

BT Group plc and EE Limited

A report on the anticipated acquisition
by BT Group plc of EE Limited

15 January 2016

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The Competition and Markets Authority has excluded from this published version of the 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 [X]. Some numbers have been replaced by a range.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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Glossary

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 communications providers (CPs).
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 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 have received a large volume of evidence in this inquiry. For example, we received around 50 submissions during phase 2 from third parties providing their views on the merger. We also received around 20 responses to detailed questionnaires, over 50 responses to our information requests, and held ten

hearings with a range of interested third parties. In addition, we received 18 responses to our provisional findings.

7. We appreciate the level of interest and participation in this inquiry which assisted us in our consideration of the ten distinct theories of harm that we identified, of which eight were assessed in considerable detail.
8. There are several interrelated themes which have a bearing on our assessment of the merger, including technological change and regulation.
9. We have noted:
 - the dynamic and innovative nature of this complex industry;
 - potential structural change in the industry (including the proposed acquisition of O2 by Hutchison 3G (H3G));
 - sophisticated competitors responding to opportunities in the market;
 - Ofcom's strategic review, which is in progress; and
 - expected increases in consumer demand for data.
10. We have sought to take into account these factors where relevant although they have inevitably made our forward-looking merger assessment more challenging. For example, we discuss concerns regarding the capacity of certain MNOs to respond to increasing data demands (and the opportunities to address such concerns) in relation to our assessment of the retail mobile and wholesale mobile markets.
11. We were 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. For example, the merger control regime is not designed to prevent merging parties from becoming stronger as a result of a merger unless that increased strength harms the competitive process.
12. 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 relating to 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 or future regulation.

13. This report applies the balance of probabilities test to the existence of an SLC. We first considered whether an SLC was likely in relation to each theory of harm, and then considered the various theories of harm in the round. However, we also noted that, where a particular theory of harm depended on the existence of a number of necessary cumulative conditions, and there was significant uncertainty in relation to a number of those conditions, then the probability of all of the necessary elements being present would be lower than the probability of each element individually.

Market definition

14. 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 concluded that we needed to consider relevant markets for five different services: retail mobile, wholesale mobile, mobile backhaul, wholesale broadband and retail broadband.

Competitive assessment: retail mobile

15. 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

16. Our 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 mobile virtual network operators (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.
17. 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 view is that these factors would not provide BT with a unique competitive advantage that could not be replicated by others.

18. We also 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 view is that, although some MNOs face challenges, it is unlikely that they would individually or in combination be sufficiently and enduringly weakened by any potential capacity constraints to the extent that the loss of BT from the retail mobile market is expected to lead to an SLC.
19. We received several submissions questioning these findings, particularly concerning our assessment of opportunities to increase capacity, the potential use of small cells, and the importance of MVNOs in the retail mobile market. We considered these submissions carefully and they are discussed in more detail in our report. We remain of the view that our findings are appropriate.
20. Our 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

21. We 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).
22. We did not find evidence in relation to any of those mechanisms which would lead us to believe that the merged party's strengths is likely to permanently weaken competitors and ultimately harm competition.
23. Specifically:
 - It is not evident that the merger is likely to lead to higher prices for spectrum in upcoming auctions sufficient to cause substantial harm to rivals.
 - The merger in itself is unlikely to cause Telefónica to switch away from its network sharing agreement with Vodafone.
 - The merger is unlikely to result in a reduction in the use of indirect sales channels (such as a third party retailer).
 - The merged entity's rivals would have a range of counter strategies to respond to any increased strength which would allow them to compete for customers.

24. We received several submissions questioning these findings, particularly concerning our assessment of opportunities to increase capacity, the importance of small cells and BT's spectrum holding, and the potential for strategic bidding in spectrum auctions. We considered these submissions carefully, but are of the view that our findings are appropriate.
25. Our 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

26. EE supplies BT with wholesale mobile services that it resells at the retail level on a stand-alone basis and as part of fixed-mobile bundles. We found that the addition of BT's small share in retail mobile would be unlikely to materially change the merged entity's behaviour towards MVNOs that do not also sell fixed services. However, given that the merged entity will be a much larger supplier of fixed-mobile bundles than EE in the counterfactual, we assessed whether the merger would lead it to foreclose rivals that rely on wholesale mobile services to also offer fixed-mobile bundles (ie fixed-MVNOs).
27. We identified four potential ways in which the merged entity could harm fixed-MVNOs: not bidding for a future contract (ie refusing to supply); bidding for a future contract, but offering worse terms than EE would have in the counterfactual (ie bidding weakly); bidding and winning a future contract but then providing a worse service than EE would have in the counterfactual; or providing a worse service under an existing contract (ie with Virgin Media).
28. In each case, we considered whether and to what extent the merged entity could have the ability to cause harm to the fixed-MVNO and whether it would have the incentive to do so. We also considered where relevant the potential effect of such a strategy on competition, if pursued.
29. We first looked at refusal to supply. We found that, if the merged entity did not bid for a future contract with a fixed-MVNO, that fixed-MVNO would still be likely to secure wholesale mobile services from another MNO but this could be at a higher price or a lower quality. Given the limited past bidding data available and the non-transparent nature of competition, the scale of this harm was not possible to quantify, although it would be limited by the competitive constraint imposed in the round by the other three MNOs.
30. We found that the merged entity would be unlikely to have a sufficient incentive to seek to foreclose fixed-MVNOs, if fixed-mobile bundles continued to be constrained by consumers' willingness to purchase the two services

separately. We therefore considered whether, for the foreseeable future, this would remain the case or if the conditions of competition in the supply of retail mobile services were likely to change in a way that would increase the retail gains to the merged entity from harming fixed-MVNOs. The evidence in general supported the view that fixed-mobile bundles would grow in prevalence, but we found that they would likely continue to be constrained by a consumer's willingness to purchase the two services separately.

31. In light of the uncertainties around the ability of the merged entity to harm fixed-MVNOs by not bidding, and given our view that market conditions were unlikely to change in such a way as to significantly increase the benefits to the merged entity of doing so, we found it unlikely that the merger would give the merged entity a sufficient incentive (compared to EE in the counterfactual) to refuse to bid for future contracts with fixed-MVNOs.
32. We then assessed weak bidding. We found that the merged entity could cause some harm to fixed-MVNOs by weakening its bid. The scale of harm was again uncertain although it would be less than the harm caused by not bidding and limited by the competitive constraint imposed by the other MNOs in the round. Whilst other MNOs might consider it possible that the merged entity would bid in a different way from EE, it would be difficult for them to discern the extent to which they could weaken their own bid and still retain a high chance of winning against the merged entity. Given these uncertainties, MNOs would be likely to be cautious in weakening their own bids.
33. We found that any weakening would sharply increase the risk to the merged entity of losing the contract to one of the other three MNOs and that this would likely outweigh any benefit to the merged entity that foreclosure of the fixed-MVNO could cause at the retail level. In light of this, we found it unlikely that the merged entity would substantially worsen its bid, relative to EE in the counterfactual, for any future contracts with fixed-MVNOs.
34. In relation to foreclosure under future contracts, we found that a fixed-MVNO would be likely to seek contractual protection to mitigate any perceived merger-specific risk that the merger would create. We found that if this was not achieved, the fixed-MVNO could gain a contract with an alternative MNO, in line with our findings in relation to refusal to supply. We therefore found it unlikely that the merger would result in foreclosure of a fixed-MVNO within a hypothetical future contract.
35. We concluded that the merger was not likely to lead to foreclosure of fixed-MVNOs in general and thus not likely to lead to an SLC in one or more markets.

36. We also considered the effects of the merged entity seeking to foreclose one or more fixed-MVNOs (other than Virgin Media). Even if the merged entity did so, despite our view that it would be unlikely to have the incentive to do so, fixed-mobile bundles would continue to be constrained by the supply of stand-alone fixed and mobile services in which multiple suppliers compete. We therefore considered it unlikely that the effects of a foreclosure strategy, if pursued, would amount to an SLC.
37. Finally, we assessed whether the merged entity might provide a worse service to Virgin Media. EE may already have some ability and incentive to degrade service to Virgin Media under its current contract and we therefore assessed whether the merged entity would have a greater incentive to do so. We found that such an incentive would only arise if a strong link developed between consumer demand for mobile and fixed services which, as we explain above, we found unlikely. In addition, we found that the merged entity would be less likely to harm Virgin Media if it wanted to supply fixed-MVNOs in future (since this could damage its reputation as a host). Lastly, we found that any harm caused to Virgin Media would in most cases be temporary and its impact on retail competition limited since the merged entity would face competition from other providers of fixed-mobile bundles that were unaffected by the foreclosure strategy.
38. Taking into account all these factors, we concluded that the merger would not be expected to result in an SLC as a result of potential foreclosure of Virgin Media under its current contract.
39. We received submissions questioning these findings, in particular concerning our approach to assessing partial foreclosure (weak bidding). Third parties also provided additional information, including in relation to the capacity of MNOs to compete for new MVNO contracts and Virgin Media's contract with EE. We considered these submissions carefully and carried out additional analysis, which is reflected in our competitive assessment, but are of the view that our findings remain appropriate.
40. We concluded 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 wholesale mobile services market.

Competitive assessment: mobile backhaul

Input foreclosure

41. 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.

42. We first considered whether the merged entity would have the ability to foreclose MNOs by increasing the price of Openreach Ethernet products. We 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 most MNOs for backhaul and the prices of the Openreach products.
43. 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. In our assessment, we recognised that there may in principle be minor impact actions of which the cumulative effect might still be significant. However, we found that on balance the overall impact on rival MNOs would not be large enough to significantly reduce their competitiveness. We therefore find that it is not likely that the merged entity would, in the future, have the ability to engage in this foreclosure strategy.
44. 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 find that it is unlikely that the merged entity would have the ability to harm rival MNOs by pursuing these foreclosure strategies.
45. We considered whether the merged entity could discriminate against rival MNOs through other strategic decisions taken by Openreach. We 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.
46. 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 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 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.

47. 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.
48. We 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 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.
49. 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 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 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.
50. Some third parties challenged our assessment of foreclosure, including our reliance on the regulation of Openreach backhaul products and the Statement of Requirements process. We also received further information in relation to cloud-RAN, high capacity circuits, fibre roll-out, phase synchronisation and small cells. We considered these submissions carefully and carried out additional analysis, which is reflected where relevant in our competitive

assessment. However, we are of the view that our findings remain appropriate.

51. Finally, we considered whether the combined adoption of these strategies would increase the merged entity's incentive to foreclose rival MNOs. We concluded that for the strategies where the regulation to which BT is subject would make it unlikely that MNOs could be harmed, or where ability was absent for other reasons, our assessment would not change if these strategies were considered cumulatively. In the strategies where we found that ability to cause harm could be present, our conclusion that the merged entity did not have the incentive to engage in these strategies did not change when assessing their potential cumulative effect.
52. In the light of our assessment, we 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

53. 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.
54. 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).
55. Therefore, the scale and timing of any such purchases is uncertain. It is particularly uncertain whether EE or MBNL would have the appetite, absent

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

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.

56. Our view is that, while the merged entity would have the incentive to cease purchasing mobile backhaul from third parties, the merged entity is unlikely to have the ability to foreclose independent fibre networks as a result of the merger.
57. We received a submission questioning these findings, and considered this and recently announced changes in fibre network ownership, but concluded that our findings are appropriate.
58. We therefore 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

59. 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.
60. 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.
61. As BT is also a retail broadband supplier, the CPs purchasing inputs from BT also compete with BT at the retail level.
62. 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 CPs need to provide SBB or SFBB at the retail level.
63. 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.

64. 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.
65. Based on our discussions with and written evidence from Ofcom, our view is that it is unlikely that the VULA margin test was ineffective in preventing BT from foreclosing its rival CPs to a material extent in the counterfactual. 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 how it currently applies the VULA margin test to address new issues that may arise as a result of the merger. However, our 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.
66. We therefore conclude 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.
67. 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.
68. 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 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.
69. We received submissions questioning these findings, and in particular how we should view the Ofcom regulation of VULA. We considered these submissions carefully, but are of the view that our findings are appropriate.
70. Our conclusion is that the merger does not create or enhance an ability or incentive for BT to foreclose SBB or SFBB 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 or SFBB input foreclosure.

71. We also 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. Our conclusion is that these concerns are not caused or exacerbated by the merger.

Competitive effects: retail fixed broadband

72. 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 where BT faces limited competition) in both SBB and SFBB, and loss of potential competition in SFBB across the UK.

Loss of competition in Market A

73. 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.
74. 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.
75. 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.
76. 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.
77. We did not receive any additional evidence or arguments in response to these findings on retail fixed broadband and we remain of the view that they are appropriate.
78. Our 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 loss of competition in the supply of retail broadband (SBB and SFBB) in Market A.

Loss of superfast broadband competition

79. 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.
80. 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.
81. 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.
82. We did not receive any additional evidence or arguments in response to these findings and we remain of the view that they are appropriate.
83. Our 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 loss of competition in SFBB.

Competitive effects: other

Coordinated and conglomerate effects

84. 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.
85. 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.

86. Our conclusion 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

87. As well as our assessments of the individual theories of harm, we also considered whether any potential interaction between individual theories 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. We received several submissions arguing that we should find an SLC as a result of these issues.
88. We did not reach a different conclusion on whether the merger is expected to result in an SLC as a result of the interaction between the various theories of harm we considered.

Our findings

89. We 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.
90. In our provisional findings, the group was evenly divided on whether the merger was expected to result in an SLC in the wholesale mobile market (and was unanimous that it was not in any other market). Following further assessment of all the relevant evidence, the group is now unanimous in its findings.

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) (the merger) 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 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.

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 at <https://www.gov.uk/cma-cases/bt-ee-merger-inquiry>.

⁵ [Rules of procedure for merger, market and special reference groups \(CMA17\)](#), Rule 11.

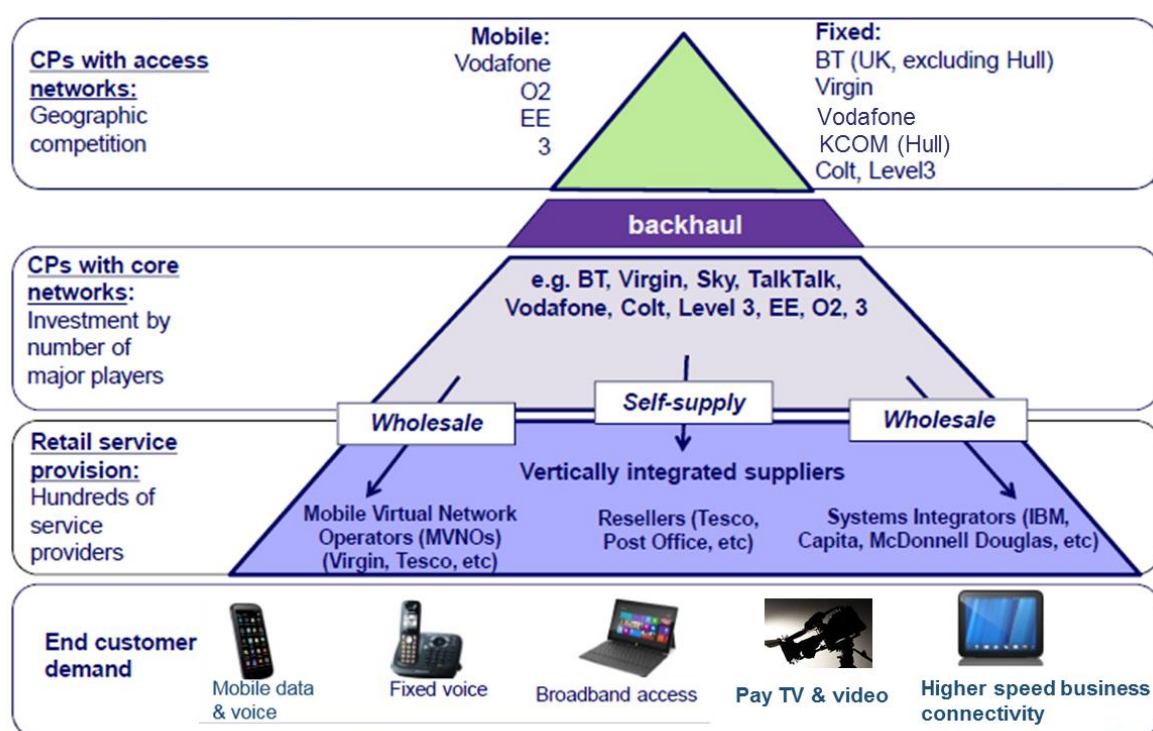
⁶ [BT/EE merger inquiry case page](#).

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 and interrelated effects. Finally, we conclude 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 communications providers (CPs) and other 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 telecoms 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 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 are also referred to as 'Next Generation' services.
- 2.8 The technology and speeds available for fixed broadband vary considerably. Basic broadband⁷ with download speeds of more than 2 Mbit/s⁸ (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. Light is used to transmit signals along optical fibre connections. Unlit fibre which has not been configured for transmission is known 'dark fibre'. 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

⁷ Originally fixed broadband services were required to deliver a speed of 128 Kbits/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.

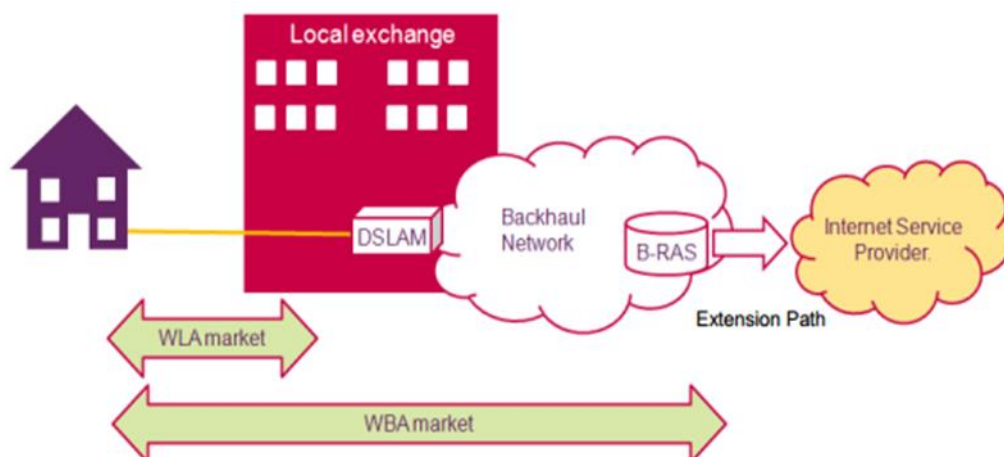
Wholesale fixed voice and broadband inputs

- 2.9 Having described the fixed telecom products and services at a retail level, we now consider the associated wholesale inputs.
- 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 ADSL¹² 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.

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 inputs¹³



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

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 to 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

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).¹⁹ The 2015 CMR indicates that UK telecoms revenues declined in 2014, falling by 2% to £37.4 billion.²⁰ 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 revenues²¹ insufficient to offset these reductions.²²
- 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.²³
- 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 \(Ofcom CMR 2015\)](#).

²⁰ [Ofcom CMR 2015](#), p255.

²¹ Including fixed access and call revenues and fixed internet revenue.

²² Within total retail fixed revenue there was a decline in fixed access and call revenue.

²³ [Ofcom CMR 2015](#), p292.

month more than SBB services.²⁴ 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.²⁵ 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).

²⁴ *ibid*, p287.

²⁵ *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.²⁶ 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)²⁷ that were 4G to 28% in Q4 2014.²⁸

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.²⁹

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 2013.³⁰
- 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.

²⁶ 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.

²⁷ Ofcom figures indicate that at the end of 2014 there were 89.9 million mobile subscriptions including 6.3 million M2M connections.

²⁸ [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.

²⁹ [Ofcom CMR 2015](#), p163 & p145.

³⁰ *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.
 - (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 combination 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 (Openreach³¹ 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

³¹ Part of BT Group.

the fixed network in the Hull area.³² In addition to these fixed access operators 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.³³

- 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.³⁴ 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.³⁵ 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.³⁶ 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.³⁷ In recent months Gigaclear has also begun deploying its own localised fibre network in selected rural areas.³⁸ Zayo's UK fibre optic network is based on routes alongside the national gas pipeline and London's sewer network.

³² KCOM announced on 14 December 2015 an agreement to sell the physical infrastructure of its national network outside Hull and East Yorkshire to CityFibre, see [KCOM announcement](#) (December 2015). The network assets to be sold include the ducts, sub-ducts, chambers, cables and cable joints, optical distribution frames and patch cords. KCOM will retain the ownership of network switching, transmission control and application elements.

³³ Other fixed providers also purchase/are able to purchase these wholesale services from BT.

³⁴ Ofcom Business Connectivity Market Review (BCMR) (May 2015) consultation document, paragraph 3.18.

³⁵ Virgin Media Initial Submission, paragraph 2.1, refers to approximately 5 million cable customers.

³⁶ 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](#).

³⁷ See the [CityFibre Network](#) webpage, and plans for further investment within these areas and across the UK on the [CityFibre Gigabit Cities](#) webpage.

³⁸ See the [Gigaclear](#) website.

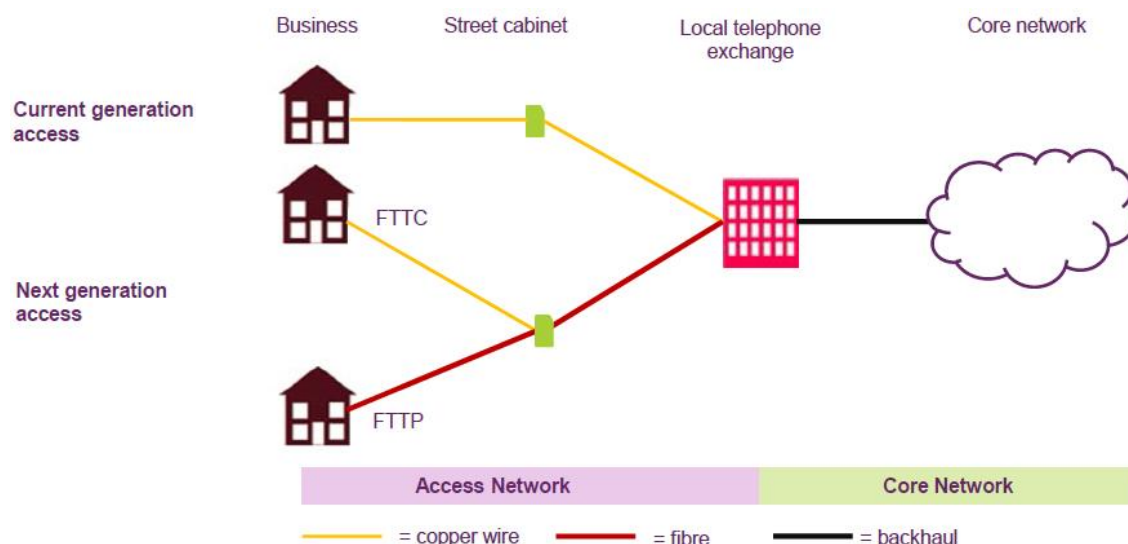
Fixed broadband network topology

- 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.³⁹ 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.⁴⁰
- 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.
 - (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.

³⁹ Asymmetric digital subscriber lines (ADSL) and ADSL2+.

⁴⁰ [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.⁴¹ The parties, for example, told us that there were more than 100 MVNOs. The International MVNOx Association (iMVNOx) and Federation Communication Services (FCS) told us there were over 200 MVNOs in the UK as at May 2015.⁴² Conversely, the MNOs reported to Ofcom a total of 41 'direct' MVNO customers.⁴³ 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).

⁴¹ For the purposes of this inquiry, we refer to MVNOs generally in an inclusive sense unless otherwise specified.

⁴² [iMVNOx and FCS response to provisional findings](#), p12 paragraph 1.1.

⁴³ [Ofcom response to issues statement](#), paragraph 4.3. See also, for example, [Ofcom SRDC 2015](#), paragraph 1.44.

Figure 2.4: MNOs and MVNOs

Mobile Network Operators (MNOs)	Mobile Virtual Network Operators (MVNOs)			
	Fixed CPs	Major retail brands	Value challenger brands	International/ethical focus
	 	 	 	
	 			
				
				 

Source: CMA analysis.

Notes:

1. Tesco Mobile is a joint venture between Telefónica and Tesco.
2. iD is the mobile brand offered by Dixons Carphone.
3. Sky plans to launch its mobile service in 2016 and is therefore shown in dotted lines.
4. Sainsbury announced on 14 October 2015 that their mobile service will no longer be available after 15 January 2016.
5. FreedomPop is a customer of Three's MVNA partner X-Mobility.
6. The People's operator (TPO) signed a wholesale contract with Three in November 2015 which targets services being rolled out to TPO customers from Q1 2016 and is therefore shown in dotted lines.

Light and full MVNOs

- 2.50 There is a broad range of different MNVO approaches that fall approximately into the two categories of 'full MVNO' and 'light MVNO'.⁴⁴ 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.⁴⁵
- 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

⁴⁴ These are sometimes referred to in the telecoms industry as 'thick' and 'thin' MVNOs.

⁴⁵ 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.

MVNOs also own core networks and may hold licences to a limited amount of spectrum.⁴⁶

- 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. We also note that iMVNOx told us that there are two full MVNOs if a full MVNO is characterised as one which owns and manages its own core network.⁴⁷ 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.⁴⁸ All MNOs are subject to an obligation to provide 90% outdoor coverage for voice services by 2017.⁴⁹
- 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 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.⁵⁰

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.

⁴⁶ Ofcom SRDC 2015, Figure 21.

⁴⁷ iMVNOx and FCS response to provisional findings, p13, paragraph 4.1.

⁴⁸ Ofcom SRDC 2015, paragraph 4.6.

⁴⁹ 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.

⁵⁰ Ofcom CMR 2015, p258.

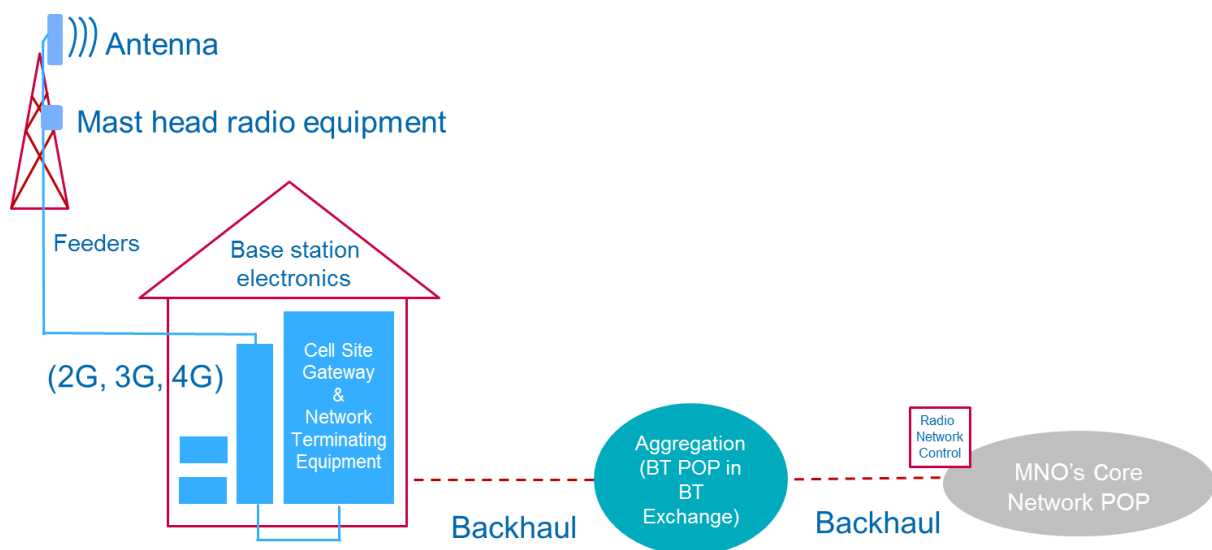
2.56 The mobile access network includes base stations where antenna, mast head radio equipment and electronic systems:

- (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.

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.⁵¹
- 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 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.)⁵² 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.⁵³ RootMetrics’ recent comparison of 4G networks (shown in Table 2.2) provides a comparison of real world speeds for the different networks.⁵⁴

⁵¹ 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.

⁵² 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.

⁵³ [Ofcom Infrastructure Report 2014](#).

⁵⁴ RootMetrics (May 2015), [4G in the UK: Fast Speeds and Expanding Footprints](#).

Table 2.2: MNO network speeds, May 2015

	<i>Mbit/s</i>			
	<i>MNO</i>			
	<i>EE</i>	<i>O2</i>	<i>Three/H3G</i>	<i>Vodafone</i>
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.

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.⁵⁵
- 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.⁵⁶
- 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

⁵⁵ [BT Annual Report & Form 20-F 2015](#), p55.

⁵⁶ [Ofcom, Designation of BT and Kingston as universal service providers](#), p5, paragraph 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'.⁵⁷

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).⁵⁸
- 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%.⁵⁹
- 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.⁶⁰
- 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.

⁵⁷ See the [Openreach](#) webpages. The operational, engineering, and systems capabilities of Openreach are functionally separate from those of the rest of the BT Group.

⁵⁸ [BT Group plc Annual Report and Form 20-F 2015](#), p7.

⁵⁹ *ibid*, p54.

⁶⁰ *ibid*.

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

	<i>£m</i>						
	<i>BT Global Services</i>	<i>BT Business</i>	<i>BT Consumer</i>	<i>BT Wholesale</i>	<i>Openreach</i>	<i>Other</i>	<i>Total</i>
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

	<i>£m</i>	
<i>Products and services</i>	<i>2015</i>	<i>2014</i>
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).⁶¹

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.⁶²

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 communications services to retail customers and wholesale mobile services

⁶¹ [BT Group plc Annual Report and Form 20-F 2015](#), p88.

⁶² *ibid*, p183.

to MVNOs. EE operates exclusively in the UK and runs the EE, Orange and T-Mobile brands.⁶³

- 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.⁶⁴ Not all of its hosted MVNOs have access to its 4G services.
- 3.19 EE describes itself as the 'UK's largest mobile communications provider'.⁶⁵
- 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.⁶⁶

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

<i>Technology</i>	<i>% Coverage of UK population</i>
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).⁶⁷ It serves more than 30 million customers across its mobile, fixed and wholesale businesses.⁶⁸

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.

⁶³ EE Limited Annual Report – year ended 31 December 2014, p4–5.

⁶⁴ EE initial submission, p3. One of the MNVOs hosted by EE is Virgin Media, which the submission states is the second largest MVNO in the UK.

⁶⁵ EE Limited Annual Report – year ended 31 December 2014, p4.

⁶⁶ See EE's 'A bit about us' webpage.

⁶⁷ EE Limited Annual Report – year ended 31 December 2014, p5.

⁶⁸ 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).⁶⁹
- 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.⁷⁰
- 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.⁷¹
- 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).⁷² Included in EE's total assets is £182 million (2013: £172 million), which is EE's share of MBNL network assets.⁷³
- 3.28 At the end of 2014, EE's leverage ratio was 1.64x Net Debt to EBITDA.⁷⁴

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 (O2,

⁶⁹ *EE Limited Annual Report – Year ended 31 December 2014*, p6.

⁷⁰ *ibid*, p40.

⁷¹ *ibid*, p38, section 5.

⁷² *ibid*, p17.

⁷³ *ibid*, p52, paragraph 2.

⁷⁴ *ibid*, p6, paragraph 12.

Vodafone, H3G), three MVNOs⁷⁵ (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.⁷⁶
- 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,⁷⁷ 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

⁷⁵ 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.

⁷⁶ See [Telefónica's website](#).

⁷⁷ 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.⁷⁸

- 3.37 For the year ending 31 March 2015, Vodafone reported UK revenue of £6,414 million⁷⁹ 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

<i>£m</i>	
<i>Line of business</i>	<i>Revenue</i>
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 2014.⁸⁰
- 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 2013,⁸¹ H3G reported UK revenue of £2,049 million⁸² and UK EBITDA of £391 million.

⁷⁸ See [Preliminary results statement](#).

⁷⁹ 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.

⁸⁰ CKHH [Annual Report 2014](#).

⁸¹ 2014 accounts not yet available.

⁸² 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.⁸³
- 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.⁸⁴
- 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.⁸⁵
- 3.45 For the year ending 30 June 2015, Sky reported UK revenue of £7,820 million.⁸⁶

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.⁸⁷ 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.

⁸³ Sky is active in the UK & Ireland, Austria, Germany and Italy.

⁸⁴ Sky wholesales its channels to third-party pay TV platforms, as well as selling a wide range of programming internationally through Sky Vision.

⁸⁵ MarketLine Industry Profile (February 2015), Telecommunications services in the United Kingdom, p25.

⁸⁶ 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.

⁸⁷ TalkTalk Telecom Group company profile, MarketLine, October 2014.

- 3.48 For the year ending 31 March 2015, TalkTalk reported UK revenue of £1,795 million⁸⁸ 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 2015.⁸⁹ 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.⁹⁰
- 3.51 For the year ending 31 December 2014, Virgin Media inc reported revenue of £4,214 million⁹¹ and EBITDA equivalent⁹² 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.⁹³ 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.⁹⁴ 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.

⁸⁸ 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.

⁸⁹ See the [Liberty Global website](#).

⁹⁰ [Virgin Media submission](#), p2.

⁹¹ 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. This can be found in Appendix C.

⁹² 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.

⁹³ CityFibre announced on 14 December 2015 an agreement to purchase KCOM's national fibre and duct network assets outside Hull and East Yorkshire, see [CityFibre announcement](#) (December 2015).

⁹⁴ [CityFibre initial 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.⁹⁵

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.⁹⁶

3.57 For the year ending 30 June 2014, Zayo reported revenue of £38.1 million and EBITDA of £6.6 million.⁹⁷

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.⁹⁸

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

⁹⁵ CityFibre [Annual Report 2014](#).

⁹⁶ Zayo Group UK Limited statutory accounts for year ended 30 June 2014, p2.

⁹⁷ Zayo Group UK Limited statutory accounts for the year ended 30 June 2014.

⁹⁸ 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.⁹⁹

*CTIL*¹⁰⁰

- 3.62 In October 2012, Vodafone UK and Telefónica established a network sharing joint venture, CTIL. The purpose was to combine their respective site grids to achieve a single grid of shared sites and to engage in active sharing of RAN assets and access transmission links for 2G, 3G and 4G mobile network traffic (except in London where only 4G technologies are shared).
- 3.63 Responsibility for active RAN assets, including network service levels, and access transmission in the UK is split on a geographic basis between the parties (see the illustrative map in Appendix C, Figure 6).
- 3.64 Each party manages the cost and financing of deploying, operating and maintaining the active RAN assets in its respective region and CTIL manages the cost and financing of deploying, operating and maintaining passive RAN assets in the combined network across the UK.

⁹⁹ See *Ofcom BCMR responses, EE, H3G and MBNL combined response*.

¹⁰⁰ 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.¹⁰¹ 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.¹⁰²
- 4.3 Ofcom also has concurrent competition powers with the CMA under the Competition Act 1998 and the Enterprise Act 2002 (the Act).¹⁰³ These powers include an ability to take enforcement action in relation to anti-competitive agreements and abuse of dominance. Ofcom may also undertake market reviews and may refer a market to the CMA for an in-depth investigation where it identifies a feature or features of a market that prevent, restrict or distort competition.
- 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'.

¹⁰¹ [Issues statement](#) (17 July 2015).

¹⁰² 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.

¹⁰³ See [CMA and Ofcom memorandum of understanding](#), (17 June 2014).

- 4.5 In doing so, Ofcom is required to secure a number of specific objectives¹⁰⁴ and to have regard to certain matters, such as, transparency, accountability and proportionality¹⁰⁵ 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.¹⁰⁶

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.¹⁰⁷ 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.¹⁰⁸
- 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.¹⁰⁹ Where remedies are already in place, Ofcom is required to consider whether they remain appropriate and proportionate in the light of changing market conditions.¹¹⁰ The Access Directive specifies a number of SMP obligations, including transparency, non-discrimination,

¹⁰⁴ 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))).

¹⁰⁵ 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.

¹⁰⁶ [Ofcom response to issues statement](#), paragraph 2.3.

¹⁰⁷ See [BCMR 2013](#), Annex 2, regulatory framework; see [FAMR 2014](#), Annex 1, regulatory framework.

¹⁰⁸ [Ofcom response to issues statement](#), paragraph 2.5. See section 87 CA03.

¹⁰⁹ See [BCMR 2013](#), Annex 2, regulatory framework; see [FAMR 2014](#), Annex 1, regulatory framework.

¹¹⁰ [Ofcom response to issues statement](#), 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 Recommendation¹¹¹ and the EC SMP Guidelines.¹¹² 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.¹¹³
- 4.11 When identifying markets other than those set out in the Recommendation, Ofcom would have to ensure the Commission does not raise any objections¹¹⁴ and that three specific criteria are cumulatively met.¹¹⁵
- 4.12 SMP is currently found in the following UK markets:¹¹⁶
- (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.

¹¹¹ [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.

¹¹² 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.

¹¹³ See [BCMR 2013](#), Annex 2, regulatory framework; see [FAMR 2014](#), Annex 1, regulatory framework.

¹¹⁴ 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.

¹¹⁵ [EC, Commission Recommendation](#) of 9 October 2014 on relevant product and service markets within the electronic communications sector; [Ofcom response to issues statement](#), paragraph 2.6.

¹¹⁶ 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 There are currently no SMP conditions relevant to the retail mobile or wholesale mobile markets, and the depth and range of MVNO relationships with MNOs in the UK reflects commercial rather than regulatory decisions. However, Ofcom submitted that, should competition concerns emerge, it could investigate whether an SMP finding would be appropriate and whether remedies would be needed.
- 4.14 With regard to the enforcement of SMP conditions, Ofcom's enforcement powers are set out in sections 94 to 104 CA03.¹¹⁷
- 4.15 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

- 4.16 In 2004/05, Ofcom undertook a Strategic Review of Telecommunications¹¹⁸ 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 2005.¹¹⁹ The Undertakings have been varied on a number of occasions.¹²⁰
- 4.17 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.¹²¹ 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.¹²² Ofcom recognised that BT's previous

¹¹⁷ See Appendix D, paragraphs 24(a)–(f).

¹¹⁸ Original publication: Ofcom (September 2005): [Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference.](#)

¹¹⁹ [Original undertakings](#), Annex A.

¹²⁰ [Undertakings given to Ofcom by BT pursuant to the Enterprise Act 2002](#) (19 June 2014).

¹²¹ For a summary of the Undertakings see: BEREC (February 2011), [Guidance on Functional Separation](#), Annex I and [Ofcom response to issues statement](#), paragraph 2.7.

¹²² *ibid.*

vertically integrated structure gave it both the incentive and ability to discriminate against competitors.¹²³

Equivalence of Inputs

4.18 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 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.¹²⁴

Statement of Requirements/new products

4.19 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.¹²⁵

Monitoring and enforcement

4.20 Should the Undertakings fail to deliver a solution, Ofcom can open an investigation with a view to making a market investigation reference to the

¹²³ Ofcom (July 2015), [Strategic Review of Digital Communications: Discussion document](#), paragraph 11.8.

¹²⁴ 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 response to issues statement](#), paragraph 2.7.

¹²⁵ [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.

CMA.¹²⁶ Furthermore, the EAB, alongside BT, is obliged to identify and report on as well as investigate, complaints about BT's compliance with the Undertakings¹²⁷ and to conduct and publish an annual review.¹²⁸ The EAB is obliged to inform Ofcom of non-trivial breaches.¹²⁹ The EAB and Ofcom also monitor the SOR process (product development requests) for compliance with the Undertakings.¹³⁰

- 4.21 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.¹³¹ If BT accepts the direction, failure to comply with the direction is also itself a breach of the Undertakings.¹³² 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'.¹³³ The EAB can additionally suggest remedial action to BT to ensure compliance with the Undertakings and BT must take 'due account'.¹³⁴ The Undertakings are also enforceable under the Act.

Strategic Review of Digital Communications

- 4.22 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.¹³⁵ The assessment will consider future policy challenges across fixed, mobile and content sectors.¹³⁶ 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.¹³⁷

¹²⁶ Paragraph 8.43 of the [statement accompanying the Undertakings](#).

¹²⁷ Section 10.11 of the [Undertakings](#). Complaints may also be made by BT and the Equality of Access Office.

¹²⁸ Section 10.27 of the [Undertakings](#). See paragraphs 10.9 onwards of the [Undertakings](#).

¹²⁹ 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.

¹³⁰ See [BT undertakings](#); also answer to question 10, Ofcom response to Regulatory Framework RFI dated 30 July 2015.

¹³¹ See section 10.15.1 of the [Undertakings](#).

¹³² See section 15.1(b) of the [Undertakings](#).

¹³³ [Strategic Review of Digital Communications: Discussion document](#), paragraph 11.58.

¹³⁴ See section 10.15.1 of the [Undertakings](#).

¹³⁵ [Strategic Review of Digital Communications: Discussion document](#), 'About this document'.

¹³⁶ *ibid.*

¹³⁷ [Strategic Review of Digital Communications: Discussion document](#), paragraph 11.6.

- 4.23 Ofcom outlines four courses of possible action that it should consider for its overarching fixed telecoms regulatory strategy, including considering structural separation of Openreach.¹³⁸

Ofcom's dispute resolution powers

- 4.24 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.
- 4.25 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 2011.¹³⁹
- 4.26 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.¹⁴⁰ It has a number of powers in resolving disputes (other than those relating to spectrum disputes) – for instance it can: 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.¹⁴¹
- 4.27 A determination made by Ofcom for resolving a dispute binds all parties to the dispute.¹⁴² 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.¹⁴³

Regulation of spectrum

- 4.28 Ofcom is responsible for managing civilian use of radio spectrum and auctions mobile spectrum.¹⁴⁴ 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

¹³⁸ *ibid*, paragraphs 1.37 & 1.38 and section 11.

¹³⁹ *ibid*.

¹⁴⁰ 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.

¹⁴¹ See [Ofcom's Dispute Resolution Guidelines 2011](#).

¹⁴² *ibid*.

¹⁴³ *ibid*.

¹⁴⁴ See [spectrum information](#) pages on Ofcom's website.

allocation meets market needs and would not have a negative impact on competition on the retail and wholesale mobile markets.¹⁴⁵

Regulation of mobile backhaul (business connectivity)

- 4.29 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’.¹⁴⁶ CPs source mobile backhaul either from Openreach, or from BT Wholesale which itself sources mobile backhaul from Openreach.¹⁴⁷ Accordingly, the Undertakings and SMP conditions imposed under the Business Connectivity Market Review (BCMR) 2013 are of relevance to this area.
- 4.30 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.¹⁴⁸ 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.¹⁴⁹
- 4.31 Ofcom is in the process of consulting on the next BCMR review in 2016.¹⁵⁰

Regulation of Wholesale Local Access and Wholesale Broadband Access

- 4.32 In 2014, in its Fixed Access Market review (FAMR),¹⁵¹ Ofcom concluded that BT had SMP in the supply of WLA in the UK excluding the Hull area.¹⁵² Historically, Ofcom’s approach has been to intervene upstream in order to facilitate competitive downstream markets.¹⁵³
- 4.33 In order to promote effective competition in the broadband and voice markets, Ofcom requires BT to provide various WLA¹⁵⁴ services on regulated terms

¹⁴⁵ [Ofcom response to issues statement](#), paragraph 3.8.

¹⁴⁶ [Ofcom response to issues statement](#), paragraph 5.8.

¹⁴⁷ Openreach products are just leased lines, whereas the BT Wholesale product is a wider managed service that uses leased lines as an input.

¹⁴⁸ [Ofcom response to issues statement](#), 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.

¹⁴⁹ [Ofcom response to issues statement](#), 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.

¹⁵⁰ Ofcom, [Business Connectivity Market Review – May 2015](#); [Ofcom response to issues statement](#), paragraph 5.19.

¹⁵¹ Ofcom (26 June 2014), [Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30](#).

¹⁵² As above; [Ofcom response to issues statement](#), paragraph 6.10.

¹⁵³ [Ofcom response to issues statement](#), paragraph 6.3.

¹⁵⁴ Wholesale local access refers to the fixed connection from the local exchange or access node to the end user.

such as LLU for copper-based CGA services, and VULA¹⁵⁵ for fibre-based NGA services. This allows other CPs to use BT's access network to provide competing voice and broadband services in the downstream markets.

- 4.34 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.¹⁵⁶ No further remedies were imposed in the geographic areas where LLU had been effective in promoting broadband competition (referred to as Market B).¹⁵⁷
- 4.35 However, in some areas (referred to as Market A), Ofcom submitted that WLA remedies have not been as effective at promoting entry.¹⁵⁸ 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.
- 4.36 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.¹⁵⁹

Current WLA regulation

- 4.37 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'.¹⁶⁰ Other SMP remedies were also imposed by Ofcom. These remedies remain in place until 31 March 2017.¹⁶¹

¹⁵⁵ 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).

¹⁵⁶ 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.

¹⁵⁷ [Ofcom response to issues statement](#), paragraph 6.5.

¹⁵⁸ [Ofcom response to issues statement](#), paragraph 6.6.

¹⁵⁹ See [FAMR 2014, Volume 2](#).

¹⁶⁰ [FAMR 2014, Volume 2](#), paragraphs 1.1 & 1.2.

¹⁶¹ [FAMR 2014, Volume 2](#), paragraph 1.4. Further details are set out in Section 10, [FAMR Statement 2014](#). Also see [Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and](#)

- 4.38 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.¹⁶² LLU products must also be provided by BT on an EOI basis.¹⁶³

Virtual unbundled local access (VULA)

- 4.39 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.¹⁶⁴ 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.¹⁶⁵
- 4.40 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.¹⁶⁶ 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.¹⁶⁷
- 4.41 Ofcom's approach in its VULA Margin Statement has been appealed to the CAT by both BT¹⁶⁸ and by TalkTalk.¹⁶⁹
- 4.42 On 29 July 2015, Ofcom published a statement¹⁷⁰ 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.

ISDN30; Volume 1: Statement on the markets, market power determinations and remedies; Ofcom response to issues statement, paragraph 6.13.

¹⁶² 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.

¹⁶³ Ofcom (26 June 2014), [Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30](#).

¹⁶⁴ With the exception of GEA migration charges. [FAMR 2014, Volume 1](#), paragraphs 12.210–12.212.

¹⁶⁵ Further details are set out in [Ofcom's statement](#) of 19 March 2015 (the 'VULA Margin Statement').

¹⁶⁶ [FAMR 2014](#), paragraph 12.54.

¹⁶⁷ [FAMR 2014](#), paragraph 12.97.

¹⁶⁸ [British Telecommunications Plc v Office of Communications \(case number: 1238/3/3/15\)](#).

¹⁶⁹ [TalkTalk Telecom Group Plc v Office of Communications \(case number: 1237/3/3/15\)](#).

¹⁷⁰ Ofcom, [BT's compliance with the VULA margin control](#).

Current WBA regulation

- 4.43 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.¹⁷¹ 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.¹⁷² Further details are set out in the 2014 WBA market review.¹⁷³
- 4.44 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.¹⁷⁴

Regulation of wholesale and retail mobile markets

- 4.45 There is currently no regulation of retail mobile markets related to a finding of SMP.¹⁷⁵ 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).¹⁷⁶ There is also no obligation for MNOs to provide wholesale mobile services.

¹⁷¹ [Ofcom response to issues statement](#), paragraph 6.18.

¹⁷² [Ofcom response to issues statement](#), paragraph 6.18.

¹⁷³ Ofcom (26 June 2014), [Review of the wholesale broadband access markets: Statement on market definition, market power determinations and remedies](#).

¹⁷⁴ Ofcom [Review of the Wholesale Broadband Access Markets \(Statement on market definition, market power determinations and remedies\)](#), 2014, paragraphs 3.3 & 3.4.

¹⁷⁵ [Ofcom response to issues statement](#), paragraph 3.7.

¹⁷⁶ [Ofcom response to issues statement](#), 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.

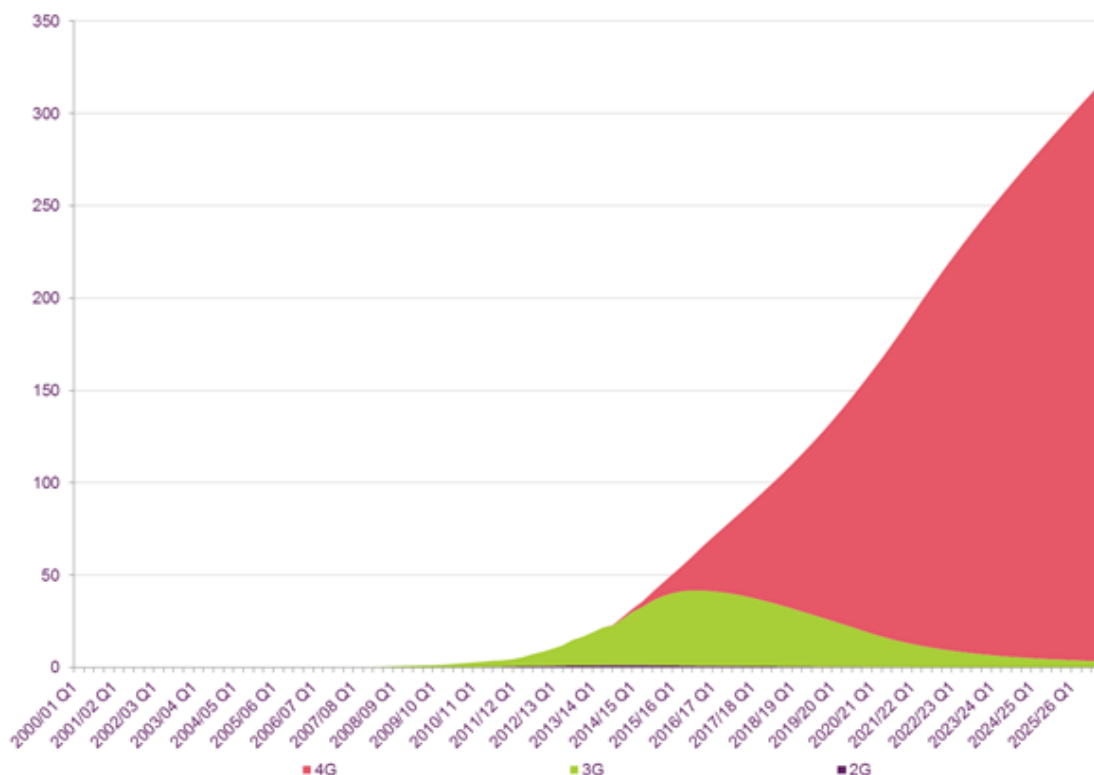
Demand for data

- 5.3 The evidence we have seen shows it is widely accepted among operators that the key trend, and challenge, facing the industry is the rapid growth in end user demand of data.¹⁷⁷ 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).¹⁷⁸

¹⁷⁷ Several third party hearings.

¹⁷⁸ 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).¹⁷⁹ 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

¹⁷⁹ 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 app¹⁸⁰), Netflix and Amazon Prime Instant Video (formerly LoveFilm).¹⁸¹

Spectrum and capacity constraints

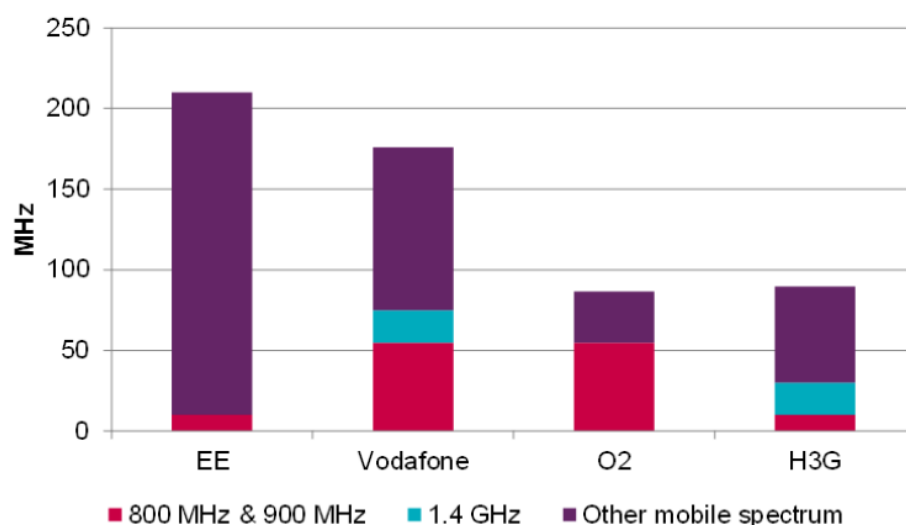
- 5.15 Chapter 2 described the use of spectrum to provide mobile telecoms services. Here we examine the trend towards increasing spectrum availability, and factors that may affect how quickly new spectrum will be useful for providing network capacity.
- 5.16 There is a relationship between spectrum and 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.¹⁸²
- 5.18 Figure 5.2 shows the ownership of spectrum by MNOs post the recent Qualcomm sale. For spectrum holdings by other CPs see Appendix G.

¹⁸⁰ *The Guardian* (February 2014), [WhatsApp adding voice calls is a logical move](#).

¹⁸¹ [Ofcom SRDC](#) (2015), p9; and BARB Establishment Survey, Q1 2015.

¹⁸² See Ofcom website [Spectrum trade announcement, 22 September 2015](#).

Figure 5.2: Holdings of spectrum by MNOs 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 after the Commission's decision on the H3G/O2 merger.¹⁸³ In November 2014 Ofcom published a statement¹⁸⁴ 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.¹⁸⁵
- 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

¹⁸³ See Ofcom website [Public Sector Spectrum Release](#).

¹⁸⁴ Ofcom (October 2015), [The award of 2.3 and 3.4 GHz spectrum bands](#), paragraph 9.22.

¹⁸⁵ See Ofcom website, [700MHz statement](#).

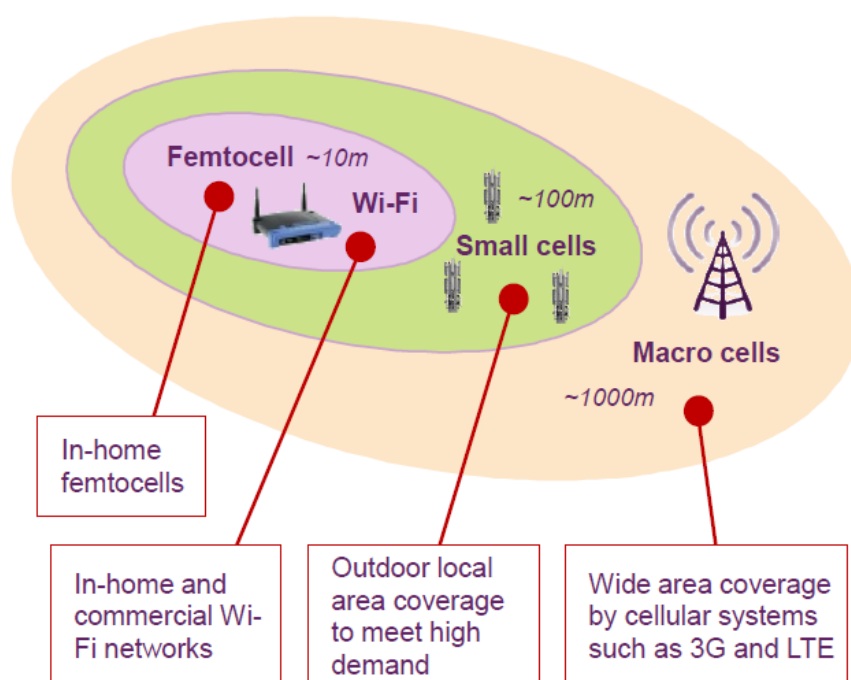
- (b) using methods that reduce the number of simultaneous users of each spectrum band at each cell, such as sectorisation/cell-sectoring, adding additional macro or small sites, or encouraging offload to Wi-Fi (to the extent this is possible).

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'.¹⁸⁶ 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.

¹⁸⁶ 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.¹⁸⁷ 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.¹⁸⁸
- 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.¹⁸⁹ 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

¹⁸⁷ See, for example, [Vodafone SureSignal](#).

¹⁸⁸ ISPreview (19 February 2015), [Virgin Media Business and Arqiva to Improve 4G Mobile in UK Cities](#).

¹⁸⁹ 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.¹⁹⁰ In addition Vodafone has a programme to provide rural mobile coverage using femtocells.¹⁹¹

- 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.¹⁹² Ofcom expected the number of small cells to grow at 10% a year, and at a faster rate than macro sites.¹⁹³ According to Ofcom, it is becoming more difficult to find suitable macro sites and small cells could provide a more 'targeted answer to capacity'.¹⁹⁴ 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)'.¹⁹⁵
- 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.¹⁹⁶

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

¹⁹⁰ See [Preliminary results announcement](#), p10.

¹⁹¹ See [Vodafone website](#).

¹⁹² See Ofcom [Consultation](#) p33.

¹⁹³ *ibid*, p109.

¹⁹⁴ *ibid*, p109.

¹⁹⁵ *ibid*, p35.

¹⁹⁶ *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;¹⁹⁷
- (c) network-sharing agreement created between T-Mobile and H3G (2007);
- (d) passive network sharing agreements created between Vodafone and O2 (2008 and 2009);¹⁹⁸
- (e) Orange and T-Mobile merged to form Everything Everywhere (2010),¹⁹⁹ which was later rebranded as EE (2012);
- (f) active network sharing (Beacon) agreements created between Vodafone and O2 (2012);²⁰⁰
- (g) Vodafone purchased Cable & Wireless Worldwide plc (CWW), (2012).²⁰¹
- (h) Sky purchased Telefónica's (O2 and BE brand) consumer fixed telephony and consumer fixed broadband business (2013);²⁰²
- (i) Virgin Media purchased by Liberty Global (2013);²⁰³
- (j) BT announced merger with EE (2015) (the subject of this report); and
- (k) H3G announced merger with O2 (2015) (currently being considered by the Commission).²⁰⁴

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 Commission. Three mergers (in Germany, Austria and Ireland) have recently

¹⁹⁷ See [Virgin Mobile UK/Virgin Media](#) webpage.

¹⁹⁸ These agreements were terminated and replaced by the Beacon agreements in 2012.

¹⁹⁹ 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.

²⁰⁰ See Vodafone press release (June 2012): [Telefónica UK and Vodafone UK to Strengthen their Network Collaboration](#).

²⁰¹ See Vodafone press release (July 2012): [Vodafone's Recommended Offer for Cable & Wireless Worldwide](#).

²⁰² See O2 press release (March 2013): [Sky to Acquire Telefónica UK's Broadband and Fixed-Line Telephony Business](#).

²⁰³ See Liberty Global press release (June 2013): [Liberty Global Completes Acquisition of Virgin Media](#).

²⁰⁴ The CMA issued an Article 9(2) request for the merger to be referred to the CMA for consideration, but the Commission decided not to do so.

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.²⁰⁵ 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.²⁰⁶
- 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'.²⁰⁷ 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

²⁰⁵ 42nd Annual Conference on International Antitrust Law and Policy Fordham University, 2 October 2015. See [Competition and Telecoms speech](#).

²⁰⁶ Ibid, paragraph 3.1.1.

²⁰⁷ 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 2014,²⁰⁸ 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.²⁰⁹ On 5 February 2015, BT signed a sale and purchase agreement (the SPA) with the Sellers for the entire issued share capital of EE²¹⁰ 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.²¹¹ 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.²¹² BT held a general meeting of shareholders on 30 April 2015, and announced on 7 May 2015 that shareholders had approved the transaction.²¹³
- 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).²¹⁴ The SPA includes a condition that completion of the transaction is subject to clearance by the CMA under the Act.²¹⁵ 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).²¹⁶ For details of other conditions precedent see Appendix E.

²⁰⁸ 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](#).

²⁰⁹ See BT statement (15 November 2015): [BT enters into exclusive negotiations to acquire EE](#).

²¹⁰ BT press release (5 February 2015), [BT agrees definitive terms to acquire EE for £12.5bn to create the UK's leading communications provider](#).

²¹¹ [BT Circular](#) (1 April 2015), p4.

²¹² [BT Circular](#), p4.

²¹³ BT press release (7 May 2015), [Results for the fourth quarter and year to 31 March 2015](#).

²¹⁴ [BT Circular](#), p25, paragraph 2.

²¹⁵ See [§].

²¹⁶ [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 merger²¹⁷ 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.²¹⁸
- 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.²¹⁹

Strategic rationale for the merger

BT rationale

- 6.6 In considering BT's strategic rationale and BT's view of the benefits of the acquisition we examined BT's submissions and communication by BT to investors and analysts.²²⁰
- 6.7 BT has informed us that its rationale for the merger was as follows.

Acceleration of BT's mobility strategy²²¹

- 6.8 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 told us that the transaction would allow it to accelerate its mobile strategy (which is currently premised on organic growth as an MVNO)²²² by providing immediate scale of network, customers and operations.²²³ [§] the likelihood that users will enjoy an improved quality of connectivity provided by femtocells.²²⁴

²¹⁷ [CMA2](#).

²¹⁸ See the [reference decision](#) on the case page.

²¹⁹ See Appendix A for further details.

²²⁰ [BT Circular](#) and [Conference call](#) on the acquisition of EE to BT investors and analysts presented by Gavin Patterson, (February 2015).

²²¹ [BT initial submission](#), paragraph 4.2(a).

²²² [BT Circular](#), p4.

²²³ [BT initial submission](#), paragraph 4.2(a).

²²⁴ [BT initial submission](#), paragraph 4.2(a).

Greater control over investment and product innovation

- 6.9 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.^{225,226} BT stated that the transaction would 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.²²⁷
- 6.10 We note that the BT Circular stated that the principal benefit of the acquisition is the creation of the UK's leading fixed-mobile converged communications provider in the UK and that fixed-mobile converged products have seen a strong take-up in a number of Continental European markets, to the benefit of consumers. BT expects there to be growing appetite for these products in the UK and stated that the lines between fixed and mobile are blurring as people increasingly rely on tablets and smartphones to access data services.²²⁸

Cost synergies

- 6.11 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;

²²⁵ [BT initial submission](#), paragraph 1.4.

²²⁶ See also [BT Circular](#), p5 which states that the acquisition: complements BT's long-term network vision to build a single, seamless, converged platform, supported by a single IP network, that is able to serve customers with no distinction between fixed and mobile; increases BT's capacity for future investment and innovation in networks, converged products and services, providing economies of scale as it continues to build world-class digital infrastructure in the UK.

²²⁷ *ibid*, paragraph 1.4.

²²⁸ [BT Circular](#), p5.

- (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.²²⁹

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

Revenue synergies

6.12 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 2015.²³⁰ 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 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.

6.13 BT told us [REDACTED].²³¹

DT rationale

6.14 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

6.15 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

²²⁹ *ibid*, paragraph 4.3(a).

²³⁰ [Conference call](#) on the acquisition of EE to BT investors and analysts presented by Gavin Patterson, (February 2015).

²³¹ [BT initial submission](#), paragraph 4.4.

regards a presence in Europe's second largest economy to be a requirement for a leading European telecoms company.

[REDACTED]

6.16 [REDACTED]

[REDACTED]

6.17 [REDACTED]

[REDACTED]

6.18 [REDACTED]

6.19 [REDACTED]

[REDACTED]

6.20 [REDACTED] transaction [REDACTED]. 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.²³²

Orange rationale

6.21 [REDACTED]

EE rationale

6.22 EE told us that it believes the merger will deliver substantial benefits and specific efficiencies including the following, 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).

²³² See DT announcement (February 2015): [Deutsche Telekom and Orange sell their mobile Joint Venture EE to BT for GBP 12.5 billion](#).

- (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.²³³

Jurisdiction

6.23 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.²³⁴

6.24 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 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.²³⁵

Enterprises ceasing to be distinct

6.25 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'.²³⁶

²³³ [EE initial submission](#), p3.

²³⁴ [Article 2, Council Regulation 139/2004](#) on the control of concentrations between undertakings of 20 January 2004 (EU Merger Regulation).

²³⁵ 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).

²³⁶ [The Act](#), section 129(1).

- 6.26 BT and EE would clearly satisfy the definition of an enterprise for the purposes of the Act²³⁷ 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.²³⁸
- 6.27 The Act provides that two enterprises ‘cease to be distinct’ if they are brought under common ownership or control.²³⁹ 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.
- 6.28 We are therefore satisfied that two enterprises have ceased to be distinct.

Turnover test

- 6.29 The turnover test is satisfied if the value of the turnover in the UK of the enterprise being taken over exceeds £70 million.²⁴⁰ 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 £70 million threshold set out in the Act. We are therefore satisfied that the turnover test is met.

Conclusion on relevant merger situation

- 6.30 For the reasons given in paragraphs 6.26, 6.27 and 6.28, we are satisfied that the merger constitutes an RMS and that we therefore had jurisdiction to decide 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.²⁴¹

²³⁷ [The Act](#), section 129(1) and (3).

²³⁸ [CMA2](#), paragraph 4.6.

²³⁹ [The Act](#), section 26.

²⁴⁰ [The Act](#), section 23(1)(b).

²⁴¹ [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.²⁴²
- 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.²⁴³

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).²⁴⁴
- 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.²⁴⁵
- 7.6 The Commission initiated a detailed phase 2 investigation into the H3G/O2 merger on 30 October 2015, citing concerns in retail and wholesale mobile services and on the issue of coordinated effects.²⁴⁶ The Commission's final

²⁴² [Merger Assessment Guidelines \(CC2 \(Revised\)/OFT1254\)](#), which have been adopted by the CMA Board, paragraph 4.3.1.

²⁴³ [CC2 \(Revised\)/OFT1254](#), paragraph 4.3.6.

²⁴⁴ [Case M.7612 – Hutchison 3G UK/Telefónica UK](#).

²⁴⁵ The CMA made a request to the Commission for the H3G/O2 merger to be referred to the UK under Article 9 of the EU Merger Regulation, but the Commission decided on 4 December 2015 not to do so. See the CMA's [CK Hutchison/Telefonica Europe \(O2 UK\) merger case page](#) and the Commission's [case page](#) for further details.

²⁴⁶ See Commission press release (October 2015): [Mergers: Commission opens in-depth investigation into Hutchison's proposed acquisition of Telefónica UK](#).

decision is expected in April 2016 (although it could be delayed in certain circumstances).

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

- the transaction does not proceed, due to prohibition by the Commission or for any other reason (hereafter, ‘discontinuation’);
- 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).

7.8 It is not possible at this stage to pre-judge the outcome of the Commission’s investigation into this parallel transaction and hence to predict the precise impact that this outcome will have on competition in markets relevant to BT/EE in the UK.

7.9 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 final decision, it can however be noted that the H3G/O2 merger gives rise to sufficiently serious competition concerns for the Commission to initiate a phase 2 investigation.²⁴⁷

7.10 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.²⁴⁸ 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

²⁴⁷ Under Article 6(1)(c) of the EU Merger Regulation, a phase 2 investigation is initiated where a concentration ‘raises serious doubts as to its compatibility with the common market’.

²⁴⁸ See [Case M.6992 Hutchison 3G/Telefónica Ireland](#), [Case M.7018 Telefónica Deutschland/E-Plus](#), and [Case M.6497 Hutchison 3G Austria/Orange Austria](#).

withdrawal of the TeliaSonera/Telenor notification²⁴⁹ and the Commission's recent public statements.²⁵⁰

- 7.11 TalkTalk said that it was not particularly difficult to predict the most likely outcome of the Commission's investigation, pointing to a number of previous cases in which commitments were accepted involving the creation of MVNO contracts with options to buy spectrum under various terms.²⁵¹ TalkTalk said that these remedies would not secure a functioning and competitive wholesale market.²⁵² However, we noted that the Commission is considering the impact of the H3G/O2 merger on the market for wholesale mobile services, which it has identified as one of its main concerns.²⁵³ We did not find it possible to pre-judge that aspect of the Commission's investigation, nor did we think it right to assume that the Commission will require no remedy in relation to what has been identified as a main concern. We also noted that more recent evidence did not suggest that the outcome of the H3G/O2 investigation will necessarily be the same as the previous cases to which TalkTalk referred (see footnote 246 above).
- 7.12 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.
- 7.13 Although the conditions of competition would not be identical as between the scenarios of discontinuation and conditional clearance, the intended basis of any commitments accepted by the Commission in relation to the H3G/O2 merger would be to eliminate any competition problem which the Commission identified as a consequence of the merger.²⁵⁴ Such commitments are likely to

²⁴⁹ 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.

²⁵⁰ 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).

²⁵¹ TalkTalk Response to Provisional Findings, para 2.23.

²⁵² TalkTalk Response to Provisional Findings, para 2.24.

²⁵³ See Commission press release (October 2015): [Mergers: Commission opens in-depth investigation into Hutchison's proposed acquisition of Telefónica UK](#). The press release states that one of the Commission's main concerns is that 'the transaction would reduce the number of MNOs that are effectively willing to host mobile virtual network operators (MVNOs). Prospective and existing MVNOs would have less choice of host networks and hence weaker negotiating power to obtain favourable wholesale access terms.'

²⁵⁴ See recital 30 to the EU Merger Regulation and the Court of Justice's judgment in [C-202/06 Cementbouw v Commission](#), paragraph 54, which state that commitments accepted by the Commission should 'entirely eliminate' the competition problems that have been identified.

restore the competitive situation existing before the merger in the markets to which they relate.²⁵⁵

- 7.14 Thus, competitive conditions in any market in which commitments are accepted should be materially 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 as a result of the merger. It is not possible to say which markets would be the subject of remedies and which would not.
- 7.15 There is accordingly a significant overlap in the conditions of competition in two of the three possible H3G/O2 outcomes, being discontinuation and conditional clearance.
- 7.16 We have carried out our assessment of the merger against a counterfactual in which the level of competition is equivalent to that existing prior to the H3G/O2 merger – that is, the status quo ante. This scenario is representative of the conditions of competition in a number of potential outcomes, and overall represents the most likely conditions of competition absent the merger.
- 7.17 In response to our provisional findings, TalkTalk said that the Commission can only accept commitments if a change in competitive conditions results in an SIEC.²⁵⁶ It gave the example of a 5 to 4 merger in which no SIEC is found but in which the merger may nevertheless change the relevant competitive conditions.²⁵⁷ TalkTalk said it is wrong to argue that there is no material difference in competitive conditions as between a discontinuation and a conditional clearance.²⁵⁸
- 7.18 Our provisional findings recognised that the conditions of competition might differ as between a discontinuation and a conditional clearance. We found that the likely effect of any commitments would be to restore the level of effective competition in the markets to which those commitments related; in other markets no remedy might be applied. However, the potential for such differences does not undermine our view that there is likely to be a substantial overlap between the conditions of competition as between the two scenarios,

²⁵⁵ See for example [Case T-282/05 Cementbouw v Commission](#) (upheld on appeal) paragraph 308 in which the General Court noted that 'the notifying parties are not required to confine themselves to proposing commitments aimed strictly at restoring the competitive situation existing before the concentration ... the Commission is authorised to accept all commitments by the parties which allow it to adopt a decision declaring the concentration compatible with the common market.'

²⁵⁶ [TalkTalk response to provisional findings](#), paragraph 2.8.

²⁵⁷ [TalkTalk response to provisional findings](#), paragraph 2.9.

²⁵⁸ [TalkTalk response to provisional findings](#), paragraph 2.12.

such that the status quo ante is representative of the most likely conditions of competition absent the merger.

BT presence in retail mobile services

- 7.19 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.
- 7.20 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

- 7.21 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.
- 7.22 We have taken the above issues into account, where relevant, as part of our competitive assessment rather than as part of the counterfactual.²⁵⁹

²⁵⁹ 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).²⁶⁰
- 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, which are:
- (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.

²⁶⁰ CC2 (Revised)/OFT1254, 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 statement²⁶¹ 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).

²⁶¹ [Issues statement](#).

- Retail broadband – unilateral effects arising from loss of competition in ‘rural’²⁶² 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*.²⁶³

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

²⁶² Defined as Market A, using Ofcom definition.

²⁶³ [CC2 \(Revised\)/OFT1254](#).

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*²⁶⁴ 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.
- 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, 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.²⁶⁵ 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.²⁶⁶

²⁶⁴ [CC2 \(Revised\)/OFT1254](#).

²⁶⁵ *Ibid.*

²⁶⁶ Other vertical theories harm may arise as well in a vertical merger, see paragraph 5.6.13 of [CC2 \(Revised\)/OFT1254](#). We have focused on the theories of harm that could arise from the merger at issue.

- 9.12 In this report 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 could increase the costs or reduce the quality of rival downstream firms’ products or services, 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:²⁶⁷
- (a) Ability: Would the merged entity have the ability to cause harm to 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 to cause harm or its incentive to do so, 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 While these questions are to an extent interrelated, the nature of these theories of harm is such that all three elements must be present for the theory

²⁶⁷ [CC2 \(Revised\)/OFT1254](#), 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.

of harm to hold, and the effects on competition must be of an order of magnitude likely to give rise to an SLC (that is, the legal test at phase 2).²⁶⁸ This is because these elements are necessarily cumulative. Absent an ability to cause harm by engaging in a certain foreclosure strategy, the merged entity's incentive to engage in that strategy, and the strategy's potential effects if implemented, cannot of themselves create a probability of an SLC. Therefore, if in our analysis we do not find, for example, an ability to cause harm to rivals, the theory of harm can be dismissed without further assessing incentive and effect. Similarly, it is not sufficient to show that the merged entity in principle has an ability to cause harm to its rivals if we do not also find that the merged entity has the incentive to act in that way. Moreover, 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 Where we found that the merged entity would have the ability to cause harm to its downstream rivals by engaging in a certain foreclosure strategy, we assessed whether the merged entity would have the incentive to engage in that strategy. In doing so we took into account the expected benefits to the merged entity of pursuing that strategy and the losses that the merged entity could incur if it pursued that strategy. Where the scale of the harm that the merged entity could cause was uncertain, we took that uncertainty into account in our assessment of expected benefits as well.
- 9.18 In response to our provisional findings, TalkTalk argued that the balance of probabilities test should be applied to whether an SLC may be expected to occur, and not to each step of the analysis individually.²⁶⁹ In that regard, TalkTalk noted that our provisional findings identified uncertainty at a number of stages of our analysis, particularly in relation to our analysis of wholesale mobile services. TalkTalk said in cases of uncertainty, our approach was likely to make the difference between an SLC finding and a finding that no SLC may be expected to occur.²⁷⁰
- 9.19 We agreed that the balance of probabilities test should be applied to the existence of an SLC. That is the approach taken in this report. We first considered whether an SLC was likely in relation to each theory of harm, and then by considering the various theories of harm in the round (see paragraph 9.23 below).

²⁶⁸ [CC2 \(Revised\)/OFT1254](#), paragraph 5.6.7.

²⁶⁹ TalkTalk referred to [British Sky Broadcasting Group Plc v Competition Commission \[2010\]](#) EWCA Civ 2. TalkTalk response to provisional findings.

²⁷⁰ TalkTalk response to provisional findings.

- 9.20 However, we also noted that, where a particular theory of harm depends on the existence of a number of necessary cumulative conditions, and there is significant uncertainty in relation to a number of those conditions, then the probability of all of the necessary elements being present will be lower than the probability of each element individually. We did not therefore agree that by giving distinct consideration to each element, we risked understating the likelihood of an SLC.
- 9.21 An assessment of the ability of the merged entity to cause harm to its downstream rivals may involve factors such as whether regulation prevents or restricts this ability,²⁷¹ 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.
- 9.22 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.²⁷² 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 through 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). The fact that adoption by the merged entity of a specific foreclosure strategy may be unlawful under

²⁷¹ An example of this approach can be found in Case [COMP/M.5467 RWE/Essent](#), Commission decision of 23 June 2009, paragraphs 198–206, where the Commission found a lack of ability because of the deterrence arising from the likelihood of detection and regulatory intervention.

²⁷² 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.

general competition law or under sector-specific rules may have an impact on the merged entity's incentives to adopt that strategy.²⁷³

- 9.23 The above shows that regulation can play a role in our assessment of both ability and incentive.²⁷⁴ This is particularly true in heavily regulated markets such as some of the markets under consideration in this investigation. In some cases regulation specifically addresses BT's ability to cause harm to its downstream rivals (eg a charge control), in others the situation is more nuanced: a non-discrimination obligation could be argued to restrict the merged entity's ability to discriminate against its rivals, or to reduce or even eliminate the incentives to engage in such discriminatory conduct. What matters ultimately, is whether the regulation is effective in addressing the ability and/or incentive of foreclosure by the merged entity.

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

- 9.24 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.
- 9.25 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 on a balance of probabilities. Therefore, we also considered whether an overall expectation of an SLC may be based upon our composite view of multiple alternative theories.

²⁷³ This will depend on whether the behaviour would be clearly, or highly probably, unlawful; whether the behaviour would be likely to be detected; and the potential consequences of such behaviour. See [CC2 \(Revised\)/OFT1254](#), paragraph 5.6.14.

²⁷⁴ Indeed, as set out in [CC2 \(Revised\)/OFT1254](#), paragraph 5.6.7, many of the factors relevant to our analysis may affect more than one question of ability, incentive and effect.

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 (also referred to as retail mobile) are supplied to consumer and business 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 84%²⁷⁵ of subscribers in the retail mobile market. Including Tesco Mobile, a 50:50 joint venture with Telefónica, they supply around [X] %.

10.5 The remainder of retail mobile is supplied by MVNOs. The number of MVNOs deemed to be operating in the market varied across submissions, depending on the definition used for MVNO.²⁷⁶ For instance the parties told us that there were over 100 MVNOs in the UK that purchased wholesale mobile services from MNOs (directly or through intermediaries), and competed with MNOs at the retail level (see Chapter 2 and Appendix F). We have interpreted MVNOs to include:

²⁷⁵ Ofcom Mobile Call Termination (MCT) final statement, figure 4.57.

²⁷⁶ See Chapter 2.

- (a) Fixed CPs such as BT, TalkTalk and Virgin Media, which together currently represent approximately [X]% of total UK MVNO retail revenues (of which Virgin Media accounts for [X]).
- (b) Joint ventures between an MNO and a separate company. Tesco Mobile is a joint venture between Tesco and Telefónica, and accounts for approximately [X]% of total UK MVNO revenues. Sainsbury's Mobile is a joint venture between Sainsbury's and Vodafone, although full management control has now passed to Sainsbury's and it will cease to provide mobile services in January 2016.²⁷⁷
- (c) Other independent providers, including retailers (for example Asda), those that focus on low-cost international calling (for example, Lycamobile and Lebara), business services (for example Abica), data-only services, or other niche offers, such as charity-focused MVNOs²⁷⁸ which make up the remainder of the market.

10.6 The business sector accounts for approximately 12% of mobile subscriptions.²⁷⁹ The major suppliers of mobile services to business customers are Vodafone, Telefónica and EE (with in excess of 25% share of subscribers each). H3G has a share of [X]. Of the MVNOs competing in this sector, BT has the largest presence of [X] of business subscribers. Virgin Media has a share of [X] of business subscribers, [X]. A number of smaller MVNOs are also present in the business sector.

Market definition

10.7 To determine the relevant market to assess the supply of retail mobile services, we considered the provision of retail mobile services by MNOs and MVNOs to businesses and consumers as well as any relevant subsegments.

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 there was supply-side substitution between different segments of retail mobile services.

²⁷⁷ [X]. Sainsbury's confirmed that under the terms offered by Vodafone it did not consider that Sainsbury's Mobile was commercially viable. It submitted that it had found it difficult to move to another provider because of the combination of [X].

²⁷⁸ For example, The People's Operator, which is hosted on EE's network and has pledged to donate a fixed percentage of earnings to charity.

²⁷⁹ Ofcom, [Communications Market Report 2015](#), figure 4.57. [X]

Previous Commission decisions on market definition

10.9 There are no recent UK merger decisions in the retail mobile sector. We note that the Commission has consistently found that mobile telecommunications services (including voice, SMS and data) constitute a separate market from fixed telecommunications services.²⁸⁰

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.²⁸¹ 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 that the conditions of competition are similar across subsegments (see (a) to (d) below).²⁸² 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:²⁸³

- (a) by customer (businesses or consumers);
- (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 2015-18.²⁸⁴ In it, Ofcom concluded that the mobile call termination prices charged²⁸⁵ 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 connections (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,²⁸⁶ though

²⁸⁰ [Case M.7018 Telefónica Deutschland/E-Plus](#), recital 64.

²⁸¹ 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.

²⁸² 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.

²⁸³ 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].

²⁸⁴ [Mobile call termination market review 2015-18](#), published on 17 March 2015.

²⁸⁵ Charge made by the 'terminating' provider (of the customer receiving a call) to the provider whose customer originates the call.

²⁸⁶ 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.

it noted that possible technological developments could mean different retail markets related to different technologies in the future.²⁸⁷

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 such that these should be included in the relevant market
- 10.14 While we note that these services may place a constraint on the pricing of mobile voice and SMS services, we agree with Ofcom's conclusion on the lack of constraint of OTT services on mobile services mentioned above (see paragraph 10.11) and are not persuaded that OTT services place a constraint on the pricing or quality of data services provided by mobile operators. This is largely because OTT services do not facilitate substitution away from data services, since they may depend on them as an input. 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 we should 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. We did not find it necessary for our competitive assessment to conclude on this issue, and do not consider these segmentations 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.

²⁸⁷ Ofcom CMR 2014, p3.

- (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 We considered whether these subsegments were 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' views*

10.19 The parties submitted that the conditions of competition for the supply of mobile services to business and consumers were not sufficiently different as to form distinct markets.²⁸⁸

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 distinguish between business and consumer customers. In this respect, the parties were unable to quantify the number of their customers who took 'consumer' mobile propositions for business purposes.²⁸⁹

- *Commission's views in recent cases*

10.21 The Commission has previously found that 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.²⁹⁰ 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.²⁹¹

²⁸⁸ [BT/EE response to issues statement](#), paragraph 3.6.

²⁸⁹ [BT/EE response to issues statement](#), paragraph 3.7.

²⁹⁰ 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).

²⁹¹ [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.

- *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.

- *Our 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), [REDACTED]. 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.²⁹²

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.²⁹³

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, [REDACTED].

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 previously been present in business mobile [REDACTED].²⁹⁴

²⁹² For more detail see our competitive assessment in Chapter 11, and Appendix H.

²⁹³ [Merger Assessment Guidelines](#), Sections 5.2.17–5.2.19.

²⁹⁴ See [BT One Phone](#).

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

(c) H3G submitted that [X]

10.29 We did not, however, find it necessary to conclude on whether business and consumer segments constituted separate 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 taken account of differences between business and consumer customers where appropriate within our competitive assessment.

- *Fixed-mobile bundles vs separate products*

10.30 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 stand-alone fixed and mobile products.

10.31 As explained in Chapter 13 (discussion of market definition of wholesale mobile), we have seen no evidence to suggest that bundles would not in future be constrained by unbundling in response to a price rise (ie switching purchasing from a bundled product to the stand-alone products, whether from the same or different supplier). We therefore did not define a separate market for fixed-mobile bundles in the UK.²⁹⁵

10.32 However, as part of our competitive assessment, we considered the possible emergence of such a market and how it could affect the conditions of competition in the retail mobile services market.

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

10.33 We considered whether it was appropriate to define markets for subsegments of consumers that desire generous data packages and/or high speed data services.²⁹⁶

- *Parties' views*

10.34 The parties submitted that there was significant competition for customers that demand high speeds or high data allowances. The parties also told us that

²⁹⁵ See also Appendix H for analysis of fixed-mobile bundles

²⁹⁶ [Merger Assessment Guidelines](#), 5.2.5 (c).

there was not a submarket for 4G mobile services (or high speed data), which was in line with EU and UK precedents.²⁹⁷

- *Commission's view in recent cases*

10.35 The Commission has previously considered whether the market should be segmented by type of network technology (ie 2G, 3G, or 4G),²⁹⁸ but has concluded that the different technologies for retail mobile telecommunication services do not constitute separate markets.²⁹⁹ For example, in *Hutchison 3G Austria/Orange Austria* (2013), the Commission found there was limited customer differentiation between different types of technology (the vast majority of market participants said a change to 4G was not important to them and they were not willing to pay a premium for it). Furthermore, 4G was expected to be complemented by 3G.³⁰⁰

10.36 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.³⁰¹

- *Third parties' views*

10.37 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 view on high data users vs low data users*

10.38 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.

²⁹⁷ [BT/EE response to issues statement](#), paragraphs 3.8–3.17, p4–7.

²⁹⁸ See for example [Case M.6497 Hutchison 3G Austria/Orange Austria](#) (2013), [Case M.5650 T-Mobile/Orange](#) (2010)

²⁹⁹ [Case M.7018 Telefónica Deutschland/E-Plus](#) (2014), paragraph 50.

³⁰⁰ [Case M.6497 Hutchison 3G Austria/Orange Austria](#) [44, 45, 46].

³⁰¹ [Case M.6497 Hutchison 3G Austria/Orange Austria](#) [45].

- 10.39 From a supply-side perspective, we note that all the MNOs offer 4G and 3G services,³⁰² and the extent of their 4G coverage is rapidly converging.³⁰³ [X]. 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.³⁰⁴ 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.
- 10.40 Additionally, from a supply-side perspective, it appears that all MNOs currently offer generous data packages on competitive terms (see Appendix G which 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). [X] 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 effect would be time limited (as well as having an uncertain effect on competition for subsegments of consumers).
- 10.41 We have not found it necessary to 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. We have, however, taken these factors into account in our competitive assessment where appropriate.

Geographic scope

- 10.42 Given that 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 in 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*

- 10.43 [X]

- *Third parties' views*

- 10.44 [X]. However, [X].

³⁰² H3G does not provide 2G services, but all services offered over 2G can be provided over 3G.

³⁰³ [Ofcom Infrastructure Market Report 2014](#), paragraph 1.44

³⁰⁴ [Merger Assessment Guidelines](#), paragraph 5.2.17

10.45 Vodafone also submitted that local quality variations affected overall national competition. It told us that network quality or performance was a key parameter for consumers and therefore speed differentials in local areas would directly affect Vodafone's overall service, reputation and pricing at national level.

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

- *Our view on geographic scope*

10.47 Our 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 for mobile tariffs and services is set on a national basis; and

(b) we observe local variations in network quality, but we were told that there are supply-side steps available to MNOs for improving service in particular local geographies. We consider that this suggests that local geographies may be aggregated on the basis of supply-side substitution.

10.48 However, within the competitive assessment we take account of 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 conclusion on market definition

10.49 Our 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 vs stand-alone mobile services, business vs consumer customers and packages including high speeds and generous data allowances relative to less generous packages. We have therefore considered those factors in the competitive assessment, where appropriate.

Pre-merger competition

10.50 To inform our assessment of the competitive effects of the merger in respect of retail mobile services, we assessed pre-merger competition in this market by considering the views of parties and third parties, shares of supply, the nature of competition and market outcomes.

Parties' views

10.51 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

10.52 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.³⁰⁵ It has also said that it 'welcome[s] the benefits that [MVNOs] can bring to consumers.'³⁰⁶

10.53 Other third parties also told us that the UK retail mobile market is competitive. H3G 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.³⁰⁷

10.54 Virgin Media told us that MVNOs, and Virgin Media in particular, are an important competitive constraint in the UK mobile sector and have a history of driving innovation and choice to the benefit of customers.³⁰⁸ iMVNOx also told us of the importance of MVNOs to competition and consumers.³⁰⁹

Commission's views in past cases

10.55 Notwithstanding the Commission's view in *Telefónica Deutschland* that MVNOs impose a limited constraint on MNOs,³¹⁰ the Commission has also commented on the importance of MVNOs.

10.56 For instance, third parties drew our attention to the Commission stating that the 'strong presence of MVNOs' was one of two key reasons why the UK retail mobile market has been very competitive, and that the MVNOs play a 'significant role' in the UK retail mobile market.³¹¹

³⁰⁵ [Ofcom response to issues statement](#), paragraph 3.16.

³⁰⁶ [Mobile Evolution: Ofcom's mobile sector assessment](#), 17 December 2009.

³⁰⁷ [H3G hearing summary](#), paragraph 106.

³⁰⁸ [Virgin Media response to provisional findings](#), paragraph 6.21.

³⁰⁹ [iMVNOx response to provisional findings](#).

³¹⁰ [M7018 Telefonica Deutschland/E-plus](#), paragraph 715.

³¹¹ [T-Mobile/Orange](#), paragraphs 53 and 46.

10.57 We note that in *Telefónica Deutschland* the Commission found that ‘MVNOs and Service Providers are unable to compete in the same way as MNOs in the German retail market for mobile telecommunications services...mainly because of the dependency of wholesale partners on MNOs (access conditions and inability to switch)’.³¹²

10.58 Our view on the role of MVNOs in the UK retail mobile market is explored further in the paragraphs below.

Shares of supply

10.59 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 machine to machine)	2014 (consumer)
EE	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
BT	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
BT (with EE)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Telefónica	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Vodafone	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
H3G	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Tesco (50:50 joint venture with Telefónica)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
All MVNOs excluding Tesco	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Virgin Media	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Others	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: [BT 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.³¹³

10.60 Table 10.1 shows that in the consumer segment, EE has the largest share of supply with [REDACTED]%, followed by Telefónica with [REDACTED]%, Vodafone with [REDACTED]% and H3G with [REDACTED]%. 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).

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

³¹² [M7018 Telefonica Deutschland/E-plus](#), paragraph 626. See also paragraphs 561, 567-568 et seq.

³¹³ The parties submitted that shares for other MVNOs active in the business segment could not be estimated and that the figure of [REDACTED]% 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.

Nature of competition

10.62 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.

Parameters of retail competition

10.63 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 (including speed, coverage and, especially, reliability); and
- (c) other factors, including the handsets offered and branding.

10.64 We also received evidence that a high proportion of sales (52% of post-pay connections)³¹⁴ are made through physical retail stores, making them important for competition,³¹⁵ whether owned by the operator or by companies that make indirect sales such as Carphone Warehouse.³¹⁶ The four MNOs, Virgin Media, and retailers such as Asda and Tesco are all able to sell through their own retail stores (online and physical), whereas BT, Sky and TalkTalk do not have physical retail stores.³¹⁷

Competitive interactions between operators

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

10.66 Internal documents showed that the [redacted] along the dimensions discussed above (including price and network performance), and that [redacted].

10.67 H3G has grown its share of the market over time [redacted], and H3G appears to be very strong in competing for customers that have high levels of data use.³¹⁸

³¹⁴ [Dixons Carphone initial submission](#), p2.

³¹⁵ Eg [Ofcom response to issues statement](#).

³¹⁶ Carphone Warehouse (now Dixons Carphone Warehouse) has [recently announced](#) it is launching a new retail mobile service as an MVNO.

³¹⁷ We were told that 'indirect retail channels provide better consumer choice, advice and a simplified buying journey' to compare the large number of variations of offers from MNOs and MVNOs ([Dixons Carphone initial submission](#), pp1–2). See also Ofcom's comments on the importance of retail stores in paragraph 11.9 below.

³¹⁸ See Appendix G.

10.68 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, Virgin Media submitted that it made an important contribution to competition (and highlighted its low prices for some tariffs and handsets, and its good brand awareness in areas covered by its fixed network),³¹⁹ but [X]. The fact that MVNOs rely on MNOs for the coverage, speed and pricing of their wholesale access places a limit to the extent of the additional competitive constraint that they can impose in the market.

- *Switching*

10.69 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.

10.70 The parties submitted data from an independent analyst showing that each year 10 to 18% of customers switch provider, depending on the operator.³²⁰ 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%).³²¹ 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.³²²

10.71 These annual switching rates are set in the context that many customers of mobile services have two-year contracts,³²³ in contrast with other markets, for example: 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.

10.72 The parties submitted data showing that in the UK 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.³²⁴

³¹⁹ Virgin Media [response to provisional findings](#), paragraph 2.7.

³²⁰ [BT 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.

³²¹ See UKRN (2014), [Consumer engagement and switching](#).

³²² See CMA (2015), [Retail market banking investigation: summary of provisional findings report](#).

³²³ 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](#).

³²⁴ [BT initial submission](#), Annex J.

10.73 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.³²⁵

10.74 We conclude that the switching evidence is broadly supportive of the view that the retail mobile market is competitive.

- *Market outcomes*

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

10.76 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.³²⁶

10.77 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.³²⁷

10.78 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.³²⁸ 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).³²⁹

10.79 The parties submitted that the UK market is more competitive than other countries, and supported this with evidence showing that both prices and EBITDA margins are lower in the UK than in many other EU countries (see Appendix F for details).

10.80 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.

³²⁵ See UKRN (2014), [Consumer engagement and switching](#).

³²⁶ For more detail see Appendix F.

³²⁷ [Ofcom CMR 2015](#), Figure 4.46.

³²⁸ [Ofcom SRDC discussion document](#) (2015), Figure 2.

³²⁹ See Ofcom (2014), [International Communications Market Report](#), p293, Figure 6.65.

Our view on the nature of pre-merger competition

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

- (a) Each of the four MNOs has a substantial market share, including H3G which has been increasing its share.
- (b) Some additional constraint is also provided by MVNOs, although their reliance on MNOs for wholesale access limits the extent of the competitive constraint that they impose.
- (c) The operators compete on a range of parameters, including price and network quality.
- (d) 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).
- (e) While there are limitations to comparison across different jurisdictions, we also note that prices and profits are lower in the UK than elsewhere in Europe which is consistent with the conclusion that the UK market is currently competitive.

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 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 retail mobile 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 the consumer mobile segment in March 2015 with plans to grow. Moreover, it purchased high-powered licensed spectrum in 2013, which is unique amongst MVNOs (although TalkTalk holds a licence for a small amount of shared, low-powered spectrum which can provide more limited coverage).
- 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 as an MVNO. 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 [redacted]% by 2023/24), [redacted],³³⁰ 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.

³³⁰ We note that BT's latest results (Q2 2015/2016) indicate that BT Mobile (BT's consumer offering) has 200,000 subscribers, which [redacted]. See BT (2015), [Q2 2015/16 results](#), slide 17.

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).³³¹ It told us that the proposed merger would remove BT as an independent and powerful new entrant into the UK retail mobile market with access to spectrum.³³²
- 11.6 Vodafone submitted that the merger would result in an SLC in the retail mobile market, 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' (eg small mobile cells that could act as substitutes for fixed broadband/Wi-Fi).³³³ 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.³³⁴
- 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.³³⁵
- 11.9 However, Ofcom also submitted that 'MNOs rely heavily on high street distribution to generate sales of both prepaid and postpaid mobile services.

³³¹ [Virgin Media initial submission](#), paragraph 6.8.

³³² [Virgin Media initial submission](#), paragraph 6.1 (3 July 2015).

³³³ That is, services that rely on both fixed and mobile inputs.

³³⁴ [Sky initial submission](#), section 9.3.

³³⁵ [Ofcom response to issues statement](#), paragraph 3.20.

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.³³⁶

11.10 In addition, we received several submissions from third parties arguing that the strength of the merged entity would lead to harm to retail mobile competition. These concerns are considered under other theories of harm.³³⁷

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.³³⁸

11.12 We described in Chapter 10 the competitive nature of the current retail mobile market. The remainder of this chapter 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 therefore focused on the loss of the constraint from BT in the retail mobile services market. In assessing the merger under this theory of harm we have assumed the complete removal of any constraint provided by BT. This is equivalent to assuming that the merger will bring no efficiencies and that the merged entity will not use (ie will 'hoard') the spectrum currently held by BT. As such, we have not needed to consider whether the merger may give rise to efficiencies, nor whether EE may have

³³⁶ *ibid*, paragraph 3.21.

³³⁷ In particular, in Chapter 12.

³³⁸ *Merger Assessment Guidelines*, Section 5.4.

incentives to hoard spectrum relative to a stand-alone BT³³⁹ (or indeed relative to any other theoretical situation in which the spectrum were fully deployed) as we found that the retail mobile market would remain competitive on any basis, as explained below.³⁴⁰

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

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 [REDACTED]% 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 [REDACTED]% of gross additions in the subsegment of consumer post-pay contracts.³⁴¹

11.16 BT's initial gains in consumer mobile were noted by several third parties.³⁴² 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,^{343,344} which it said indicated that BT therefore already represented a new and significant competitive force in the mobile market.³⁴⁵

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

11.18 We received differing views from third parties about whether BT's consumer launch was more or less aggressive than they had anticipated.³⁴⁶ Some

³³⁹ Vodafone told us that the merged entity would have different incentives to BT in terms of hoarding spectrum: see Vodafone [response to provisional findings](#), paragraph 1.2(ii). Given our assessment of the retail mobile market we did not need to consider this issue further.

³⁴⁰ As this is not the relevant counterfactual.

³⁴¹ See Appendix F, Table 6 for more details.

³⁴² For example, [Ofcom response to issues statement](#).

³⁴³ [BT Press Releases](#).

³⁴⁴ We note that BT subsequently published that it had gained 100,000 customers in the first three months (see BT, [Financial results](#)).

³⁴⁵ See www.techweekeurope.co.uk and www.telegraph.co.uk.

³⁴⁶ For instance [REDACTED]. See: [TalkTalk hearing summary](#), paragraph 53.

submitted that the anticipated merger had softened BT's approach, but others took a different view.³⁴⁷

11.19 We asked BT if it had made any changes to its retail plans because of its anticipated merger. It told us [REDACTED].³⁴⁸

Parties' projections for BT Mobile

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

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

[REDACTED]

Source: Parties.

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

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

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

11.24 [REDACTED]

11.25 [REDACTED]

EE's perception of the threat from BT

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

Third parties' perceptions of the threat from BT

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

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

³⁴⁷ See Appendix F for more details.

³⁴⁸ See Appendix F for more details.

11.29 H3G submitted one internal document [REDACTED].

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

11.31 TalkTalk [REDACTED]

11.32 Although Vodafone submitted that it had no reason to think that BT's forecasts are unreasonable,³⁴⁹ [REDACTED].³⁵⁰

Our view on BT's presence in retail mobile

11.33 We expect that in the counterfactual, given its size and offer, BT would gain further modest market share in the retail mobile market. There is, nonetheless, uncertainty around the extent of this likely growth, but we note that any constraint from BT would be in addition to that provided by the MNOs, and MVNOs, in a market that we have found to be currently competitive.

11.34 We will therefore now consider more specific factors in respect of 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*

11.35 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. [REDACTED].³⁵¹

- *Third parties' views*

11.36 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-

³⁴⁹ [Vodafone hearing summary](#), paragraph 22.

³⁵⁰ See Appendix F.

³⁵¹ For more details of BT's previous launches into the consumer and business mobile segments, see Appendix F.

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.³⁵²

11.37 Vodafone told us that [REDACTED]. This is a strategy involving small mobile cells inside homes and businesses, with a goal that these would also provide some coverage outside the building.

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

(a) A fast 4G service from EE.

(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. [REDACTED]

(c) An aggressive approach with substantial supporting funding.

(d) Cross-selling from fixed into mobile.

- *Our assessment*

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

- *Fast 4G service from EE*

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

11.41 We note that [REDACTED]. [REDACTED].³⁵³ [REDACTED].³⁵⁴ In Chapter 14 we set out our views on the wholesale mobile market and our conclusion that Telefónica, H3G and Vodafone together exert a strong constraint on EE (and would continue to do so post-merger). In the counterfactual, it would also have been open to Sky and TalkTalk to switch MNO host and seek to contract with EE ([REDACTED]).³⁵⁵

11.42 Our 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

³⁵² Virgin Media initial submission, section 6, paragraph 6.2.

³⁵³ BT initial submission, paragraphs 4.37–4.40. [REDACTED]

³⁵⁴ See Chapter 14 and Appendix G for more discussion of the quality of Telefónica's network over time.

³⁵⁵ See Chapter 14 on wholesale mobile for more discussion.

differentiator relative to other MVNOs, who would also have had the opportunity to agree similar contracts with EE or other MNOs.

- *Wholesale costs and small cells offload*

11.43 The competitive constraint provided by MVNOs can be limited by the fact that relative to MNOs, they face higher variable costs,³⁵⁶ and so a higher cost of serving each additional customer. 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.

11.44 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.³⁵⁷ 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 in turn, that BT's sensitivity to wholesale prices (and quality) may reduce which would strengthen it as a retail competitor.

11.45 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. We then considered whether this would materially increase BT's competitive constraint on the MNOs such that its loss as an independent rival should concern us.

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

11.47 Evidence submitted by BT, including internal documents, suggested that BT had limited expectations of its femtocell strategy over the next few years. It hoped to achieve:

(a) [REDACTED]

(b) [REDACTED]

³⁵⁶ [Case M.7018 Telefonica Deutschland/E-Plus](#), paragraphs 568–569. The Commission found that, although MVNOs have lower fixed costs than MNOs, they face higher variable costs, and therefore have less incentive to compete aggressively.

³⁵⁷ Small base stations deployed in businesses and in the broadband routers of BT superfast broadband customers.

(c) [REDACTED]

- 11.48 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 [REDACTED]), [REDACTED].³⁵⁸
- 11.49 We also looked at whether other MVNOs were following, or could follow, a similar strategy.
- 11.50 The parties submitted that opportunities were available to other MVNOs to deploy strategies similar to that of BT, by (a) purchasing high power 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.
- 11.51 TalkTalk told us [REDACTED].
- 11.52 [REDACTED]. However, Sky also put forward the view that small cell deployment by BT would not be fully replicable by competitors.³⁵⁹
- 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 [REDACTED]. Sky submitted that [REDACTED].
- 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 backhaul services supporting these sites, 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.³⁶⁰
- 11.55 A number of MNOs expressed the view that deploying alternative offload strategies (for example, small cells, Wi-Fi or additional macro sites) involved a range of challenges including costs, technical requirements, physical and planning restrictions around installing equipment at suitable sites, and

³⁵⁸ To understand how BT's costs may compare with those of an MNO, we note that EE has estimated that it achieves an average variable margin of £[REDACTED] per month for each retail customer gained by an MVNO on its network. We consider that this is an approximate indicator of the (variable) cost disadvantage that an MVNO is currently at, relative to an MNO. BT hopes, through its offload strategy, to make a saving of £[REDACTED] per customer per month by 2020/21. However, the remainder would still make up approximately [REDACTED]% of BT's £[REDACTED] recurring variable costs per consumer customer. This suggests that BT may [REDACTED] relative to MNOs.

³⁵⁹ Sky [response to provisional findings](#), paragraph 1.7, 3.14 to 3.26.

³⁶⁰ See Chapter 14 (wholesale mobile).

availability of suitable spectrum. Telefónica, for example, pointed to a lack of suitable sites for small cells, and outlined a number of technical challenges to rolling out femtocells and to using Wi-Fi hotspots.³⁶¹ H3G also outlined the practical challenges of small cell deployment in terms of site availability and practical deployment and coordination issues, such as spectral interference issues as a result of small cells re-using existing spectrum currently used in the macro layer. H3G also noted that small cells were [REDACTED] not widely used outside the residential and enterprise environments.³⁶² Vodafone pointed out that, as BT was the only MVNO with spectrum, any other MVNO would be years behind BT in developing a femtocell strategy even if it were to acquire suitable spectrum.³⁶³

11.56 For the reasons discussed in detail in Chapter 16,³⁶⁴ our view is that access to appropriate sites is not a substantial barrier to the deployment of small cells by other operators. BT appears to have some advantage over other MVNOs, in respect of its spectrum holding, although the extent of such advantage is unclear given the range of views we received on the benefits to be gained from indoor small cells using high power spectrum, relative to lower power shared use spectrum for mobile services or Wi-Fi. Moreover we are also of the view that [REDACTED]. [REDACTED] if BT's strategy were to be successful, it would still remain significantly 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.

- *Aggressive, well-funded approach*

11.57 Some third parties³⁶⁵ 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) [REDACTED]

³⁶¹ Telefonica [response to provisional findings](#), pp4–6.

³⁶² H3G [response to provisional findings](#), paragraphs 14 & 15.

³⁶³ Vodafone [response to provisional findings](#), paragraph 1.5 (v).

³⁶⁴ Paragraph 16.66 onwards.

³⁶⁵ See Appendix F.

(b) [REDACTED]

11.59 We also note that other operators have made or are also making substantial investments in their UK businesses – for example Vodafone’s £1 billion investment in Cable & Wireless, Virgin Media’s £3 billion ‘Project Lightning’ to expand its broadband coverage,³⁶⁶ and Sky’s successful entry into broadband and planned entry into mobile.

11.60 In light of the above evidence, 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. Third parties emphasised that this was an important part of BT’s rationale for the merger.³⁶⁷

11.62 As set out in Appendix H, 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 44% of households or more in 2019 (though the latter is a much smaller figure of around 12% when expressed as a proportion of mobile subscriptions).³⁶⁸

11.63 TalkTalk, Sky, and BT forecast that [REDACTED] alongside Virgin Media ([REDACTED]), 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.³⁶⁹ BT, EE, Vodafone, TalkTalk and Telefónica provided examples and research evidence of growth and demand in converged services from business customers.³⁷⁰

³⁶⁶ See The Guardian news release, ‘[Virgin Media challenges BT with cable network extension plan](#)’.

³⁶⁷ For example, BT’s CEO Gavin Patterson has stated that ‘We expect significant demand in the market for fixed and mobile converged products, and we will [be] better equipped than anyone else in the UK to offer these services and meet the changing needs of UK consumers’. See for instance Mobile World Live: ‘[BT boasts 50,000 consumer mobile subs](#)’; or BT (2015), *Acquisition of EE*.

³⁶⁸ See Appendix H, Table 4.

³⁶⁹ See Appendix F.

³⁷⁰ See Appendix H, paragraphs 28–36.

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 [REDACTED].

11.66 We therefore concluded that even if bundling became more important in the consumer sector,³⁷¹ the evidence indicates this would not provide BT with a unique competitive advantage in the consumer retail mobile sector.

11.67 However, in the business segment BT has a [REDACTED] 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 [REDACTED], Vodafone submitted that [REDACTED].

Table 11.2: Broadband market shares of supply

[REDACTED]

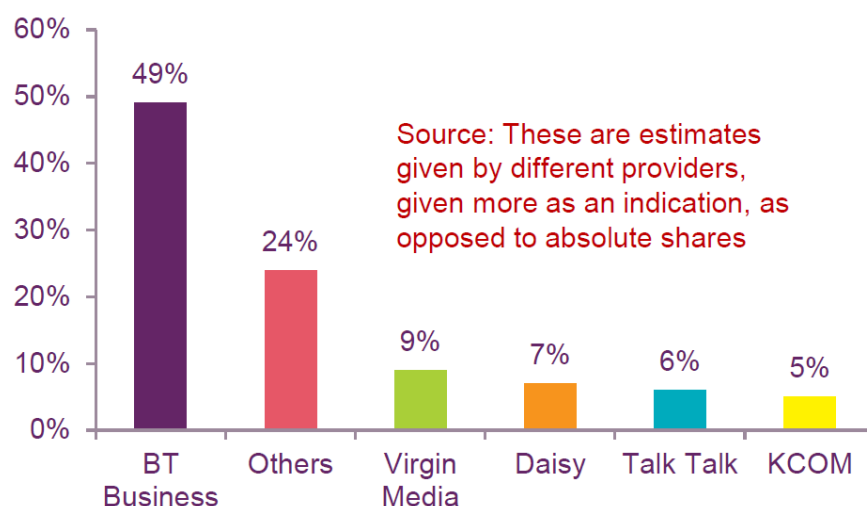
Source: [REDACTED]

11.69 BT's stronger relative position may be particularly 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.³⁷² BT's share in SME broadband is high, as shown in Figure 11.1.

³⁷¹ See Appendix H for more detailed discussion of whether fixed-mobile bundling is likely to become important in the UK.

³⁷² [TalkTalk initial submission](#), section 2(b).

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



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

11.70 However, BT submitted that it faced a wide range of competitors in business mobile. BT internal documents also suggested that in addition to competition from Vodafone and Telefónica it [X]. In line with this, we note that Virgin Media has plans to expand in the business segment.³⁷³

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.³⁷⁴ 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) [X]% of the market is made up of operators outside of BT, TalkTalk, Sky and Virgin Media. 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 view on balance is therefore that the ability of BT to cross-sell to its fixed customer base would not provide BT with a unique and important strength

³⁷³ See Appendix F.

³⁷⁴ *ibid*, paragraphs 15–17.

which other MNOs, MVNOs or other service providers in both the residential and business sectors were unable to replicate.

Our 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 view is that although (like other MVNOs) BT may have been expected to provide a degree of competitive constraint in the counterfactual, it faces similar issues to those faced by other MVNOs in terms of dependency on MNOs for wholesale access and wholesale conditions, which limits the overall constraint provided by MVNOs on MNOs. We also consider that BT's potential sources of future differentiation from other MVNOs are not such that the loss of BT is likely to lead to an SLC in the retail mobile market, given the existing level of competition in the absence of a strong current constraint from BT.

11.74 We now consider the constraint exercised by the MNOs in the counterfactual.

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 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 weaker competitors than is currently the case, because of their spectrum constraints.

11.77 BT submitted that it could only benefit from any purported advantage for capacity in the short term. BT added, however, that absent the merger it [X]. 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 Appendix G contains our detailed assessment of the evidence on capacity constraints. We do not consider it likely that H3G, Vodafone or Telefónica would individually or in combination be sufficiently and enduringly weakened by any potential capacity constraints to the extent that the loss of BT is expected to result in an SLC.

11.79 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 [X] who told us they would 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.³⁷⁵ Our view is that BT was unlikely to become a supplier of spectrum capacity to MNOs, absent the merger.

11.80 We therefore 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 is not expected to result in an SLC.

Our conclusion on the loss of competition in retail mobile

11.81 We 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 competition from BT in the retail mobile services market. This conclusion is based on the following findings in particular:

- (a) Pre-merger, the retail mobile market is competitive, with close competition amongst the four MNOs. While [X] submitted [X] would face capacity constraints in the medium term, our view is that to the extent that these may 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) Evidence, as outlined above, indicates that MVNOs (of which BT is one) provide limited additional competition to MNOs.
- (c) We found that BT is not currently 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; BT regards the forecasts as uncertain [X].
- (d) We found that BT's use of EE's network would not in the counterfactual have been a unique or enduring differentiator relative to other MVNOs that would have had the opportunity to agree similar contracts to BT in respect of 4G with EE or other MNOs.

³⁷⁵ [X]. See Appendix F – Retail Mobile for more detail.

- (e) BT's femtocell strategy is subject to uncertainty [X]. 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 [X] 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.
- (f) We did not find that BT's willingness or ability to invest in the UK telecoms market to be unique to BT given the significant investments made by other operators.
- (g) 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

Outline 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.
- 12.2 As any improvements in EE's offer as a result of the merger might be viewed as efficiencies and of potential benefit to consumers, our view is that to find an SLC under this theory of harm, any improvements in EE's offer as a result of the merger would need to permanently (that is, in the foreseeable future) weaken competitors to an extent that would lead to an SLC, for example, by reducing quality or increasing prices relative to the counterfactual.³⁷⁶
- 12.3 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

- 12.4 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.³⁷⁷
- 12.5 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.³⁷⁸

³⁷⁶ For example, should rivals lose customers as a result of EE offering lower prices as a result of the merger, and through some mechanism rivals were weakened as a result, any resulting price increase would need to be measured relative to the counterfactual, rather than the post-merger lower prices, in the SLC assessment.

³⁷⁷ [BT response to issues statement](#), paragraph 5.17. See paragraphs 5.6 and 5.7 for explanation of convergent services.

³⁷⁸ [ibid](#), paragraph 5.18.

Third parties' views

- 12.6 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.³⁷⁹ In some cases they also suggested mechanisms through which these benefits to the merged entity could lead to harm to competition, by weakening competitors.
- 12.7 Details of the third party submissions will be discussed below in the relevant sections of the competitive assessment.

Our assessment

- 12.8 We considered market definition in Chapter 10 and our conclusion was that there is a national market for the supply of retail mobile telecommunication services. Our assessment is therefore conducted within that framework.
- 12.9 As a starting point we note that our merger assessment is focused on harm to competition rather than competitors and 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.
- 12.10 However, it could potentially be argued 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 for a prolonged period. 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.
- 12.11 We consider that an SLC could only arise under this theory of harm if the merged entity's strength caused other operators to become permanently weaker relative to their own strength in the counterfactual. This is because we do not consider that the merged entity would have the ability to raise prices or degrade quality relative to the counterfactual, unless this occurred. 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

³⁷⁹ For example, UK Broadband [response to provisional findings](#), pp4 & 5.

which operators are strengthened, for example, by receiving additional spectrum.³⁸⁰

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) leading to one partner wanting to switch from CTIL to MBNL and thereby harming the other partner;
- 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 Vodafone and Telefónica network joint venture) 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.

³⁸⁰ 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.³⁸¹

Third parties' views

12.16 [REDACTED]. [REDACTED] would not have the ability to compete effectively with the other MNOs in the UK.³⁸²

Our assessment

12.17 As stated above, the evidence would need to support a finding that any merger-specific strengths from which the merged entity would benefit may permanently weaken competitors to such an extent that the merged entity could gain a significant competitive advantage. To this end, we investigated both the incentive and ability of the merged entity to degrade the backhaul service to CTIL.

12.18 In Chapter 16 we consider the merged entity's incentive and ability to degrade the backhaul service to the rival MNOs, including Vodafone and Telefónica which are hosted on CTIL. Our conclusion (explained in that chapter) 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.

12.19 We note that at contract renewal time, we expect that [REDACTED],³⁸³ [REDACTED].³⁸⁴

12.20 However, even without degradation of the CTIL service, it is possible that Telefónica (or Vodafone) may still wish to switch from CTIL to MBNL due to improvements in MBNL and that this could lead to harm to Vodafone (or Telefónica), and to competition in retail mobile as a result. Vodafone told us [REDACTED].³⁸⁵ [REDACTED] caused by the merger. Telefónica told us [REDACTED].

12.21 We note that the proposed H3G/O2 merger would be likely to prove a more direct influence than the anticipated merger of the parties on encouraging such switching. Whether a switch of Telefónica from CTIL to MBNL would harm competition, and whether it should be prevented and/or have remedies

³⁸¹ BT [response to issues statement](#), paragraph 5.12.

³⁸² [REDACTED]

³⁸³ See Chapter 16, paragraphs 16.115–16.118.

³⁸⁴ See Chapter 16, paragraph 16.153.

³⁸⁵ Vodafone [response to provisional findings](#).

imposed, is therefore within the remit of the Commission's review of the H3G/O2 merger. We therefore expect the Commission's assessment to deal with any harm that is foreseen in that respect.

12.22 We did, however, consider [REDACTED] and the potential improvements in MBNL post-merger whether it would be feasible [REDACTED].

12.23 [REDACTED]

12.24 [REDACTED]

12.25 [REDACTED]

Our view on harm through marginalisation of CTIL

12.26 Our view is that there is insufficient evidence to suggest that [REDACTED] would be permanently weakened, to an extent amounting to an SLC, as a result of any marginalisation of CTIL resulting from the merger.

12.27 Chapter 16 of this report considers in detail whether there is incentive or ability for the merged entity to degrade the quality of the backhaul service to CTIL and concludes, on balance, that it lacks the ability or incentive to do so.

12.28 We also note that even if Telefónica was willing and able to switch to CTIL, [REDACTED].

12.29 We expect that Telefónica's decision whether to switch from CTIL to MBNL is more likely to be influenced by the outcome of the H3G/O2 merger than this merger.³⁸⁶ [REDACTED], the outcome of our assessment of the effect of that influence would be speculative given [REDACTED]. Therefore, our view is that the proposed harm is not expected to result in an SLC.

Harm through BT/EE bidding strategically in spectrum auctions

Proposed harm

12.30 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.

12.31 Strategic bidding would involve the merged entity paying for spectrum over and above its intrinsic value, which would be costly, in the hope that those costs would be recouped by denying an opportunity to its rivals to increase

³⁸⁶ The H3G/O2 merger is currently under review by the Commission.

spectrum holdings (and therefore frustrating their attempts to increase coverage, capacity or speed).

Third parties' views

12.32 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 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

12.33 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.

12.34 Ofcom also suggested how harm to consumers could be caused by strategic bidding:

[...] 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.³⁸⁷

12.35 We note that there was no suggestion of strategic behaviour, either by the parties or their rivals, as part of the recent sale of spectrum by Qualcomm in September this year.³⁸⁸ That said, the probative value of this evidence in relation to the behaviour of the parties is limited given that the parties knew at

³⁸⁷ See paragraphs 4.158–4.166 in Ofcom (2012), [Assessment of future mobile competition and award of 800 MHz and 2.6 GHz Statement](#).

³⁸⁸ Vodafone took ownership of the 1,542 MHz–1,772 MHz frequencies and 3UK the 1,472 MHz–1,492 MHz.

the time that we were considering strategic bidding as a possible harm arising from this merger.

12.36 On the basis of existing competition at the time of its consultation (that is, with BT, EE, H3G and Telefónica all separate), Ofcom did not consider that strategic investment in spectrum was likely in the PSSR award, because:³⁸⁹

- 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.

12.37 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 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.

³⁸⁹ See Ofcom (2014), [Public Sector Spectrum Release \(PSSR\): Award of the 2.3 GHz and 3.4 GHz bands](#), paragraph 7.102.

- 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.

12.38 It is, therefore, not evident 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.

12.39 Finally, we note that Ofcom has experience and powers in relation to discouraging or preventing strategic bidding.³⁹⁰

12.40 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 that discourage or prevent it.³⁹¹ 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.

12.41 Following the announcement of the merger and the prospective merger of H3G/O2, Ofcom has published a statement announcing that it plans to auction the spectrum in early 2016, with no holdings caps imposed.³⁹² Ofcom has also highlighted some features of the auction design that discourage strategic bidding. In particular, Ofcom has said:

we believe the likelihood of a single bidder outbidding all the other bidders in the auction, or acquiring a very large volume of spectrum, is lower as a result of decisions set out in our May 2015 statement. These included the choice of a simultaneous multiple-round ascending auction (SMRA) as the format for our award.

In our SMRA design, the price for lots within each band will be the same – or very similar. In order to outbid all the other bidders, or to acquire a very large amount of the spectrum, a bidder would need to keep on bidding on a large amount of the lots available. This in turn would have the effect of increasing the price for all the

³⁹⁰ See for example Ofcom (2014), [Public Sector Spectrum Release \(PSSR\): Award of the 2.3 GHz and 3.4 GHz bands](#).

³⁹¹ [ibid.](#)

³⁹² See Ofcom (2015), [Public Sector Spectrum Release \(PSSR\) - Competition and auction design issues for the 2.3 and 3.4 GHz spectrum award, including reserve prices](#).

spectrum in that band available in the auction. Such a strategy could however fail, and the bidder might end up winning a smaller amount of the spectrum at a high price – potentially a price that exceeds the bidder’s valuation for that smaller amount of spectrum.³⁹³

12.42 In response to our provisional findings, Telefónica said that it disagreed with the CMA’s reasoning in relation to strategic bidding, and submitted that:

- such a strategy was unlikely to be costly, given the potential to weaken competitors;
- the payoff was reasonably certain because:
 - 3.4 GHz spectrum was an inadequate substitute for other high frequency spectrum available to mobile operators; and
 - contrary to the CMA’s provisional finding, [§]; and
- Telefónica disagreed that Ofcom was capable of discouraging, monitoring and preventing strategic bidding or that it was likely to do so, given that it failed to recognise the likelihood of such a strategy being successful.³⁹⁴

12.43 In its response to our provisional findings, Sky submitted that the CMA should assess in combination the effects on competition (via effects on MNOs and MVNOs) of possible:

- strategic bidding through which the merged entity could foreclose access to spectrum necessary for the deployment of small cells; and
- behaviour through which BT could foreclose access to sites and backhaul necessary for small cell connectivity.³⁹⁵

12.44 Sky submitted that in the short to medium term, 2.6 GHz or 2.3 GHz spectrum was the only spectrum suitable for use in small cells. It said that the merger reduced the number of operators that held 2.6 GHz spectrum from three (BT, EE and Vodafone) to two. However, we concluded above that BT would have been unlikely to provide wholesale access to its small cell network in the short to medium term and that the loss of BT as a competitor is not expected to result in an SLC.

³⁹³ Ofcom (26 October 2015), [Public Sector Spectrum Release \(PSSR\) Statement](#).

³⁹⁴ Telefónica [response to provisional findings](#), p7.

³⁹⁵ Sky [response to provisional findings](#), paragraph 3.4.

12.45 Sky went on to say that because there would only be 40 MHz of 2.3 GHz spectrum available at the upcoming auction (and, Sky submitted, 20 MHz was the minimum bandwidth needed for competitive speeds) BT could, by purchasing only 20 MHz, limit the number of rivals, be they MNOs or fixed MVNOs, able to acquire spectrum for small cell deployment.

Our view

12.46 From the evidence, we do not find that the merger is likely to lead to an increased probability or extent of strategic bidding with effects that may be expected to result in an SLC. This is because:

- (a) An increased likelihood of strategic bidding relies on the merger causing the merged entity to capture a higher proportion than EE of any customers it could cause rivals to lose through strategic bidding. It is not clear to us that this effect would be substantial.
- (b) By bringing together BT and EE's spectrum holdings the merger is likely to have a countervailing effect of reducing the merged entity's intrinsic need or value for spectrum.
- (c) It is not clear, in any event, that any increased incentive for strategic bidding could lead to successful foreclosure of rivals, given the safeguards in Ofcom's auction design along with the large amount of spectrum available and the likelihood that if rivals were capacity constrained they would have a high valuation for the spectrum, making strategic bidding more costly.

12.47 In relation to small cells we further note that [X] have existing plans to deploy small cells in the short to medium term. We also received submissions from the MNOs and Ofcom that 3.4 GHz spectrum, of which 150 MHz was due to be released, would be suitable for small cells. Operators' views varied, but on balance it appears that a substantial proportion of devices are likely to support this band by 2020.³⁹⁶ In relation to MVNO purchase of this spectrum for small cell use, we note that TalkTalk has existing plans to deploy small cells using the low power spectrum it already holds; [X].

12.48 In light of our conclusion above and this evidence, we do not consider that any substantial concern arises in relation to the possible effects of strategic bidding on the deployment of small cells.

³⁹⁶ See Appendix G.

12.49 Sky's concerns that the merged entity may foreclose access to sites and to backhaul for small cells are addressed in Chapter 16. We also note that Sky has access to sites and backhaul from the broadband routers in its customers' premises, and its extensive Wi-Fi network; [§].

Reduction in use of indirect sales channels

Proposed harm

12.50 Under this proposed harm, we considered whether the merger may harm competition through a reduction in the use of indirect sales channels.

Third parties' views

12.51 Dixons Carphone presented evidence to show that indirect sales channels provided benefits to the consumer.³⁹⁷

12.52 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 (ie where a network operator will only sell through its own retail outlets, website etc.).³⁹⁸
- (b) If the same quad play offerings were not offered through the indirect channel (putting the indirect channel at a competitive disadvantage), 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

12.53 The evidence does not support the suggestion 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. We therefore have not gone on to consider whether a reduction in the use of indirect sales channels would result in harm to competition.

³⁹⁷ See paragraph 10.64.

³⁹⁸ [Dixons Carphone initial submission](#), section 1.

12.54 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 view

12.55 Our view is that the merger would not be likely to result in a reduction in the use of indirect sales channels. Accordingly, our conclusion is that this concern is not expected to result in an SLC.

Harm through the merged entity attracting customers and weakening competitors

Proposed harm

12.56 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

12.57 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.³⁹⁹

Our assessment

12.58 We note that if the merger resulted in improvements in the merged entity's capabilities along the lines suggested in paragraph 12.56 above, this would benefit consumers in the first instance (eg through lower prices or faster data services), and it would put pressure on the merged entity's rivals. In those circumstances, we would generally expect the rivals to respond by competing harder. In particular, we consider that there are viable alternatives/opportunities open to the parties' rivals that may allow them to replicate those improvements, or to employ counter-strategies, to a degree

³⁹⁹ For instance, this point was raised by UK Broadband in its [response to provisional findings](#), pp2–4.

which would allow them to remain competitive relative to their own positions in the counterfactual and to arrest customer loss, including:

- (a) using 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); and
- (b) in the medium to long term, acquiring 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.

12.59 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.

12.60 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 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 Appendix F. They suggest that a plausible scale of customer switching would not cause a significant harm to competition, including because:

- (a) shares of subscribers (and data carried) in the UK and elsewhere do not appear to be closely connected to the shares of spectrum held; and
- (b) should switching occur in proportion to EE's increase in spectrum, this would lead to relatively small changes in other operators' customer numbers.

Our view

12.61 Accordingly, our view is that this concern is not expected to result in an SLC.

Our conclusions on dynamic loss of mobile competition

12.62 We have assessed a number of mechanisms by which a strengthening of the merged entity – which may provide benefits to consumers – could lead to long-term harm to competition.

12.63 However, we did not have to consider this trade-off explicitly. This is because none of the mechanisms that we assessed are likely to result in harm to BT/EE's rivals sufficient to result in an SLC. In particular, the evidence we have considered showed that:

- (a) the merger in itself is unlikely to be the key factor in causing Telefónica to switch away from its network sharing agreement with Vodafone, and even if it were able to, and did, switch as a result of improvements in MBNL post-merger, we have no evidence that this would have an adverse impact on competition;⁴⁰⁰
- (b) it is not evident that the merger is likely to lead to higher prices for spectrum in upcoming auctions sufficient to cause substantial harm to rivals;
- (c) the merger specific effect of the merger on the use of indirect sales channels by the merged party is unclear, and could actually increase the incentive to use of indirect channels; and
- (d) the merged entity's rivals would have a range of counter strategies to respond to any increased strength which would allow them to compete for customers.

12.64 In combination, we do not consider that any effects through the means detailed above would be likely to permanently weaken competitors to the extent the merged entity could harm customers.

12.65 Our 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.

⁴⁰⁰ See paragraphs 12.15–12.30 above.

13. Wholesale mobile

Introduction

- 13.1 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. The merger will result in a wholesale supplier of mobile services (EE) merging with an MVNO (BT) that purchases those services to operate at the retail level.⁴⁰¹
- 13.2 We received concerns from third parties that, post-merger, the merged entity would refuse to supply, and/or offer worse terms for, wholesale mobile services to MVNOs. We received concerns that this could negatively affect downstream retail competition for mobile services either on a stand-alone basis or alongside broadband, fixed telephony and/or pay TV services ('fixed services'). Given that BT's retail market share in fixed services is much higher than its share in retail mobile, our assessment focused (as explained in more detail in Chapter 14) on the supply of wholesale mobile services to MVNOs that also sell fixed services ('fixed-MVNOs').
- 13.3 In the remainder of this chapter, we:
- explain our approach to market definition relevant to the supply of wholesale mobile services; and
 - briefly introduce the market for wholesale mobile services.

Market definition

- 13.4 We assessed market definition in relation to:
- the (upstream) supply of wholesale mobile services; and
 - the (downstream) supply of retail fixed-mobile bundles.

Wholesale mobile services

- 13.5 We investigated the extent to which different aspects of wholesale mobile services for MVNOs could be aggregated on the basis of demand-side

⁴⁰¹ 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.

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).

- 13.6 The Commission, in past merger cases, has consistently defined a wholesale market for network access and call origination on public mobile telephone networks.⁴⁰² 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 such constituted a single market.⁴⁰³ The Commission also concluded in previous cases that the market is national in scope.^{404, 405}
- 13.7 The parties submitted that there was a distinct product market for wholesale network access and call origination services and the relevant geographic market was national in scope.⁴⁰⁶ We received no third party submissions arguing against this market definition.⁴⁰⁷
- 13.8 Some MVNOs submitted that certain MNOs were less willing to provide 4G than 3G services,⁴⁰⁸ and that the conditions of competition therefore differed across technologies. We note that all MNOs are able to supply 4G and 3G services.
- 13.9 Our competitive assessment has taken into account the supply of 4G (and possible future technologies) at the wholesale level as a feature of wholesale services, 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. In light of

⁴⁰² 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).

⁴⁰³ See, for example: [Telefónica Deutschland/E-Plus](#) (published 2 July 2014), paragraph 77.

⁴⁰⁴ See, for example: [Telefónica Deutschland/E-Plus](#) (published 2 July 2014), paragraph 83.

⁴⁰⁵ 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.

⁴⁰⁶ [BT initial submission](#), paragraphs 2.1–2.3

⁴⁰⁷ We received a submission [38] arguing that self-supply of network capacity by MNOs to their own downstream retail mobile businesses should not be included in the relevant market. 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.

⁴⁰⁸ For example, [Gamma initial submission](#), [38].

this, it has not been necessary to conclude on whether separate markets are likely to exist for the wholesale supply of specific mobile technologies.

- 13.10 We therefore 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

- 13.11 In relation to fixed-mobile bundles, we investigated the extent to which the supply of retail fixed and mobile services in the UK would be likely to form a single product market, as distinct from the supply of the retail services on a separate basis. As explained in Chapter 10, we identified a separate market for the supply of retail mobile services.

- 13.12 We considered the term ‘fixed-mobile bundles’ to encompass scenarios where a customer purchased mobile services alongside fixed services from the same supplier,⁴⁰⁹ 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; and/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.

- 13.13 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 substantial discount or contractual tie, then projections of the future level of bundling will tend to overstate the competitive importance of bundles. We take this into account in our competitive assessment in Chapter 14.

⁴⁰⁹ 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 also known as ‘quad-play’.

- 13.14 To date, fixed-mobile bundles have not been widely adopted in the UK.⁴¹⁰ As set out in Appendix H, under 10% of consumers currently purchase fixed and mobile services from the same provider.⁴¹¹
- 13.15 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 which expected slower growth in their own sales of fixed-mobile bundles.⁴¹² In relation to business customers, we do not have consistent data but the information shared by operators suggests that under 20% of businesses currently buy fixed and mobile services from the same provider.⁴¹³
- 13.16 However, for the purposes of market definition we assess whether, in response to a small but significant non-transitory increase in price (SSNIP), or equivalent quality degradation, for bundles but not individual components, current and potential future customers would switch to unbundled products in numbers sufficient to make the price rise unprofitable.⁴¹⁴ Providers' forecasts do not inform this question, on which we received no direct evidence.
- 13.17 No third party submitted that in the UK fixed-mobile bundles currently constitute a separate market,⁴¹⁵ in which a SSNIP would not be prevented by switching to stand-alone products.⁴¹⁶ Other authorities have left open the questions of whether such bundles constitute a separate market. For example, the Commission in relation to Spain (where sales of fixed-mobile bundles are the highest in Europe) has recently left open this question, while noting that a majority of respondents to its investigation did not consider that bundles formed a distinct market, although they considered that bundled

⁴¹⁰ This is in contrast to some other European countries, such as France and Spain, where the uptake of fixed/mobile bundles is much higher, largely driven by heavy discounting (see Appendix H for more detail).

⁴¹¹ For example, in its [Communications Market Report 2015](#), Ofcom found in a survey of 3,756 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.

⁴¹² Forecasts received from BT, EE, Telefónica, Virgin Media, Sky, TalkTalk and Vodafone. For more explanation see Appendix H.

⁴¹³ RSee Appendix H.

⁴¹⁴ 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.

⁴¹⁵ See for example TalkTalk [response to issues statement](#), paragraph 2.2, p1; [§].

⁴¹⁶ Though the Post Office referenced 'the increasing demand for fixed/mobile bundles and development of a separate market for such bundled products'.

purchases were important in the residential segment (and that they were largely driven by discounts).⁴¹⁷ Ofcom found, in its 2014 review of the UK 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'.⁴¹⁸

13.18 In future, demand-side substitution between bundled and unbundled 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 are not 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
- contractual links between fixed and mobile offers so far appear to be weak and operators told us that it would be difficult to develop such links.⁴¹⁹ Moreover, at present the drivers and methods of purchase for fixed and mobile services are generally different (eg fixed purchases are often household decisions prompted by house moves and bought online, while mobile purchases are more individual purchases and may be prompted by the desire for a new handset and bought in a retail store).

13.19 We found no evidence to suggest that it was likely that bundles would not in future be constrained by unbundling (ie switching purchasing from a bundled product to the stand-alone products, whether from the same or different

⁴¹⁷ See [Case M.7421 – Orange/ Jazztel](#) recitals 72 to 86.

⁴¹⁸ 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.

⁴¹⁹ For example, because fixed services are purchased at the household level whereas mobile services are more often purchased at the individual level; and because of the difficulty in aligning multiple existing contracts with different end dates.

supplier), in response to a price rise. We therefore did not define a separate market for fixed-mobile bundles in the UK.⁴²⁰

13.20 However, we explored as part of our competitive assessment the possible emergence of such a market, how it could affect the conditions of competition in the wholesale market, and how this might affect the incentive of the merged entity to pursue one or more foreclosure strategies.

Introduction to the wholesale mobile market

13.21 In this section, we set out:

- the parties' activities and merger rationale;
- market shares of MNOs and MVNOs and types of MVNOs;
- general approach to contracting; and
- current fixed-MVNO supply relationships.

The parties' activities and merger rationale

13.22 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. EE is also a supplier to other MVNOs that compete with EE and BT, including Virgin Media, and a potential supplier to other MVNOs.

13.23 BT supplies retail customers with mobile services alongside its fixed services, and competes in the supply of these fixed 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.⁴²¹

13.24 We note that part of the rationale for BT's purchase of EE is to accelerate its mobile strategy by providing immediate scale, and to gain greater control over investment and product innovation in mobile, particularly in relation to

⁴²⁰ 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. See also [M.7421- Orange/Jazztel](#), paragraph 86.

⁴²¹ 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.

converged fixed-mobile services.^{422,423} As set out in Chapter 2, the parties estimated cost savings and synergies from the merger of around £5.1 billion, of which around [X] related to cross-selling between fixed and mobile activities (or vice versa),⁴²⁴ with the remainder being largely driven by eliminating duplicative fixed costs relating to procurement, IT and network savings.

Market shares of MNOs and MVNOs and types of MVNOs

13.25 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.⁴²⁵

13.26 As set out in Chapter 11, there are over 100 MVNOs currently active in the UK, accounting for around [X]% of mobile subscribers and a revenue share of [X]%. Excluding those that are wholly or jointly owned by MNOs, MVNOs' overall share is less than [X]% of subscribers and [X]% of retail revenues. The different types of MVNOs in the UK include:

- Communications providers such as BT, TalkTalk and Virgin Media, which together currently represent approximately [X]% of total UK MVNO retail revenues (of which Virgin Media accounts for [X]).
- Joint ventures between an MNO and a separate company. Tesco Mobile is a joint venture between Tesco and Telefónica, and accounts for approximately [X]% of total UK MVNO revenues. Sainsbury's Mobile is a joint venture between Sainsbury's and Vodafone, although full management control has now passed to Sainsbury's and will cease to provide mobile services in January 2016.⁴²⁶
- Other independent providers, including retailers (such as Asda), those that focus on low-cost international calling (for example Lycamobile and

⁴²² [BT initial submission](#), paragraph 4.2.

⁴²³ We consider that the purchase price for EE of £12.5 billion largely reflects the underlying value of the stand-alone EE business. [X]

⁴²⁴ 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. [X] For further details see Appendix E.

⁴²⁵ 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.

⁴²⁶ [X] Sainsbury's confirmed that under the terms offered by Vodafone it did not consider that it was commercially viable. It submitted that it had found it difficult to move to another provider because of the combination of [X].

Lebara), business services (eg Abica), data-only services, or other niche offers, which make up the remainder of the market.⁴²⁷

13.27 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 and relying 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.

13.28 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) [X]. [X] also indicated that this was a step it might consider in future.

Approach to contracting

13.29 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.⁴²⁸ The latter can be commercially attractive to smaller MVNOs since the set-up process is more straightforward and less costly.

13.30 Our investigation focused on the supply of wholesale mobile contracts to fixed-MVNOs,⁴²⁹ the largest of whom purchase wholesale mobile services

⁴²⁷ 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.

⁴²⁸ BT submitted that among MVNOs, 41 had direct contracts with MNOs, with the remainder having indirect contracts through MVNAs or MVNEs.

⁴²⁹ See further paragraph 14.7 below.

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.⁴³⁰

- 13.31 When forming contracts directly with MVNOs, MNOs 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.
- 13.32 Sky also submitted to us that, since not all important aspects could be fully set out in a contract, it was important to have a good working relationship and a level of trust between MVNOs and their host.
- 13.33 In their most recent tender exercises, [X] initially engaged with [X] MNOs, before seeking bids. In each case the number of suppliers involved in the process was reduced as negotiations progressed, [X].
- 13.34 Not all MNOs bid for each contract. As set out later, operators gave varying reasons for deciding whether (and at what level) to bid for a contract, including the necessary technical work, the extent to which they have existing projects, and perceptions of the likelihood of winning a contract (including when in competition with the incumbent provider). We considered such behaviour to be normal in a bidding market, especially where it is costly to bid for contracts, and do not consider the fact that an operator has not bid for a particular MVNO's contract as necessarily strong evidence that it would not do so in future.
- 13.35 We found that the wholesale mobile bidding market was not transparent. In any given bidding negotiation, the MNOs involved in the process would not always be aware of which other MNOs were bidding. For example, the perception of an MNO's involvement has been referred to by some MVNOs as important in obtaining competitive outcomes [X].

⁴³⁰ We explain why in our competitive assessment in Chapter 14. For completeness, we note that some fixed-MVNOs, [X], purchase wholesale mobile services indirectly through MVNAs or MVNEs.

Current fixed-MVNO supply relationships

13.36 We note that all four large fixed-MVNOs have recently tendered for wholesale mobile arrangements, all successfully concluding direct contracts with an MNO:

- BT is currently a light MVNO and signed an MVNO agreement with EE in March 2014. BT had previously been offering business mobile services as a light MVNO via a wholesale contract with Vodafone, but began offering consumer mobile services in March 2015 and is migrating its customers to EE. [X]
- 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. [X]
- Sky signed a contract with Telefónica in January 2015 and expects to begin offering retail mobile services as a full MVNO in [X].
- 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. [X]

13.37 Virgin Media is currently the largest fixed-MVNO, by subscriptions, with around [X] mobile subscribers, followed by TalkTalk with around [X] subscribers and BT with around [X] subscribers.

13.38 We note there are other smaller current or potential fixed-MVNOs. We found that, insofar as competition concerns are not found in relation to the larger fixed-MVNOs, they are unlikely to arise for smaller fixed-MVNOs, for reasons including that they are less likely to be viewed as major fixed competitors by BT, more likely to be able to access services via MVNEs or MVNAs, and MNOs are more likely to have sufficient network capacity to take them on.

14. Wholesale mobile: competitive assessment

Overview

Third party concerns

14.1 We received concerns that the merged entity could:

- restrict or degrade the supply of wholesale mobile services to fixed-MVNOs by not competing for their contracts or competing more weakly than EE would have in the counterfactual;
- degrade the quality of the wholesale mobile services that EE may provide to a fixed-MVNO under a potential future contract; and/or
- degrade or restrict the quality of the wholesale mobile services that EE provides to Virgin Media (a fixed-MVNO) under the current contract or in a future contract, or delay Virgin Media's transition to a 'full MVNO' model.

14.2 Some third parties also raised concerns that the merged entity would undertake similar strategies aimed at foreclosing its rivals, but in relation to stand-alone mobile services.⁴³¹

Parties' views

14.3 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.⁴³² 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 through increased profits at the retail level the wholesale revenues foregone as a result of restricting MVNOs' access to its wholesale services;⁴³³ and

⁴³¹ For example, [X] 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.

⁴³² [BT initial submission](#), section b (paragraph 1.2).

⁴³³ [ibid](#), section b (paragraph 1.2).

- any MVNO refused access by the merged entity would remain able to enter the retail mobile market through access to other MNOs' networks.⁴³⁴

14.4 EE submitted that the merged entity would not have any ability to foreclose given that wholesale market was competitive and the merger would not result in any change to the number of wholesale providers. EE submitted that Telefónica and Vodafone were committed to the market and that H3G was an active wholesaler.⁴³⁵

Responses to provisional findings

14.5 We received a number of submissions in response to our provisional findings which provided additional information relevant to our assessment. Some third parties also raised concerns, including that we had:

- not applied the appropriate analytical framework to our assessment of foreclosure (including that our vertical arithmetic was unduly narrow);⁴³⁶
- not properly assessed the risk of partial foreclosure (which we refer to as 'weak bidding'), which was considered more likely by some third parties than total foreclosure (ie refusal to supply);
- underestimated in our assessment the impact of future capacity constraints on rival MNOs; and
- underestimated the potential harm to Virgin Media and the impact that this could have at the retail level.

14.6 In response to these concerns, we carried out further inquiries and expanded our assessment of this market, including in relation to weak bidding and potential foreclosure of Virgin Media.

Mobile-only MVNOs vs fixed-MVNOS

14.7 We found that, when assessing the merger against the prevailing conditions of competition:

- the combination of BT's mobile business with EE's mobile businesses would be unlikely to materially change the merged entity's incentives (as compared to EE in the counterfactual) to supply wholesale mobile

⁴³⁴ [BT initial submission](#), section b (paragraph 1.3).

⁴³⁵ [EE initial submission](#), p5.

⁴³⁶ We discuss these concerns where relevant further in Annex I and J.

services to MVNOs in general, since BT's mobile business is small (currently less than [X] % of subscriptions and with a forecast share of under [X] % of subscriptions by 2023), and so its combination with EE's existing mobile business is unlikely in itself to have a material impact on the retail gains the merged entity may make from harming other mobile operators;⁴³⁷ and

- the further addition of BT's fixed business would be unlikely to materially change the merged entity's incentives to supply fixed-MVNOs. This is because, as we explain further below, there does not appear to be at present a strong link between consumer demand for mobile and for fixed services.⁴³⁸

14.8 In relation to mobile-only MVNOs, we did not have any evidence that the conditions of competition might change in the foreseeable future in a way that could increase the merged entity's incentives to foreclose these MVNOs.⁴³⁹

14.9 However, in relation to fixed-MVNOs, we received submissions from third parties that the retail conditions of competition in the sale of fixed and mobile services would evolve in the future in a way which would increase the

⁴³⁷ We received submissions and questionnaire responses from a number of smaller MVNOs. We did not receive strong evidence that different merger specific concerns arise for this group. For example, the Post Office emphasised the role of fixed-mobile bundles and convergence. The Phone Co-op (a fixed MVNO) submitted that there were potential risks to the wholesale market from the creation of a powerful new entity that would control the majority of fixed line infrastructure and would also have the largest number of mobile customers. They were concerned that the merged business would seek to exploit this position through cross-selling and, unless required by regulators or competition authorities to do so, might have little incentive to sell wholesale mobile services to competitors who wished to offer a similar bundled service. Asda and Sainsbury's (mobile-only MVNOs) did not consider that the merger would directly affect competition in the wholesale mobile market as BT is not an MNO (albeit that they raised concerns about its current functioning), while Dixons Carphone raised concerns in around the distribution of the merged entity's products through the indirect channel rather than about the wholesale market. Separately, we considered whether, in line with [X] 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.

⁴³⁸ For example, we conducted an analysis of what wholesale price rise the merged entity would need to be able to cause by not bidding for fixed-MVNOs' contracts, in order for it to have an incentive not to bid. If we assumed that a high proportion of bundle customers, if faced with an increase in the retail price of the mobile element, would switch their provider of the mobile component only (rather than the whole bundle), this 'necessary price rise' is over 200% in both the counterfactual for EE and post-merger. See Appendix I for more detail.

⁴³⁹ We did not receive concerns that the merged entity would foreclose MVNAs or MVNEs. While we do not exclude in principle the possibility that the merger may create an incentive to foreclose MVNAs/MVNEs, and the small fixed-MVNOs that procure these services from them (such as the Post Office, which procures its services from an MVNE), doing so would involve losing wholesale revenue from all MVNOs supported by them (mainly mobile-only MVNOs). Therefore the merged entity's incentives to engage in such a strategy would be weaker than incentives to foreclose the larger fixed-MVNOs that contract directly with MNOs. Given our findings on the latter we did not further assess the impact on MVNAs, MVNEs or fixed-MVNOs that procure wholesale mobile services from them.

merged entity's incentives to harm these MVNOs. We discuss this further at paragraphs 14.21 onwards below and in detail in our assessment.

Potential foreclosure strategies

14.10 We investigated the extent to which the merged entity had the ability and incentive to harm one or more fixed-MVNOs at the wholesale level.

14.11 We identified four possible foreclosure strategies that the merged entity could in principle pursue in relation to the supply of wholesale mobile services:

- **refuse to supply** a fixed-MVNO (ie by not bidding) in an attempt to either:
 - leave that fixed-MVNO without a wholesale mobile supplier and therefore unable to offer mobile services at the retail level; or
 - cause that fixed-MVNO to receive worse terms at contract renewal or re-negotiation from an alternative MNO than in the counterfactual, thereby raising that fixed-MVNO's costs;
- **bid more weakly** than EE in the counterfactual and, in doing so, raise that fixed-MVNO's costs at contract renewal because it receives worse terms than in the counterfactual (either from the merged entity or from an alternative MNO, because the bidding process is affected by the merged entity's behaviour);
- **provide a worse service in a future contract** with a fixed-MVNO than EE would have done in the counterfactual; and/or⁴⁴⁰
- **provide a worse service within an existing contract** to a fixed-MVNO than EE would have done in the counterfactual. This potential strategy applies only to Virgin Media.

14.12 These strategies, with the exception of a refusal to supply aimed at leaving a fixed-MVNO without a wholesale mobile supplier, could all be described as 'raising rivals' costs' strategies.⁴⁴¹ We began by assessing the potential

⁴⁴⁰ 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).

⁴⁴¹ The term used in much of the related academic literature, and emphasised in some of the responses to our provisional findings.

impact of foreclosure strategies across fixed-MVNOs other than Virgin Media⁴⁴² and then looked separately at the potential impact on Virgin Media, whose position differs from that of the other fixed-MVNOs for various reasons – including because EE is its current supplier.

Approach to assessment

- 14.13 We assessed each foreclosure strategy by first considering whether and to what extent the merged entity could harm fixed-MVNOs through its behaviour at the wholesale level. If we found that the merged entity had the ability to cause harm, we then assessed whether it would have the incentive to do so.⁴⁴³ Ultimately, we sought to assess whether the merged entity would be likely to pursue one or more foreclosure strategies that EE would not have pursued in the counterfactual. To the extent that we found ability to cause harm and incentive to do so, we also considered where relevant what effect the strategy could have on competition.
- 14.14 We explain what we mean by ability, incentive and effect, in the context of wholesale mobile services, below.

Ability to cause harm

- 14.15 The merged entity could refuse to supply wholesale mobile services, or offer wholesale mobile services on worse terms to fixed-MVNOs when bidding for (or, subject to contractual protections, during) future contracts, but this would only harm fixed-MVNOs if it resulted in worse outcomes for the fixed-MVNO, by causing it:
- to be unable to secure wholesale mobile services at all; or
 - to receive worse terms for wholesale mobile services.
- 14.16 If there were such an outcome, it could lead to foreclosure of the fixed-MVNO in a number of ways, some of which are relatively straightforward to quantify and others that are more speculative and uncertain. For example:
- if the strategy results in the fixed-MVNO being unable to secure wholesale mobile services, this will clearly affect its sales of mobile

⁴⁴² Although we have used evidence that relates to Virgin Media where it is relevant to the assessment of foreclosure strategies that could affect other operators.

⁴⁴³ As explained at paragraph 9.17, where we found that the scale of the harm that the merged entity could cause was uncertain, we took that uncertainty into account in our assessment of profitability.

services (either on a stand-alone basis or sold as part of a fixed-mobile bundle);

- if the strategy results in the fixed-MVNO receiving worse terms, and this leads to a more expensive or lower quality offering at the retail level, this could affect its sales of mobile services (and, as above, potentially sales of fixed-mobile bundles);
- if the strategy results in the fixed-MVNO being unable to secure wholesale mobile services or offering a more expensive or lower quality product at the retail level, this could conceivably affect the MVNO's brand or reputation more generally; and/or
- if the strategy results in the MVNO gaining a lower return on investments in its services (for example because it foregoes margin at the retail level to maintain the competitiveness of its retail mobile offering), this could potentially reduce the fixed-MVNO's incentives to make such investments.

14.17 In assessing the ability of the merged entity to harm fixed-MVNOs through one or more foreclosure strategies, an important factor was the extent of competitive constraint that would remain from the other MNOs post-merger.⁴⁴⁴ In addition to the merged entity, there will be three MNO hosts (H3G, Telefónica and Vodafone) and we have assessed the competitive strength of each of these other MNOs as part of our assessment of ability.

Incentive

- 14.18 Where we find that the merged entity is able to harm one or more fixed-MVNOs at the wholesale level, we assessed whether it would have the incentive to do so. A finding of incentive can rely, for example, on documentary evidence (eg internal board papers that point to the intention to pursue a given strategy) or on empirical analysis that points to the strategy being one which is profitable for the merged entity to pursue.
- 14.19 We assessed whether adopting one or more foreclosure strategies would be profitable for the merged entity to pursue. This depends on the degree to which harm at the wholesale level could lead to foreclosure of the fixed-MVNO and whether foreclosure would lead to enough customers switching to the merged entity to make the strategy profitable. The potential existence of a foreclosure strategy is not in itself sufficient for a finding that the merger

⁴⁴⁴ See, specifically for partial foreclosure, [Merger Assessment Guidelines](#), paragraph 5.6.10. We consider the possibility of switching is also relevant to an assessment of total foreclosure.

will be likely to lead to an SLC in a relevant market or markets. We found it likely that, as for EE pre-merger, the merged entity would balance two key factors:

- On the one hand, the potential wholesale margin that it would forego (immediately and in the future) if it:
 - ceased wholesale supplies to fixed-MVNOs entirely or refused to supply mobile services to a specific fixed-MVNO;⁴⁴⁵
 - bid more weakly and as a result lost the contract; or
 - supplied a fixed-MVNO on terms that caused the fixed-MVNO to attract fewer subscribers than if the merged entity had supplied wholesale mobile services on better terms.
- On the other hand:
 - the potential retail margin it would expect to gain over time from higher sales of its own products (ie capturing some of the fixed-MVNO's mobile and potentially fixed customers) as a result of any harm it could inflict on the MVNO; and/or
 - the additional wholesale margin it could receive by charging a higher price for wholesale mobile services (by bidding more weakly than in the counterfactual) if it still won the contract.

14.20 As discussed in paragraph 14.7 above, we found it unlikely that, when assessing the merger against the prevailing conditions of competition, the merged entity's incentives to supply wholesale mobile services to MVNOs (including fixed-MVNOs) would be materially different to EE's in the counterfactual.

14.21 However, some third parties submitted that the conditions of competition in the retail supply of mobile services would change in the future; including that:

- the sale of fixed-mobile bundles would become more prevalent (including as a result of the merger); and

⁴⁴⁵ For example, EE currently generates revenue of around £[X] per year from its wholesale mobile contract with Virgin Media.

- for an increasing proportion of customers, mobile services would come to influence their choice of fixed provider.⁴⁴⁶ This would mean, for example, that when faced with an increase in the price of the mobile component of their bundled purchase, more customers would not ‘unpick’ that bundle and switch away only their mobile purchase, but would instead switch both their fixed and mobile services to another provider. This would make it increasingly important for a provider selling fixed services to also be able to offer an attractive mobile service.

14.22 These third parties submitted that, in light of the above, an increase in the price, or worsening in the quality, of mobile services that fixed-MVNOs could offer would lead them to lose not only mobile custom, but also fixed custom. Combining EE (a predominantly mobile player) with BT (a large supplier of fixed services), would therefore lead the merged entity to have less of an incentive to supply wholesale mobile services on terms that allowed fixed-MVNOs to provide mobile services at competitive prices and quality (and more of an incentive to harm fixed-MVNOs).

14.23 We found that a simple increase in the number of retail customers purchasing mobile and fixed services from the same supplier (including where this is driven by cross-selling) would be unlikely in itself to change the conditions of competition in a way that would materially change the merged entity’s incentives to supply wholesale mobile services to fixed-MVNOs as compared to EE’s in the counterfactual.

14.24 However, if the conditions of competition in the supply of retail mobile services were to change (or were perceived by the merged entity to be likely to change) in a way that increased the retail gains from harming fixed-MVNOs’ mobile services, this could affect the merged entity’s incentives to supply rival fixed-MVNOs with wholesale mobile services as compared to EE.⁴⁴⁷ The expected retail gains for the merged entity by foreclosing a fixed-MVNO in the supply of wholesale mobile services could be greater for the merged entity than for EE in the counterfactual (since EE was predominantly active in the sale of mobile services and had not been greatly successful in

⁴⁴⁶ This could be because of competition between differentiated bundles, where for some consumers the differentiated element of mobile services is a driver of the bundle. It could also be because bundles are priced lower than individual components. In either case, if consumers only make their bundle decisions on the basis of fixed products, then foreclosing a rival in mobile has no effect on bundles. However, if mobile does have an influence on the bundle provider (even if consumers choose only on the basis of who has the cheaper bundle), the merger will only alter incentives to foreclose if it could cause some of them to make a different choice of fixed provider than they would have absent foreclosure.

⁴⁴⁷ However, we note that, in the counterfactual, EE has a fixed and mobile offer and could also conceivably, where fixed and mobile bundles became more important, have faced less of an incentive to supply fixed-MVNOs. However, we do not consider this point further.

cross-selling fixed services to its mobile customers).⁴⁴⁸ However, such gains would also depend to a large extent on the competitive constraint exercised by retail suppliers who are not affected (or not materially affected) by the foreclosure strategy.

- 14.25 We therefore investigated the extent to which the conditions of competition were likely to change in the foreseeable future in a way that could harm fixed-MVNOs. Our analysis was prospective and involved the CMA assessing chains of cause and effect in relation to future competitive conditions with a view to ascertaining whether, overall, a substantial lessening of competition in this market is more likely than not. There is necessarily much uncertainty as to how competition will develop in the future in this regard and we discuss this in detail, particularly in our assessment of incentives.

Effects

- 14.26 We note that the pursuit of one or more foreclosure strategies could in principle result in there being fewer fixed-MVNOs, or in fixed-MVNOs offering retail mobile products at higher prices or at lower quality than they might have done absent the merger. This may in turn affect the degree of competition in relevant retail markets. However, the effect would depend on the extent of competition remaining from suppliers that are not affected by foreclosure. This includes those fixed-MVNOs continuing to receive competitive terms, any MNOs that also sell fixed services, and operators selling stand-alone mobile and fixed services.
- 14.27 In light of our view that the merger was only likely to substantively alter the merged entity's behaviour (relative to EE in the counterfactual) in the event that fixed-mobile bundles become more prevalent and mobile services become more important in determining a consumer's choice of fixed-service supplier (ie paragraph 14.7), we also considered how other MNOs and fixed-MVNOs might change their behaviour in that scenario. This is discussed further in our assessment of ability, incentive and effects.

⁴⁴⁸ Although EE supplied fixed services pre-merger, its market share was, in contrast to BT's, very small. Further details of EE's presence in broadband services is provided in Chapters 17 and 18.

Assessment of ability to harm fixed-MVNOs other than Virgin Media

Introduction

14.28 As explained above in paragraphs 14.15 and 14.16, for the merged entity to have the ability to harm fixed-MVNOs, it would need to be likely that a refusal to bid or a worsening of its offer would harm the fixed-MVNOs, that is, increase the price ultimately paid by them, and/or cause a degradation in quality.⁴⁴⁹ This ability could arise either because EE would have made the best offer in the counterfactual by a material margin, or because in a scenario where EE did not bid or bid more weakly other wholesalers recognised that competition was weaker and degraded their wholesale offers materially in response.⁴⁵⁰

14.29 The ability of the merged entity to cause harm to one or more fixed-MVNOs depends to a large extent on the level of competition in the market and the scope this allows for one MNO wholesaler to change its bidding behaviour should it have an incentive to do so.

Third parties' views

14.30 Some third parties submitted that options available to MVNOs and competition in the wholesale mobile market were limited; in particular, that the market was:

- highly concentrated, with MVNOs having very few potential hosts;
- dysfunctional, [✂]; and
- 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.

⁴⁴⁹ 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. In the extreme, as discussed further below, foreclosure in the form of a refusal to supply or supply on commercial terms could lead to a fixed-MVNO being unable to supply mobile services at the retail level (ie because there were no other MNOs willing or able to bid for that contract).

⁴⁵⁰ 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.

14.31 Some third parties also submitted that the merged entity would have the ability to harm fixed-MVNOs because the worsening or removal of EE's wholesale offer could:

- cause direct harm since EE was likely in the counterfactual to have been the most attractive host; and/or
- cause indirect harm by causing other MNOs to worsen their own offers relative to the counterfactual.

Ofcom's views

14.32 Ofcom told the CMA that in its 2009 mobile sector assessment and 2012 competition assessment for the 4G auction, it highlighted the importance of national wholesale competition with at least four credible competitors supporting both direct competition at the retail level between vertically integrated providers and competition to supply MVNOs which then compete in the retail market.

14.33 Ofcom noted several factors that are relevant to our assessment:

- MVNOs face some difficulties in switching MNO suppliers which may affect their buyer power;
- usage pricing in wholesale supply agreements may provide MVNOs with different incentives to MNOs in the retail market and may be a cause of MVNOs' focus on lower revenue and lower data usage customers; and
- MNOs may when responding to an MVNO tender consider the risk of substitution of existing customers and revenue as well as the potential for new customers when responding to MVNO tenders, and this may limit the extent to which MNOs would compete to supply MVNOs.

Parties' views

14.34 The parties submitted that the upstream wholesale market was competitive and that MVNOs could play MNOs off against each other to get the most favourable contractual terms. The parties submitted that the market would remain competitive post-merger, in particular given the formal bidding processes undertaken by MVNOs and the strong incentives MNOs would have to bid for MVNO contracts.⁴⁵¹ The parties also submitted that EE could not credibly commit to withdraw from the supply of wholesale mobile

⁴⁵¹ [BT/EE response to issues statement](#), paragraphs. 9.11–9.36.

services to fixed-MVNOs and would therefore continue to act as a constraint on other MNOs' offers, even if it did not bid.

14.35 Moreover the parties told the CMA that pre-merger, [REDACTED]. The parties submitted that there was no change in ability as a result of the merger.

Overview of remainder of section

14.36 We now set out:

- A discussion of the factors that influence an MNO's behaviour in bidding for wholesale mobile contracts with MVNOs and how this might be affected if fixed-mobile bundles become more prevalent.
- Our assessment of the competitive constraint that each MNO is likely to exert in the wholesale mobile market in future (including any other factors, such as capacity constraints, that could affect that MNO's bidding behaviour).
- Our assessment of the potential impact that EE refusing to bid or bidding weakly could have on fixed-MVNOs and how other MNOs may react.
- Our conclusions on the ability of the merged entity to harm fixed-MVNOs. These are split between:
 - (i) conclusions relevant to all strategies; and
 - (ii) conclusions in relation to each foreclosure strategy.

Factors MNOs consider when deciding whether to bid for an MVNO contract

14.37 We examined past bidding behaviour and internal documents of the four MNOs. Based on this, we found that, in deciding whether or not to bid for a wholesale contract, and at what level, MNOs may take into account a number of short- and longer-term factors:

- **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 relation to the work involved (for example, a joining MVNO may necessitate complex technical work and internal resources that are incompatible with existing projects) and

available network capacity (for example, whether the additional demand could result in congestion at some cell sites).⁴⁵²

- **strategic considerations**, which arise because any MVNO that offers its services on the retail mobile market will do so to some extent in competition with the MNO that 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.⁴⁵³ In assessing the cost/benefit of hosting, an MNO may take into account:
 - the level of overlap between the customers targeted by the MNO and MVNO and so the likely extent to which the MVNO will win customers at the MNOs' expense;⁴⁵⁴ and
 - the likelihood that the MVNO will obtain wholesale services on similar terms from another wholesaler, in which case the MVNO will win customers at the MNOs' expense whether or not the MNO chooses to bid for the wholesale contract. The better the offer that the rival MNOs would make, the more customers the MNO would lose in any case, and so the stronger its incentive to bid to offset these losses by earning wholesale margin.

14.38 In some cases, certain MVNOs may be more attractive to an MNO, because they allow it to target customer segments that the MNO's core brand is not as effective at reaching. A fixed-MVNO may also have some countervailing buyer power as regards a specific MNO, if that MNO requires wholesale access to an input offered by the fixed-MVNO (eg [X]).

14.39 In relation to fixed-mobile bundles, we note that, if mobile services come to drive a customer's choice of fixed service provider to a significant extent, then:

⁴⁵² MNOs assess, in light of growing demands for data, whether an allocation of capacity to provide wholesale mobile services to MVNOs could affect their ability to provide mobile services to their own retail customers for the duration of the contract. This may have an impact on an individual MNO's willingness or ability to bid for certain contracts.

⁴⁵³ 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. See also Appendix G (Spectrum).

⁴⁵⁴ For example, some third parties submitted that MNOs were less willing to serve MVNOs that compete closely for 'mass-market' customers, as opposed to niche customer segments. Sky, TalkTalk and Virgin Media, as 'mass-market' providers of fixed services, could potentially also be considered as such in the mobile segment. However, all these fixed-MVNOs have current wholesale mobile contracts.

- In its assessment of whether to host a fixed-MVNO, an MNO that sells fixed services will take into account its expected retail margin across both fixed and mobile products and the extent to which:
 - (i) customers switching to the MNO for its mobile services also choose to switch their fixed services to that MNO; and
 - (ii) customers switching away from the MNO to another supplier also switch their fixed services;⁴⁵⁵
- These effects could make such an MNO less willing to host a fixed-MVNO, unless the MVNO could obtain similar terms from another MNO anyway.
- Conversely, an MNO that does not sell fixed services, or has only a small share in this market, could gain a greater incentive to bid for a fixed-MNO's wholesale contract, because it will otherwise not earn any revenue (wholesale or retail) from consumers who take fixed-mobile bundles.

14.40 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 if a better price was available by purchasing the services separately, 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:

- launching or 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.

14.41 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.

⁴⁵⁵ Other considerations (wholesale profits and whether another MNO would serve the fixed-MVNO on similar terms) would remain the same. There may be relevant less direct effects: for example, if the quality of the fixed-MVNO's mobile service affects its reputation generally and the attractiveness of its fixed services specifically.

- 14.42 We discuss how these factors might affect each MNO's bidding behaviour, including where fixed-mobile bundles become prevalent, in our assessment of each MNO below.

Competitive constraint exercised by each MNO

- 14.43 We assessed the activity of each MNO in the market pre-merger, including its success at winning fixed-MVNO contracts, third party perceptions of that MNO and submissions regarding an MNO's capacity. We also assessed how that MNO's approach to the market might change in a post-merger scenario where fixed-mobile bundles became more prevalent. For more detail on each MNO, see the Annex to Appendix I.

EE

- 14.44 [REDACTED] 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. [REDACTED]
- 14.45 Based on submissions from MVNOs, we found that pre-merger, 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 [REDACTED]
- 14.46 We concluded 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. We found that [REDACTED].

Telefónica

- 14.47 Pre-merger, Telefónica was invited to bid for the tenders of Virgin Media, BT, Sky and TalkTalk. Telefónica engaged with all these processes to an extent, [REDACTED], and was successful in winning two of these contracts (Sky and TalkTalk).
- 14.48 Telefónica (which provides some fixed services to businesses) is a mobile-only operator at the consumer retail level. In a scenario where fixed-mobile bundles became more prevalent, Telefónica, as a mobile-only supplier, would lose retail revenues unless it either developed a strong fixed offering of its own, or generated wholesale revenue from fixed-mobile bundle sales by another operator. Currently it has chosen to remain a mobile-only supplier, having sold its consumer base to Sky in 2013, and (as described in its internal documents) to 'hedge' against the growth of fixed-mobile bundles

by hosting two fixed-MVNOs. Therefore, it would continue to have an incentive to provide wholesale mobile services to fixed providers the more prevalent fixed-mobile bundles become and to continue to offer wholesale terms that allowed those providers to remain competitive against the merged entity in the downstream market. Even if Telefónica became the only credible supplier of wholesale mobile services, its ability to increase substantially the wholesale prices it charges to fixed-MVNOs may be tempered by an incentive to structure charges in such a way that its hosted fixed-MVNOs could still compete effectively for fixed-mobile bundles.

14.49 Telefónica submitted [REDACTED]. We noted that:

- [REDACTED] have a contractual right to service from Telefónica until [REDACTED] (with [REDACTED]), under terms at least as good as at present; and
- Virgin Media was [REDACTED]. Telefónica submitted internal documents showing that this approach had been [REDACTED]. We note that Telefónica also [REDACTED], subsequent to the finalisation of Telefónica's contract with Sky.

14.50 Telefónica's [REDACTED] capacity [REDACTED] would be affected by possible investments in spectrum and network improvements. Additional spectrum is becoming available soon through Ofcom's PSSR auction. Telefónica submitted that [REDACTED].

14.51 In other forecasts provided by Telefónica (as set out in Appendix G), the [REDACTED]. Telefónica submitted that its densification target, as reflected in this modelling, was unlikely to [REDACTED]. We note that [REDACTED] average usage on Telefonica's network is currently [REDACTED]. We also note that 700 MHz spectrum will become available by the beginning of 2022, and potentially sooner.⁴⁵⁶

14.52 We note that [REDACTED] and at that point [REDACTED]. This issue is considered further at paragraphs 14.277 to 14.292.

14.53 We also note that [REDACTED] and [REDACTED].

14.54 We found that Telefónica is currently an important competitor in the wholesale mobile market and will continue to be so for at least the duration of its contracts with Sky and TalkTalk.

Vodafone

14.55 Vodafone was invited to bid for the tenders of [REDACTED] TalkTalk [REDACTED].

⁴⁵⁶ Ofcom (2014), [Decision to make the 700 MHz band available for mobile data - statement](#).

- 14.56 Third parties suggested that Vodafone had publicly expressed a lack of willingness to supply MVNO services. TalkTalk told the CMA that it considered that Vodafone was not a significant competitive supplier and that pre-merger it was attempting to engineer the withdrawal of others from the market (within the bounds of competition law). Vodafone strongly refuted any claims regarding a withdrawal from the market and/or that it was attempting to engineer the withdrawal of others. Post-merger, should this be Vodafone's strategy, it could potentially be enhanced by an express refusal by EE to bid. However, 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. We note Vodafone's public statements that it remains a willing wholesaler, that Vodafone maintains an MVNO bidding team and has participated in a number of recent tenders and discussions (which can be resource-intensive).
- 14.57 Vodafone told the CMA that it was and remains keen to agree commercial terms with Virgin Media to host them on the Vodafone network [X].
- 14.58 In a scenario where fixed-mobile bundles grow in prevalence (in particular, through cross-selling to a fixed base), 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. 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:
- it appears that cross-selling mobile to fixed customers may be a stronger driver of fixed-mobile bundles than vice versa;⁴⁵⁷ and
 - [X]⁴⁵⁸ This supports the view that mobile (where Vodafone is a strong competitor) would not be a strong driver of fixed services. We note that EE has been serving fixed-MVNOs while present in fixed services with a 3% share of supply in broadband.⁴⁵⁹
- 14.59 Therefore, we found that Vodafone would be likely to maintain a presence in providing wholesale services to fixed-MVNOs, although it was not possible to conclude on whether it would be a stronger or weaker competitor than in the fixed-MVNO bidding exercises that took place pre-merger.

⁴⁵⁷ See paragraph 14.153 and Appendix H.

⁴⁵⁸ We note that the growth of Vodafone's fixed business may tend to reduce its incentive to serve fixed-MVNOs relative to a situation in which it did not have such a business. However, we consider that a growth in the importance of fixed-mobile bundles would tend overall to increase its incentive to do so, given its own small expected market share.

⁴⁵⁹ Ofcom (2014), *The Communications Market Report*.

H3G

- 14.60 We found that pre-merger, H3G had exercised a competitive constraint in the market, [REDACTED]. H3G does not have a wholesale contract with Sky, TalkTalk or Virgin Media. H3G has recently won a tender for the Dixons Carphone wholesale mobile contract.⁴⁶⁰
- 14.61 H3G has been invited to bid for a number of contracts, including with fixed-MVNOs. [REDACTED]
- 14.62 H3G told us that [REDACTED]. In a scenario where EE refused to bid, H3G could be incentivised to bid more often and therefore be a stronger wholesale competitor than pre-merger.
- 14.63 In addition, 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 potential direct presence) in relation to fixed-mobile bundles by engaging competitively to win business with at least one fixed-MVNO. [REDACTED]
- 14.64 H3G submitted that it was facing capacity constraints and [REDACTED]. We noted that the extent of forecast congestion depends on how congestion is defined (in terms of acceptable speeds); on how much spectrum is assumed to be purchased; and what network investments are forecast.
- 14.65 In respect of acceptable speeds, H3G provided congestion forecasts based on a [REDACTED]. We considered that this is potentially relevant in future as a minimum speed required for individual users of, for example, high definition video, but may overestimate the average speed necessary at busy sites, and therefore the impact of forecast congestion.
- 14.66 In relation to spectrum, we note that H3G's share of mobile spectrum holdings is already higher than its market share of subscribers [REDACTED]⁴⁶¹ [REDACTED]. In November 2014, Ofcom set out plans to release the 700 MHz band for mobile broadband. The objective is to make this happen by the start of 2022, and possibly up to two years sooner. Ofcom is also exploring the possibility of releasing the 700 MHz band for mobile use on a region-by-region basis as it becomes available. This means that to the extent that they arise, H3G has opportunities to purchase new spectrum to relieve any capacity constraints,

⁴⁶⁰ H3G submitted that [REDACTED].

⁴⁶¹ We note that to an extent the purchase of more spectrum by H3G could make it more difficult for Telefónica to ease potential capacity concerns, although the lot sizes mean that it is possible in principle for each to purchase some 2.3 GHz spectrum.

particularly from 2022 onwards when 700 MHz spectrum will be available, as well as 3.4 GHz being likely to be supported by a large proportion of devices.

- 14.67 H3G submitted that in terms of network investments, [REDACTED]. However [REDACTED].
- 14.68 [REDACTED] It may [REDACTED] to an extent be able, while remaining competitive with other operators, to further alleviate any constraints through demand management.
- 14.69 We found that, in a scenario where the merged entity chose not to bid, or weakened its bid, for fixed-MVNO contracts, then H3G would continue to exert some constraint on the terms that these MVNOs ultimately received.
- 14.70 We noted H3G's submissions that it will face capacity constraints in the coming years and that [REDACTED]. We note that, to the extent that those constraints affect its competitiveness at the retail or wholesale level, it would have strong incentives to mitigate this, including by acquiring further spectrum (in addition to that reflected in the congestion forecasts it provided to us) and there will be opportunities to do so over the next 5 years.
- 14.71 We concluded that, on balance, to the extent that capacity constraints arose, H3G could take a number of actions to mitigate those constraints and therefore that, as a minimum, it would continue to exercise a similar competitive constraint in the wholesale mobile market as it had pre-merger. As discussed above, to the extent that fixed-mobile bundles did become prevalent, H3G, as a mobile-only MNO, may face greater incentives to bid for future contracts with fixed-MVNOs. In such a scenario, it could be a greater constraint than it had been in the past.

Our assessment of the potential impact of the merged entity refusing to bid or bidding weakly and how the other MNOs may react

- 14.72 For each fixed-MVNO contract that is put out to tender, the merged entity may choose not to bid or to bid more weakly than EE in the counterfactual. However, this would only harm fixed-MVNOs if by doing so it could degrade the terms received by fixed-MVNOs. This depends on (a) whether other MNOs would offer similar or better terms than EE, and (b) whether other MNOs would react to EE's behaviour.
- 14.73 As a preliminary point, in the counterfactual, as in some cases pre-merger, EE may not bid for some contracts tendered by fixed-MVNOs and would continue to balance a number of factors (as explained in paragraphs 14.37 to 14.41 above) in deciding which contracts to bid for and how strongly to bid. It is therefore possible that, for any given contract with a fixed-MVNO, the decision by the merged entity not to bid (or to bid only up to a particular level) would be the same decision as EE would have made in the

counterfactual. In that case, any harm that the merged entity's bidding behaviour might cause would not be merger specific. However, it is not possible to determine which (if any) contracts with fixed-MVNOs EE would have bid for or the precise levels at which EE would have bid.

- 14.74 In assessing the relative importance of the merged entity and other MNOs in the wholesale mobile market, we attempted to assess how large the gap could be between the terms that fixed-MVNOs would receive in the counterfactual and under a foreclosure strategy, initially assuming that other MNOs' post-merger behaviour in the wholesale mobile market was the same as pre-merger.
- 14.75 We reviewed internal documents to assess how close to one another on price and non-price factors the bids received in recent tenders had been.⁴⁶² We observed that:
- [REDACTED]
 - BT's first and second-placed bidders [REDACTED].
 - Sky [REDACTED] received [REDACTED].
 - [REDACTED] Comparing the prices for calls and data (including 4G) in TalkTalk's contract suggest that [REDACTED]. TalkTalk also secured terms allowing it to roll out its own small cell network, [REDACTED].
- 14.76 We note that, pre-merger, the price variation between the winning and second-placed bids was as small as 2% (and [REDACTED]). The extent of variation in non-price terms including quality was more difficult to assess. For more detail see Appendix J. [REDACTED] BT submitted that its two first placed bidders were [REDACTED]. Virgin Media provided us with information that its two first placed bidders were very close to one another overall in terms of the rates offered. [REDACTED] Sky submitted that [REDACTED].
- 14.77 There is a limited extent to which the outcomes of these tenders can be used as a predictor of future bidding processes (given the number of factors that influence an MNO's approach to bidding for a particular fixed-MVNO). However, this evidence shows that pre-merger the variation in the terms that the fixed-MVNO secured as compared to the terms offered by the second-placed bidder appeared to be limited. This suggests that whilst there could be some scope for the merged entity to worsen the terms received by fixed-MVNOs (either by not bidding or bidding weakly), this may be limited. Given

⁴⁶² See Appendix I for more detail

the very small dataset available of previous bids [REDACTED] it was not possible to quantify the scale of harm that a change in the merged entity's behaviour could cause. However, this evidence did not, by itself, suggest that, should other MNOs' strategies not be affected, the merged entity would have the ability to cause a substantial worsening of the terms received by fixed-MVNOs.

14.78 We also noted that, in general, EE would in the counterfactual have the incentive to maximise its wholesale profits, subject to the risk of losing the contract if its bid were not sufficiently competitive, by aiming for a bid that is close to, but better than, its rivals'.⁴⁶³ This means that the scope for the merged entity to cause harm by changing its bidding behaviour is limited in a scenario where other MNOs do not change their bidding behaviour post-merger, because MVNOs would be likely to be able to get from a rival MNO a similar offer to that offered by EE in the counterfactual.

14.79 We therefore considered whether, should the merged entity not bid, or bid weakly, other operators would be likely to change their own bids in response. This could increase the scale of potential harm that the merged entity could cause. We received conflicting submissions from the parties and third parties about what recent tenders can tell us about the scale of this possible effect.

14.80 The parties submitted that:

[REDACTED]

14.81 TalkTalk submitted that [REDACTED].

14.82 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 [...] [REDACTED]

14.83 In general, the loss or weakening of a bid from the merged entity could reduce competition in a way that would make the fixed-MVNO worse off overall (through the worsening of some aspects of quality or a higher price).

⁴⁶³ EE does not have certainty over other MNOs' bids and so may sometimes make substantially better bids than others, but we would not expect it to do so systematically. We would also expect the same behaviour from other MNOs.

However, the impact on the offer received by fixed-MVNO's might be mitigated by:

- (a) the fixed-MVNOs' control over the structure of the tender process, if the MVNO can convince one bidder that it has another strong bid;
- (b) related to the above, the presence and bidding strategy of MNOs other than EE (as already discussed); and
- (c) whether other MNOs find it credible that the merged entity would not bid (or would bid weakly), so that this affects their own bidding behaviour.

14.84 We therefore assessed the credibility of a foreclosure strategy involving not bidding or bidding weakly.

Credible commitment not to bid or bid more weakly

14.85 As set out in our guidelines, in evaluating the ability of the merged firm to engage in total input foreclosure, the CMA may assess how easily the merged firm can commit not to re-enter the input market, for example by adopting an input technology that is incompatible with the production techniques of rival manufacturers of the final product.⁴⁶⁴ We also use the language of 'credibility' to assess the potential impact on the market of partial foreclosure (ie caused by the merged entity either expressly signalling its intention to bid more weakly or other MNOs perceiving the merged entity as a weaker player).

14.86 We assessed whether the merged entity could credibly commit to behave in particular ways. In practice, this meant assessing whether, given the nature of the wholesale mobile market, it would be credible to other operators (because of public statements by the merged entity, or observed or expected changes in the merged entity's behaviour) that the merged entity would either:

- (a) not bid to supply wholesale mobile services to particular fixed-MVNOs;
or
- (b) bid more weakly than EE in the counterfactual to supply wholesale mobile services to particular fixed-MVNOs.

⁴⁶⁴ [Merger Assessment Guidelines](#), paragraph 5.6.13.

- *Credibility of a commitment not to bid*

14.87 Sky told the CMA that it anticipated that EE could credibly commit to not bidding for new MVNO contracts, particularly for fixed-MVNOs, and that should the merged entity have the incentive to not bid this would be apparent to other MNOs and therefore credible, particularly as it would be shown through repeated tenders. Sky highlighted Telefónica's statement to the CMA that BT may decide not to give wholesale access to fixed-MVNOs⁴⁶⁵ and said that it was already clear to the MNOs that BT-EE would have reduced incentives to bid for fixed-MVNO contracts post-merger.

14.88 TalkTalk also submitted [REDACTED].

14.89 Similarly, Virgin Media submitted that:

All rational market participants (including the remaining MNOs) will act on the basis that the merged entity's incentives to supply have changed. In particular, any attempt by an MVNO to portray the merged entity as bidding as aggressively as a stand-alone EE would be ineffective because the remaining MNOs will rationally expect less competitive bidding by the merged entity (based on the facts available on the transaction), and will re-calibrate their bids accordingly.⁴⁶⁶

14.90 The parties submitted that the merged entity would not be able to credibly commit not to bid for fixed-MVNO wholesale contracts. In particular, the parties submitted that:

- The main assets used for the supply of wholesale mobile services were the same as those used by EE for the supply of its retail mobile services (in particular EE's radio access network). The parties submitted that the merged entity would retain the capability to bid for wholesale mobile contracts on a competitive basis, and other MNOs would know this.
- Contracts for wholesale mobile services were, furthermore, negotiated by MNOs with no transparency of rival bids beyond that communicated by the procuring MVNO. The parties argued that this lack of visibility, and MVNOs' control of the bidding process, would prevent rival MNOs from

⁴⁶⁵ 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.

⁴⁶⁶ Virgin Media [response to provisional findings](#), paragraph 4.23.

detecting any deviation from a commitment to withhold MVNO access by the merged entity until after it would have won the relevant contract. [§]

- Without such a credible commitment, other MNOs would continue to view the merged entity as a competitive constraint, and would therefore bid for fixed-MVNOs' contracts on the same competitive terms as pre-merger. The parties submitted that this in itself was sufficient to conclude that a foreclosure strategy by the merged entity would not lead to worse outcomes for fixed-MVNOs.

14.91 In assessing credibility of refusal to supply, we note that, even if the merged entity attempted to totally withdraw from the supply of wholesale mobile services to 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. As explained above, we did not find that the merged entity's incentives to supply mobile-only MVNOs were likely to change relative to the counterfactual. As a result, even if the merged entity was to make statements that it intended to withdraw from supplying fixed-MVNOs, or not to bid for particular fixed-MVNO contracts, it would be able to re-enter at any time.

14.92 Given that pre-merger and in the counterfactual there would remain a degree of uncertainty as to each MNO's bidding behaviour in the wholesale mobile market, the extent to which a statement that the merged entity intended to withdraw entirely from supplying fixed-MVNOs would be considered entirely credible by rival MNOs is questionable. 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.
- On the other hand, even in circumstances where the merged entity did not have an incentive to change its bidding strategy, the merged entity may have reasons to underplay its presence in the market whilst nevertheless entering into negotiations with some fixed-MVNOs, as this could result in a better deal for the merged entity than it would have achieved if it had been visibly competing. Other MNOs would anticipate this as a possibility, and therefore we would expect them to be sceptical about the credibility of such statements, thus weakening their efficacy. For example, EE told the CMA [§].

- The small number of large fixed-MVNO deals would provide little opportunity for the merged entity to build credibility through repeated behaviour.
- Rivals keen to win the contract would therefore take a material risk if they were to rely on such a commitment, since it would risk them losing valuable contracts, which are few in number.

14.93 If a commitment not to bid is not considered credible by one or more of the other MNOs, this will limit the potential effect that such a strategy could have on the terms that those MNOs are willing to offer. Even if the merged entity itself does not bid, the nature of the bidding process may make it difficult for rival MNOs to verify that it did not bid and so its perceived presence may continue to constrain other bidding MNOs. For example, we received evidence that pre-merger MNOs were unable to verify which other MNOs were participating in a bidding process, the level of a given MNO's bid or the details of the successful bid. We also found [X]. Therefore, such a strategy may not lead to other fixed-MVNOs receiving less competitive terms than they would otherwise have received, unless the strategy is credible to other MNOs. This in turn may depend on other MNOs' understanding of the merged entity's incentives, discussed later in this chapter.

- *Credibility of a commitment to bid weakly*

14.94 It is a possibility that rival MNOs might in a general sense believe that the merged entity might have less interest or less of a focus on the wholesale mobile market (for example because of a belief that it will focus on sales of its own fixed-mobile bundles). However, once the merged entity bids for a contract it is likely that rival MNOs will interpret this to mean that the merged entity is seeking to win that contract. In such a scenario, rival MNOs that also seek to win the contract will be cautious in bidding on worse terms than they might otherwise have offered. This is particularly the case given the lack of transparency of each MNO's bid in any given bidding scenario.

14.95 Specifically, a commitment to bid weakly (ie offering terms to MNOs at higher prices or at lower quality than EE would have offered in the counterfactual) is likely to be less credible (in the sense that rivals would change their own bidding strategies in response) than a commitment not to bid, since:

- Insofar as credibility depends on signalling by the merged entity:
 - (i) It would be more difficult to signal the nature and extent of the weakened bid, than it would be to signal an intention not to bid at all,

although it is possible to envisage signals such as publicly stating an intention not to provide specific technology to MVNOs (or to provide it only to its own customers). If MNOs expect the merged entity to bid 'more weakly', but do not know how that may manifest itself (eg how pricing terms may be adjusted if certain technology is withheld), they will be cautious in adjusting their own bidding strategies.

- (ii) Rivals will be aware that the merged entity may, following its initial bid, improve that offer within the period over which a given contract negotiation takes place. Therefore, even if it does initially bid weakly, and is able directly or indirectly to communicate this to rival bidders, the initial bid is unlikely to be seen by rivals as its best and final offer.
- Insofar as credibility depends on rival MNOs perceiving a change in the merged entity's incentives compared to EE's incentives pre-merger:
 - (i) As noted in paragraphs 14.37 to 14.41 above, MNOs balance a number of factors pre-merger in deciding which contracts to bid for and how strongly to bid. For any given contract with a fixed-MVNO, some MNOs may bid strongly, some weakly, and some not at all, and this will depend on when the contract arises, what other contracts that MNO has with fixed-MVNOs or is in the process of negotiating and other factors such as an MNO's internal resource constraints and any capacity concerns. It would be very challenging for rival MNOs, absent explicit signalling, to perceive with any precision the extent to which the merger would alter the merged entity's balancing exercise for a given fixed-MVNO (relative to EE in the counterfactual).
 - (ii) Pre-merger, rival MNOs would not have been aware of the precise terms of EE's winning bids (eg for Virgin Media or BT), or what EE's optimal bidding strategy was for those or any other fixed-MVNO contracts. Rival MNOs would therefore not have a clear baseline to compare the merged entity's behaviour to that of EE's.
 - (iii) In most (if not all) bidding rounds, one MNO cannot see the bid of another MNO and must rely on the details of that bid being relayed to it by the fixed-MVNO. Even if an initial bid by the merged entity was weak, the fixed-MVNO would have no incentive to relay the precise details of that bid to other competing MNOs.
 - (iv) Notwithstanding the above, over time and with the experience of multiple contracting rounds in which an MNO bids against the

merged entity, it may be possible for that MNO to build a clearer picture of the merged entity's bidding strategy. However, given that wholesale mobile contracts are typically long term and there are few major fixed-MVNOs, there are limited opportunities over a long period of time for MNOs to develop this knowledge. It is also unclear how useful knowledge of the outcome of a previous round (to the extent that a rival MNO could obtain it) would be at the next contract review or renewal (typically multiple years apart).

14.96 In light of the above we concluded that post-merger:

- in a scenario where the merged entity had the incentive not to bid and acted upon it, this would have some credibility (although other MNOs may still be cautious), raising the possibility that rival MNOs might materially change their bidding strategies (subject to the constraints imposed by competing MNOs); and
- in a scenario where the merged entity had the incentive to weaken its bid (relative to EE in the counterfactual) and acted upon it, and/or was perceived by rivals to have different incentives to EE, but still bid for contracts with fixed-MVNOs, it would be difficult to signal (or for rivals to perceive) the overall strength of a bid and to commit not to strengthen it in subsequent stages of the tender. We note that the impact of the merged entity bidding weakly on the bidding behaviour of other MNOs could be increased if they had confidence that the merged entity's incentives to supply wholesale mobile services to fixed-MVNOs had changed (relative to EE in the counterfactual). However, as we discuss further below, the effect of the merger on incentives is uncertain and therefore we believe that other MNOs would be cautious in changing their bidding strategies as a result of the merger.

Assessment and conclusions on ability to cause harm, that relate to all foreclosure strategies

14.97 We note submissions that some MNOs may experience capacity constraints in the future and that, in past bidding processes, particular MNOs had not entered certain tenders. We nevertheless thought that these MNOs would continue to be perceived as a competitive constraint in the future, because of:

- actions already underway to mitigate capacity concerns and the opportunities available to further mitigate such concerns, including through upcoming spectrum auctions;

- the likelihood that, should fixed-mobile bundles grow in importance (ie the scenario where the merged entity's incentives could change), MNOs without substantial shares in the fixed market would have increased incentives to serve fixed-MVNOs and to structure their wholesale offer in a way that enabled their fixed-MVNOs to be competitive at the retail level;⁴⁶⁷ and
- the likely increase in the attractiveness to MNOs of Sky and TalkTalk following their expected increase in customers, which would mean that these MVNOs represent higher wholesale revenues, with more certainty, than at their previous contract.

14.98 While there is therefore some uncertainty about the behaviour of each of the rival MNOs in future tendering exercises, we expect that post-merger, in a scenario where the merged entity pursues a strategy of refusing to supply or supplying weakly, Vodafone, Telefónica and H3G would in the round continue to exert a significant competitive constraint on the merged entity (and each other). This is based upon their participation in previous tenders and discussions with MVNOs, and our review of internal documents. This constraint would limit the scale of any harm that the merged entity may be able to cause to a fixed-MVNO through its approach to bidding for new contracts.

Assessment and conclusions, in relation to each foreclosure strategy, on ability to harm fixed-MVNOs other than Virgin Media

14.99 In light of the above, we set out below our further assessment of the merged entity's ability to harm fixed-MVNOs through each foreclosure strategy.

Ability to cause one or more fixed-MVNOs to exit the retail mobile market through refusal to bid

14.100 We note that [X]. In relation to [X], we note that this is [X] years in the future and therefore is subject to considerable uncertainty about how the wholesale and retail mobile markets might develop (both in relation to the counterfactual and post-merger). However, based on the evidence we have assessed, we found it unlikely that a refusal to bid on the part of EE could cause either to exit because:

- [X]

⁴⁶⁷ See paragraphs 14.39 to 14.42 generally and paragraphs 14.48 (Telefónica), 14.58 (Vodafone) and 14.63 (H3G).

- in a scenario where fixed-mobile bundles become prevalent – ie the scenario where the merger could change the merged entity’s incentives – fixed-MVNOs such as Sky and TalkTalk could become more attractive to MNOs without a substantial fixed offering of their own, as a way of gaining or retaining, at least on a wholesale basis, customers who wish to buy bundles;⁴⁶⁸
- [X], when they are next seeking a wholesale contract, Sky and TalkTalk’s customer bases are expected to have increased. This means that they would likely be more attractive to MNOs since they would immediately bring with them a large amount of wholesale revenue, and their cannibalisation of MNOs’ retail customers would already have taken place to a large extent; and
- to the extent that capacity concerns arise in future (which could potentially discourage H3G or Telefónica from bidding [X]), we noted, as set out in paragraphs 14.50 and 14.51 above, that there are actions that can be taken to mitigate those concerns.

14.101 We have focused on Sky and TalkTalk, for reasons summarised in paragraph 13.30, where we noted that other (existing and possible future) fixed-MVNOs, are generally small and so (a) may have options to gain hosting through an MVNA/MVNE rather than directly through an MNO, and (b) are unlikely to test any capacity constraints experienced by MNOs in the short term.

14.102 Overall, we found in relation to fixed-MVNOs other than Virgin Media that while there is uncertainty about the likely capacity and behaviour of each of Vodafone, H3G, and Telefónica, it would be unlikely that all would fail to bid for a fixed-MVNO’s contract, meaning that it would be unlikely that the merged entity could cause a fixed-MVNO to be unable to offer retail mobile services.

Ability to raise the costs of rival fixed-MVNOs’, other than Virgin Media, through refusal to bid

14.103 We assessed whether, by not bidding, the merged entity could raise fixed-MVNOs’ costs or reduce their quality at contract renewal [X].

⁴⁶⁸ This is consistent with what MNOs told us about their incentives. By [X] and, to a greater extent, by [X], TalkTalk and Sky could also have increased their customer base, making them more attractive to either their incumbent host (Telefónica) or others seeking access to an established fixed-mobile customer base.

- 14.104 Our view is that if it were credible to other MNOs that the merged entity would not bid, this will tend to lead to worse prices or lower quality, but the extent of worsening is difficult to quantify: it would depend upon whether EE's bid would have been significantly better than rival bids in the counterfactual, and the extent to which rivals' bidding strategies change.
- 14.105 We found that the scale of price rise (or quality degradation) that the merged entity could cause (by refusing to supply fixed-MVNOs) would likely be constrained to an extent by:
- the competitive constraint imposed in the round by the other three MNOs ([§]); and
 - if fixed-mobile bundles become more prevalent:
 - (i) The presence of at least one MNO that also wants to gain market share in fixed-mobile bundles.
 - (ii) The desirability in general for MNOs with limited fixed offers to offer terms that ensure that fixed-MVNOs they host on their networks are reasonably competitive at the retail level.
- 14.106 In addition, the nature of the tender process for wholesale mobile services (in particular the fact that it is not transparent and MNOs may be unable to verify which other bidders are present) may mitigate the impact of a change in the merged entity's bidding behaviour. When bidding, other MNOs will consider (a) whether the merged entity's alleged withdrawal is credible, and (b) how strongly they expect other MNOs to bid (taking into account their reactions to the merged entity's behaviour). This will inform their own appraisals of their chances of winning for any given level of bid they make. Other things being equal we would expect a claimed withdrawal by the merged entity to have some effect on this appraisal, given that EE appeared a credible bidder pre-merger. However, the size of this effect is highly uncertain. If fixed-MVNOs are attractive to MNOs they would have to gamble that a bidding strategy sufficiently different to be worthwhile in terms of wholesale revenue would not result in them losing the contract in the face of significant uncertainty over other MNOs' strategies.
- 14.107 We therefore concluded that, should the merged entity not bid for future contracts to supply fixed-MVNOs, those MVNOs could face higher wholesale prices (and/or lower quality) from the remaining MNOs. Therefore, the merged entity may have some ability to harm those MVNOs. However, we found that the extent of any price rise (or quality degradation) was uncertain and not possible to quantify and would be limited by the constraint imposed

in the round by the other MNOs. We take this uncertainty into account in our assessment of the merged entity's incentives to pursue this strategy.

Ability to raise rival fixed-MVNOs' costs through bidding weakly

14.108 Some third parties submitted that the merged entity might bid more weakly than EE in the counterfactual, and that this could cause a worsening of the terms received by fixed-MVNOs.

14.109 The merged entity has the ability to choose the level at which it bids for a contract with a given fixed-MVNO and this decision would, as in the counterfactual, be influenced by a number of factors that will affect its approach to bidding on a case-by-case basis. However, bidding weakly would only amount to an ability to harm that fixed-MVNO if by choosing a less competitive level (than EE) it could degrade the terms received by fixed-MVNOs, either:

- directly if the merged entity bid weakly and still won the contract; or
- indirectly if the merged entity bid weakly and lost the contract but the winning offer was nonetheless worse than would have been received by the fixed-MVNO in the counterfactual.

14.110 In assessing the scope for the merged entity to weaken its bid (relative to EE in the counterfactual), but still win the contract, the following factors are relevant:

- There are three other potential bidders for future fixed-MVNO contracts ([X]).
- [X] although the fixed-MVNOs submitted that EE was a strong competitor, it is not clear that in the counterfactual it would necessarily have been the strongest bidder for any given contract.
- In some cases, there appeared to be relatively little difference between the best and second best bids (see paragraph 14.76, and Appendix [J1] for more detail).
- In the counterfactual EE would have the incentive to maximise its wholesale profits, subject to the risk of losing the contract if its bid were too expensive. This means that in general, EE would have an incentive to aim for a bid that is close to, but better than, its rivals' – as has been

seen above.⁴⁶⁹ There would thus only be a limited degree to which the merged entity could ‘fine-tune’ its bid so that it could still win a bid but on worse terms, given that the merged entity will not be aware pre-tender which other MNOs will bid for the fixed-MVNO in question, or indeed what terms these other MNOs will offer.

14.111 We therefore concluded that in the scenario where other operators did not change their bids as a result of the merger, the extent to which the merged entity could harm the fixed-MVNO by submitting a weaker bid would be limited by the constraint imposed in the round by the other MNOs. It would be further limited in a scenario where the merged entity wanted to win the contract (and so was reluctant to substantially reduce its chances of winning), as we discuss below under incentive (paragraphs 14.185 onwards).

14.112 We therefore assessed whether other operators might weaken their own bids in response to a perception that the merged entity had different incentives from EE and would be bidding more weakly. We found it unlikely that any such weakening would be material given that:

- As explained in paragraphs 14.94 to 14.96 above, it would be difficult for the merged entity to signal the overall level of its weakened bid or for that signalling to be credible. The remaining MNOs would face considerable uncertainty over whether the merged entity would have substantially changed incentives and choose to weaken its bids. We discuss the extent to which the merged entity’s incentives may change (relative to EE) from paragraph 14.122 below.
- Each MNO would face two potential MNO competitors in addition to the merged entity and would face further uncertainty over whether and by how much those MNOs might alter their own bidding strategies, which would reduce its incentives to weaken its own bid, even if it were certain that the merged entity had chosen to weaken its bids.
- These uncertainties would increase the expected cost, and risk, to MNOs of weakening their own bids – since they would have the goal of winning, rather than helping the merged entity to foreclose fixed-MVNOs – and make such a weakening less likely.

⁴⁶⁹ EE does not have certainty over other MNOs’ bids and so may sometimes make substantially better bids than others, but we would not expect it to do so systematically. We would also expect the same behaviour from other MNOs.

- 14.113 The scale of any price rise or quality degradation as a result of bidding weakly will be no more than that caused by a refusal to supply and likely less. A weakened bid from the merged entity would be of greater value than no bid at all, since it would increase the number of MNOs bidding for a given contract and either enable that MVNO to gain a contract with the merged entity or use the merged entity's bid as leverage to achieve better terms with another MNO. The uncertainties around the credibility and extent of a weakened bid would also lessen the impact it could have on other MNOs' bidding strategies (as compared to a refusal to bid).
- 14.114 We therefore concluded that the merged entity could by bidding weakly cause some harm to fixed-MVNOs but the scope was uncertain and not possible to quantify and would be limited by the constraint imposed, in the round, by the other MNOs. However, it would be no greater than in the case of a refusal to supply (and likely less so). We take this uncertainty about the extent of harm into account in our assessment of the merged entity's incentives to pursue this strategy, where we also consider the likely extent to which the merged entity would be prepared to weaken its bid, taking into account whether it is willing to risk losing a contract.

Ability to bid to win the contract but then worsen the terms in contract

- 14.115 We also assessed the possibility that the merged firm could win a future contract with a fixed-MVNO (ie by bidding as competitively as EE would have done absent the merger) but subsequently try to harm the fixed-MVNO within the contract. For example, 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. [✂]
- 14.116 The ability to pursue this strategy is likely to be the same for the merged entity as for EE in the counterfactual, although the gain from harming a hosted MVNO may be increased, if fixed-mobile bundles become more prevalent and a strong link develops between fixed and mobile services (ie such that mobile comes to drive a customer's choice of fixed service), as we discuss from paragraph 14.122.
- 14.117 All MVNOs compete with their host MNOs to some extent, and so will need to carefully consider the extent to which the terms on which they agree to purchase wholesale inputs give them sufficient protection. Sky, Virgin Media and TalkTalk are large firms with significant commercial experience, and have a long history of purchasing wholesale inputs from rivals, including in some cases (pay TV) on unregulated terms. For example:

- Sky and TalkTalk purchase wholesale fixed line phone and broadband inputs from BT on regulated terms;
- 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.

14.118 In some of these examples, firms have launched retail products that are highly dependent on these inputs (such as Sky and TalkTalk's broadband and fixed voice products, and Virgin Media's retail offering of Sky Sports), and which have come to represent large parts of their businesses.

14.119 Fixed-MVNOs may be reluctant to buy wholesale mobile services from a rival in the mobile or other market (or willing to buy only if the terms it offered were 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 may tend to reduce the value to them of any given offer from the merged entity, and hence be equivalent to a weakening of the merged entity's bid which could lead the fixed-MVNO to receive a worse offer overall (whether from EE or from rival MNOs).

14.120 We found that the likelihood and extent of harm that fixed-MVNOs could experience in this way would be limited by:

- The fixed-MVNOs seeking contractual protection to the extent possible (although we acknowledge contracts cannot provide for all scenarios). 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. Should the merged entity wish to win the contract (as we expect it generally would – paragraphs 14.186), we would expect it to be willing to include provisions that it would, in effect, behave similarly to EE in the counterfactual.
- The availability of alternative MNOs with offers close to that which EE would have provided in the counterfactual. As noted earlier we considered that in the counterfactual EE would have had an incentive to bid similarly to its rivals (as appears to have been the case [§]). In a scenario where the merged entity continued to bid post-merger, the possibility of the merged entity offering contractual protections to offset perceptions of the risk of post-contract foreclosure (as well as uncertainty over the merged entity's incentive to engage in such foreclosure) will mean that rival MNOs will be unsure of the extent to

which these perceptions cause a 'weakening' of the merged entity's bid, and hence would be unlikely to strongly change their own bidding strategies in response.

14.121 We concluded that the merged entity was unlikely to have the ability to cause significant harm in this way. Should fixed-MVNOs believe that the merged entity would have post-contract incentives to harm them, then if the merged entity were unwilling to provide the necessary contractual protections, it would be unlikely to win the contract and would therefore be unable to engage in the strategy. On the other hand, if the merged entity were able to provide contractual protections sufficient to win the contract,⁴⁷⁰ then material harm is unlikely to arise.

Assessment of incentive to harm fixed-MVNOs other than Virgin Media

14.122 We then assessed the merged entity's incentives:

- not to bid for wholesale mobile contracts for fixed-MVNOs in the future;
- to bid more weakly (than EE in the counterfactual) for wholesale mobile contracts for fixed-MVNOs in the future; and
- to bid to win the contract but then worsen the terms in contract.

14.123 We set out views of third parties and the parties. We then explain our analysis of each foreclosure strategy.

Third parties' views

14.124 TalkTalk told the CMA that it believed that EE's [X] 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 went 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

⁴⁷⁰ Our conclusions in relation to the 'refusal to bid' strategy suggest that the merged entity would have the incentive to do so.

would enable BT to obtain an advantage in the market for quad-play bundles, as the ineffective remaining competition in the wholesale market would lead to other operators paying higher prices.⁴⁷¹

14.126 [REDACTED] [The redaction relates to third parties' concerns that the merged entity may have a stronger incentive to foreclose MVNOs that can also offer fixed-mobile bundles, the effect of which would be to weaken competition in the wholesale mobile market]

14.127 Telefónica told the CMA that some MVNOs, such as Sky or Virgin Media, 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.

Parties' views

14.128 EE told the CMA that it was a willing wholesaler and would remain so post-merger, given that wholesale was an important part of its business. EE said that this was consistent with BT which had historically had a strong focus on its wholesale business.

14.129 The parties submitted that a number of hypothetical future developments would need to occur for the merged entity to have an incentive to pursue a foreclosure strategy and that the evidence suggested that these developments would not emerge during the relevant time period. The parties also submitted that the uncertainty of the cumulative, necessary conditions would prevent the merged entity from pursuing a foreclosure strategy.⁴⁷²

Assessment of incentives not to bid for future contracts with fixed-MVNOs other than Virgin Media

14.130 The merged entity could have an incentive to engage in a strategy involving a refusal to supply if the (risk adjusted) expected gains of doing so were greater than the losses, taking into account both retail and wholesale revenues.

14.131 The gains from refusing to supply depend on:

⁴⁷¹ [TalkTalk initial submission](#)

⁴⁷² [BT/EE response to provisional findings](#).

- 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;
- how much this could harm the fixed-MVNOs at the retail level; and
- how many customers the merged entity could recapture from customers switching away from the fixed-MVNO as a result.

14.132 The consequences of such harm could in principle 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 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 As explained in paragraph 14.37, 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 assessed 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 significantly 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;⁴⁷³ and

⁴⁷³ As discussed above in relation to our approach to assessment.

- 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 substantially stronger supplier of fixed services than was the case for EE.⁴⁷⁴

14.136 We requested from BT and EE internal documents that considered competition in wholesale mobile services, and found no evidence that the merged entity intended to undertake a foreclosure strategy after the merger or that such a strategy would be profitable.

14.137 We 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. If the merged entity did not have the ability to cause a price rise at this level by not bidding, it would not have the incentive to withdraw.⁴⁷⁵

14.138 Our analysis gave us a very wide range for the estimate of the necessary price rise, with the value depending on which combination of assumptions we made. Appendix I presents some example scenarios with necessary price rises from 85% to 240%. The parties and third parties provided their views on the appropriate values for these assumptions, and calculated necessary price rises that ranged from 30% to more than 300%. The parties submitted that the exit of one among four competitors would not be expected to cause such extreme price rises, while third parties submitted that current conditions of wholesale competition were such that EE's exit could cause very large price increases or equivalent quality degradations.

14.139 The lower the necessary price rise, the more likely it is that the merged entity would have the ability to cause it, although it is not clear that even the lowest estimates would necessarily be possible for it to achieve. In our analysis, the necessary price rise was lower:

⁴⁷⁴ 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.

⁴⁷⁵ Sky submitted that this approach was inadequate and that the CMA should instead undertake 'equilibrium analysis' – ie an assessment of what wholesale and retail prices would be under counterfactual and merger scenarios, rather than an assessment of what price rise would be necessary to make not bidding profitable. However, Sky provided no practical suggestions for how such an analysis could be carried out, and we think it would not be practicable or of evidential benefit because it would rely on many more assumptions than our existing approach.

- the more prevalent fixed-mobile bundles were assumed to be;
- the higher the proportion of customers for whom their choice of mobile provider was assumed to strongly influence their choice of fixed provider (and so were assumed not to ‘unbundle’ in response to a price rise or quality degradation in the mobile element);⁴⁷⁶ 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.⁴⁷⁷

14.140 We therefore assessed each of these factors (as set out below, recognising that each is uncertain). Given the number of relevant variables and the considerable uncertainty over many of their values, we were not able to assess within a narrow range the scale of price rise that the merged entity would have to cause to make the strategy profitable. Our assessment of incentives is therefore a qualitative one, taking into account the uncertainty over the extent to which the merged entity could cause harm to fixed-MVNOs, along with evidence of how likely it is that conditions of competition will develop in such a way that less harm would be required for the merged entity to have the incentive to trade off its wholesale mobile business to the advantage of other parts of its business.

14.141 We then assessed separately whether the merged entity could have other strategic incentives to pursue this foreclosure strategy.

14.142 We note that even if the merged entity considered that it could achieve the necessary price rise, so that the gains may exceed the losses from not bidding, 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 fixed-MVNOs and on retail customers downstream. The significant uncertainty around the quantum and timing of any potential benefits to the merged entity would be likely to discourage it from pursuing such a strategy.

⁴⁷⁶ 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.

⁴⁷⁷ 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.

Prevalence of customers buying fixed and mobile services from the same provider

- 14.143 As set out in further detail in Appendix H, 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.⁴⁷⁸
- 14.144 At present, [X]% of Virgin Media's mobile customers also buy fixed services from it, and Virgin Media expects the number of these customers to [X]. Sky forecasts that [X] and TalkTalk forecasts 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.⁴⁷⁹
- 14.145 We received submissions that operators also expect combined and/or converged purchases by businesses to increase over time.⁴⁸⁰
- 14.146 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 [X] its mobile customers,⁴⁸¹ and [X] of TalkTalk's fixed customers also take mobile services, EE already sells, and Telefónica previously sold, both fixed and mobile services, without bundles gaining substantial traction (consistent with the low proportion of customers that buy in this way today).⁴⁸² Telefónica sold its fixed line business to Sky in March 2013, which could suggest that there

⁴⁷⁸ Further information is set out in Appendix H (Fixed-mobile bundles).

⁴⁷⁹ See further Appendix H.

⁴⁸⁰ See further Appendix H.

⁴⁸¹ Although some of these may have been Virgin Mobile customers prior to the rebranding of its fixed line business.

⁴⁸² See further Appendix H.

were no substantial foreseeable gains from bundling fixed and mobile at that time.

- While in 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 has driven uptake in those countries), there are many 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 (which appear to be lower in the UK than in France and Spain) nor the possible future cost savings associated with bundling (which most operators told us would be limited⁴⁸³) would provide substantial incentives for sustaining big discounts in future. 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.⁴⁸⁴
- Bundling fixed and mobile services may in principle allow for product innovations, particularly for business customers. For consumers, while we received submissions that innovations would emerge, those mentioned to us (such as a combined home and mobile voicemail) did not appear to us to provide strong evidence of attractive new propositions that would be facilitated by fixed-mobile bundles.⁴⁸⁵

14.147 We therefore concluded that the number of customers buying fixed and mobile products from the same provider was likely to increase over time, but that there was uncertainty over the drivers of that increase (eg cross-selling as compared to sales of bundles) and the extent to which customers would develop a preference for bundles as compared to purchasing the products on a stand-alone basis.

The extent of unbundling

14.148 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, this change of behaviour is not in itself

⁴⁸³ TalkTalk submitted that in its own case, savings could be achieved through a possible effect of bundling reducing broadband customer churn – see Appendix H

⁴⁸⁴ See further Appendix H.

⁴⁸⁵ See further Appendix H.

enough to affect our assessment of incentives. It would only do so if mobile was a driver of fixed, ie if customers that are buying or considering buying both products from the fixed-MVNO would respond to an increase in the price of the mobile component⁴⁸⁶ 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 mobile purchase has no effect on the decision over what fixed provider to use, then there will be no material merger effect on incentives.

14.149 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. [Suppliers that provide fixed and mobile services did not provide relevant data.]

14.150 In light of the limited evidence of customer behaviour in relation to fixed-mobile bundles, we identified a number 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 the incentive to harm a fixed-MVNO), we assessed whether, in response to an increase in the price of their first choice of purchases (which is a bundle) a customer would be likely to:

- switch all components of their bundle 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, or switching mobile and fixed components to more than one alternative supplier.

14.151 For those customers that purchase a fixed-mobile bundle in future, we identified four 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's SFBB);

⁴⁸⁶ 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.

- their preference for the cheapest price;
- their preference for non-price aspects of a bundle; and
- contractual or administrative hurdles to unbundling.

14.152 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).

14.153 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, perhaps because of the high speeds it offers within its network footprint, [X].⁴⁸⁷
- [X]. By a large margin, Sky is the largest provider of retail pay TV services – 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.
- 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.⁴⁸⁸ 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.

14.154 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 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, the more products that are switched. Given the evidence that price differentiation may

⁴⁸⁷ See Appendix I.

⁴⁸⁸ See Appendix G.

not be strong, we therefore considered whether and why other aspects could lead customers to prefer bundles.

14.155 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.

14.156 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. This may tend to discourage unbundling. However, as set out in Section 11 other products, such as IT services, are also important for businesses' choice of provider so that if a fixed provider offers a good service in this regard, it will make customers less likely to switch their fixed purchase away. 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 expectations of future compelling converged fixed-mobile service offerings.⁴⁸⁹

14.157 The extent of unbundling may also be affected by whether there are contractual or administrative hurdles to doing so. [X] In the current offers of TalkTalk, Virgin Media, EE and BT, for example, any discount⁴⁹⁰ offered applies to the mobile product, meaning that there is no penalty in relation to the fixed product, from switching away for mobile.⁴⁹¹

14.158 We therefore concluded that there were a number of factors that would lead to significant numbers of customers unbundling a fixed-mobile bundle in response to an increase in the price of the mobile element. This would reduce the proportion of customers that would switch their fixed services in response to an increase in the price of their mobile services, in turn reducing the prospect that the strategy would be profitable.

Recapture among those that choose not to unbundle

14.159 Even if a large proportion of customers responded by switching fixed and mobile services to another supplier (ie would not unbundle), the merged

⁴⁸⁹ See Appendix H

⁴⁹⁰ In the case of EE the customer receives additional mobile data allowance.

⁴⁹¹ See Appendix H.

entity would not necessarily capture a sufficient proportion of those customers to make the strategy profitable.

14.160 CPs 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.

14.161 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.

14.162 Given that the fixed-MVNOs currently have wholesale mobile contracts, the earliest that a foreclosure strategy could affect them would be when their contract comes up for either review or renewal. In this respect, we note that Virgin Media's contract with EE ends [REDACTED], [REDACTED]. Therefore, for the period that a fixed-MVNO remains in a contract it negotiated and signed pre-merger, the merged entity cannot harm it and it will remain an alternative option for diverting customers from other fixed-mobile bundles.

14.163 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, [REDACTED].

- *Vodafone*

14.164 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 [REDACTED]. For business customers, the parties' strongest competitor is already Vodafone, which also offers fixed products, and has a [REDACTED]% share in business mobile.

14.165 Vodafone owns a fixed network with which it provides 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.⁴⁹²

14.166 [X]⁴⁹³ 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.

14.167 As noted in our assessment of the merged entity's ability to cause harm to fixed-MVNOs, if fixed-mobile bundles become important and begin to affect retail competition for mobile services, Vodafone may, given its [X], 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.

- *MNOs that don't directly offer fixed services to consumers*

14.168 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 [X]% in business mobile.

14.169 H3G is not currently present in fixed services itself, and serves [X].⁴⁹⁴

14.170 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.

14.171 In such a scenario, Telefónica and/or H3G could potentially choose to provide fixed services directly (perhaps through a merger with an existing 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.

14.172 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 and that would not be affected by the foreclosure

⁴⁹² Ofcom (2014), [Review of the wholesale broadband access markets](#), Table a.6.2.

⁴⁹³ See Appendix H.

⁴⁹⁴ [X]

strategy. This will tend to reduce the proportion of fixed-mobile customers that the merged entity could recapture through a foreclosure strategy (rather than through attractive competitive pricing to the benefit of consumers), and hence reduce its incentive to do so.

Strategic incentives

- 14.173 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.
- 14.174 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, [damage to ability to offer fixed-mobile bundles could reduce the return on investments in fixed infrastructure]
- 14.175 We therefore considered whether the merged entity could adopt a strategy in which the benefits of foreclosure, 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 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 predatory pricing, 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.
- 14.176 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 the merged entity'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, for Virgin Media its broadband service, and for TalkTalk its positioning as a value proposition. 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.
- 14.177 As to damaging investment in other services, [X]. TalkTalk, in a joint venture with Sky and CityFibre, is rolling out a trial FTTH network in York.

Should this be profitable, TalkTalk intends to roll out similar networks in additional areas, covering up to a third of its customer base. [✂]

14.178 However, when these considerations are included in our quantitative analysis of the merged entity's incentive not to bid, the estimate of the wholesale price rise necessary to give the merged entity this incentive remains both substantial and widely differing under different assumptions (about, for example, bundling).⁴⁹⁵ The incorporation of strategic incentives into our analysis did not therefore make a substantive difference to our conclusions.

14.179 For these reasons, and considering the even 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.

Conclusion on incentive to not bid

14.180 We assessed whether it would be profitable for the merged entity to not bid for MVNO contracts, in scenarios where EE in the counterfactual would have done so. This would depend on whether it would be more profitable to not bid than to bid (that is, whether the gains would exceed the losses).

14.181 As set out in our assessment of ability, it is not likely that by refusing to bid EE could cause fixed-MVNOs not to gain a contract (and indeed, this strategy would result in effectively increasing the profits of whichever rival MNO won the contract), but it could cause them to receive worse terms. We recognised that the scale of any price rise (or quality degradation) in several years' time was uncertain (although likely to be limited by the constraint provided in the round by the other MNOs) and that this was an important feature in assessing whether a total foreclosure strategy would be profitable to the merged entity.

14.182 We observed that the price rise necessary to make such a strategy profitable would be lower if:

- fixed-mobile bundles became prevalent;

⁴⁹⁵ See Appendix I.

- mobile services became a major driver of customers' choice of fixed service provider;⁴⁹⁶ and
- the merged entity could recapture a high proportion of those customers lost by the fixed-MVNO that chose to continue purchasing fixed-mobile bundles.

14.183 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 numerous reasons to believe that each and potentially all of the above factors will not arise. In particular:

- While the merged entity may cause harm to fixed-MVNOs by not bidding, the scale of harm is uncertain and likely to be limited by the competitive constraint exercised in the round by the other three MNOs. It is therefore equally uncertain whether the merged entity could cause a substantial degradation in the fixed-MVNO's retail mobile offering so as to cause significant numbers of customers to switch to alternative providers.
- There is also 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 if the merged entity ceases to be a wholesaler, we found that all the fixed-MVNOs would be likely to obtain wholesale mobile contracts. This means that all would be likely to be present in the downstream market, providing fixed-bundles (alongside MNOs that also grow their fixed-mobile retail offering). This would therefore dilute the proportion of customers that the merged entity would recapture from an attempted

⁴⁹⁶ The extent to which a customer purchasing mobile services from a provider would, in response to a price rise or quality degradation in the mobile service, also change their provider of fixed services (either switching them away from foreclosed provider along with mobile, or ruling out that foreclosed provider as a potential provider of fixed services in the future).

partial foreclosure strategy on one or more fixed-MVNOs, and therefore its incentive to engage in a foreclosure strategy.

- 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, and this would tend to further discourage it from not bidding.

14.184 In conclusion, we found that, given the significant uncertainties around the ability of the merged entity to harm a fixed-MVNO's retail offering (and thus its potential gains from foreclosure) and around whether market conditions might change in the foreseeable future in a way which would significantly increase the benefits to the merged entity of a refusal to bid, it was on balance unlikely that the merger would lead to the merged entity engaging in a foreclosure strategy involving a refusal to bid.

Assessment of incentive to bid weakly for new contracts, in order to raise the costs of fixed-MVNOs other than Virgin Media

14.185 As set out in paragraphs 14.108 to 14.114 above, we concluded that the merged entity could by bidding weakly have some potential ability to harm fixed-MVNOs. However, the merger would only be expected to change its behaviour as compared to EE's in the counterfactual if it reduced the costs or increased the benefits associated with such behaviour.

14.186 The most important cost associated with a strategy of weaker bidding would be the increased probability of losing a profitable wholesale contract. We earlier found that the harm the merged entity could inflict by bidding weakly would be less than by not bidding – so that in a scenario where the merged entity lost the bid by weak bidding, it would have incurred the same cost but gained less benefit than if it had not bid. Given our conclusion in relation to incentives not to bid in paragraph 14.184, we found that the merged entity would likely prefer to win the contract rather than inflict harm on the fixed-MVNO by not bidding. Therefore we did not believe that the merged entity would be willing to weaken its bid to an extent that substantially reduced its chances of winning.

14.187 Given our assessment of ability, and in particular the evidence that previous bids were relatively close to each other and that EE in the counterfactual would have the incentive to bid closely to its rivals, we found that the risk of losing the contract is likely to increase sharply as the merged entity offers worse terms relative to EE in the counterfactual.

14.188 A merger effect could however arise if the merged entity gains significantly more than EE would from the fixed-MVNO receiving worse terms. In those circumstances the merged entity could have a greater incentive to bid less competitively than EE would have in the counterfactual.⁴⁹⁷ However, we found that this would be unlikely, for two reasons.

14.189 First, the increased benefits of harming fixed-MVNOs depend on particular market developments occurring in the foreseeable future (including that mobile services become a strong driver of consumers' choice of fixed services).⁴⁹⁸ As already set out in relation to the strategy of refusing to bid, there is considerable uncertainty over the way in which market conditions may change in the foreseeable future, but we found that overall it was not likely that these would change significantly in a way that would materially change the merged entity's incentive to pursue this foreclosure strategy.

14.190 Second, even if this scenario occurred, the opacity of other MNOs' bidding strategies, the presence of the other MNOs (which in the round limited the scale of potential harm), and the consequences of losing the contract suggest that the merged entity would not significantly change its bidding strategy. We found that the harm that it could cause to the fixed-MVNO would be likely to be quickly outweighed by the costs of doing so (ie the increasing chance of losing the contract).

14.191 We therefore concluded that on balance the merger was unlikely to lead to the merged entity substantially worsening its bid, relative to EE in the counterfactual.

Assessment of incentive to win a contract with a fixed-MVNO other than Virgin Media and then foreclose it in contract

14.192 As set out in paragraphs 14.120 and 14.121 above, we found that the ability of the merged entity to foreclose fixed-MVNOs in future contracts was likely to be limited by the presence of alternative MNOs competing for that fixed-

⁴⁹⁷ Formally, for EE, weakening its bid would reduce its chances of winning but increase the profitability if it should win. It would seek to balance these two factors. For the merged entity, there is an additional factor: to the extent that the strength of a mobile offering drives choice of supplier for fixed services, then weakening its bid would also increase the profitability of its fixed services. Therefore, other things equal, the merged entity's optimal bid would be weaker than EE's. This effect will depend on the relative size of its different components (eg if the wholesale mobile market is sufficiently competitive then the probability of winning will fall steeply as the bid is weakened).

⁴⁹⁸ See paragraphs 14.143 to 14.172. For the merged entity to have an incentive to engage in foreclosure through weak bidding, it must be sufficiently confident that: (i) fixed-mobile bundles will become prevalent, (ii) there will be weak unbundling in the face of a price increase, and (iii) there will be high recapture by the merged entity of 'bundle' customers. The latter would require there to be limited competitive pressure from remaining suppliers of fixed-mobile bundles that are not affected by foreclosure. The merged entity would also take into account the level of risk associated with a foreclosure strategy and how it may differ from that associated with following behaviour similar to that which would occur in the counterfactual.

MVNO's business and, related to that, the availability of negotiated contractual protections that would prevent or limit the scope for such in-contract harm. Ultimately we found that material harm within future contracts was unlikely to arise.

14.193 For completeness, we also assessed the merged entity's incentives to pursue this foreclosure strategy. There were a number of factors that made it unlikely that the merged entity would have the incentive to foreclose in this way, because:

- There were likely to be limited (if any) additional merger-specific benefits in pursuing such a strategy. As set out in relation to our conclusions on incentive to refuse to supply, we found that competitive conditions in relation to the supply of fixed-mobile bundles were unlikely to shift in a way which would significantly increase the benefits to the merged entity of harming fixed-MVNOs in this way; and
- such a strategy would involve costs to the merged entity, because such action would reduce its chances of either retaining the fixed-MVNO customer at the end of the relevant contract or hosting other fixed-MVNOs or MVNOs more generally (given the risk of reputational damage to it as a host).

14.194 We concluded that, in light of the above, it was unlikely that the merged entity would have the incentive to seek to foreclose fixed-MVNOs in this way (even if it had the ability to do so).

Assessment of effects of harm to fixed-MVNOs other than Virgin Media

Refusal to bid or bidding weakly

14.195 In relation to a possible foreclosure strategy involving either a refusal to supply or bidding weakly, we found that the merged entity could cause fixed-MVNOs to receive worse terms, although in both cases the scale of potential harm was uncertain and likely to be limited by the constraint imposed in the round by the other three MNOs. However, we found that on balance the merged entity would be unlikely to have sufficient incentive to change its bidding behaviour (relative to EE in the counterfactual).

14.196 Even if the merged entity pursued one or both of these strategies against one or more fixed-MVNOs, despite our view that it would lack the incentive to do so, we note first that since the scale of harm at the wholesale level is uncertain, so too is the downstream effect, and it is not clear that it would be material. These effects at the retail level would be further diluted by

competition from other providers unaffected by the foreclosure strategy (including the other MNOs).

14.197 In relation to the supply of retail mobile, some fixed-MVNOs submitted that they would in the counterfactual be, as sophisticated mass market operators, an important and growing competitive constraint, with Sky and TalkTalk forecasting substantial growth. We examined retail mobile services in detail in Chapter 11. We found that there is strong competition between the four MNOs – themselves sophisticated mass-market operators – and it was unlikely that BT would offer a significant additional constraint in the retail mobile market. In relation to our assessment of the wholesale mobile market, for the same reasons, and especially due to their lack of ‘owner economics’,⁴⁹⁹ the fixed-MVNOs would be likely to provide only relatively weak constraints given the extent of other existing competition.

14.198 We therefore note that the limited, if any, weakening that the merged entity could cause to fixed-MVNOs’ retail mobile offers, if it engaged in a foreclosure strategy, would be unlikely to have a material effect in the retail mobile market, particularly in light of the multiple other providers of those services.

14.199 In relation to fixed-mobile bundles, we found that the most likely scenario is one in which bundles continue to be strongly constrained by the supply of stand-alone fixed and mobile services, in which multiple competitors would remain. We note that, if fixed-mobile bundles do become more prevalent and mobile increasingly drives a customer’s choice of fixed service (which we do not find likely), we would expect that Vodafone, which would be unaffected by any foreclosure strategy, would place some constraint on the merged entity in the supply of bundles, and that mobile-only players such as H3G and Telefónica would have increasing incentives to offer wholesale terms allowing their fixed-MVNO customers to be competitive downstream and/or could potentially choose to enter and expand into the direct supply of bundles for consumers using regulated inputs for fixed lines services.

14.200 We did not therefore believe that a strategy of refusal to bid or weak bidding would have material effects on competition, even if it were to be pursued.

Foreclosure in contract

14.201 In relation to a strategy involving winning a fixed-MVNO’s contract but then foreclosing it in contract, we note that, even if the merged entity had the

⁴⁹⁹ That is, their dependence on a wholesale contract, which implies higher costs per additional customer served, than is the case for MNOs who have higher fixed costs but lower variable costs

ability and incentive to pursue such a strategy (of bidding strongly to win, and then subsequently degrading service), there are a number of reasons why this would not be expected to lead to a substantial effect on competition at the retail level. These are that:

- service factors not covered by the contract would be likely to have more limited effects than terms set out in the contract;
- should some harm occur to fixed-MVNOs, any effects in the retail mobile market would be constrained by the presence of competitors including the four MNOs, and in relation to fixed-mobile bundles there would likely remain fixed-MVNOs not served by the merged entity, MNOs active in the sale of fixed-mobile bundles and constraints from unbundling (ie purchasing the services separately); and
- given the ability of MVNOs to switch provider, such harm would be time limited.

Conclusion on foreclosure of fixed-MVNOs other than Virgin Media

14.202 As set out above, while there is some uncertainty about the future behaviour of each of the rival MNOs, we expect that post-merger they would in the round exert a significant competitive constraint on the merged entity and each other.

14.203 We also found that the merged entity's incentives to engage in a foreclosure strategy in relation to wholesale mobile depended in part on how the sale of fixed-mobile bundles could change in future. Whilst the evidence in general supported the view that fixed-mobile bundles would grow in prevalence, we found it likely that they would continue to be constrained by a consumer's willingness to purchase the two services separately for the foreseeable future.

14.204 In light of these and the other findings and evidence set out above, we concluded that, in relation to fixed-MVNOs (other than Virgin Media):

- Should the merged entity not bid for a future contract with a fixed-MVNO, it would be unlikely to cause that fixed-MVNO to be unable to offer retail mobile services. Although a refusal by the merged entity to bid could cause fixed-MVNOs to face worse terms, the extent of this harm was uncertain and not possible to quantify, and would be limited by the constraint imposed, in the round, by the remaining three MNOs. We found that given the significant uncertainties around the ability of the merged entity to harm fixed-MVNOs by not bidding, and around whether

market conditions would change to increase the benefits to the merged entity of doing so, it was on balance unlikely that the merger would give the merged entity a sufficient incentive to refuse to bid.

- Should the merged entity weaken its bid for a future contract with a fixed-MVNO, the harm it could cause to fixed-MVNOs would be likely to be less than that of a refusal to bid. The scope for harm would again be uncertain and not possible to quantify and would again be limited by the constraint imposed by the other MNOs in the round. We concluded on balance that the merger was unlikely to lead to the merged entity substantially worsening its bid, relative to EE in the counterfactual.
- Should the merged entity seek to win a contract with a fixed-MVNO but then harm the fixed-MVNO in-contract, it would not have the ability to impose material harm – either because of contractual protections or because without such protections the merged entity would not win the contract in the first place.

14.205 In light of these findings, we found it unlikely that the merged entity would pursue a foreclosure strategy against one or more fixed-MVNOs other than Virgin Media. Whilst we recognise the possibility that the conditions of competition could shift to such a degree that foreclosure could be significantly more profitable for the merged entity to pursue (than EE in the counterfactual), on the balance of the evidence available to us, we did not find it more likely than not that this would occur in the foreseeable future.

14.206 Even if the merged entity pursued one or more of these strategies, despite our finding that it would be unlikely (or unable) to do so, the upstream effect would be limited, including because of the constraint imposed in the round from the remaining MNOs at the wholesale level and the constraint that would likely continue to be imposed from standalone fixed and mobile offers at the retail level. We did not therefore believe that these strategies would have material effects on competition, even if they were to be pursued.

14.207 In light of the above and (where relevant) our findings on each of ability and incentive, we concluded that the merger is not likely to lead to foreclosure of fixed-MVNOs other than Virgin Media and thus is not likely to lead to an SLC in one or more markets through this means.

Assessment of foreclosure of Virgin Media

14.208 We assessed the potential impact of the merger on Virgin Media separately because of four factors which together place it in a different position from other fixed-MVNOs:

- (a) EE is Virgin Media's current supplier, which means that the merged entity could, potentially, harm it within contract after the merger is completed.
- (b) EE's position as Virgin Media's current supplier means that it may also have some ability to affect Virgin Media's costs of switching provider (and hence bargaining power with respect to EE) at the end of the current contract. Virgin Media's switching costs could be increased if it had to switch provider before its current transition to full MVNO (mobile transformation project – MTP) is complete, [REDACTED].
- (c) The date at which [REDACTED]. This is relevant because the conditions of both retail and wholesale competition could potentially be different at the time Virgin Media seeks a new contract, from those at the time when TalkTalk and Sky do so.⁵⁰⁰
- (d) Virgin Media is currently the largest MVNO, and should any MNOs expect to be capacity constrained at the time when Virgin Media seeks a new contract, this could reduce their willingness to host it and/or affect the terms they would be willing to offer it.

14.209 We assessed first the possibility of the merged entity worsening Virgin Media's service within its current contract with EE (taking into account EE's contractual obligations). Then we assessed foreclosure strategies in relation to the period after the current contract ends under three headings: exclusion of Virgin Media from mobile services, raising Virgin Media's costs at contract renewal, and worsening Virgin Media's services within possible future contracts.

Worsening Virgin Media's service within contract

14.210 We assessed the ability and incentive for the merged entity to worsen Virgin Media's service within contract.

14.211 In August 2013, EE and Virgin Media entered into an MVNO hosting agreement which has an initial term of [REDACTED]. EE and Virgin Media have also

⁵⁰⁰ [REDACTED]

agreed a framework for the transition of the latter from a thin to a full MVNO, a programme referred to as Mobile Transformation Project (MTP). [REDACTED].

14.212 Virgin Media has submitted a number of concerns relating to a possible worsening of service within this contract, which we assess below.

Ability to harm Virgin Media within contract

14.213 Virgin Media 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 [REDACTED]. In summary, Virgin Media's concerns were that the merged entity may:

- **hinder Virgin Media's transition to full MVNO and therefore increase Virgin Media's costs of switching MNO** – [REDACTED];
- **hinder the launch of 4G services** – [REDACTED];
- **degrade service** – [REDACTED], EE could degrade the service it offers [REDACTED]; and
- **be uncooperative on issues not [REDACTED] in the contract** – [REDACTED].

14.214 Virgin Media's concern was therefore that EE already had the ability to harm it, and that the merger would create or strengthen the incentive to do so.

14.215 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*

14.216 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.

14.217 For Virgin Media to switch provider as a full MVNO, it needs to (a) switch its customers from its current EE hosted (ie thin MVNO) platform to the Virgin Media (ie full MVNO) platform, which requires swapping each customer's SIM card; and then (b) provide an 'over the air' update to all customers to switch them to the new provider's network. Virgin Media's costs of switching provider are potentially higher, the less time it has available to conduct each

step. Should Virgin Media have to switch provider while still a thin MVNO, these switching costs would be higher still.

14.218 [REDACTED] MTP. We therefore assessed:

- (a) [REDACTED] the associated costs [REDACTED]
- (b) whether and by how much EE could increase these costs [REDACTED].

14.219 In relation to current expected timings, EE and Virgin Media provided the following information:

- Virgin Media submitted that the creation of Virgin Media's full MVNO platform was currently expected to be completed in [REDACTED].
- [REDACTED]
- [REDACTED]⁵⁰¹

14.220 [REDACTED]

14.221 Virgin Media submitted that in a scenario where [REDACTED],⁵⁰² [REDACTED].

14.222 From this information we concluded [REDACTED].

14.223 However, Virgin Media raised concerns firstly that EE could [REDACTED] delay the completion of MTP [REDACTED], and secondly that under the contract terms as currently drafted, [REDACTED]. Virgin Media submitted that in combination these factors could mean that [REDACTED]. Virgin Media submitted:

- If Virgin Media is still a light MVNO [REDACTED],⁵⁰³ [REDACTED].⁵⁰⁴
- If a lesser delay occurred [REDACTED].

14.224 Virgin Media raised a further concern that [REDACTED] Virgin Media remains a customer of EE, [REDACTED].

14.225 [REDACTED] its ability to impose higher switching costs also depends on its ability to cause further substantial delays to MTP.

⁵⁰¹ [REDACTED]

⁵⁰² [REDACTED]

⁵⁰³ See Appendix J for a more detailed description of the issue involved in switching host network as a light or full MVNO.

⁵⁰⁴ That light MVNOs have higher switching costs than full MVNOs is supported, for example, by [Ofcom response to issues statement](#), paragraph 4.29.

14.226 Virgin Media alleged that the merged entity would have the ability to delay MTP. In support of this, Virgin Media submitted that:

- EE may already be prioritising other projects [REDACTED]. As such, Virgin Media is uncertain as to [REDACTED], how much resource will be available. [REDACTED]
- the contract allows EE a broad discretion to delay [REDACTED].

14.227 The parties submitted that:

- the agreement nullified any ability of the merged entity to delay Virgin Media's transition to a full MVNO post-merger. [REDACTED]
- the merged entity would be subject to the same contractual obligations as EE was subject to pre-merger in supporting Virgin Media's transition to a full MVNO. [REDACTED]

14.228 Appendix J contains more detail on EE's and Virgin Media's accounts of the history of the latter's transition to a full MVNO model, as well as their submissions on the ability of EE to cause further delays. It is not necessary for us to form a view on the reasons for the delays to date. In relation to possible future delays we concluded that the merged entity may, [REDACTED], have some ability to cause further delays. This could increase Virgin Media's switching costs, and hence weaken its bargaining power in negotiating a new contract with EE, [REDACTED].

14.229 Given this conclusion about the merged entity's ability to delay MTP, we later consider its incentives to do so.

- *Hindering the launch of 4G services*

14.230 Virgin Media submitted that its mobile customers required 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 reinforced the need for MVNO arrangements which enabled the provision of 4G services on a commercially viable and competitive basis. Virgin Media submitted that the combination of spectrum of EE and BT would enable EE to differentiate itself further from Virgin Media in terms of the quality and coverage of its 4G networks; and that this would 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.

14.231 Virgin Media said it [REDACTED].

14.232 Virgin Media also said that [REDACTED].

14.233 The parties said that the MVNO hosting agreement stipulates [REDACTED] the services Virgin Media has access to [REDACTED].⁵⁰⁵ Moreover, [REDACTED].⁵⁰⁶ EE said that [REDACTED]. EE also told us that [REDACTED].⁵⁰⁷

14.234 We compared Virgin Media's [REDACTED] with those negotiated by other MVNOs. This showed that [REDACTED]. We note that even absent the merger, EE might have limited incentive to [REDACTED].

14.235 In our view, [REDACTED].

- *Degradation of service/lack of cooperation*

14.236 Virgin Media submitted that service levels [REDACTED]. In Virgin Media's opinion, [REDACTED].

14.237 Virgin Media also said that [REDACTED]. The agreement includes a process for resolving disputes. [REDACTED]

14.238 Virgin Media, whilst operating as a light MVNO, [REDACTED]. [REDACTED] Virgin Media has not yet transitioned to a full MVNO. [REDACTED]

14.239 Virgin Media gave a number of examples of EE allegedly delaying its services or making changes that harm Virgin Media's customers. For example.⁵⁰⁸

- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

14.240 The parties submitted that the contract requires EE to meet various service level obligations and to report compliance with these service levels.

⁵⁰⁵ Parties' [response to the issues statement](#), paragraph 8.2(a).

⁵⁰⁶ Virgin Media [hearing summary](#).

⁵⁰⁷ Parties' [response to the issues statement](#), paragraph 8.2(a).

⁵⁰⁸ These are described in more detail in Appendix J.

Furthermore, EE is required to provide [REDACTED].⁵⁰⁹ Therefore, EE could not degrade the quality of Virgin Media's wholesale inputs [REDACTED].⁵¹⁰

14.241 The parties added that [REDACTED]. For example, the parties maintain that [REDACTED].⁵¹¹ In addition, the parties submitted that [REDACTED].⁵¹²

14.242 Finally, the parties said [REDACTED].⁵¹³ However, Virgin Media told us that [REDACTED].

14.243 Similar to the transition to full MVNO, Virgin Media is protected from the degradation of service to a certain degree by its MVNO hosting agreement. For example, [REDACTED].⁵¹⁴ In addition, [REDACTED]. On the other hand, we consider that a contract may not always provide sufficient protection from all types of service degradation, and Virgin Media has submitted a number of examples of potential harm to Virgin Media or its customers as a result of EE's action or inaction.

- *Conclusions on ability to worsen Virgin Media's service within contract*

14.244 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.

14.245 We concluded that:

- EE has, and the merged entity would have, the ability to harm Virgin Media through a delay to its transition to full MVNO;⁵¹⁵ and
- EE has, and the merged entity may have, some ability to degrade Virgin Media's quality of service (or refuse to upgrade it), or be uncooperative in some other way, although the extent of this ability (given the provisions of the contract) was difficult to quantify.

14.246 The issues and evidence discussed above illustrate that contracts do not cover every eventuality and do not fully 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

⁵⁰⁹ [BT/EE response to the issues statement](#), paragraph 8.4(e).

⁵¹⁰ [ibid.](#)

⁵¹¹ [ibid.](#), paragraph 8.4(c).

⁵¹² [ibid.](#), paragraph 8.4(f).

⁵¹³ [ibid.](#), paragraph 8.4(g).

⁵¹⁴ [REDACTED]. EE told us that [REDACTED].

⁵¹⁵ We note Virgin Media's submission that [REDACTED].

service it requires, if the merged entity wishes to retain Virgin Media as a customer at that point (as discussed at paragraph 14.284 below).

14.247 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 was difficult to quantify. This ability does not appear to arise from the merger or be materially strengthened by the merger. We have therefore assessed the merged entity's incentives to harm Virgin Media in contract.

Incentives to harm Virgin Media within contract

14.248 Given our conclusion above, we assessed whether the merged entity would have the incentive to impose harm that would not have been imposed by EE, despite it having the ability to do so. We discuss first the specific evidence relating to the possibility of delay to Virgin Media's transition to full MVNO status, and then more general evidence about incentives to impose in-contract harm, including through degrading (or not upgrading) the quality of Virgin Media's mobile services.

- *Incentives to hinder Virgin Media's transition to full MVNO status*

14.249 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, and give EE the possibility of retaining it on better terms (for EE). Set against that, if EE wishes to supply wholesale mobile services to fixed-MVNOs or MVNOs more generally and there are alternative MNO hosts, behaving in this manner may damage EE's reputation as a host and make it less attractive to Virgin Media in future, and also potentially to other MVNOs.

14.250 The parties told us that it was in EE's interests to support Virgin Media's transition to full MVNO, [REDACTED]. However, the parties did not provide any specific estimates of the cost savings that would be obtained were Virgin Media to transition to a full MVNO [REDACTED]. Without such estimates it is difficult to ascertain what weight can be placed on these arguments. However, given that [REDACTED], two possible interpretations are that (a) Virgin Media is at least partially responsible for the delays; and/or (b) EE already has insufficient incentives to support and drive the transition program.

14.251 Virgin Media has acknowledged that [REDACTED]. However, Virgin Media maintains that [REDACTED]. We have not been able to conclude on whether [REDACTED].

14.252 There are therefore 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 have an incentive to obstruct transition (and the delays are actually the fault of Virgin Media or merely due to technical issues rather than an attempt to harm), the merger could change the merged entity's incentives.

14.253 We consider it possible that EE had a pre-merger incentive to delay Virgin Media's transition to full MVNO.

14.254 We therefore assessed whether the merger may create or increase incentives to impose this or other harm.

- *Incentives to harm Virgin Media in-contract, including by degrading (or not upgrading) the quality of Virgin Media's mobile services*

14.255 Absent the merger, in the short term within contract, it is possible that EE would already have an incentive to harm Virgin Media, with the strength of that incentive depending on the retail benefits to EE of harming Virgin Media (in turn depending on how closely the two retailers compete), set against any short term in-contract effects this would have on EE's wholesale revenues from Virgin Media, as well as any contractual provisions discouraging or preventing harm.

14.256 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).

14.257 However, if EE is not incentivised to help Virgin Media on short-term grounds, they may still be incentivised to do so if they wish 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.

14.258 EE's pre-merger behaviour will reflect the balance of these incentives. As set out in relation to ability above, we received conflicting evidence from Virgin Media and EE about whether or not EE has already imposed harm on Virgin Media within-contract, to the extent that it may be able to – it is therefore not clear the extent to which EE has a pre-merger incentive to harm Virgin Media within contract.

14.259 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 line services to EE's own).

14.260 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.

14.261 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 the assessment of incentives not to bid (as set out earlier in relation to other MVNOs, and below in relation to Virgin Media). 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 both not bidding and for imposing harm within contract.

14.262 Further, as for EE pre-merger, any incentive to foreclose may be lessened if the merged entity wishes to retain Virgin Media as a wholesale customer after the current contract, or if foreclosure of Virgin Media makes it less attractive to other MVNOs that it wishes to supply. As set out earlier we thought it was likely that the merged entity would wish to supply other MVNOs, rather than refuse to bid for their contract. Later, in paragraph 14.284, we reach the same conclusion in respect of Virgin Media's future

contracts. 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 part⁵¹⁶ on the development of fixed-mobile bundling.

14.263 We consider that insofar as there is in-contract harm to Virgin Media which EE would in the counterfactual have the ability to cause, but not the incentive, it is possible that the merger would increase the incentive to do so. However, there is uncertainty both over the extent to which EE would have had ability to cause harm on which it did not act (leaving room for a merger effect on behaviour in this regard), and over the extent to which the merger would change the incentives to cause harm.

- *Conclusions on incentive to harm Virgin Media within contract*

14.264 As set out above, there are significant uncertainties about:

- (a) Whether EE is already taking, or likely in the counterfactual, to take actions to delay Virgin Media's transition to full MVNO. If so, there may be no possible merger effect on behaviour in this regard.
- (b) Whether EE would in the counterfactual have incentives to harm Virgin Media within contract in other ways. There is therefore uncertainty over the extent of merger effect that could be possible within the limits of ability, which we found to be the same pre- and post-merger.
- (c) The extent to which the merger would alter the incentives to harm Virgin Media within contract. The merged entity's gains from foreclosure are likely to be greater than EE's only if fixed-mobile bundles become a significant part of consumer demand and mobile services become a significant determinant of consumers' choice of fixed provider.⁵¹⁷ 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.

⁵¹⁶ Or, at least, the extent to which the merger increases these gains depends upon issues around bundling.

⁵¹⁷ As noted in paragraph 14.261, 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.

14.265 On balance, we could not rule out the prospect that the merged entity would have a greater incentive to harm VM in contract than EE, although we thought there was significant uncertainty about this. We therefore consider, from paragraph 14.293, the potential effects of any such harm to Virgin Media, after we have concluded on the merged entity's ability and incentives to harm Virgin Media outside of the current contract.

Excluding Virgin Media from mobile services

14.266 We assessed the merged entity's ability to harm Virgin Media to the extent that it may be forced to withdraw from mobile services. In particular we reviewed the conclusion we had reached in relation to other fixed-MVNOs (that there are three other MNOs and the merged entity's withdrawal could not prevent fixed-MVNOs from gaining contracts) and considered whether they should differ in relation to Virgin Media because:

- (a) should Virgin Media's transition to full MVNO be sufficiently delayed, it may be more difficult for Virgin Media to switch to a different host than it would be for a full MVNO, and in particular a switch may result in customer losses; and
- (b) Virgin Media is currently the largest MVNO, and Telefónica told the CMA that it did not currently have the capacity to [REDACTED]; while H3G also told us that it had capacity constraints at present.

14.267 On the former, we did not consider that the scale of customer losses associated with transferring host⁵¹⁸ was likely to be on a scale that would force Virgin Media to withdraw from offering mobile services (and Virgin Media has not suggested that this is the case).

14.268 On the latter, we assessed the ability (including capacity) and incentives for each of the MNOs other than EE to take on Virgin Media, and reviewed evidence on Virgin Media's recent discussions with these operators. This evidence suggested that Virgin Media has options available to it other than EE, although its negotiations are at an early stage.

14.269 Telefónica told the CMA [REDACTED] (whose [REDACTED]), although we note that:

- Telefónica also [REDACTED], (subsequent to the finalisation of Telefónica's contract with Sky).⁵¹⁹

⁵¹⁸ See Appendix J

⁵¹⁹ See paragraph 14.49.

- Virgin Media would be attractive to an MNO wishing to hedge because of its current [REDACTED] share of retail customers [REDACTED]. [REDACTED]

14.270 Vodafone told the CMA that it was and remains keen to agree commercial terms with Virgin Media to host them on the Vodafone network.

14.271 As set out earlier (in paragraphs 14.60 to 14.71) we concluded that post-merger H3G would also be competing in the supply of wholesale mobile services.

14.272 We concluded that while there is some uncertainty around the likely behaviour of each individual MNO, it is on balance likely, but not certain (for example if one or more MNOs experience capacity constraints, which they do not take steps to alleviate or because one or more MNOs have competing demands for the technical resource needed) that – should the merged entity terminate its contract – Virgin Media could find an alternative wholesale mobile provider.

14.273 We therefore concluded that notwithstanding the differences between the position of Virgin Media and other fixed-MVNOs, the merged entity would be unlikely to have the ability to cause Virgin Media to be excluded from mobile services altogether. On a cautious basis, we consider below, from paragraph 14.293, the potential effects of such exclusion.

Raising Virgin Media's costs at contract renewal

14.274 We assessed the ability and incentives of the merged entity to engage in a strategy of raising Virgin Media's costs or degrading its service at the time of contract renewal, which would be [REDACTED] at the latest.

14.275 This strategy could be pursued either through the merged entity refusing to bid for Virgin Media's contract, or through it bidding more weakly than in the counterfactual.

14.276 At this stage it is not certain whether Virgin Media will be a full MVNO at the end of its current contract; and if the merged entity's intention is to harm Virgin Media, then it can do so more effectively if Virgin Media remains a thin MVNO. Therefore we assessed both possibilities.

Ability to raise Virgin Media's costs at contract renewal through not bidding or bidding weakly

14.277 We first assessed the situation if Virgin Media does complete its MTP before the end of its current contract. [REDACTED] (see Appendix J).

14.278 Noting our earlier conclusion that Virgin Media would be unlikely to find itself without another MNO provider, the harm that the merged entity could inflict on Virgin Media in this scenario is limited by the degree to which other MNOs would compete to offer Virgin Media terms similar to those that EE might have offered in the counterfactual. This is conceptually similar to the situation for other fixed-MVNOs that we examined above (paragraphs 14.108 to 14.114), where we reached the view that the merged entity would have greater ability to harm an MVNO by refusing to bid rather than bidding weakly – partly by removing EE’s bid from the table, and partly because this was a more credible way to influence other MNOs’ bidding strategies.

14.279 The points that apply specifically to Virgin Media are its size (customer base) at present and the potential for MNOs to be more capacity constrained at this time than when other (potentially) large fixed-MVNOs’ contracts end. [X] Should it be the case that this [X], it would tend to worsen competition for Virgin Media’s contract and could potentially mean that the ability of EE and the merged entity to harm Virgin Media by not bidding is greater than for other fixed-MVNOs.

14.280 We then considered how that position would change if Virgin Media’s MTP programme were not completed at the end of its contract, and specifically if Virgin Media had not established its full MVNO capability (or did not expect to do so). In this scenario, Virgin Media would face greater switching costs, and so any given offer from another MNO would be less attractive than if Virgin Media were a full MVNO. This would increase the merged entity’s ability to harm Virgin Media in one of two scenarios:

- Virgin Media switches to another MNO, potentially on similar terms to those if it were a full MVNO, but incurs greater switching costs (including customer losses, a second SIM swap, and engineering costs to transition to full MVNO once established on the new network). This may or may not make it a less effective retail competitor.
- The switching costs mean that Virgin Media’s best offer is from the merged entity and it re-signs on poorer terms than it could have achieved as a full MVNO, and is a less effective retail competitor than it would have been.

14.281 We therefore concluded that the merged entity is likely to have some ability, by not bidding or bidding weakly, to cause Virgin Media to receive worse terms than at present, particularly if MTP is delayed. However, the scale of any resulting harm to Virgin Media is difficult to quantify.

Incentive to not bid or bid weakly for Virgin Media's contract at renewal

- 14.282 We then considered whether, within the bounds determined by the **ability** to harm Virgin Media, the merged entity would have greater **incentives** than EE to do so.
- 14.283 We noted that if the merged entity were able to cause Virgin Media to receive worse wholesale mobile terms, and by doing so could cause some of Virgin Media's customers of retail fixed services to switch to other suppliers, the merged entity would gain a greater benefit than EE from doing so (both from BT's own retail fixed services, and from Openreach's wholesale fixed services).
- 14.284 We considered first whether this change could lead the merged entity to have the incentive to refuse to bid for Virgin Media's contract, although Virgin Media itself argued that this was not the most likely outcome. We found that under cautious assumptions about the benefits to the merged entity from not bidding (for example, assuming that fixed-mobile bundles become important), and bearing in mind that we do not think it possible for the merged entity to cause Virgin Media to exit, the merged entity would profit more from hosting Virgin Media even under its current terms than from refusing to bid (see Appendix J). This is consistent with our findings for other fixed-MVNOs. Moreover, because [§], the early timeframe involved means that there is higher uncertainty about the future of bundling than might be the case for other MVNOs' contracts when the merged entity has the opportunity to bid for them. We therefore concluded that the merged entity would not have the incentive to refuse to bid for Virgin Media's contract (regardless of the status of MTP).
- 14.285 We then went on to consider the merged entity's incentives to make a weaker bid than in the counterfactual. [§]
- 14.286 As an initial observation, it seems to us that EE is likely to have, in the counterfactual, the incentive to delay MTP and thus extract for itself the best possible commercial terms for a renewal (although this could be mitigated if it would affect EE's reputation as a host MNO and thus reduce its wholesale earnings from other MVNOs, a consideration that would also apply post-merger). In this regard we note that at the time of Virgin Media's previous tender, its offer from EE was very close to the next best offer, once switching costs had been taken into account. Therefore it is plausible that the merged entity could have an incentive to foreclose Virgin Media, but that the merger does not create or strengthen this incentive.

- 14.287 If EE had Virgin Media in such a ‘hostage’ situation, it would want to offer Virgin Media the terms that maximised EE’s profits, taking into account both the wholesale terms, the expected wholesale volumes, and the effects on EE’s retail profits.
- 14.288 The merged entity would consider what terms to offer Virgin Media using the same considerations. They would only be substantially different (from those EE would offer) if, by causing Virgin Media to receive worse wholesale mobile terms, the merged entity could cause a substantial proportion of Virgin Media’s customers of retail fixed services to switch to other suppliers.
- 14.289 However, this could only affect the merged entity’s considerations to the extent that it had confidence that fixed-mobile bundles would become important in the market **and** mobile would become an important driver of the choice of fixed services.⁵²⁰ Our view is that there is considerable uncertainty over this possibility, particularly in the near term ([§]). Hence it is likely that the merged entity would have similar incentives to EE in terms of (a) supporting the completion of MTP and (b) bidding for Virgin Media’s next contract, and therefore there is likely to be no or only a small merger effect.
- 14.290 We therefore concluded that while the merged entity would not have greater **ability** to harm Virgin Media, there are circumstances in which the merged entity would have an **incentive** to bid more weakly for Virgin Media’s contract than in the counterfactual. The probable extent of such weakening, and its effect on the wholesale contract received by Virgin Media is unclear, both because it is not known how weak EE’s bid would have been in the counterfactual and because it is uncertain the extent to which mobile services will grow (within the timeframe relevant for Virgin Media’s next contract) to become an important driver of consumers’ choice of fixed service. However, and on balance, we concluded that it is not likely that the merged entity would have the incentive to significantly weaken its bid relative to the counterfactual, although it is possible.

Worsening Virgin Media’s services within possible future contracts

- 14.291 We also considered whether the merged entity may be able to foreclose Virgin Media in the future, under its next (or a subsequent) contract, via any of the mechanisms described above.

⁵²⁰ Some third parties have suggested that BT’s rationale for the merger depends on this. We note that if bundles became important and fixed drove mobile but not vice versa, then BT would have a strong rationale to purchase an MNO, but it would not have a merger-specific incentive to foreclose MVNOs.

14.292 We expected that Virgin Media would take steps to make sure that it was a full MVNO in the near term (that is, well before the end of its next contract). Therefore, the special considerations relating to the ability to harm Virgin Media (identified in paragraph 14.208) would no longer apply to Virgin Media as compared to other fixed-MVNOs, and so the ability to harm Virgin Media would be reduced. The analysis of incentives would be as for other fixed-MVNOs above, with one exception: unlike other operators, Virgin Media does not use wholesale broadband inputs from BT. This means that, should the merged entity cause fixed (broadband and telephony) customers to divert from Virgin Media to any other CP, it would gain Openreach margins in respect of all those customers, not just those who switch to BT. Therefore for any given strategy, provided that mobile has some influence on fixed purchases, the incentive to foreclose Virgin Media is higher than for other operators. However, the profitability of any given strategy still depends strongly on the extent of harm that the merged entity can impose and on the future extent and nature of fixed-mobile bundles, and the Openreach margin is a relatively small factor.⁵²¹ As a result, this factor did not cause us to reach a different conclusion for Virgin Media.

The effects on competition of harm to Virgin Media

14.293 We concluded above that the merged entity:

- (a) may have the ability, and a merger-specific incentive, to harm Virgin Media by worsening the service provided within the current contract;
- (b) may have the ability and incentive to raise Virgin Media's costs by not bidding, or weakening its bid, for Virgin Media's contract, although the scale was difficult to quantify. We concluded, however, that it would not have the incentive to refuse to bid. In relation to weakening its bid, we concluded that there may be some incentive, but that it is not likely that the merged entity would have the incentive to significantly weaken its bid relative to the counterfactual; and
- (c) would be unlikely to have the ability to cause Virgin Media to exit the supply of retail mobile services.

14.294 Given this, we have also considered what could be the effect downstream of possible foreclosure affecting Virgin Media.

⁵²¹ For example, holding other factors constant our estimate of the wholesale price rise necessary to make it profitable for the merged entity not to bid for Virgin Media's contract ranges from 78% to 234%, compared to 94% to 247% if there were no Openreach margin.

- 14.295 We considered several possible downstream markets or segments, given the uncertainty as to how the bundling of fixed and mobile services will develop and what will drive consumer choices.
- 14.296 First, we considered retail mobile services, which we examined in detail in Chapter 11. We found that there is strong competition between the four MNOs, and 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. Indeed, Virgin Media may have less potential to be a disruptive force in the market than BT, as it does not own any spectrum. Therefore we found that there was sufficient competition within the provision of stand-alone retail mobile (as discussed further in Chapter 11) that the weakening (or in the unlikely extreme case, removal) of Virgin Media from the supply of those services would not constitute an SLC.
- 14.297 Second, we did not think that effects on Virgin Media’s mobile offering would substantially weaken it as a provider of stand-alone retail fixed services, especially given its substantial investment in fixed lines and its high quality and differentiated broadband services.
- 14.298 We then considered the possibility that fixed-mobile bundles become more important, and how competition in this segment could be affected by harm to Virgin Media.
- 14.299 In such a world, we expect there to be a range of competitors offering fixed-mobile bundles, including the merged entity, TalkTalk, Sky and Vodafone, and the considerations above suggest that the merger is not likely to substantially weaken TalkTalk or Sky as a competitor. Whilst we acknowledge that Virgin Media today has the largest share of the (small) fixed-mobile segment of the market, that is at a point where there are relatively few such customers, and before Sky’s entry into mobile. Based on the projections of each company, we expect Virgin Media to be one of at least five fixed-mobile competitors, and not necessarily one of the strongest Appendix H, Table 3 contains projected market shares in 2019 based on fixed-mobile operators’ own growth estimates, and under these estimates, [X]. [X]
- 14.300 Whilst we recognise that these estimates are uncertain, they are consistent with our expectation that, if the competitive conditions necessary for this theory of harm to occur do arise, market conditions would be materially different from today and there would be a number of strong competitors

other than Virgin Media offering fixed mobile bundles to consumers. In the timescale in which harm to Virgin Media is most likely, Sky and TalkTalk would still be within contract and so the merged entity would not be able to exclude them from the market or worsen the terms in their contracts; nor (given our conclusion on ToH6) would it be able to affect the terms of Vodafone's bundled offer.

- 14.301 We also took into account that Virgin Media's fixed line footprint is significantly smaller than that of its competitors (around half of homes and businesses today, but forecast to increase to nearly 17 million premises by 2020),⁵²² and therefore cannot compete in fixed-mobile bundles for a substantial proportion of consumers (unless it uses wholesale inputs to offer an out-of-area fixed product, which Virgin Media has formerly offered but ceased offering in January 2015. Further, if bundles become important to consumers and mobile services can drive consumers' choice of fixed services, it is possible that there would be further entry and expansion into bundles using regulated inputs for fixed lines services, from a range of CPs, potentially including Telefonica and H3G directly.
- 14.302 Further, if bundles become important to consumers and mobile services can drive consumers' choice of fixed services, it is possible that there would be further entry and expansion into bundles using regulated inputs for fixed lines services, from a range of CPs, potentially including Telefónica and H3G directly.
- 14.303 Within this scenario, we considered first the possibility that Virgin Media could be caused to exit the supply of retail mobile services. Virgin Media itself argued that this was not the most likely outcome, and we agree that it is unlikely for the reasons set out above (paragraphs 14.266 to 14.273). However, even if it were to occur, given the evidence of operators' expectations for growth in this segment, we think it unlikely (though not impossible) that an SLC would arise. Given the number of factors that would need to fall into place for this to happen,⁵²³ we consider that the possibility of an SLC arising through the exit of Virgin Media is remote.
- 14.304 We also considered the possibility that Virgin Media receives substantially worse terms or worse service than in the counterfactual. This would have a lesser effect on competitive conditions than the exit of Virgin Media. In the

⁵²² 'Virgin Media and Liberty Global announce largest investment in UK's internet infrastructure for more than a decade', Virgin Media, 13 February 2015.

⁵²³ These would include: fixed-mobile bundles become important; mobile services become an important driver of choice of fixed services; Virgin Media does not complete MTP; Virgin Media experience such substantial churn that it decides to exit the mobile market, even though mobile drives fixed services; and one or more of Sky, TalkTalk and Vodafone fails to exert any competitive constraint on other operators.

case of worse service within the current contract, the effect would also be time limited.

14.305 Given our view that, if the conditions for this theory of harm are met, we expect other operators to be strong competitors for fixed mobile bundles, we consider on balance that the weakening of Virgin Media relative to the counterfactual is not likely to amount to an SLC, even if fixed-mobile bundles come to be important (which is itself not clearly supported by the available evidence, as we discussed in paragraphs 14.143 to 14.158).

Conclusion on foreclosure of Virgin Media

14.306 In light of the evidence considered above, we have concluded that:

- Within Virgin Media's current contract the merged entity, as for EE pre-merger, may 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. We consider it possible that the merger may increase the merged entity's incentives to harm Virgin Media during its current contract although there are significant uncertainties in this regard. Any effects of such behaviour would be time-limited, and we considered that its effect on downstream competition would be limited.
- The merged entity would be unlikely to have the ability to cause Virgin Media to be excluded from mobile services. Even if the merged entity did have the ability and incentive to do so, we find it unlikely that a scenario would arise in which this would amount to an SLC, given the other operators expected to be competing against Virgin Media and the merged entity downstream.
- The merged entity may have some ability, by not bidding or bidding weakly, to cause Virgin Media to receive worse terms than at present, particularly if MTP is delayed. However, we do not think it is likely that the merged entity would not have the incentive to refuse to bid for Virgin Media's contract. It is unclear whether it would have an incentive to weaken its bid, but we find it unlikely that it would have an incentive to do so substantially. In light of this we consider that the extent of any harm to Virgin Media through this strategy would be limited and the effects on competition would be further diluted through the presence of competing operators.

14.307 We therefore 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 in the wholesale mobile market affecting Virgin Media.

14.308 We considered our findings as regard Virgin Media together with our earlier findings in relation to other fixed-MVNOs. Overall, we concluded that 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.

15. Mobile backhaul – overview

Overview

- 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).⁵²⁴
- 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.

⁵²⁴ 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 us 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 to 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.⁵²⁵

15.13 To date, MNOs have sourced fibre Ethernet-based mobile backhaul almost exclusively using active backhaul products.⁵²⁶ 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

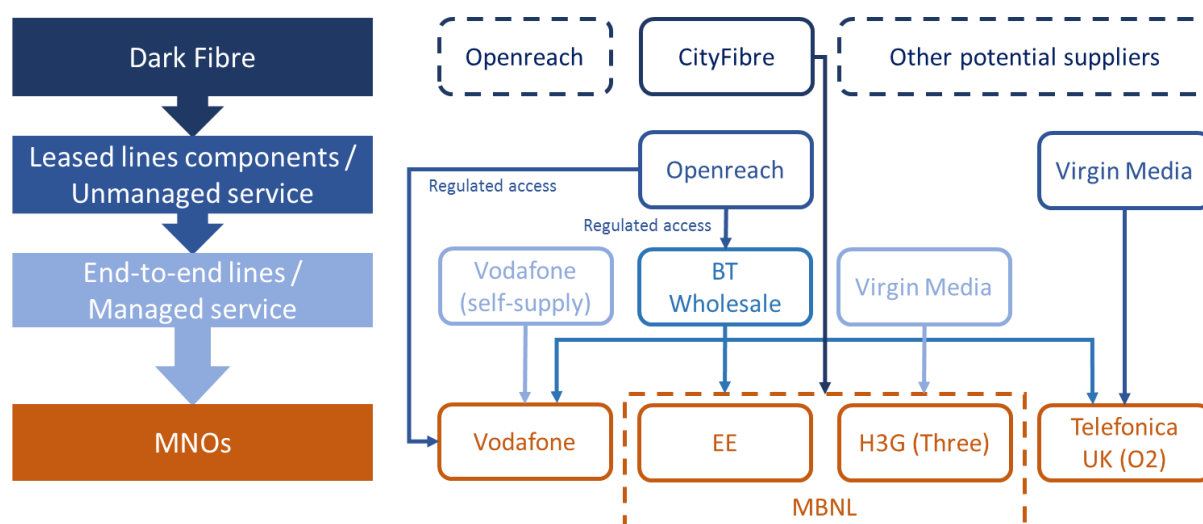
15.14 In the UK, BT (through Openreach and BT Wholesale) is the main supplier of copper and fibre mobile backhaul, and in particular fibre Ethernet-based mobile backhaul (BT supplies approximately [X] % of the fibre Ethernet circuits currently used by MNOs in the UK).⁵²⁷ However, there are some alternatives to BT, which are summarised in Figure 15.1 below.

⁵²⁵ 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 of theory of harm 5.

⁵²⁶ For example, MBNL uses some dark fibre circuits from CityFibre in Hull ([X]) and [X].

⁵²⁷ 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.⁵²⁸ BT supplies fibre backhaul through either Openreach or BT Wholesale.

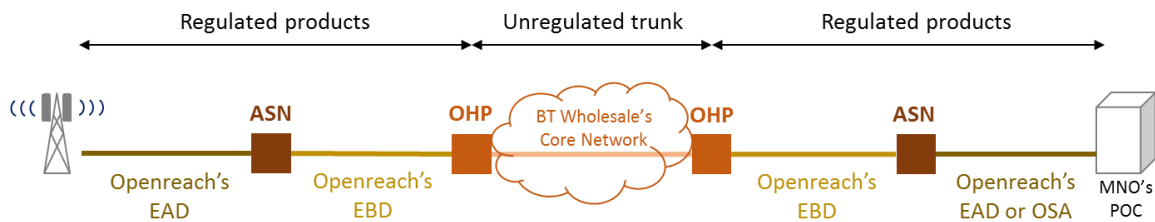
- *Openreach*

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

⁵²⁸ 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:⁵²⁹

- (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

⁵²⁹ 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:⁵³⁰

(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

⁵³⁰ 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.⁵³¹ 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.

⁵³¹ As Virgin Media does not have a national cable footprint, it would require time and investments for it to be able to provide mobile backhaul using Openreach products.

- 15.25 The 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. [REDACTED]

TalkTalk

- 15.26 The 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, [REDACTED].

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 [REDACTED]

- 15.29 [REDACTED]

Telefónica

- 15.30 [REDACTED]

- 15.31 Currently, [REDACTED] access circuits are supplied by BT Wholesale, while [REDACTED] are sourced from Virgin Media.

Vodafone

- 15.32 Vodafone is [REDACTED] MNO buying part of its backhaul links from Openreach. It [REDACTED] MNO that self-supplies part of its fibre Ethernet backhaul links. The remaining links are [REDACTED] sourced from BT Wholesale. While the contract with BT Wholesale will be in place until [REDACTED], Vodafone is subject to [REDACTED] until [REDACTED].

- 15.33 [REDACTED]⁵³²

⁵³² [REDACTED]

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.⁵³³
- 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. Although Zayo does not currently supply dark fibre for mobile backhaul to MNOs in the UK, it does so in the USA [§].
- 15.36 We understand that access to dark fibre 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 to 17. 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.

⁵³³ [§]

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, [REDACTED].

- 15.44 [REDACTED]

- 15.45 [REDACTED]

- 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 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. [X].⁵³⁴ We, therefore, considered it unlikely that there would be supply-side substitution from TalkTalk's wholesale Ethernet product in case of a SSNIP from a competitive price level.

- 15.51 In light of the above, we 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.

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 backhaul⁵³⁵ 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.
- (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.

Conclusion – Product market

- 15.53 We therefore 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).

⁵³⁴ See paragraph 15.26 above.

⁵³⁵ 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.

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:
- (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 findings, for either input foreclosure or customer foreclosure, and our findings take into account the local/regional variance in conditions of competition.

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 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 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 assessed whether the merger could lead to input foreclosure of MNOs that compete with the merged entity in the downstream retail mobile market and that require fibre mobile backhaul services from the merged entity. In the counterfactual, BT could have had some incentive to foreclose downstream MNOs, because it would also have a mobile arm. 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) than BT in the counterfactual, as BT’s mobile service in the counterfactual would have a relatively small scale. Therefore, the merger could potentially change the profitability for the merged entity of foreclosing MNOs. We assessed this potential increase in incentive against a number of foreclosure strategies, as further discussed below.
- 16.6 Our view is 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 (see also paragraphs 22.12 to 22.30).

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 mobile backhaul, which MNOs consider necessary for the operation of their 4G networks and not easily substitutable with other technologies. Specific concerns raised by third parties are reflected in more detail under each foreclosure strategy.

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.⁵³⁶

16.13 The role of regulation is therefore taken into account where relevant in our assessment of BT's ability and incentive to cause harm to rival MNOs by pursuing various foreclosure strategies in relation to Openreach products and services.⁵³⁷ In particular, while charge control regulation can be seen as limiting BT's ability to foreclose, the situation for non-discrimination obligations is more nuanced (see paragraph 9.22). What matters ultimately is whether the regulation is effective in addressing the merged entity's ability and/or incentive to foreclose.

16.14 Our reliance on the application of non-discrimination obligations to dismiss certain concerns (see paragraphs 16.40, 16.41, 16.42 and 16.92 below) has been criticised by third parties⁵³⁸ on the grounds that:

⁵³⁶ See Chapter 4 and Appendix D.

⁵³⁷ As set out in the [Merger Assessment Guidelines](#), paragraph 5.6.7, many of the factors relevant to our analysis may affect more than one question of ability, incentive and effect.

⁵³⁸ See TalkTalk [response to provisional findings](#), paragraph 9.21 and Vodafone's [response to provisional findings](#), paragraphs 2.7 to 2.15.

- (a) discriminatory behaviour may be difficult to detect;
 - (b) bringing complaints or disputes to Ofcom is costly;
 - (c) Ofcom has some discretion in deciding whether to investigate a complaint; and
 - (d) Ofcom's ability to punish discriminatory behaviour may be limited.
- 16.15 It should first be noted that in our analysis non-discrimination obligations are just one of a number of factors considered in relation to the various concerns expressed.
- 16.16 We take into account the existence of non-discrimination obligations in relation to foreclosure strategies involving discriminatory pricing practices (paragraphs 16.40 and 16.41) and discrimination in dealing with requests for new Openreach products (paragraph 16.92). We consider the likelihood of detection of these two types of discrimination separately:
- (a) Openreach is required under the SMP conditions to notify price changes in advance, with a minimum notice period of 28 days for a price decrease and 90 days for a price increase.⁵³⁹ This would allow CPs to identify concerns on discriminatory pricing before the price change comes into force. Although proving that a price change is discriminatory may be difficult for rival CPs, Ofcom would be in a position to gather and use the necessary evidence for this analysis, using data on BT's costs and on sales volumes.
 - (b) Openreach deals with requests for new products through the SoR process (see Appendix D). As explained in paragraph 16.88, this process is scrutinised by Ofcom, the Equality of Access Office (EAO) and the Office of the Telecoms Adjudicator (OTA2). Moreover, Openreach must give reasons for refusing an SoR request. Both Ofcom and BT's rival CPs are therefore in a position to identify potential discriminatory behaviour.
- 16.17 The fact that bringing disputes to Ofcom is costly does not significantly reduce the effectiveness of the non-discrimination conditions: as long as discrimination has a material impact on CPs, they will have an incentive to sustain the costs of a dispute. We do not think that discrimination that does not have a material impact on CPs would amount to an ability to harm them; it would therefore not give rise to an SLC.

⁵³⁹ 2013 BCMR, Annex 7, p219.

- 16.18 In case of enforcement investigations, Ofcom has discretion whether to investigate alleged breaches. Ofcom told us that it decided whether to initiate an investigation taking into account its administrative priority criteria, which included considerations of on the nature, significance and seriousness of the allegation.⁵⁴⁰ Even if Ofcom decides not to investigate, a CP can bring its own civil proceedings against BT. In order to do this, the CP needs the consent of Ofcom under section 104 of the Communications Act 2003.⁵⁴¹ Ofcom has given such consent on a number of occasions in the past. In case of disputes related to obligations imposed under a regulatory condition set under section 45 of the Communications Act, Ofcom has little discretion in deciding whether to handle the dispute.⁵⁴²
- 16.19 Ofcom cannot impose financial penalties as a remedy for resolving a dispute. Ofcom can require the payment of sums to adjust for an underpayment or overpayment which it determines in resolving the dispute; however, its power to require such payments in respect to past periods is being contested in an appeal that BT is currently pursuing at the Court of Appeal.⁵⁴³ This, however, does not impose a strong limitation on Ofcom's ability to penalise unlawful discriminatory behaviour. In fact, if following the resolution of a dispute Ofcom considers that BT has breached a regulatory obligation, it can take regulatory enforcement action and impose financial penalties if it finds such a breach. Furthermore, BT's appeal does not affect the existence of a CP's right to bring an action for damages in the courts.
- 16.20 Finally, 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.'⁵⁴⁴ We do not therefore assume, in our assessment, that functional separation necessarily excludes BT's incentive to foreclose. Instead, we consider whether the merger creates or enhances the ability and/or incentive

⁵⁴⁰ Ofcom's administrative criteria are set out in [Ofcom's Enforcement Guidelines](#), paragraph 4.13.

⁵⁴¹ Ofcom does not have specific criteria it follows in deciding whether to exercise its discretion to grant consent under section 104 of the Communications Act 2003. It told us that it would consider each such request for consent on its individual merits in the particular circumstances of the case, taking into account the nature of the alleged breach and the nature of the proposed civil proceedings. Any consent it gives may be subject to conditions (such as, for example, the provision to Ofcom of specific documents relating to the proceedings).

⁵⁴² Ofcom must handle the dispute unless it considers that there are alternative means available for resolving the dispute, that a resolution of the dispute by those means would be consistent with the Community requirements set out in section 4 of the Communications Act 2003, and that a prompt and satisfactory resolution is likely if those alternative means are used (see s186(3) of the [Communications Act 2003](#)).

⁵⁴³ [British Telecommunications PLC v Office of Communications & Others](#), Case reference C3/2014/4203.

⁵⁴⁴ [Ofcom SRDC \(2015\)](#), paragraph 11.25.

to foreclose for the BT Group as a whole, taking account of Openreach regulation (including the Undertakings) and functional separation, and the revenues it generates through Openreach.

- 16.21 However, if evidence shows that BT currently does not discriminate against rivals where, absent the regulation, it would have an incentive to do so, we interpret this as evidence of an absence of ability to foreclose (as a result of the functional separation of Openreach) or of incentives being sufficiently reduced by other regulatory provisions, such as non-discriminatory obligations.

The incidence of backhaul on an MNO's costs

- 16.22 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.⁵⁴⁵

Table 16.1: Incidence of backhaul on MNOs' costs

	EE	H3G	Telefónica	Vodafone	Ofcom estimate*
Backhaul costs as a percentage of total network costs	[X]	[X]†	[X]	[X]†	18
Backhaul costs as a percentage of total cost	[X]	[X]†	[X]	[X]†	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.

- 16.23 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).
- 16.24 Further details of our calculations are set out in Appendix K, paragraphs 82 to 94.

The meaning of quality in fibre mobile backhaul

- 16.25 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:

⁵⁴⁵ For data, see Table 2 in Appendix K. In terms of MNOs' profits, backhaul costs are not insignificant (EBIT in 2013 was £[X] million for Vodafone, £[X] million for H3G, £[X] million for Telefónica).

- (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).
- 16.26 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.
- *Openreach*
- 16.27 Openreach is responsible for the provision of terminating segments of backhaul connections.⁵⁴⁶ 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.
- 16.28 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.
- 16.29 We have 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

⁵⁴⁶ See Appendix K, paragraphs 95–104 for more detail.

connected with a given fibre link, and would not affect 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.⁵⁴⁷ 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 expansion of the MNO's 4G network, which often requires capacity upgrades.⁵⁴⁸
- (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.⁵⁴⁹ Vodafone said that it expected the current fault rate to increase post-merger because the merged entity had an incentive to discriminate against rival MNOs by being slow to replace fault-prone equipment.⁵⁵⁰ Ofcom, however, told us that it had received no evidence from CPs that particular equipment used in the supply of Ethernet services was fault-prone.⁵⁵¹
- (d) A Service Level Guarantee direction has been in place since 2008 that requires that Openreach pays compensation for non-delivery and fault repair on a proactive basis.⁵⁵²

16.30 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 [X]% higher propensity to churn where customers experienced temporary congestion resulting in speeds below 400 Kbit/s.

16.31 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

⁵⁴⁷ BT/EE [response to issues statement](#), paragraph 12.6.

⁵⁴⁸ [Vodafone response to provisional findings](#), paragraph 3.9

⁵⁴⁹ [Ofcom hearing summary](#).

⁵⁵⁰ [Vodafone response to provisional findings](#), paragraph 2.31.

⁵⁵¹ Ofcom response to information request of 24 November 2015, question 2.

⁵⁵² Vodafone, however, told us 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))

cell). We consider the potential impact of degrading this innovation in the specific strategies to which they relate.

- *BT Wholesale*

16.32 Whilst BT Wholesale relies on Openreach inputs, it is directly responsible for certain elements of the service that affect quality.⁵⁵³ 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:
 - (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.⁵⁵⁴

16.33 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.

16.34 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

16.35 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.

⁵⁵³ See Appendix K, paragraphs 105–109 for more detail.

⁵⁵⁴ [X]

- 16.36 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 cause diversion of customers to its own mobile division.
- 16.37 We therefore considered whether Openreach would have the ability and incentive to increase the price it charged for use of its leased lines for the purpose of fibre mobile backhaul.

Ability and incentive to increase the price

- 16.38 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.
- 16.39 Some third parties submitted that there might be sufficient flexibility in the charge control to allow the merged entity to increase the wholesale price.⁵⁵⁵ 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.⁵⁵⁶
 - (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

⁵⁵⁵ See Appendix K, paragraphs 111–120 for more detail.

⁵⁵⁶ [Vodafone initial submission](#), paragraph 2.43(iii), and its [response to provisional findings](#), paragraph 2.21.

- (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.⁵⁵⁷
 - (c) More generally, TalkTalk submitted that the merged entity could discriminate against rivals by raising the prices of Ethernet products above their true costs, through manipulation of cost attributions. TalkTalk claimed that BT had attributed over £250 million of excessive costs to regulated products.⁵⁵⁸
- 16.40 In relation to Vodafone's concerns, we found that it was unlikely that the merged entity would be able to foreclose rival MNOs by altering the relative prices of EAD and EAD LA products. In fact, [X] (see Appendix K, paragraph 115). As a consequence, if the relative prices of EAD and EAD LA were changed while keeping the overall charge across the basket at the regulated level, the average prices paid by non-BT CPs would not increase significantly. Therefore, the price of backhaul, either self-supplied by Vodafone or supplied to other MNOs by alternative providers, would not change significantly as a result of such a strategy.⁵⁵⁹
- 16.41 In relation to the first of Sky's concerns, we found that this strategy was not likely to result in higher prices to other MNOs, for the following reasons:
- (a) If the volume discount was outside the calculation of regulated prices, a discount that only EE could get would not harm rival MNOs since the price those MNOs paid would not change, and payments between EE and Openreach would constitute internal transfers and so such a discount would give EE no competitive advantage.
 - (b) If, on the other hand, Openreach applied volume discounts as a means to comply with the charge control, then a discount that favoured EE would be in breach of the non-discrimination obligation imposed on BT. The 2013 BCMR specifies that volume discounts 'would very often constitute undue discrimination in practice since BT's downstream divisions would almost inevitably be the main beneficiary giving rise to a

⁵⁵⁷ 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.

⁵⁵⁸ [TalkTalk response to provisional findings](#), paragraph 9.9.

⁵⁵⁹ Moreover, such an action would be a breach of the SMP condition of non-discrimination (see Appendix D, paragraph 61(b)) and could risk enforcement action being taken by Ofcom on its own initiative or by an MNO taking a formal dispute to Ofcom.

strong potential for anti-competitive effects.’⁵⁶⁰ Such a breach would be easily detected, as volume discounts would need to be made public.

- 16.42 In relation to the second of Sky’s concerns, we 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.⁵⁶¹
- 16.43 TalkTalk’s evidence of BT’s cost misallocation is taken from Ofcom’s second consultation on a review of BT’s cost attribution methodologies, published in November 2015.⁵⁶² Ofcom initiated this review of BT’s existing attribution rules after deciding, in May 2014, that BT’s Regulatory Financial Statements should comply with a new set of guiding principles, which Ofcom called the Regulatory Accounting Principles. Ofcom’s intention is that any proposed changes to the attribution rules would be reflected in any consequent price control.⁵⁶³ In this review, Ofcom has provisionally found that BT’s current attribution rules do not comply in some cases with the new Regulatory Accounting Principles. As a result of the application of the more stringent new accounting principles, £250 million of costs currently allocated to BT’s regulated products may have to be reallocated to non-regulated ones.
- 16.44 We note that any ability to allocate excessive costs to regulated products will not change post-merger, nor will BT’s incentive to do so significantly increase. This incentive is already strong pre-merger, because the products used for mobile backhaul are the same that are purchased by BT’s rivals in the provision of business connectivity services.

Impact of Openreach prices on the prices paid by MNOs

- 16.45 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.⁵⁶⁴

⁵⁶⁰ Ofcom [2013 BCMR](#), paragraph 12.112.

⁵⁶¹ In addition, pricing strategies that discriminate between CPs would be in breach of the non-discrimination condition and MNOs could bring a dispute to Ofcom.

⁵⁶² Ofcom, [Review of BT’s cost attribution methodologies. Second consultation](#).

⁵⁶³ *ibid*, paragraph 1.3.

⁵⁶⁴ See Appendix K paragraphs 121–122 for more detail.

16.46 Currently, [redacted] 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.

Conclusion – Increasing the price of Openreach Ethernet leased lines

16.47 We found that it was not likely that the merger would give the merged entity the ability or the incentive (because of the non-discrimination obligations)⁵⁶⁵ to significantly increase rival MNOs' backhaul costs by increasing the price of Openreach, for the following reasons:

- (a) The constraints imposed by the charge control.
- (b) To the extent that the merged entity would notwithstanding the charge control be able to alter the relative prices of EAD and EAD LA products, there would be insufficient differentiation between BT and its rival CPs for this to amount to an ability to cause harm to those rivals.
- (c) To the extent that the merged entity offered volume discounts as a means to comply with the charge control, the constraints imposed by the non-discrimination obligations.
- (d) The small incidence that backhaul has on MNOs' costs.
- (e) The lack of a clear link in the short run between the actual price paid by MNOs, [redacted], for backhaul and the prices of the Openreach products.

16.48 Further details of our assessment are set out in paragraphs 110 to 122 of Appendix K.

Strategy 2 – Foreclosure by discriminating on the quality of Openreach Ethernet leased lines

16.49 We then considered the extent to which the merged entity would have the ability and, if so, the incentive to discriminate against rival MNOs with respect to the quality of Openreach inputs. As noted in paragraph 16.29 above, Openreach is responsible for the delivery and repair of terminating segments. The merged entity could therefore in principle put in place a series of actions to discriminate against its rival MNOs in the provision of these services, favouring EE and reducing Openreach's costs.

⁵⁶⁵ See paragraph 16.13.

- 16.50 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.⁵⁶⁶ In particular:
- (a) 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.⁵⁶⁷
 - (b) 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.
 - (c) 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.
- 16.51 On the other hand, the parties told us 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 obligations and the EOI requirement.⁵⁶⁸ In addition, BT noted that it was required to publish quality of service information.
- 16.52 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.⁵⁶⁹ In light of this incentive, we first considered whether there was evidence of past discrimination. As stated in paragraph 16.21, this absence of evidence of past discrimination would suggest that BT has limited ability to engage in these practices (as a result of the functional separation of Openreach) or that the non-discrimination obligations and the EOI requirement are effective in curbing BT's ability and incentive to foreclose.
- 16.53 In this regard, 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

⁵⁶⁶ [Sky initial submission](#), paragraph 5.42(c); [Vodafone initial submission](#), paragraphs 2.3 & 2.40.

⁵⁶⁷ [Sky response to issues statement](#), paragraph 4.17.2.

⁵⁶⁸ [BT initial submission](#), p25, paragraph 4.4.

⁵⁶⁹ The merger may expand the set of rivals that it might be profitable for the merged entity to foreclose.

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.⁵⁷⁰ In contrast, Telefónica told us 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.⁵⁷¹ We reviewed the extent to which there was evidence of past discriminatory behaviour on the part of Openreach. In summary:

- (a) In relation to provision times, BT's EAB⁵⁷² 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.⁵⁷³
- (b) In relation to Vodafone's submission on the disproportionate use by BT divisions of Project Services (which project manage Openreach orders), we assessed 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 found no evidence that Project Services orders received favourable treatment, though it could not exclude the possibility.⁵⁷⁴
- (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 2011.⁵⁷⁵

16.54 In light of the above, we found that the evidence did not support third party concerns that BT had in the past circumvented existing regulation. As stated in paragraphs 16.21 and 16.52, we interpreted the absence of such evidence as indicating that, as a result of the existing regulations, BT either lacks the ability to discriminate against rivals (because of the functional separation of Openreach), or has insufficient incentives to do so (as a result of non-discrimination obligations). The merger will not affect BT's ability to foreclose; moreover, we do not expect the merged entity's incentive to degrade the quality of mobile backhaul to be significantly higher than BT's

⁵⁷⁰ [Vodafone initial submission](#), paragraph 2.40(ii).

⁵⁷¹ [Telefónica hearing summary](#), paragraph 69.

⁵⁷² Appendix D.

⁵⁷³ [BCMR May 2015 consultation annexes](#), paragraphs A17.140 & A17.162.

⁵⁷⁴ [ibid](#), paragraph A17.160.

⁵⁷⁵ [ibid](#), paragraph A17.167.

pre-merger incentive to degrade the quality of Openreach's services provided to competitors in fixed communications markets.

16.55 For some actions that could lead to discrimination on the quality of Openreach Ethernet leased lines, it may be difficult for the MNOs to detect discrimination between BT and other MNOs, so that non-discrimination obligations may not be effective in curbing the merged entity's incentives.⁵⁷⁶ However, MNOs would in general be able to detect a deterioration in quality following the merger and raise the issue with Ofcom if necessary (any deterioration that even the MNO cannot detect is unlikely to be noticed by customers to an extent that could significantly harm the MNO's competitiveness).

16.56 Although all such actions may individually be minor, their cumulative effect might still be significant. However we took into account our conclusions that:⁵⁷⁷

(a) there was no evidence that regulation was currently ineffective in preventing discrimination, even where Openreach already appeared to have the incentive to discriminate;

(b) our assessment in paragraph 16.29 suggested that any quality discrimination on Openreach products⁵⁷⁸ would have at most a temporary effect on MNOs in particular local areas; and

(c) CPs should be able to detect significant deterioration in quality following the merger even if they cannot detect discrimination.

16.57 Having considered these factors, we reached the view that on balance, even if the merged entity were to attempt several of these minor impact actions simultaneously, the overall impact on rival MNOs would not be large enough to materially harm them.

16.58 We therefore concluded that it was not likely that the merged entity would in the future have the ability and the incentive (because of the non-discrimination obligations) to degrade the quality of mobile backhaul it supplied to competing MNOs through Openreach.

⁵⁷⁶ This is observed, for example, by Vodafone in its [response to provisional findings](#), paragraph 9.2.

⁵⁷⁷ Further details of our assessment are set out in paragraphs 123 to 129 of Appendix K.

⁵⁷⁸ Apart from innovation, which we discuss in Strategy 3 below.

Strategy 3 – Foreclosure through frustration of innovation by Openreach or through Openreach’s investment decisions

- 16.59 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.⁵⁷⁹
- 16.60 As described in Chapter 4 (Regulation), Openreach is required to follow the SoR process when developing new products. Openreach must evaluate each request on the basis of its impact on Openreach only, without consideration of the implications for the rest of BT.⁵⁸⁰
- 16.61 Some third parties 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;⁵⁸¹ and
 - (b) backhaul products supporting Cloud-RAN technologies.⁵⁸²
- 16.62 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.⁵⁸³ 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.
- 16.63 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;

⁵⁷⁹ 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.,

⁵⁸⁰ In markets where BT has been found to have SMP, the SMP conditions require BT to follow a specified SOR process, and if BT refuses a request for network access on the basis that it is not reasonable, it must give reasons for such a refusal. This is accompanied by an SMP condition requiring BT not to unduly discriminate between downstream operators.

⁵⁸¹ [Sky initial submission](#), paragraph 7.5; [Sky response to provisional findings](#), paragraph 3.24; [Vodafone response to provisional findings](#), paragraph 2.34.

⁵⁸² [Vodafone initial submission](#), paragraph 2.43(i)(b).

⁵⁸³ Or other CPs that may in future wish to use small cells.

- (b) the merged entity blocked or delayed developments in backhaul technology which would benefit competing MNOs more than its mobile division; or
 - (c) the merged entity planned the development of its fixed network infrastructure in a way that favoured the needs of its mobile division.
- 16.64 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.⁵⁸⁴

Concerns relating to the development of small cell infrastructure

- 16.65 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).
- 16.66 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 power and a backhaul connection). In this section we analyse the merged entity's ability to discriminate against rival MNOs in the provision of backhaul services for small cells and of suitable sites.

Availability of backhaul products for small cells

- 16.67 Small cells have some specific requirements in relation to fibre backhaul. They require very small fibre termination equipment and, as they are mostly deployed outdoors without protection from weather conditions, the fibre

⁵⁸⁴ We have not analysed the issue of discrimination in relation to the provision of dark fibre, as we consider that any effect would not be merger-specific. In fact, Openreach has so far refused to supply dark fibre products for mobile backhaul and, absent regulatory intervention, it appears unlikely to do so in the future, irrespective of the merger. Ofcom told us that it was aware of one recent request for a dark fibre product submitted using the SoR process in November 2014 by Vodafone and supported by Sky, TalkTalk, Verizon Business and Level 3. The request was rejected by Openreach in December 2014 on the basis that it was not reasonable and also that it fell outside the scope of the regulated wholesale leased lines markets.

termination equipment also needs to be made rugged. While microwave backhaul could be deployed for small cells, line of sight and capacity limitations may make it impractical. In these cases, a point-to-multipoint fibre deployment would reduce costs when deploying fibre backhaul in neighbouring small cells. Provision of time signal over the backhaul would also reduce the cost of deployment, compared to the use of GPS clocks at every small cell (for more details on this issue, see paragraphs 16.161 to 16.164).

16.68 Openreach currently offers two products suitable for small cells:

- (a) Street Access, which is designed to connect to street furniture, such as street lamps; and
- (b) Mobile Infill Infrastructure Solution (MiiS), which connects to Openreach's telegraph poles.

Openreach does not currently offer a point-to-multipoint fibre product.

16.69 Small cells will be mostly deployed in dense urban areas, where MNOs have the highest need for additional network capacity. These are also the areas in which alternative providers of backhaul are more likely to be present. For example, Virgin Media and Arqiva claim to be able to offer backhaul in more than 400,000 locations in London, Birmingham, Manchester, Leeds, Bradford and Southampton, using a combination of Arqiva's wireless technology and Virgin Media's fibre network.⁵⁸⁵

16.70 Given the presence of alternative suppliers of backhaul solutions for small cells, it is unlikely that the merged entity would be able to impede rival MNOs' deployment of small cells by not providing suitable backhaul products.

Availability of suitable locations for small cells

16.71 In relation to Openreach's sites, 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

⁵⁸⁵ See TechWeekEurope article (20 February 2015), '[Virgin Media and Arqiva agree small cell partnership for better urban 4G](#)'.

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.⁵⁸⁶

- 16.72 We note that [X]. 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.
- 16.73 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.
- 16.74 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.
- 16.75 Ofcom told us 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.
- 16.76 The parties told us 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.
 - (b) Virgin Media and Arqiva have access through a joint arrangement to more than 400,000 locations.⁵⁸⁷
 - (c) Vodafone has signed a deal with JCDecaux that gives it access to owned bus shelters, billboards and street furniture.⁵⁸⁸

⁵⁸⁶ [Sky initial submission](#), paragraph 7.5.

⁵⁸⁷ See TechWeekEurope article (20 February 2015), '[Virgin Media and Arqiva agree small cell partnership for better urban 4G](#)'.

⁵⁸⁸ See TechWeekEurope article (10 December 2014), '[Vodafone to deploy small cells at bus stops and billboards](#)'.

- (d) National retail chains have a large portfolio of potential locations.
 - (e) In London, Transport for London owns many potential sites for small cells.
- 16.77 While some BT locations have the advantage of a fibre backhaul connection already installed, which would reduce the cost and time of installing a small cell, they also have potential disadvantages:
- (a) Small cells need to be within 50 metres of the area where high demand is experienced. BT does not own a high volume of assets that are likely to be within 50 metres of hotspots in urban areas: exchange buildings are too few in areas where small cells are required and BT's telegraph poles are typically not found in high street locations or dense urban areas.
 - (b) Small cells also need power, which is not already present in telegraph poles, unlike the case of, for example, lamp posts. Non-availability of power at site locations requires excess construction charges to be paid to power providers. Telephone kiosks do have power, but they do not usually have a fibre connection already present.
 - (c) An antenna for small cells would need to be at least several meters above ground to get adequate coverage. BT's telephone kiosks and cabinets would not deliver a structure to place an antenna at an adequate height; if they were used for small cell sites, new structures would need to be built close to those sites to deliver optimal antenna height, which would therefore need planning permission and would increase the cost of deployment.
- 16.78 Sky told us that, in order to get access to non-BT locations, MNOs would have to negotiate with multiple landlords, while the merged entity would only need to choose a location from its own estate.⁵⁸⁹ However, we considered this would not be the case, for the following reasons:
- (a) As seen above, Virgin Media and Arqiva offer a portfolio of more than 400,000 sites. An agreement with a local council can also give access to thousands of sites in an area.
 - (b) The location of BT's sites will make it difficult for EE to rely exclusively on them in the development of its small cells network.

⁵⁸⁹ [Sky response to provisional findings](#), Annex 2.

- 16.79 Finally, the allegedly higher cost of alternative locations has not discouraged MNOs from trying to agree access to them, as seen in paragraph 16.76(c) in the case of Vodafone.
- 16.80 Given the alternative means of accessing appropriate small cell sites, it is unlikely that the merged entity would be able to impede rival MNOs' deployment of small cells by not providing access to its portfolio of sites.

Conclusion – Development of small cell infrastructure

- 16.81 In light of the above, we concluded 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.

Concerns relating to Cloud-RAN

- 16.82 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.
- 16.83 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, [X]. 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 could harm rival MNOs by ceasing the development of products supporting this technology or restricting access to such products, a concern raised by Vodafone (see paragraph 16.61(b)).
- 16.84 We found that the merged entity's ability to harm rival MNOs by foreclosing supply of these products was limited. 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 the 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.⁵⁹⁰ According to Ofcom, the level of additional benefits that Cloud-RAN could deliver above those offered by LTE-Advanced is still uncertain, while the stringent requirements in terms of latency would translate into significant investment costs in backhaul capacity and equipment.

- (b) It is also likely that Cloud-RAN would be used especially in dense urban areas with high capacity needs rather than nationwide. EE told us that even in countries where dark fibre was widespread, Cloud-RAN had been used only in certain areas. In these urban areas alternative providers of backhaul are usually available.

16.85 In light of the above, we 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

16.86 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.

16.87 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, absent regulation, BT already had a strong pre-merger incentive to discriminate in this way against its current rivals in fixed communication services. In fact, pre-merger BT competes strongly with other CPs in fixed wholesale markets, such as markets for business connectivity, and these CPs submit SoRs to Openreach. 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 the regulation is effective now, and would therefore be effective post-merger, in curbing BT's ability and/or incentive to discriminate against rivals (see also paragraph 16.21).

⁵⁹⁰ LTE-Advanced provides several efficiency benefits:

- Enhanced MIMO (multiple input, multiple output), which quadruples the number of spatially separated channels and the corresponding cell capacity.
- Carrier aggregation, which combines spectrum bands to increase cell capacity.
- Heterogeneous networks, which introduce a range of smaller cells to provide additional network capacity in areas of high demand or poor coverage.
- Techniques for reducing the effects of interference and increasing wanted signal levels, especially near cell edges, to improve the uniformity of service across a cell (eg as enhanced inter-cell interference cancellation (eICIC) and coordinated multipoint (CoMP)).

- 16.88 We found that the SoR process is subject to intense scrutiny. Openreach, the EAO and 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. This regular monitoring makes it more likely that discrimination would be detected.
- 16.89 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.⁵⁹¹
- 16.90 Vodafone, on the other hand, noted that Ofcom had found that the success rate for SoRs submitted by BT was higher than for other CPs.⁵⁹² Ofcom, however, considered that these results should be interpreted with caution, as:
- (a) in some instances, a request may be proposed by BT Wholesale on behalf of a number of CPs, so that there may not be a clear dividing line between BT's requests and those of other CPs, which devalues the statistics; and
 - (b) it is likely that BT has greater demand volumes, making the business case for its SoRs more likely to succeed.⁵⁹³
- 16.91 Vodafone also told us that Openreach could discriminate against other CPs which competed with BT downstream by saying that, unless also wanted by BT, the demand for the innovation wanted by the other CPs did not justify its business case.⁵⁹⁴ However, if true, we did not consider this a form of discrimination, as it would be unreasonable to expect Openreach to develop a product if it forecasted an insufficient level of demand.
- 16.92 Finally, CPs have the right to appeal to Ofcom if they think they have been discriminated against in the treatment of an SoR, which increases the likelihood of Ofcom taking action. Ofcom has so far received only two formal complaints, and has dismissed both of them.⁵⁹⁵ Although TalkTalk told us

⁵⁹¹ [EAB Annual Report 2015](#), p17.

⁵⁹² [Vodafone response to provisional findings](#), paragraph 2.40. Ofcom makes that observation in its [BCMR May 2015 consultation annexes](#), paragraph A27.31.

⁵⁹³ [BCMR May 2015 consultation annexes](#), paragraph A27.31.

⁵⁹⁴ [Vodafone response to provisional findings](#), paragraph 2.41.

⁵⁹⁵ 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)'.

that there was evidence that Openreach discriminated against non-BT CPs in the choice of Metallic Path Facility (MPF) technology,⁵⁹⁶ we do not consider that is the case, as explained in detail in Appendix K, paragraphs 130 to 133.

- 16.93 In light of the lack of any evidence of BT using the SoR process to discriminate against its current rivals, and the countervailing regulatory constraints that BT would face if it attempted to do so post-merger, which include monitoring and the possibility of appeal to Ofcom, both of which increase the likelihood of Ofcom taking action against discriminatory behaviour in relation to SoRs, we concluded that it was unlikely that the merged entity would be able, or have sufficient incentives (due to regulation),⁵⁹⁷ to harm rival MNOs by pursuing this foreclosure strategy.

Concerns relating to other strategic decisions taken by Openreach

- 16.94 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.⁵⁹⁸
- 16.95 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. We therefore considered the possibility that the merged entity may plan the development of Openreach's fibre infrastructure in a way that favoured its mobile division.
- 16.96 BT's fibre network is in large part in place, with new deployment being largely minor and local branches of fibre. With the exception of SFBB, Openreach does not have a fibre roll-out plan. Instead, it provides fibre to new premises on an order-by-order basis. In delivering orders, Openreach uses existing fibre where it can or lays new fibre through its existing ducts; in

⁵⁹⁶ [TalkTalk response to provisional findings](#), paragraph 9.16. MPF is a technology that fixed CPs use to offer retail voice and broadband services.

⁵⁹⁷ See paragraph 16.13.

⁵⁹⁸ See [Vodafone response to provisional findings](#), paragraph 2.44.

a minority of cases, new ducts are built. The exact path followed is likely to be mainly determined by practical considerations such as the routing of ducts, cable congestion within the ducts, local authority permissions for traffic management, and availability of wayleaves. It is therefore difficult to see how Openreach could strategically and systematically route its fibre connections close to EE's radio sites to discriminate against EE's rivals.⁵⁹⁹

- 16.97 In addition, 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.
- 16.98 We therefore concluded that the merged entity would be unlikely to have the ability to foreclose rival MNOs by designing its fibre footprint to support its own mobile demand.

Strategy 4 – Foreclosure through supply of BT Wholesale's managed backhaul services at contract renewal

- 16.99 We then considered a potential foreclosure strategy that involved the merged entity foreclosing rival MNOs' access to managed backhaul services at contract renewal.⁶⁰⁰
- 16.100 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 services and would likely incur substantial costs in attempting to replicate the BT managed service (through self-supply and Openreach inputs). Some third parties submitted that this could therefore have

⁵⁹⁹ BT also told us that it might be difficult to forecast the exact locations of small cells that MNOs would require in the future.

⁶⁰⁰ We assess a foreclosure strategy under current contracts separately from paragraph 16.152 (Strategy 5).

significant implications for the competitiveness of rival MNOs in the retail mobile market.⁶⁰¹

16.101 We assessed these concerns in two parts:

- (a) First, we considered whether the merged entity could harm rival MNOs by refusing to supply them managed backhaul (ie total input foreclosure) and whether it would have the incentive to do so.
- (b) Second, we considered whether the merged entity could harm rival 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)

16.102 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.

16.103 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).

⁶⁰¹ [Telefónica initial submission](#), paragraphs 3.9–3.11; [Vodafone initial submission](#), paragraphs 2.32–2.41; [H3G hearing summary](#), paragraph 48; [Sky response to issues statement](#), paragraphs 4.5–4.10.

16.104 We set out our assessment of ability and incentive below.

The ability to cause a price increase or quality reduction by withdrawing supply

16.105 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.

16.106 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.

16.107 In relation to alternative suppliers, the parties told us 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.⁶⁰² 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.⁶⁰³

16.108 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,

⁶⁰² 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 [3%] of BT Wholesale's revenues from MEAS.

⁶⁰³ 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.

Virgin Media is competitive in the areas within its network's footprint,⁶⁰⁴ but it may not be so in areas where it has to rely on Openreach's inputs.

16.109 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).⁶⁰⁵ 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.

16.110 In relation to self-supply, we found that [REDACTED].

16.111 Our view is that BT Wholesale would have an 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. BT told us that MNOs frequently used the threat of alternative suppliers in order to achieve a better deal from BT Wholesale. Therefore, although pricing was not public, BT Wholesale could be expected to have an indication of the level of pricing for alternatives. For example, the price difference between Virgin Media and BT Wholesale at a tender launched by MBNL in 2014 was around [REDACTED]%. We therefore concluded that:

- (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.

16.112 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.

⁶⁰⁴ Virgin Media told us 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.

⁶⁰⁵ [Vodafone initial submission](#), paragraph 2.27(ii).

- *Vodafone*

16.113 [REDACTED]

16.114 As we concluded that the merged entity has no ability to foreclose rival MNOs by changing the price or quality of Openreach's backhaul products (see Strategies 1 to 3 above), [REDACTED].

16.115 [REDACTED], it appears therefore unlikely that the merged entity would have the ability to increase the price or reduce the quality of backhaul services used by Vodafone by refusing to supply it with managed backhaul products at contract renewal time.

16.116 Vodafone plans to keep using [REDACTED] sites, in areas [REDACTED]. Although the merged entity may be able to impose a significant cost increase on Vodafone in relation to these sites, [REDACTED] makes it highly unlikely that this could have a significant impact on Vodafone's overall costs.⁶⁰⁶ Moreover, we considered that BT would have an incentive to charge a high price at these sites even pre-merger.

- *Telefónica and H3G*

16.117 Currently, H3G's and Telefónica's⁶⁰⁷ preferred alternatives would be either using dark fibre supplied by companies like CityFibre or Zayo ([REDACTED]), or purchasing managed backhaul services from Virgin Media or from other potential suppliers ([REDACTED]), most likely Vodafone, which already self-supplies part of its fibre circuits, and TalkTalk.

16.118 Our assessment of alternative suppliers is set out in detail in Appendix K, paragraphs 134 to 142.

16.119 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

⁶⁰⁶ Table 1 in Appendix K.

⁶⁰⁷ In this subsection we consider first the implications of the theoretical framework for the case of foreclosure of Telefónica and H3G, and then additional considerations applying exclusively to H3G.

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, it may be unable or unwilling to supply backhaul at the same prices as BT Wholesale.

(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, [REDACTED].⁶⁰⁸

16.120 In light of the evidence we obtained, in the case of reduced competition from BT Wholesale, we considered that neither Vodafone nor TalkTalk nor independent fibre operators would be likely to impose sufficiently strong competitive pressure to keep the prices and quality of managed backhaul services at their pre-merger levels.

16.121 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.

16.122 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) [REDACTED]

(b) [REDACTED]

(c) [REDACTED]

16.123 [REDACTED]. They will therefore govern the choice of backhaul supplier at the expiry of the current contract with BT Wholesale in 2018. According to H3G, however, these arrangements [REDACTED].⁶⁰⁹ Unilateral deployment would, of course, be more costly for both MNOs, but more so for H3G, which could

⁶⁰⁸ 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 ([REDACTED]% in terms of subscribers), even in relation to its host MNO, which has a [REDACTED]% 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.

⁶⁰⁹ [REDACTED]

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.⁶¹⁰

Estimating the loss of MNOs' customers that would make foreclosure profitable

16.124 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 160 to 210.

16.125 We summarise our approach and findings in the remainder of this section.

16.126 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 simple 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 whose values 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 other than Openreach, so an alternative supplier of managed backhaul would require Openreach inputs. We considered this assumption to be conservative (ie giving the strongest possible incentive to foreclose),

⁶¹⁰ The merging parties told us that, post-merger, [REDACTED]. We note, however, that it would be very costly for H3G to leave MBNL before [REDACTED].

since foreclosed MNOs might decide to use more Virgin Media circuits or dark fibre, or install more microwave links.⁶¹¹

- (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 an additional margin that may be gained by cross-selling fixed communication services to these new mobile customers, if mobile services come to influence significantly consumers' choice of fixed service supplier (although, as we discuss in Chapter 14, we do not consider this to be likely, we considered that using a figurative 20% adjustment allowed us to be 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.⁶¹²

16.127 In summary, our analysis suggested that, for total foreclosure to be profitable, H3G, and its hosted MVNOs, would need to lose at least [X] retail customers, corresponding to [X]% of their customer base. Telefónica, and its hosted MVNOs, would need to lose at least [X] retail customers, or [X]% of their customer base for total foreclosure to be profitable.

Estimating the expected decrease in MNOs' customers

16.128 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

⁶¹¹ 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 primarily 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.

⁶¹² This assumption may bias the estimation in either direction.

this might increase the number of customers lost by the foreclosed MNOs.

The expected increase in backhaul costs

- 16.129 We first estimated how much the backhaul costs of an MNO would increase as a result of the refusal to supply by the merged entity, which would force the MNO to source from an alternative supplier. 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 16.120.
- 16.130 The best approach would be to set the prices that alternative suppliers would be expected to charge at a level consistent with post-merger competition. 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 182 to 190. In the estimation we excluded the cost elements that were clearly fixed in nature (eg parallel running costs), as fixed costs were less likely than variable costs 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 88 to 94.
- 16.131 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 188(c)), 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

- 16.132 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.
- 16.133 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.⁶¹³ 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.

- 16.134 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 16.127): expected churn is lower than [X] 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 in the case of Telefónica, while it is approximately 12% higher in the case of H3G. However, isoelastic demand tends to overestimate cost pass-through, implying that it is higher than 100%, and other assumptions in the model are biased towards making foreclosure easier. Taking all of the above in the round, we did not find it likely that the merged entity would find it profitable to withdraw supplies to H3G and Telefónica. Therefore, we found that it would not have an incentive to withdraw supply post-merger.

Quality differences and their impact on MNOs' competitiveness

- 16.135 Telefónica told us that BT Wholesale may be the only supplier offering IP/VPN-based services. However, Vodafone told us that it would also be able to provide an IP/VPN service.
- 16.136 Telefónica believed that, if it had to switch backhaul supplier, 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 [X] outage at each cell site. H3G, therefore, expected that the impact on customer churn would be significant. H3G, however, described this situation only as 'not ideal' and as adding a further layer of complexity that H3G would have to manage, noting [X]. We also note that any impact on service quality would be transitory.

⁶¹³ 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.

16.137 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 differences which would alter our assessment of the merged entity's incentive post-merger.

Conclusion – Refusal to supply managed backhaul services

16.138 Based on the analysis outlined above, we found that the merged entity would be unlikely to have the ability to increase the price or reduce the quality of backhaul services used by Vodafone by refusing to supply it with managed backhaul services. Whilst the merged entity might have the ability to cause harm to H3G and Telefónica by means of 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 these rival MNOs were due for renewal.

Analysis of partial foreclosure

16.139 The analysis above concerned withdrawal of supply (ie total foreclosure) at contract renewal. However, we identified other foreclosure strategies that the merged entity could engage in, to 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.

16.140 Before assessing these partial foreclosure strategies, we first considered the materiality of a quality degradation that could be imposed by BT Wholesale.

Materiality of quality degradation

16.141 BT told us that a significant limitation on its ability to degrade quality was the use of classes of service streams. BT's core network prioritised traffic into three separate streams (which included both MNO and non-MNO traffic) and BT had no ability to give preference to any traffic within an individual stream. [REDACTED]. MNOs using a specific type of technology (IP/VPN) could choose to prioritise their traffic into any one of three streams, depending on their requirements. [REDACTED]

16.142 There are therefore limited ways in which BT Wholesale can degrade the service provided to MNOs without significantly affecting 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';⁶¹⁴ and
- (b) denying the MNOs access to new products developed by Openreach during the life of the contract.

Ability and incentive to partially foreclose

16.143 As seen in paragraph 16.116, Vodafone would need to contract with BT Wholesale for a number of MEAS circuits at the end of the current contract. However, [X]. For this reason, Vodafone is unlikely to become the target of partial foreclosure strategies. We therefore focused on the potential for partial foreclosure of H3G and Telefónica.

16.144 Post-merger, we do not expect BT Wholesale to offer MNOs significantly 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 paragraph 16.111), 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 significantly worse terms at contract renewal post-merger than in the counterfactual.

16.145 Moreover, a minor weakening of the terms offered by BT Wholesale would be unlikely to have a significant impact on the MNOs' competitiveness, given the small incidence of backhaul on MNOs' total costs (see paragraph 16.22 and Table 16.1), and hence any gain to the merged entity would be small. The merged entity would balance this limited gain against the risk of losing a substantial income, so that its incentive to offer worse terms post-merger would be limited.

16.146 On the other hand, after a new contract between BT Wholesale and the MNOs is signed, there may be an incentive to delay fault repair or the supply

⁶¹⁴ In relation to fault repairs, we have seen in paragraph 16.29(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.

of new connections, and to deny MNOs access to new technologies or backhaul products that may emerge during the contract's lifetime

16.147 When negotiating with BT Wholesale, the MNOs will be aware of the merged entity's future 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 on similar terms as in the counterfactual, the MNOs should have a sufficiently strong bargaining position to be able to impose these terms as a condition for contracting with BT Wholesale (ie to get an outcome equivalent to that which they would have received in the counterfactual). Given that, as concluded in paragraph 16.139, 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.

16.148 We note that there could be some risk of quality degradation as a result of behaviour by BT within 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.

16.149 Even if these potential risks did 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 affect that MNO's competitive offering);
- (b) Important technological innovations are usually developed over the course of several years and so might be envisaged at the time the contract is signed; and
- (c) Even if such risks materialised, any such impact would only be at most for the duration of the contract.

16.150 In light of the above, we therefore consider that, even after signing new contracts for the supply of backhaul services, the merged entity would not be able to significantly harm rival MNOs.

Conclusion – Partial foreclosure of managed backhaul services

16.151 Because of the constraints exercised by alternative suppliers and the fact that the merged entity can be expected to remain in the market with an incentive to win contracts with MNOs, MNOs will have the ability to protect themselves against most material risks through commercial negotiations. In any event, BT Wholesale's ability to impose a service deterioration is 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

16.152 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.

16.153 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: [X]

[X]

Source: [X]⁶¹⁵

16.154 Some third parties raised concerns that the merged entity could harm rival MNOs in contract by denying them access to innovation, increasing prices

⁶¹⁵ 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, [X] new sites; for Telefónica, [X]; and for Vodafone, [X]. These circuits will be delivered in the next years and will remain committed to BT Wholesale for [X] years.

and/or reducing quality of BT Wholesale's managed fibre mobile backhaul to one or more competing MNOs.

16.155 We therefore assessed whether the merged entity could harm rival MNOs by pursuing the following strategies and, if so, 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

16.156 We considered that long-term contracts with significant minimum volume obligations could raise concerns if, during the lifetime of the contract, new backhaul innovations became available (or could be developed) that might be desired by rival MNOs to the merged entity.⁶¹⁶

16.157 The theory of harm here is that, whilst BT might pre-merger be willing 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).

16.158 The parties told us that the existing contracts contained change control provisions which allowed for amendments to terms, including the price, to be agreed.⁶¹⁷ However, it was not clear that the current contractual terms would prevent BT from blocking access to such changes.

16.159 We asked third parties to identify any important innovations that could become available in the next few years. They identified:

- (a) phase synchronisation;
- (b) access circuits with capacity above 1 Gbit/s; and
- (c) dark fibre access circuits.⁶¹⁸

16.160 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

⁶¹⁶ Such concern applies to Telefónica and Vodafone, whose contracts have a longer residual duration, more than to H3G. [§X]

⁶¹⁷ See [BT initial submission](#), section C, paragraph 4.33.

⁶¹⁸ [Vodafone response to provisional findings](#), paragraph 3.4.

technologies (see paragraph 16.147). We therefore focused our assessment on innovations that were reasonably foreseeable in the next three to five years (in line with the duration of the current contracts). It is of course possible that an innovation may become available in that timeframe that MNOs are not yet aware of, but in the unlikely event that an unforeseen innovation that could have a material impact arises, the remaining duration of contracts will be short. In any event, we cannot sensibly assess an innovation we do not know about.

Phase synchronisation

- 16.161 One third party, [X], told us that BT would delay the development of phase synchronisation, a technology that MNOs need in order to use TDD spectrum.⁶¹⁹ 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.
- 16.162 We noted that alternative technologies are available, such as the use of GPS clocks. According to one third party UK Broadband, which already uses TDD spectrum, these clocks are quite inexpensive.
- 16.163 Vodafone, however, told us that GPS clocks could not be used in indoor locations where small cells might be required, as the GPS signal would not be received; moreover, even in outdoor locations, the presence of high-rise buildings in the vicinity of a small cell site might create a ‘canyon effect’, so that the small cells might have limited ability to receive the signal from the GPS satellites.⁶²⁰ These limitations, however, do not appear insurmountable, as:
- (a) Indoor small cells would be particularly useful in locations with a high traffic concentration, especially at peak time, such as shopping centres and train stations. In such locations it would be possible to use GPS clocks by installing an antenna on the roof connected to the indoor cell. We expect that landlords in those locations would allow such installation, because it would help them ensure good mobile connectivity. Finally, in

⁶¹⁹ 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). [X]

⁶²⁰ Vodafone response to provisional findings, paragraph 3.3.

its statement on the PSSR award, Ofcom suggested that small cells in indoor domestic environments did not typically need to synchronise.⁶²¹

- (b) Ofcom also stated that outdoor small cells would typically have no difficulty in receiving GPS satellite reception.⁶²² GPS clocks may be required to prevent timing drift over a long period, such as 24 hours. However, if the GPS signal was lost during the day, an internal clock could maintain timing synchronisation until the GPS signal was re-established. Ofcom is aware of an example where an internal clock could maintain the system for up to 8 hours.

16.164 GPS clocks appear therefore to be a valid alternative to phase synchronisation provided through the backhaul connection. For this reason, while we found that the merged entity could have the ability to increase an MNO's costs, we concluded that MNOs would have a viable alternative available to them, so that any such cost increase would not be of a magnitude to cause harm to their downstream business.

Access to circuits with capacity above 1 Gbit/s

16.165 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.

16.166 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 this strategy. We analyse the strategy separately for the three rival MNOs.⁶²³

- *Foreclosure of Telefónica*

16.167 Telefónica told us that it might need higher capacity backhaul during the life of its current contract with BT Wholesale, but that it did not have any forecast on future requirements.⁶²⁴ The need for higher capacity would arise [§]. As these scenarios are quite speculative, we considered it unlikely that the

⁶²¹ [Public Sector Spectrum Release: Award of the 2.3 and 3.4 GHz spectrum bands statement \('PSSR statement'\)](#), 26 May 2015, paragraph 8.61.

⁶²² *ibid*, paragraph 8.63.

⁶²³ A more detailed analysis is developed in Appendix K, paragraphs 143–152.

⁶²⁴ [Telefónica response to provisional findings](#), p10.

merged entity would have the ability to harm Telefónica by denying access to circuit upgrades.

- *Foreclosure of Vodafone*

- 16.168 Based on the estimate we received, it is likely that, between now and [X], Vodafone will need backhaul capacity above 1 Gbit/s in [X] sites.⁶²⁵ Vodafone told us that, if a site required capacity above 1Gbit/s (even if the capacity required was below 2 Gbit/s), it would likely [X]. This was because BT did not offer circuits between 1 Gbit/s and 10 Gbit/s, and [X].
- 16.169 Purchasing an additional circuit from Openreach 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.⁶²⁶ However, given the [X] upgrades that Vodafone would need by [X], the cost increase would be sufficiently small not to have a significant impact on Vodafone's competitiveness. The cost increase would also be temporary, ending when the current circuits will no longer be committed to BT Wholesale.
- 16.170 In addition to duplication costs, Vodafone told us that the use of multiple circuits would introduce operational issues which could affect service performance. In particular, as separate transmission paths would have different circuit routes, there might be differences in latency.
- 16.171 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, [an MNO] told us that, if the same supplier was used, no impact on the quality of service would be expected.
- 16.172 We therefore 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

⁶²⁵ [X]

⁶²⁶ 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.

therefore not likely that the denial of upgrades would harm Vodafone's downstream business.

- *Foreclosure of H3G*

16.173 H3G told us that, [REDACTED].⁶²⁷ As seen in Figure 16.1, [REDACTED].

16.174 [REDACTED].⁶²⁸ [REDACTED],⁶²⁹ [REDACTED].

16.175 There would therefore remain many sites at which H3G may have to proceed with a unilateral deployment of additional backhaul capacity by 2017. [REDACTED], and this constrains the amount that H3G would be willing to pay for circuit upgrades. [REDACTED].⁶³⁰

16.176 Post-merger, should BT Wholesale not offer circuit upgrades and should EE decide [REDACTED] 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).

16.177 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) [REDACTED]; the increase in H3G's costs in case of foreclosure compared to the counterfactual would, therefore, be 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 a viable alternative. In this case, the merged entity would lose the wholesale margin on the additional backhaul capacity if it refused to supply H3G. The vertical arithmetic analysis developed in paragraphs 16.124 to 16.134 suggests that it would not have an incentive to engage in such foreclosure.
- (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 concluded in

⁶²⁷ [REDACTED]

⁶²⁸ [REDACTED]

⁶²⁹ [REDACTED]

⁶³⁰ [REDACTED]

paragraph 16.138 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.

- 16.178 In light of the above, we concluded that the merged entity would be unlikely to have the incentive to force H3G to unilaterally deploy additional circuits.

Dark fibre access circuits

- 16.179 As discussed in paragraph 15.37, Ofcom has proposed to impose on BT an obligation to provide access to dark fibre. If the proposed regulation is approved and included in the 2016 BCMR, Openreach would have to start offering dark fibre access circuits within one year, that is, by early 2017.⁶³¹ Vodafone has expressed the concern that BT Wholesale could deny MNOs access to this new product under the current contracts, therefore increasing their costs with respect to EE.⁶³² We note dark fibre would offer the same functionality as lit fibre, and so the only attraction to MNOs would be if BT Wholesale using dark fibre could reduce the MNOs' costs.
- 16.180 First, we note that it is uncertain whether this regulation will be approved. Absent regulation, we do not expect Openreach to offer dark fibre products, and therefore BT Wholesale would not be able to make use of them. In this case, there would be no merger-specific concern. For completeness, we have considered what would happen if access to dark fibre is mandated.
- 16.181 We considered that, absent the merger, BT Wholesale would have no incentive to allow MNOs a cost saving by using dark fibre under the current contracts. We can illustrate this by comparing with the case of capacity upgrades for EAD circuits, analysed in paragraphs 16.165 to 16.178. In that case, upgrading a circuit is less costly than adding a second one and the cost savings can be split between BT Wholesale and the MNO to find a mutually beneficial agreement. In the case of dark fibre, on the other hand, substituting a dark fibre circuit for an existing active product, such as EAD or EAD LA, would not significantly reduce the ongoing costs incurred by the vertically integrated BT;⁶³³ and BT would incur additional costs in substituting the electronic equipment. Therefore, we considered that BT Wholesale

⁶³¹ [BCMR May 2015 consultation](#), Table 9.1.

⁶³² [Vodafone response to provisional findings](#), paragraph 3.4.

⁶³³ Note that the pricing of dark fibre, which is still the subject of consultation, does not affect BT's vertically integrated costs: it would be a transfer from BT Wholesale to Openreach.

would not have any incentive to switch to a dark fibre product at a reduced price to MNOs absent the merger.

16.182 We therefore conclude that it is uncertain that regulation mandating access to dark fibre will be introduced. Absent that regulation, we do not expect Openreach to offer dark fibre products, and therefore BT Wholesale would not be able to make use of them and there would be no concern. For completeness, if access to dark fibre was mandated, we conclude that with respect to the denial of access to dark fibre backhaul under the current contracts between the MNOs and BT Wholesale there is no merger effect.⁶³⁴

Increase in price or reduction in quality of service of the services offered to individual MNOs

16.183 In this section we consider in turn possible foreclosure of H3G, Telefónica and Vodafone through an increase in price or reduction in quality under their current contracts with BT Wholesale.

Foreclosure of H3G

16.184 As shown in Figure 16.1 above, [REDACTED].

- *Ability to foreclose*

16.185 H3G submitted that it might be discriminated against in terms of the service quality provided for its [REDACTED] traffic by BT Wholesale during the contract.⁶³⁵

16.186 [REDACTED]. We did not consider further the potential degradation of backhaul used for 3G, [REDACTED].

16.187 [REDACTED]

16.188 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) instead of only targeting H3G. As set out previously in paragraph 16.141, at that level BT Wholesale is not able to treat traffic differently according to its source. Therefore any reduction in the quality of service would have the same impact on all the

⁶³⁴ BT Wholesale told us that [REDACTED]. BT Wholesale would have an incentive to offer these services when negotiating a new contract both pre-merger and, given our conclusion in paragraph 16.138, post-merger.

⁶³⁵ [H3G hearing summary](#), paragraph 61.

customers whose traffic is carried in the same class of service [REDACTED]. Even if BT's own traffic were carried in a different class of service, such an intervention would damage BT Wholesale's relationship with many non-MNO customers, such as purchasers of business connectivity services. Therefore, the merged entity would not have the ability to specifically target H3G through this foreclosure strategy without also affecting its other customers, including non-MNOs and potentially itself.

16.189 H3G has also expressed the concern that, when providing 4G upgrades of existing Openreach links and deployments of new Openreach links to [REDACTED] cell sites, BT Wholesale could [REDACTED].

16.190 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 are likely to be limited.⁶³⁶

- *Incentive to foreclose*

16.191 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 2018 onwards (see our conclusion on total foreclosure at contract renewal in paragraph 16.138).

16.192 In light of this and our finding of 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, see paragraph 16.188), we considered it unlikely that the merged entity would have an incentive to pursue this strategy.

Foreclosure of Telefónica

16.193 As shown in Figure 16.1 above, [REDACTED]. [REDACTED]

16.194 With respect to a reduction of the quality of service, on the access component, the quality of the provision and repair service depends on Openreach and, although Telefónica has expressed dissatisfaction with Openreach's service, it does not consider discrimination likely. On the 'aggregation' component, although Telefónica believes that, in theory, BT Wholesale could prioritise EE's traffic with respect to Telefónica's, [REDACTED]. Telefónica, therefore, believes the merged entity will have the ability and incentive to give higher priority to EE's traffic.

⁶³⁶ [REDACTED]

16.195 As we have seen in paragraph 16.141, the only way BT could prioritise EE's traffic would be associating it to a higher class of service than that reserved for other MNOs. However, any MNOs consuming IP/VPN would also have the right to allocate their traffic to any class of service (see paragraph 16.141). This is the case for Telefónica. Our view is therefore that the merged entity is unlikely to have the ability to discriminate against Telefónica by prioritising EE's traffic.

Foreclosure of Vodafone

16.196 Figure 16.1 above and footnote 615 show that [REDACTED].

16.197 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.⁶³⁷ Vodafone told us that [REDACTED], 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.

16.198 Circuit deployments and repairs are performed by Openreach and, as we 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.⁶³⁸ Vodafone told us that, by slowing the flow of information, BT Wholesale might be able to delay the delivery of a new circuit by several weeks. According to Vodafone, the potential implications for it are:

(a) a delay in the expansion of its 4G network;

(b) [REDACTED]

(c) [REDACTED]

16.199 However, the length of the delays that can be caused by BT Wholesale (ie excluding those for which Openreach is responsible) would be limited. Moreover, the effects of such delays would be temporary and localised and the possible impact on Vodafone's costs would be small relative to Vodafone's overall costs and revenues. Therefore, it is unlikely that the merged entity could use such a strategy to foreclose Vodafone.

⁶³⁷ Vodafone initial submission, paragraph 2.40(ii).

⁶³⁸ [REDACTED]

Conclusion – Increase of price or reduction in quality under current contracts

16.200 The information we have collected suggests that the merged entity is unlikely to have the ability to materially harm 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, we found it was unlikely that the merged entity would be able to target H3G through network failures, without also affecting its other customers and potentially itself. We also found that the opportunities for the merged entity to discriminate against H3G by prioritising its own cell sites and delaying the delivery of circuit upgrades that only benefited H3G were likely to be limited, as the areas where mobile traffic is highest were likely to be mostly the same for the merged entity and H3G. In any event, on the basis of the evidence available to us, we conclude that the merged entity 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.

16.201 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 (strategies 1, 4 and 5). This section, therefore, will concentrate on the second strategy: reducing the downstream prices (or, equivalently, increasing the products' quality keeping the prices unchanged).

16.202 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 on this cost reduction into retail prices, leading to a situation in which rivals, which face higher costs, cannot compete effectively. 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.

16.203 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.⁶³⁹

Margin squeeze through a reduction of retail prices

16.204 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.

16.205 A detailed analysis is developed in Appendix K, paragraphs 153 to 159. 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

16.206 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.⁶⁴⁰

⁶³⁹ [Vodafone initial submission](#), paragraph 2.62.

⁶⁴⁰ [Vodafone initial submission](#), paragraph 2.62.

16.207 However, EE has told us that [REDACTED]. Moreover, given the small incidence of backhaul on overall costs, [REDACTED].

16.208 We therefore conclude 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 that would harm competition.

Cumulative effect of foreclosure strategies

16.209 In this final section, we consider whether the combined adoption of the six strategies analysed above would increase the merged entity's incentive to foreclose rival MNOs compared to a situation in which each strategy is individually assessed.

16.210 In relation to strategies 1, 2 and 3, which all relate to foreclosure through services provided by Openreach, we reached the conclusion that the regulation to which BT is subject would make it unlikely that MNOs could be harmed by means of these strategies. For this reason, the assessment would not change if these strategies were considered cumulatively, nor would the combined adoption of these and any of the remaining strategies affect the analysis of the latter.

16.211 The same applies in relation to strategy 6 and, for the case of foreclosure of Telefónica and Vodafone, strategy 5, where we found that the merged entity would have no ability to cause harm to these MNOs. This conclusion would continue to hold even if these strategies were adopted in combination with each other and with others.

16.212 In strategies 4 and, in the case of foreclosure of H3G, strategy 5, we found that ability to cause harm could be present; moreover, these strategies relate to non-regulated products. However, when assessing the likelihood that the merged entity would have the incentive to pursue each of these strategies, we found it unlikely that it would do so. The two strategies would be put in place at different times (strategy 5 under the current contracts between the MNOs and BT Wholesale, while strategy 4 at contract renewal). Therefore, the merged entity's incentive to engage in strategy 4 would not depend on whether it had previously adopted strategy 5. On the other hand, the link between the merged entity's incentives to engage in strategy 5 and its incentives at contract renewal has already been taken into account in our analysis (see paragraph 16.191).

16.213 Therefore, after assessing these strategies individually and together, we did not find it likely that the merger would create or enhance the merged entity's ability and incentive to foreclose rival MNOs through the provision of fibre mobile backhaul.

Conclusion

16.214 In light of our assessment, we 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 fibre 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.⁶⁴¹ 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 fibre networks on a local basis.⁶⁴² 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 FTTC⁶⁴³ and FTTH⁶⁴⁴) 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 us 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.⁶⁴⁵
- 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

⁶⁴¹ MNOs can either self-supply extra inputs or commission a third party to provide other inputs on top of the dark fibre product.

⁶⁴² For example, CityFibre announced on 14 December 2015 that it had agreed to [acquire KCOM’s fibre and duct network assets](#) outside Hull for £90 million.

⁶⁴³ Access network consisting of optical fibre extending from the access node to the street cabinet.

⁶⁴⁴ A form of fibre optic communication delivery in which the optical signal reaches the end user’s home. Also known as FTTP.

⁶⁴⁵ 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.⁶⁴⁶

Incentive

- 17.10 We 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

⁶⁴⁶ 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;⁶⁴⁷ and second, that there would not be alternative purchasers of dark fibre access (specifically, those suitable to act as anchor tenants). We therefore considered whether:

(a) 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;

(b) EE or MBNL would have purchased from a new supplier absent the merger; 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.

Whether the merged entity would be able to influence MBNL's decision making

17.14 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, [REDACTED]; and that there was limited potential to affect choice of backhaul

⁶⁴⁷ For these purposes, we exclude the existing MBNL agreement with CityFibre in Hull, [REDACTED], and since we understand that the lack of BT fibre in Hull makes a BT alternative unsatisfactory.

supplier, since a lot of MBNL's backhaul was under long-term contracts already.

- 17.15 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 [REDACTED]. 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.

Likelihood of EE or MBNL purchasing from a new supplier

- 17.16 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 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.
- 17.17 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.
- 17.18 Our review of EE's internal documents [REDACTED].
- 17.19 We also sought views from H3G, as EE's joint venture partner in MBNL. H3G told us that, to date, [REDACTED]. 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.
- 17.20 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 (see 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;⁶⁴⁸ and
- (ii) these proposals may already be having a chilling effect on both 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,⁶⁴⁹ 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.

17.21 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.⁶⁵⁰ We also took into account that Ofcom had been considering access to Openreach's dark fibre for several years, having previously decided not to grant access, and that its current consultation was at a reasonably advanced stage, although the detail of the pricing proposals was new to this

⁶⁴⁸ 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.

⁶⁴⁹ [Ofcom's BCMR](#).

⁶⁵⁰ 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.

consultation. Therefore the current proposal was the result of a considerable amount of investigation.

- 17.22 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 (including possible legal appeals to Ofcom's decision), in the counterfactual.

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 that the majority of CityFibre's current anchor tenants were not MNOs; 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. [REDACTED]. However, we note that CityFibre's response to Ofcom's BCMR consultation said that the proposed pricing 'destroys the viability of anchor tenancy by increasing the volume of circuits in anchor contracts to unobtainable levels'.⁶⁵¹
- 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 ([REDACTED]) 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.

⁶⁵¹ 2015 BCMR and LLCC Consultations (Confidential Version) Response submitted by CityFibre Holdings Limited 7th August 2015, paragraph 3.9.4.

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. [REDACTED]. However, it was recently announced that CityFibre had agreed a deal with Vodafone to [REDACTED] in York, and had agreed a framework agreement under which it expected Vodafone to use networks in other cities covered by CityFibre in future.⁶⁵² [REDACTED].
- (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. CityFibre submitted that if H3G were to complete its proposed purchase of Telefónica, then given H3G's more positive attitude towards dark fibre, Telefónica would become a more likely purchaser. We note that, if anything, this would be likely to reduce CityFibre's reliance on EE/MBNL as a prospective tenant.
- (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). CityFibre told us that in its view, these contracts were a restrictive practice and should be unenforceable, and that we therefore could not rely on them as a factual matter.⁶⁵³ Whether or not that argument is correct, our decision does not rely on these commitments; absent them, Vodafone and Telefónica would seem to be more likely customers, not less likely.

⁶⁵² Financial Times (6 October 2015), 'Vodafone signs with CityFibre for connectivity for UK network' (£).

⁶⁵³ CityFibre response to provisional findings.

- 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 other CPs seeking fibre as an input to retail SFBB; and municipalities and larger commercial customers seeking a direct source of connectivity. We also note that prospective suppliers of dark fibre may to some extent expand their fibre networks through acquisition, and move towards a broader geographic offering in that way, as CityFibre has done.⁶⁵⁴
- 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 service. [X]. 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 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. Assembling a set of local anchor customers would likely be more administratively demanding for operators than a single national anchor. As to whether this would slow an operator's roll-out, that depends partly on the speed at which EE/MBNL would have rolled out agreements for particular locations. Since EE/MBNL had not made a decision to do so, we cannot say how fast that would have proceeded.

Our conclusion 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,

⁶⁵⁴ See footnote 642.

Gigaclear or Zayo. [REDACTED]. 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, [REDACTED]. 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 as compared to a national anchor tenant).
- 17.39 For these reasons, whilst the merged entity would have the incentive to cease purchasing mobile backhaul from third parties, we 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 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 the possible impact of the merger on 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 the possible impact of the merger on 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 customer's 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. BT and these CPs (except KCOM) compete in the retail supply of broadband services.
- 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 WLA⁶⁵⁵ in the UK excluding the Hull area, including LLU and VULA.⁶⁵⁶ 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

⁶⁵⁵ See paragraphs 18.15 and 18.16 for Ofcom's definition of the WLA ('wholesale local access') markets.

⁶⁵⁶ 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.⁶⁵⁷ In other areas ('Market B'), there is no additional regulation of BT's WBA products.

- 18.6 In the remainder of this chapter, we give an overview of the theory of harm we identified in relation to wholesale broadband services and the potential foreclosure strategies in which the merged entity could engage. We then discuss market definition and the role of regulation in the provision of wholesale broadband services. Lastly, we provide our competitive assessment of each potential foreclosure strategy.

The theory of harm

- 18.7 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 SFBB or SBB at the retail level. In the next section we set out possible strategies by which this could take place.

Potential foreclosure strategies

- 18.8 We received a number of concerns from third parties that the merged entity would attempt to engage in input foreclosure against rival CPs that supply retail broadband products from access to wholesale broadband services.
- 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. Taking this regulatory framework into account, 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. As BT is under an obligation to provide the services mentioned, a strategy of total foreclosure would not be open to the merged entity.⁶⁵⁸
- 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. 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

⁶⁵⁷ 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 \(Statement on market definition, market power determinations and remedies\)](#).

⁶⁵⁸ 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.

quality of services provided (including provision of new or improved services), and/or a reduced margin between BT's retail prices and 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 cause harm to 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). 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

Commission's views

18.13 The Commission has so far left open the exact product market definition in its merger decisions.⁶⁵⁹ In its most recent merger decision that discussed wholesale broadband access services in the UK,⁶⁶⁰ 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 decision⁶⁶¹) 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.

⁶⁵⁹ See, for example, [Case M.6990 Vodafone/Kabel Deutschland](#), paragraph 161; and Case [M.5532 Carphone Warehouse/Tiscali UK](#), paragraph 34.

⁶⁶⁰ [Case M.5532 Carphone Warehouse/Tiscali UK](#), decision of 29 June 2009.

⁶⁶¹ The decision dates from before Ofcom required BT to give access to its VULA service.

18.14 In its most recent merger decisions involving wholesale broadband access services, the Commission left the geographic market definition open,⁶⁶² although it stated in *Carphone Warehouse/Tiscali UK* that there are several arguments supporting a national geographic market definition from a merger control perspective.⁶⁶³

Ofcom's views

18.15 As stated in paragraph 18.5 above, Ofcom distinguishes between WLA and WBA in its regulatory statements. The supply of WLA concerns access to the fixed telecommunications infrastructure – the connection between consumers' premises and the telecommunications network. Ofcom considers that the WBA market sits between the retail broadband and WLA markets.⁶⁶⁴

18.16 In relation to WLA, Ofcom defined the following markets:⁶⁶⁵

- 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.⁶⁶⁶

18.17 In relation to WBA, Ofcom defined the following product market:

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

⁶⁶² [Case M.6990 Vodafone/Kabel Deutschland](#), paragraph 163; and [Case M.5532 Carphone Warehouse/Tiscali UK](#), paragraph 53.

⁶⁶³ [Case M.5532 Carphone Warehouse/Tiscali UK](#), paragraph 49.

⁶⁶⁴ Ofcom (26 June 2014), [Review of the Wholesale Broadband Access Markets \(Statement on market definition, market power determinations and remedies\)](#), paragraph 1.11.

⁶⁶⁵ 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.

⁶⁶⁶ BT does not supply wholesale fixed products in the Hull area. Accordingly, further information on this potential geographic market is not provided.

(30Mbit/s or faster). Broadband access provided via mobile, wireless and satellite networks are outside the market.⁶⁶⁷

18.18 Ofcom has segmented the WBA market into three distinct geographic markets within the UK, reflecting the geographical differences in competition 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.⁶⁶⁸ 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).⁶⁶⁹

Parties' views

18.19 The parties submit that the narrowest product market is wholesale broadband access services 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 (see paragraph 18.18 above).

Our assessment

18.20 We considered the product market taking account of previous decisions by Ofcom and the Commission. In particular, 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

⁶⁶⁷ 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.

⁶⁶⁸ Ofcom (26 June 2014), [Review of the Wholesale Broadband Access Markets \(Statement on market definition, market power determinations and remedies\)](#), paragraph 4.211.

⁶⁶⁹ BT does not supply wholesale fixed products in the Hull area. Accordingly, further information on this potential geographic market is not provided.

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 considered the product market to be the market for fixed wholesale broadband access services, which does not include mobile, wireless 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,⁶⁷⁰ 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 In relation to geographic market definition, we considered that competition in the supply of fixed wholesale broadband access to WLA products is national in scope (excluding the Hull area). 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

- 18.23 We discuss below how Ofcom has regulated access to WLA and, where applicable, WBA products.

WLA

- 18.24 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.⁶⁷¹ In light of this SMP finding, Ofcom imposed specific regulatory obligations on BT by way of SMP conditions. A distinction can be made between four types of SMP conditions: general and quality of service SMP conditions and

⁶⁷⁰ 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.

⁶⁷¹ Ofcom (26 June 2014), [Fixed access market review](#), paragraph 7.91.

specific current generation access (CGA) and next generation access (NGA) SMP conditions.⁶⁷²

- 18.25 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 on BT a charge control for LLU services and a basis of charges obligation for electricity charges for LLU services.⁶⁷³
- 18.26 For NGA, Ofcom decided in its June 2014 Fixed access market review to (continue to) regulate VULA.⁶⁷⁴ 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.⁶⁷⁵ The requirement to offer VULA is in addition to and supplemented by the general conditions, which include, among other requirements, the provision of VULA on fair and reasonable terms, conditions and charges.⁶⁷⁶
- 18.27 Ofcom decided against regulating the level of wholesale VULA prices using a cost-based charge control at the time of its review,⁶⁷⁷ stating that BT should retain broad flexibility over the level of VULA prices during the market review period that followed its review.⁶⁷⁸ 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, which are currently in force.

⁶⁷² 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 cause harm to its rivals.

⁶⁷³ Ofcom (26 June 2014), [Fixed access market review](#), section 13.

⁶⁷⁴ Ofcom (26 June 2014), [Fixed access market review](#), paragraph 12.56. Ofcom also decided to (continue to) regulate 'sub-loop unbundling' (known as SLU) and 'physical infrastructure access' (known as PIA). Ofcom indicated in its review that it did not have firm evidence of material plans to deploy new networks using SLU or PIA. We have not seen evidence indicating otherwise, or suggesting that the merger will create issues with PIA or SLU. We have, therefore, focused our analysis on VULA.

⁶⁷⁵ Ofcom (26 June 2014), [Fixed access market review](#), paragraph 12.54.

⁶⁷⁶ Ofcom (26 June 2014), [Fixed access market review](#), paragraph 12.97.

⁶⁷⁷ Ofcom (26 June 2014), [Fixed access market review](#), paragraph 12.147.

⁶⁷⁸ See also [Ofcom, Fixed access market reviews: Approach to the VULA margin](#), 19 March 2015, paragraph 1.4.

WBA

- 18.28 In areas where Ofcom considers WLA remedies have not been effective in promoting competition (referred to as Market A⁶⁷⁹), 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 cost-based charge control on WBA services offered in Market A, supported by a number of other general conditions.
- 18.29 Further details of regulation of the WLA and WBA markets are set out in Appendix D.

Partial foreclosure of CPs that offer retail broadband products

Initial observations on ability, incentive and effect of foreclosure

- 18.30 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.⁶⁸⁰ 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.
- 18.31 Some third parties have put it to us that the SMP conditions that are currently imposed on BT are already less than fully effective. In our view, there are two scenarios in which the merger may lead to an increased ability to cause harm to BT's downstream rivals:
- 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.
- 18.32 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. Generally speaking, there may be

⁶⁷⁹ 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.

⁶⁸⁰ Ofcom (26 June 2014), [Fixed access market review](#), paragraph 8.7.

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.

- 18.33 In common with Ofcom, we consider that BT already has an *incentive* to foreclose other retail broadband suppliers even absent the merger.⁶⁸¹ This is the rationale for Ofcom's existing regulation, and Ofcom notes that Openreach has the incentive to favour BT, and functional separation does not affect this.⁶⁸² Instead, Ofcom argues that functional separation and associated regulation prevents Openreach from acting on these incentives.⁶⁸³ 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 quality of their products, which would reduce competitive constraints at the retail level.
- 18.34 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 and BT's already substantial market share (see Chapter 20), this effect is likely to be insignificant.
- 18.35 Second, if fixed-mobile bundles become more prevalent and mobile services become more important in determining a consumer's choice of fixed-service supplier (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 merger⁶⁸⁴ 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 Chapter 13 of this report.
- 18.36 However, an increase in incentive does 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 (which is Ofcom's

⁶⁸¹ [ibid.](#)

⁶⁸² Ofcom (16 July 2015), [Strategic review of digital communications: Discussion document](#).

⁶⁸³ Ofcom (16 July 2015), [Strategic review of digital communications: Discussion document](#), paragraph 1.35.

⁶⁸⁴ [BT initial submission](#), paragraph 4.3b.

view,⁶⁸⁵ from which we have seen no reason to depart), then the merger might increase BT's gain from foreclosure but would not change the way in which it would be expected to behave.

- 18.37 In our view, at least some (if not all) forms of foreclosure in wholesale broadband services are likely to have some *effect* on downstream competition, but the size of this effect will depend on multiple factors. 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 likely affect the retail market, whereas the effect of slower fault repair in particular locations, for example, would likely be localised. 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.
- 18.38 In light of the above, we have focused primarily on ability to cause harm to its rivals by foreclosing SFBB and SBB inputs, and especially the regulatory constraints on BT's behaviour and how the merger might affect those constraints.

BT's ability in relation to SFBB inputs

- 18.39 We assessed whether the merger could give BT the ability to cause harm to its rivals by foreclosing SFBB inputs by increasing the price of VULA (or reducing its retail SFBB price while leaving the wholesale price unchanged), which could cause harm to competing SFBB providers.

VULA regulation

- 18.40 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 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

⁶⁸⁵ Ofcom (26 June 2014), [Fixed access market review](#), paragraph 8.7.

bundle with SFBB during the current market review period (eg mobile services).⁶⁸⁶

- 18.41 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.⁶⁸⁷ The guidance makes explicit that there might be material changes in circumstances which would warrant a departure from that guidance.⁶⁸⁸ 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 (in August 2015) supplementary guidance to explain how it would undertake the VULA margin test in light of this change.⁶⁸⁹ 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.⁶⁹⁰
- 18.42 On 19 May 2015, BT and TalkTalk each appealed Ofcom's decision to impose the VULA margin test on BT, raising both non-specified and specified price control matters.⁶⁹¹ The appeals are specifically against the VULA margin test and not against the BT's SMP position or the obligation on BT to provide VULA on fair and reasonable terms, conditions and charges and on the basis of EOI and no undue discrimination.⁶⁹² The VULA margin test remains in force throughout the appeals until any order is made directing otherwise. Even if an appeal were to be successful in challenging the VULA margin test, BT would still have an SMP position and Ofcom would continue to have the power to impose an amended form of price control on BT. It would also still be under the general obligation to provide VULA services on fair and reasonable terms. Therefore, even if Ofcom's decision introducing the VULA margin test were quashed and Ofcom did not immediately impose an amended form of price control, the merged entity could not engage in total foreclosure and would also face constraints in terms of its ability and

⁶⁸⁶ Ofcom (19 March 2015), [Fixed access market reviews: Approach to the VULA margin](#), paragraphs 6.70–6.74.

⁶⁸⁷ Ofcom (19 March 2015), [Fixed access market reviews: Approach to the VULA margin](#).

⁶⁸⁸ Ofcom (19 March 2015), [Fixed access market reviews: Approach to the VULA margin](#), paragraph 6.5.

⁶⁸⁹ Ofcom (13 August 2015), [Supplementary guidance on assessment of the VULA margin](#).

⁶⁹⁰ Ofcom (19 March 2015), [Fixed access market reviews: Approach to the VULA margin](#), footnote 354.

⁶⁹¹ 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 (one of which provisional): that a portfolio test alone is insufficient, and a product level test (without bundles) is necessary; and (provisional ground) that Ofcom may have erred in not adjusting the test for the apparent fact that BT benefits from higher call revenues that cannot be replicated by a competitor (the ground is provisional, as TalkTalk contends that it is unable to assess this point properly in the absence of disclosure by Ofcom of confidential information. It, therefore, applied for disclosure into a confidentiality ring. The CAT ordered disclosure into a confidentiality ring in July 2015. Sky has intervened in TalkTalk's appeal; Sky and TalkTalk have both intervened in BT's appeal. The CAT referred the price control matters to the CMA on 6 January 2015.

⁶⁹² Ofcom (26 June 2014), [Fixed access market review](#), chapter 12.

incentive to engage in partial foreclosure from the obligation to provide VULA on fair and reasonable terms, conditions and charges and on the basis of EOI and no undue discrimination during the period until an amended form of price control was imposed.

- 18.43 In addition, the VULA margin test was designed to constrain BT's ability to foreclose its rivals.⁶⁹³ Even if, and contrary to the above, the appeals lead to Ofcom's decision adopting the VULA margin test being quashed and this gives BT some scope to cause harm to its rivals, then this would have occurred in the counterfactual as well, meaning this risk is not caused by the merger.

Parties' views

- 18.44 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:⁶⁹⁴

- 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 ability to foreclose rival retail broadband providers at the wholesale level.
- BT is also subject to competition laws generally, including the Competition Act 1998 and analogous EU prohibitions on margin squeeze.⁶⁹⁵
- 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.

⁶⁹³ See paragraph 18.30.

⁶⁹⁴ [BT/EE response to issues statement](#), section 14.

⁶⁹⁵ 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.

- 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.

Third parties' views

- 18.45 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.⁶⁹⁶ In its response to our provisional findings, Sky stated that the CMA had deferred responsibility for the adaptation of the regulation of VULA entirely to Ofcom. Sky argued that the CMA should, at the very least, decide prior to issuing its final report the overarching principles governing the adapted implementation of the VULA margin condition.⁶⁹⁷
- 18.46 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.⁶⁹⁸
- 18.47 Vodafone said that in order to supply triple-play or quad-play packages, Vodafone is reliant on BT to provide the wholesale SFBB product; and that, following the merger, BT will have the ability and enhanced incentive to foreclose Vodafone's access to essential wholesale inputs to SFBB in order to restrict Vodafone's ability to compete with the BT/EE group's triple-play and quad-play offerings.⁶⁹⁹ In its response to our provisional findings, Vodafone stated that reliance on the VULA margin test is highly uncertain, first by its very nature, which depends on uncertain implementation of already highly detailed and complex guidance that allows multiple points of

⁶⁹⁶ [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 report.

⁶⁹⁷ [Sky response to provisional findings](#), paragraphs 4.1–4.9.

⁶⁹⁸ [TalkTalk initial submission](#), paragraphs 3.41–3.43; TalkTalk response to issues statement, paragraph 7.2.

⁶⁹⁹ [Vodafone initial submission](#), paragraph 5.1.

disagreement, and second because the test and guidance is under appeal. Vodafone also said that changes to or departures from the prevailing guidance should be regarded as future regulation because it is not currently in effect and Ofcom is under no obligation to change or depart from the prevailing guidance.⁷⁰⁰

Ofcom's views

18.48 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 SFBB 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.⁷⁰¹

18.49 In its 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.⁷⁰²

18.50 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:

⁷⁰⁰ [Vodafone response to provisional findings](#), paragraphs 5.1–5.9.

⁷⁰¹ [Ofcom response to issues statement](#), paragraph 6.11.

⁷⁰² [Ofcom response to issues statement](#), paragraphs 6.24–6.26.

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.⁷⁰³

- 18.51 We held two hearings with Ofcom in which the VULA margin test was discussed in detail, including one which focused specifically on the design and application of the test, including how Ofcom dealt with changes to BT's cost and revenue base when applying the test. 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.⁷⁰⁴

Our assessment of BT's ability to cause harm to its downstream rivals

- 18.52 In analysing whether the merged entity would have the ability, post-merger, to cause harm to 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 effectively constrains that ability and whether this effectiveness is affected by the merger. This is because in the absence of *ex ante* regulation,⁷⁰⁵ 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.⁷⁰⁶
- 18.53 Since the concerns we received from third parties focused on the merger's impact on the effectiveness of the VULA margin test in particular, we focused our analysis on that aspect of the regulation of VULA.
- 18.54 In general, we are mindful that the test is:
- in use, so is not completely untested;⁷⁰⁷
 - under appeal by BT and TalkTalk; and

⁷⁰³ [Ofcom further submission](#).

⁷⁰⁴ For example, see [Ofcom second hearing summary](#) and [Ofcom response to issues statement](#).

⁷⁰⁵ That is, in the absence of the VULA margin test and the general obligation on BT to provide VULA on fair and reasonable terms, conditions and charges and on the basis of EOI and no undue discrimination

⁷⁰⁶ See also Ofcom (26 June 2014), [Fixed access market review](#), paragraph 8.7.

⁷⁰⁷ 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](#).

- 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.⁷⁰⁸

Effectiveness of current VULA regulation

- 18.55 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 depart from or 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.
- 18.56 The assessment of the effectiveness of regulation is complex. Here it is only one factor being assessed as part of a merger inquiry. In the case of the VULA margin test, the regulatory regime is young, and appeals against it are ongoing.
- 18.57 We gave considerable thought to the VULA margin test's effectiveness in preventing BT's ability to cause harm to rival CPs pre-merger, and Ofcom's experience in applying the test, including when faced with a change in circumstances as a result of changes to BT's BT Sport retail proposition (see paragraph 18.41 above). We also took into account the various submissions third parties made on the VULA margin test's effectiveness and we are aware of the grounds of appeal that have been lodged against the test by BT and TalkTalk.
- 18.58 As noted above, we sought significant information and clarification from Ofcom concerning the operation and effectiveness of the VULA margin test. Based in particular on Ofcom's submissions, both at the hearings and in

⁷⁰⁸ [Ofcom second hearing summary](#).

writing,⁷⁰⁹ we 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.

- 18.59 We also note that a finding that the VULA margin test is ineffective, or would become so as a result of the merger, would not automatically mean that the merged entity will have the ability to cause harm to its rival CPs and the incentive to do so. We would also have to be satisfied that the general obligation on BT to provide VULA on fair and reasonable terms, conditions and charges and on the basis of EOI and no undue discrimination did not sufficiently constrain the merged entity's ability and incentive to foreclose CPs from access to its VULA services. However, as we find below that the merger does not lead to an SLC because of its effect on the VULA margin test, it is not necessary for us to determine what the regulatory constraints would be in the absence of the VULA margin test.

Impact of the merger on the VULA margin test

- 18.60 We went on to assess the impact of the merger on the effectiveness of the VULA margin test.
- 18.61 The merger may have an impact on the VULA margin test because of the fact that BT bundles SFBB with other products at the retail level.⁷¹⁰ 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 number of inputs that form part of the calculation of the retail margin, the more complex the test is to apply – and, in the view of third parties, the greater the scope for abuse.

⁷⁰⁹ See paragraph 18.51. In particular, these submissions showed that Ofcom did not have concerns around the test's effectiveness and was confident that the six-month monitoring mechanism built into the test in combination with the possibility to request information before the end of the six months and to open an investigation allowed it to effectively monitor BT's compliance with the test.

⁷¹⁰ 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 second hearing summary](#).

- 18.62 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.⁷¹¹ Ofcom also suggested (in general terms) the way it might assess relevant costs and revenues.⁷¹²
- 18.63 However, the merger may affect the application of the VULA margin test 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 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, 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.
- 18.64 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.⁷¹³ 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.⁷¹⁴

⁷¹¹ Ofcom (March 2015), [Fixed access market reviews: Approach to the VULA margin](#), paragraphs 6.70–6.71.

⁷¹² Ofcom (March 2015), [Fixed access market reviews: Approach to the VULA margin](#), paragraphs 6.72–6.74.

⁷¹³ 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.

⁷¹⁴ 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).

- 18.65 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 higher⁷¹⁵ (due to the 'owner economics' of MNOs meaning lower mobile variable costs than MVNOs, and the potential for cost savings for EE on backhaul as a result of the merger).
- 18.66 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 than the costs'.
- 18.67 We assessed whether this gave BT scope to undermine the VULA margin test. The strongest potential for the merger to have an immediate undermining effect on the 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, 31% of customers that take BT broadband services were also EE mobile customers.⁷¹⁶ 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.
- 18.68 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.
- 18.69 As part of our assessment, we looked at the relevant margins. EE's average variable margin on a postpay customer was £[~~8~~] per month, which would fall to £[~~8~~] per month if opex, capex and depreciation were allocated across

⁷¹⁵ The general competitiveness of the mobile market suggests that this margin should be relatively small pre-merger when taking into account fixed costs, especially for BT as an MVNO, although not necessary on a variable cost basis.

⁷¹⁶ In May 2014. Enders Analysis (27 February 2015), *UK broadband, telephony and pay TV trends Q4 2014 – Growth, investment and competition*.

the base (as might be considered more appropriate for a margin squeeze test⁷¹⁷). A margin of this scale would imply that if the merged entity gave, for example, a £[X] 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.

18.70 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 Openreach prices rather than BT Wholesale prices), but that would only slightly increase the margin.⁷¹⁸
- Secondly, we considered wider efficiencies: BT told us it expects cost synergies of £3.0 billion net of integration costs.⁷¹⁹ 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.⁷²⁰ 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.

18.71 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).

18.72 However, in practice, as part of its regular compliance assessments, Ofcom would consider how costs and revenues should be allocated to SFBB

⁷¹⁷ 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.

⁷¹⁸ We took EE's annual backhaul spend with BTW (£[X] million); subtracted BTW's variable margin on MBNL backhaul ([X] %); and divided the result by the number of subscribers on EE's network, including MVNOs ([X] million). This suggested a saving of just over £[X] 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 [X] % saving on reasonable assumptions, but remains small. Mobile subscriber figures taken from Ofcom data; other figures can be found in ToH4 working paper.

⁷¹⁹ 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.

⁷²⁰ [BT initial submission](#), paragraph 4.2.

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,⁷²¹ which avoids setting out a rigid framework that BT could game (although there could be a lag – see paragraph 18.54, third bullet). 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.⁷²²

- 18.73 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 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 18.69 above is likely to represent an upper bound. However, if Ofcom believed that BT/EE were able to set a margin that an adjusted ‘equally efficient operator’ (ie one with the same costs as BT) 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 costs⁷²³ and considered for fixed line voice revenues.
- 18.74 We also assessed the impact of the merger on fixed costs under the VULA margin test, specifically whether 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.⁷²⁴ BT

⁷²¹ Ofcom made clear that the VULA margin test includes a six-month reporting mechanism to enable Ofcom to receive information on periodic basis and that there was nothing preventing Ofcom from requesting data or opening an investigation within this period. BT’s competitors would also be able to approach Ofcom under the Communications Act ([Ofcom second hearing summary](#), paragraph 39).

⁷²² [Ofcom second hearing summary](#), paragraph 35.

⁷²³ [Ofcom second hearing summary](#), paragraph 5.

⁷²⁴ [Sky response to issues statement](#), paragraph 3.21.3.

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 [X] customers) because typically customers do not value sport as highly on mobile devices as on a television screen.

- 18.75 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),⁷²⁵ 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).

Adaptation of VULA margin test post-merger

- 18.76 It is likely that Ofcom will have to adapt how it currently applies the VULA margin test to deal with one or more of the issues described above or indeed others that could arise as a result of the merger. We recognised that there is uncertainty as to the details of the products BT would sell post-merger or in the counterfactual, and how the test would deal with the addition of mobile services. We nevertheless considered how Ofcom would be likely to approach the regulation of VULA post-merger. We considered whether the existing regulatory framework gave Ofcom sufficient flexibility to adapt the VULA margin test without changing the nature of the test. We also considered whether the VULA margin test can be expected to be less effective than at present because of the merger.⁷²⁶
- 18.77 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:⁷²⁷
- Ofcom might depart from the guidance when taking the impact of the merger into account as part of a compliance assessment.

⁷²⁵ 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.

⁷²⁶ For completeness, we note that if we do not find that the merger is likely to make the VULA margin test less effective to the extent that this gives rise to an SLC, it is not appropriate for us to give directions or recommendations to Ofcom as Sky appears to suggest (see paragraph 18.45).

⁷²⁷ [Ofcom second hearing summary](#), and [Ofcom further submission](#).

- It may amend its guidance (as was done to reflect the changes to BT Sport in August 2015).⁷²⁸
- In the event that any changes meant that the condition is no longer appropriate in its current form, Ofcom could amend it. Ofcom told us 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.⁷²⁹
- 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.

18.78 Ofcom also considered that both the existing regulation, and the threat of regulation, would have an effect on BT's incentives.⁷³⁰

18.79 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 suggested by Ofcom (ie departing from its guidance and amending its guidance) should be viewed as part of the existing VULA regulatory framework. Indeed, the swift 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 margin test itself, which is to maintain a minimum margin between BT's VULA wholesale price and BT's SFBB retail price to enable BT's rivals to compete. This is an example of Ofcom flexibly and within a short timeframe 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.

18.80 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. In any event, not all amendments to the condition would involve material changes to the basis of the regulation.

⁷²⁸ Ofcom (13 August 2015), [Supplementary guidance on assessment of the VULA margin](#).

⁷²⁹ Ofcom further submission.

⁷³⁰ Ofcom second hearing summary.

- 18.81 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, our view is that no material change to the basis of regulation of VULA is expected.
- 18.82 For the fourth option, addressing concerns through the March 2017 Fixed access market review, this would also require future regulation. 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 result from that review. We do not therefore rely on the potential for this review to address any concerns which might arise from the merger.
- 18.83 Overall, it is 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 the impact that the merger may have on the application of the VULA margin test. We found that it is likely that Ofcom can address this 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.
 - Second, Ofcom, as a responsible and expert 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 no evidence that Ofcom would fail to take the steps needed to ensure effective regulation.

- Third, Ofcom has explicitly stated that it considers its approach is sufficiently flexible to address any added complexity arising out of the merger.⁷³¹

18.84 We did not accept the suggestion by certain third parties that we could not reach this conclusion without drawing conclusions as to precisely how Ofcom would deal with the regulation of VULA post-merger, nor did we think that assessment could realistically be made as part of a merger reference.

18.85 In response to our provisional findings, Vodafone stated that the CMA had not considered the impact of the appeals on the effectiveness of the regulatory constraints on BT's ability to cause harm to rival CPs. However, the impact of the appeals is not merger-specific (see paragraph 18.43). Ofcom found that, absent ex ante regulation, BT would have the incentive, and its SMP would give it the ability, to favour its downstream retail business over rival CPs' retail businesses.⁷³² The VULA margin test is part of the regulatory control implemented to address that ability. The appeals do not challenge the finding that BT has SMP in this market, they challenge the specific form of price control condition decided by Ofcom. If the CAT quashes the decision imposing the VULA margin test on appeal,⁷³³ Ofcom will continue to have the power to impose an amended form of price control on BT because of BT's SMP in this market. If the CMA amends the VULA margin test on appeal, this can be expected to address BT's ability to foreclose its rival CPs. We therefore expect that BT will continue to be subject to VULA pricing conditions of some kind, whatever the outcome of the litigation. Our duty is to assess the impact of the merger on competition, which in this case means testing the merger's impact on the effectiveness of the VULA margin test. As far as we are aware from the publicly available information and submissions made to us by BT and TalkTalk, the appeals do not appear to raise matters that we have not taken into account in that assessment of the merger's impact.

18.86 Vodafone also submitted that in the absence of any assurance from Ofcom that adaptations to the VULA margin test will be in effect from completion of the merger, there would likely be a significant time lag between completion of the merger and any new guidance coming into force. We note in this respect that we did not find in this inquiry that the merger will make the VULA margin test ineffective, so that an SLC can be expected. Instead, we

⁷³¹ [Ofcom further submission](#), paragraph 1.3.

⁷³² See paragraph 18.33, and Ofcom (26 June 2014), [Fixed access market review](#), paragraph 8.7.

⁷³³ As indicated in paragraph 18.42, BT would also still be under the general obligation to provide VULA services on fair and reasonable terms. Therefore, the merged entity could not engage in total foreclosure and would also face constraints from the obligation to provide VULA on fair and reasonable terms, conditions and charges and on the basis of EOI and no undue discrimination.

thought it unlikely that the test was currently ineffective (paragraph 18.58), we assessed the impact the merger could have on that effectiveness and how Ofcom could be expected to deal with that potential impact within the existing regulation (including how it would monitor the merged entity's compliance with the test, see for example paragraphs 18.73 and 18.74). When an adaptation to the VULA margin test was last needed (ie when BT announced a change to its BT Sport retail proposition), Ofcom consulted on (in June 2015) and subsequently adopted (in August 2015) supplementary guidance to explain how it would undertake the VULA margin test in light of this change.⁷³⁴ This is an example of Ofcom flexing its approach within a short time frame (just over two months in that case). We have no evidence that Ofcom would fail to take the steps needed to ensure effective regulation within the required time frame if the merger necessitates it to do so.

Conclusion on BT's ability in relation to SFBB inputs (VULA)

- 18.87 Based on our discussions with and written evidence from Ofcom, we thought it unlikely that the VULA margin test was ineffective in preventing BT from foreclosing its rival CPs to a material extent in the counterfactual. We have therefore sought to determine the impact that the merger may have on the effectiveness of Ofcom's regulation of VULA and in particular the VULA margin test. We consider it likely that Ofcom will have to adapt how it currently applies the VULA margin test to address new issues that may arise as a result of the merger.
- 18.88 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 VULA margin test. We consider 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.
- 18.89 We therefore find that the merger is not expected to decrease the effectiveness of the regulation of VULA to such an extent that it creates or enhances the merged entity's ability to cause harm to its rival CPs.

⁷³⁴ Ofcom (13 August 2015), [Supplementary guidance on assessment of the VULA margin](#).

BT's ability in relation to SBB inputs

- 18.90 Our concern here is that the merger could give BT the ability cause harm to rival CPs by foreclosing by favouring SBB inputs used by its own downstream division over (different) products used by rival CPs who are active in retail broadband.

SBB inputs

- 18.91 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.⁷³⁵

Parties' views

- 18.92 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.

Third parties' views

- 18.93 Sky⁷³⁶ 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 assessment

- 18.94 We considered whether it was likely that the merger would have a significant effect on BT's ability to cause harm to its downstream rivals, including Sky

⁷³⁵ [Sky response to issues statement](#), footnote 19.

⁷³⁶ See, among other things, [Sky response to issues statement](#), paragraph 3.5.

and TalkTalk, or its incentive to do so, 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.

- 18.95 However, the prices of these products are the subject of well-established charge control regulation, and Ofcom told us that it recognised that without regulation, BT could have an incentive to favour the wholesale products it tended to use (namely WLR and SMPF related products) relative to the wholesale products that LLU operators tended to use (namely LLU-related products). The charges for the key rental and connection products were therefore individually charge controlled. Ofcom also told us that while BT's Regulatory Financial Statements were an important input into its assessment of prices of regulated services, it did not follow that changes in the way BT allocated its costs in its Regulatory Financial Statements would 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 thought it unlikely that BT has the ability to reallocate costs in a way that would affect prices.
- 18.96 If there is any residual ability to cause harm to rival CPs, 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 implies that any extra gain from reallocation would be small. Second, we thought 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 view it is not likely that this would constitute a 'tipping point' at which BT reallocates to a greater extent.
- 18.97 In light of the above, our conclusion is that the merger does not create or enhance an ability or incentive for BT to favour SBB inputs used by its own downstream division over (different) products used by rival CPs who are active in retail broadband.

Other issues

- 18.98 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 view, neither concern gives rise to an SLC as a result of the merger.

Prioritisation of fibre over copper

- 18.99 Sky told us that BT already prioritised investment in fibre (where Sky considered BT had a stronger competitive position) over copper, and that post-merger, BT would have an even greater incentive to neglect investment in its copper network, because the integration of EE's mobile business within BT's Group would mean a greater number of investment projects would be competing for BT's funding post-merger and therefore there would be a greater risk that funds would not be directed to investment in BT's copper network. According to Sky, BT could increase its profitability by neglecting investment in the copper network, even though such investments, seen in isolation, may generate a positive return.⁷³⁷
- 18.100 On the pre-merger facts relating to Sky's concerns, BT told us that in the last five years it had spent [X] on its copper network [X] its fibre network, that this copper spend [X], 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.
- 18.101 We understand that there can be circumstances where copper line performance can degrade without affecting services provided over fibre – for example, because water in ducts affects copper but not fibre. Therefore, we considered whether this issue had been investigated previously.
- 18.102 Ofcom told us that it reviewed the question of Openreach's capital expenditure 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.

⁷³⁷ [Sky initial submission](#), paragraph 4.4.

- 18.103 We are of the 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'.⁷³⁸ 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.
- 18.104 In light of the above, we 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

- 18.105 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.
- 18.106 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 view that it would not materially change the incentive to foreclose that exists pre-merger. Therefore, we conclude that the concern about not providing particular GEA inputs to Vodafone is not merger-specific and cannot, therefore, give rise to an SLC.
- 18.107 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,⁷³⁹ restricts the merged entity's ability and incentive to harm rival CPs in this way. We understand that [§]. The outcomes of SoRs are made public. Sky told us 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.⁷⁴⁰ 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

⁷³⁸ Sky initial submission, paragraph 4.4.

⁷³⁹ See Appendix D.

⁷⁴⁰ Sky Response to Statement of Issues, paragraph 3.6.1.

current rivals, and the countervailing regulatory constraints that BT would face if it attempted to do so post-merger, we concluded that it was unlikely that the merged entity would have the ability and/or the incentive to harm rival MNOs by pursuing this foreclosure strategy.

Conclusion on wholesale broadband

18.108 We assessed 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 18.33 to 18.37 of this chapter, we focused primarily on the merged entity's ability to cause harm to its rival CPs, and especially the regulatory constraints on BT's behaviour, which will remain in place post-merger.

18.109 We conclude that the merger does not give rise to an SLC in the provision of wholesale broadband services:

- We think it is unlikely that the regulation of VULA was ineffective in preventing BT's ability to cause harm to its rival CPs pre-merger, and we consider that Ofcom could 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 would require material amendments to the VULA margin test. We therefore find that the merger is not expected to decrease the effectiveness of the VULA margin test to such an extent that it creates or enhances the merged entity's ability to cause harm to its rival CPs.
- For SBB inputs, we think it unlikely that BT has the ability to reallocate costs in a way that would affect prices.
- For the concerns raised in relation to prioritisation of fibre over copper and foreclosure by not providing a specific GEA input, we think that these concerns are not caused or exacerbated by the merger.

19. Retail fixed broadband: overview

Introduction to retail fixed broadband

- 19.1 Our issues statement outlined two theories of harm concerning retail fixed broadband,⁷⁴¹ 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 fixed broadband sector, including a description of retail broadband, how it is supplied and regulated, and 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 L and M.

Description of retail fixed 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.⁷⁴² There are two main categories of broadband: SBB and SFBB.⁷⁴³ SFBB is defined by Ofcom as broadband services with an actual speed of 30 Mbits/s or higher.
- 19.4 SBB is delivered using ADSL technology and can generate speeds up to 24 Mbit/s.⁷⁴⁴ 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).

⁷⁴¹ We have also investigated the wholesale broadband market, as described in the previous chapter.

⁷⁴² A separate cable connection that does not connect to the local telephone exchange.

⁷⁴³ See Chapter 2.

⁷⁴⁴ The maximum speed of services provided using ADSL2+.

- 19.5 SFBB 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 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 cabinet⁷⁴⁵ and the last portion of the connection for delivering next generation broadband is via a coaxial cable, rather than a copper line.⁷⁴⁶
- 19.7 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 SFBB services by customers is increasing and by the end of 2014 over 30% of retail fixed broadband connections had a headline (advertised) speed of 30 Mbit/s or higher.⁷⁴⁷
- 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.⁷⁴⁸ Increasing numbers of people live in areas where superfast broadband

⁷⁴⁵ This can be a chamber in the ground, rather than a physical cabinet in the street.

⁷⁴⁶ 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.

⁷⁴⁷ Ofcom (6 August 2015), [The Communications Market Report](#), p1.

⁷⁴⁸ [ibid](#), pp287–288.

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 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).⁷⁴⁹ 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.⁷⁵⁰ 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 to 19.18).
- 19.15 Virgin Media deploys its own cable network,⁷⁵¹ 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.⁷⁵² 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.

⁷⁴⁹ 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.

⁷⁵⁰ Where KCOM owns the network.

⁷⁵¹ Note that 'cable' refers to the cable network operators – their services are provided over fibre.

⁷⁵² 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.

- 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 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 and full national launch 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. In addition, Sky and TalkTalk have a joint venture agreement with wholesale supplier CityFibre to build an FTTP network in York that is separate from BT's access network, and were due to start connecting customers in [X] 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 L, and Chapter 18 on wholesale broadband (including discussion of the VULA regulation under the theory of harm concerning wholesale broadband). This section will therefore only provide a brief overview of the relevant regulation.

- 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.⁷⁵³ In such areas, Ofcom imposes regulation further down the supply chain.
- 19.25 In its most recent Fixed access market review in 2014, Ofcom continued to find that BT had SMP in the supply of WBA⁷⁵⁴ in areas collectively referred to as Market A. Market A is defined as an area where no or only one Principal Operator⁷⁵⁵ (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.^{756,757}

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 [X] % in SBB, [X] % in SFBB and 4% overall in retail fixed broadband.

⁷⁵³ [Ofcom initial submission](#), paragraph 6.6.

⁷⁵⁴ Wholesale Broadband Access – see paragraph 2.12 for more details.

⁷⁵⁵ 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.

⁷⁵⁶ See [Ofcom 2014 WBA 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.

⁷⁵⁷ For more details, see sections on Regulation (Chapter 4 and Appendix D).

Table 19.1: Retail shares of supply for fixed broadband, UK, Q1 2015

	<i>All</i>		<i>SBB only</i>		<i>SFBB only</i>	
	<i>Number</i>	<i>Share (%)</i>	<i>Number</i>	<i>Share (%)</i>	<i>Number</i>	<i>Share (%)</i>
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 To determine the appropriate market definition within which to carry out our assessment in relation to retail broadband, we investigated the scope of retail broadband and any relevant sub-segments or downstream markets..

Product scope

- 19.30 We considered the scope of the broadband product market for our analysis.

- *Parties' views*

- 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.⁷⁵⁸

- *Previous Commission decisions on market definition*

- 19.32 We note that recent Commission decisions have defined the relevant market as standardised fixed telecommunication services enabling broadband access to the internet.⁷⁵⁹ The Commission has also considered 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

⁷⁵⁸ BT/EE response to issues statement, paragraphs 18.1 & 18.2.

⁷⁵⁹ See eg Case M.5532 – *Carphone Warehouse/Tiscali UK*, paragraph 9. In Case M.7421 *Orange/Jazztel*, paragraph 38, the Commission defined the market as the retail supply of fixed internet access services, which consists of a fixed telecommunications link enabling customers to access the internet.

business customers on the other.⁷⁶⁰ Moreover, despite the Commission recognising a distinction between the speed of internet access services below and above 30 Mb/s, it has not found it necessary to conclude on this point.⁷⁶¹

- *Ofcom's view*

19.33 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 broadband, symmetric services, fixed wireless access, and satellite broadband.⁷⁶²

19.34 In the review, 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.⁷⁶³

⁷⁶⁰ See [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 (2014/710/EU) (the '2014 recommendation') published with accompanying explanatory note (SWD(2014) 298). In the 2014 explanatory note, the Commission discusses the possibility of customer segmentation referring to the divide as 'retail mass-market' and the 'retail high-quality market.' The latter service would be 'typically offered with high-quality service level guarantees, guaranteed availability and often symmetric up- and download speeds' and/or 'include a variety of products that are geared towards the specific needs of these individual customers.' See also [Case M.5532 Carphone Warehouse/Tiscali UK](#).

⁷⁶¹ In [Case M.7421 Orange/Jazztel](#), paragraphs 46 & 47, the Commission recognised the distinction between SFBB and SBB, but left open the exact definition as it made no difference to its competitive assessment.

⁷⁶² Ofcom, [Review of the wholesale broadband access markets - Final statement](#), 2014, paragraph 3.201.

⁷⁶³ *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.

- 19.35 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.⁷⁶⁴
 - *Third parties views*
- 19.36 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 [redacted].⁷⁶⁵ TalkTalk therefore considered that there was no constraint on SFBB pricing from copper-based products.⁷⁶⁶
- 19.37 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 SBB not constraining SFBB.⁷⁶⁷ 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.
- 19.38 We received no submissions suggesting other product segmentations.

⁷⁶⁴ [ibid](#), paragraph 3.90.

⁷⁶⁵ [redacted]

⁷⁶⁶ [TalkTalk response to the issues statement](#) (6 August 2015). See also [TalkTalk hearing summary](#).

⁷⁶⁷ [Sky hearing summary](#).

- *Our assessment*

- 19.39 We have used the Ofcom 2014 WBA market review definitions as a starting point for assessing the theories of harm relating 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.
- 19.40 We note other evidence provided to us concerning the constraint of SBB on SFBB (see Appendix M). In particular, we note that [REDACTED].
- 19.41 An internal EE document dated Q4 2013 notes that SFBB pricing is becoming increasingly competitive and that CPs are pushing aggressive price promotions to encourage SFBB uptake.
- 19.42 An internal BT document from April 2014 noted that [REDACTED]. However, the document also stated [REDACTED].
- 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.⁷⁶⁸
- 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 view is that mobile and fixed broadband are not in the same market.

Geographic scope

- 19.46 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

⁷⁶⁸ Less than one in three retail broadband connections had headline speeds of 30 Mbit/s or more by the end of 2014.

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).

- 19.47 However, conditions of competition are materially different in Market A and, especially, Market A1 (as defined by Ofcom). In particular, we view Market A as a separate geographic market 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 higher prices in Market A1.
- 19.48 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.

Conclusion on market definition

- 19.49 Our conclusion is that there is a market for retail fixed broadband. SBB continues to exert some degree of constraint on the terms of supply of SFBB. However, we have not found it necessary to conclude on whether the degree of constraint is such that SBB and SFBB are and will remain in the same market as, 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.
- 19.50 In our competitive assessment, we have therefore 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.
- 19.51 From a geographic perspective, most of the UK (excluding Hull) 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).
- 19.52 However, conditions of competition are materially different in Market A and, especially, Market A1 (as defined by Ofcom). In particular, we view Market A as a separate geographic market.

Nature of competition (SBB and SFBB)

- 19.53 To inform our assessment of the competitive effects of the merger in respect of retail fixed broadband, 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

- 19.54 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.
- 19.55 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.⁷⁶⁹
- 19.56 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).
- 19.57 Additional opportunities for product differentiation differ between SBB and SFBB, and how the broadband service is delivered.

SBB

- 19.58 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).
- 19.59 CPs providing fixed broadband services through their own network or through BT exchanges that they have unbundled (ie on-net) are able to differentiate on price, speed, and quality of service (eg ensuring consistent speeds, line maintenance and fixing of faults).
- 19.60 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. Given that the per unit costs are

⁷⁶⁹ 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.

regulated there will be limited scope to lower prices to attract new customers.

SFBB

- 19.61 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.⁷⁷⁰
- 19.62 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.
- 19.63 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.⁷⁷¹
- 19.64 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 products provide aggregated access to many customers, and offer less scope for innovation than direct access to the more upstream infrastructure.⁷⁷²
- 19.65 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).

⁷⁷⁰ In areas outside Hull (KCOM owns the network in Hull).

⁷⁷¹ Ofcom (2014), [FAMR Statement](#), paragraph 12.4. Ofcom (2010), *WLA market review*, paragraph 8.4.

⁷⁷² Ofcom (2014), [WBA market review](#), paragraph 2.7.

Pricing

- 19.66 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.
- 19.67 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 lower 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.
- 19.68 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.⁷⁷³
- 19.69 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 longer provide an off-net product, having divested their off-net customer bases).⁷⁷⁴

Bundling

- 19.70 As described earlier in Chapter 5, we have defined 'bundles' to describe any situation where a customer buys from the same provider both mobile services and fixed services such as broadband. Broadband services are offered by some operators as part of a bundle with fixed voice, TV and/or

⁷⁷³ [Ofcom response to issues statement](#).

⁷⁷⁴ For Virgin Media, this applies to residential customers only.

mobile services. The emergence of fixed-mobile bundles in the UK is discussed in Appendix H.

- 19.71 The majority of CPs bundle fixed broadband with fixed voice, or fixed voice and pay TV.⁷⁷⁵ Only Virgin Media offers a fixed broadband service that does not include a fixed voice service of any description.⁷⁷⁶ Currently, most residential consumers are on fixed voice and broadband or fixed voice, broadband and TV packages.⁷⁷⁷
- 19.72 Several providers offer, or plan to offer, mobile services that are available only to, or with a discount for, their broadband customers.⁷⁷⁸ However, quad-play bundles⁷⁷⁹ (fixed voice, fixed broadband, TV, mobile phone) have so far been taken by 2% of households.⁷⁸⁰
- 19.73 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.⁷⁸¹
- 19.74 In the next two chapters we consider each retail fixed broadband theory of harm in turn.

⁷⁷⁵ 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.

⁷⁷⁶ Ofcom (2014) [CMR](#), p356.

⁷⁷⁷ See Appendix L, figure 1

⁷⁷⁸ 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.

⁷⁷⁹ Consumers were asked if they received more than one of these services as part of an overall deal or package from the same supplier.

⁷⁸⁰ See Appendix L, figure 1

⁷⁸¹ 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 fixed 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 LLU⁷⁸² 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 urban areas can also be included.
- 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.⁷⁸³
- 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 in Market A. 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 [REDACTED]. [REDACTED]
- 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

⁷⁸² See Chapter 2 and Appendix L.

⁷⁸³ See [Ofcom response to issues statement](#)

broadband suppliers to serve rural customers or to fill EE's pre-transaction role as a WBA operator.⁷⁸⁴

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.⁷⁸⁵ 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 [X].⁷⁸⁶ The Post Office also voiced similar concerns.

Our assessment

20.9 To investigate this theory of harm, we have focused on retail fixed broadband competition in Market A and the question of whether the loss of EE would remove an important competitive constraint on BT and allow it to raise prices (or otherwise worsen its retail offer). We addressed this by considering 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?

⁷⁸⁴ See [BT/EE 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 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.

⁷⁸⁵ 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.

⁷⁸⁶ [TalkTalk initial submission](#), paragraphs 3.51–3.54; and [TalkTalk response to issues statement](#), paragraphs 8.1–8.3.

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 investigated 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:

- 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).⁷⁸⁷ This indicates that EE share is small (1%) for both Markets A and B), compared with other operators. As the estimated share of supply of BT in Market A is 1%, the incremental impact of EE on the merged entity share is therefore proportionately small.

⁷⁸⁷ 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](#).

Table 20.1: Estimated market shares for retail fixed broadband, December 2014

<i>Operator</i>	<i>Estimated Market A share*</i>	<i>Estimated Market B share†</i>	<i>%</i> <i>Estimated national share</i>
BT	[REDACTED]	[REDACTED]	[REDACTED]
TTG	[REDACTED]	[REDACTED]	[REDACTED]
Sky	[REDACTED]	[REDACTED]	[REDACTED]
Virgin Media	[REDACTED]	[REDACTED]	[REDACTED]
EE	[REDACTED]	[REDACTED]	[REDACTED]
Others	[REDACTED]	[REDACTED]	[REDACTED]

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 Markets A1 and A2 separately. The evidence we received suggested that EE's share is small - approximately [REDACTED]% 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.
- 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 ([REDACTED]) 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 [REDACTED]% of UK premises, and exchanges with the highest shares of supply (where shares of [REDACTED]% were observed) covered only [REDACTED]% of UK premises.
- 20.18 The situation is similar for fibre. EE's share is 4% or more in exchanges equating to around [REDACTED]% of UK premises, and exchanges with the highest shares of supply (where shares of [REDACTED] were observed) covered only [REDACTED]% 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 conclusion is that EE in general has a far smaller retail broadband customer base in rural areas compared to BT and other competitors, and although there are a limited number of exchanges where both EE and BT have higher market shares with few other competitors, this represents an insignificant proportion of UK premises overall.

Trend in EE's share of supply of rural retail broadband

- 20.21 Having concluded that the current share of supply of EE was very 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 [REDACTED]⁷⁸⁸
- 20.23 [REDACTED]
- 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 [REDACTED] for SBB but [REDACTED] 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.
- 20.25 Our conclusion 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 from the evidence 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,⁷⁸⁹ 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.⁷⁹⁰ We noted that EE imposes a £15

⁷⁸⁸ 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.

⁷⁸⁹ See Appendix L, paragraph 28 and Annex.

⁷⁹⁰ See Appendix L, Table 6.

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).⁷⁹¹ No other provider (including EE) charges a surcharge for Market A where it offers fibre to retail customers.
- 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.⁷⁹²
- 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 for the UK as a whole, EE had higher prices for SFBB than its main competitors (see Appendix M for further details).
- 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).

- *Conclusions on pricing*

- 20.34 Our view is that EE is unlikely to represent strong price competition for BT in SBB or SFBB.
- 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

⁷⁹¹ See Appendix L, Table 7.

⁷⁹² See Appendix L, Table 8.

this decision 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 very small proportion of premises in Market A, the small scale of EE nationally, and other important competitive constraints generally (as described above), 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 We looked first at EE's quality of service. 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 2015.⁷⁹³ 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. [X] It therefore appears that quality of service should not be regarded as a competitive strength of EE.
- 20.37 We then looked at evidence concerning EE's reputation with retail broadband customers. [X]
- 20.38 [X]
- 20.39 [X]
- 20.40 We also looked at whether EE had an advantage in providing multiple services (or 'bundles'). [X],⁷⁹⁴ [X]
- 20.41 [X]
- 20.42 We note that consumers may be aware of Ofcom research suggesting EE was a reliable mobile network.⁷⁹⁵ However, EE reported that [X].
- 20.43 [X].
- 20.44 Our conclusion is therefore that the evidence does not support a finding that the quality and reputation of its broadband products enhanced EE's competitiveness in broadband. Furthermore, the evidence shows that its mobile offering had limited impact on the competitive constraint EE provided in broadband in Market A.

⁷⁹³ Ofcom (June 2015), [Latest customer complaint numbers](#).

⁷⁹⁴ See Appendix L, Figure 7.

⁷⁹⁵ 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.

Switching to EE

- 20.45 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. [REDACTED]
- 20.46 Our conclusion is that the evidence demonstrates that EE is 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

- 20.47 We then investigated whether EE was considered to be an important competitor in the supply of retail rural broadband.
- 20.48 BT told us that it did not consider EE to have a value proposition comparable to that of [REDACTED]. It provided evidence from internal planning documents which stated that [REDACTED].
- 20.49 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 Market A1 or elsewhere. The 'key competitors' mentioned in Plusnet's internal documents are [REDACTED]. Other competitors ([REDACTED],⁷⁹⁶ [REDACTED]) are mentioned but with no such emphasis.
- 20.50 Our conclusion is that EE is not perceived to be one of the main competitors in broadband by BT.

Conclusion on EE as a constraint on BT

- 20.51 Our conclusion is that EE does not impose a significant competitive constraint on BT in retail broadband in Market A.
- 20.52 In SBB, evidence provided to us indicated that EE was unlikely to exert a strong competitive constraint on BT either on price (unless it offered significant promotions which it had not done to date) or on quality or reputation of its broadband products.
- 20.53 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.

⁷⁹⁶ [REDACTED]

Constraint imposed by competitors other than EE on BT

20.54 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

20.55 We looked first at the network reach of each CP (or PO, as Ofcom describes them) in Market A.

20.56 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.⁷⁹⁷ This suggests that there remain significant further unrecoverable costs that would need to be incurred by operators other than BT to provide comprehensive coverage across Market A, and that there is only a limited presence in Market A of competitors operating on-net.

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.

20.57 As noted earlier (see paragraphs 19.55 to 19.60) 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)

%

⁷⁹⁷ 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.

	<i>BT wholesale share</i>	<i>BT CPs share</i>	<i>EE share</i>	<i>Other CPs share</i>
<i>A1 (BT Only)</i>				
September 2013	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
March 2014	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
September 2014	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
March 2015	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<i>A2 (BT + 1 PO)</i>				
September 2013	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
March 2014	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
September 2014	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
March 2015	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: BT

Note: [REDACTED]

20.59 [REDACTED] This suggests that competitors other than EE do provide some competitive constraint on BT for SBB across Market A.

20.60 Our conclusion is therefore that there is some competitive constraint imposed by competitors, in addition to EE, in SBB on BT in Market A.

SFBB

20.61 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)

	<i>BT wholesale share</i>	<i>BT CPs share</i>	<i>EE share</i>	<i>Other CPs share</i>
	%			
<i>A1 (BT Only)</i>				
September 2013	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
March 2014	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
September 2014	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
March 2015	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
<i>A2 (BT + 1 PO)</i>				
September 2013	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
March 2014	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
September 2014	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
March 2015	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

Source: Parties

Note: [REDACTED]

20.62 This evidence suggests that BT's share of SFBB in Market A at the retail level is [REDACTED] ([REDACTED] in Market A1 and [REDACTED]% in Market A2) with other POs (excluding EE) combined having shares of [REDACTED]% in Market A1 and [REDACTED]% in Market A2. This suggests that competitors other than EE do provide some, if limited, competitive constraint on BT across Market A.

Conclusion on constraints imposed by competitors on BT

- 20.63 Our conclusion is therefore that there is some constraint imposed by competitors on BT in the supply of broadband in Market A.

Likelihood of new entrants or expansion

SBB

- 20.64 We first considered on-net expansion.
- 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.⁷⁹⁸
- 20.67 We therefore find that, on the basis of the evidence, on-net expansion of CP networks is unlikely.
- 20.68 We then considered off-net expansion.
- 20.69 The likelihood of off-net 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,⁷⁹⁹ [redacted].⁸⁰⁰ This indicates that large 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.
- 20.70 We also considered the potential expansion of 'niche' competitors in Market A, such as Fleur Telecom. It is too early to know 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

⁷⁹⁸ [Virgin Media hearing summary](#).

⁷⁹⁹ For Virgin Media, this applies to their residential customers only.

⁸⁰⁰ [redacted]

using a bundle that includes a highly discounted mobile package, and using other service offerings.⁸⁰¹

- 20.71 Lastly, we considered the potential expansion of Vodafone in Market A. Vodafone [REDACTED].⁸⁰²

SFBB

- 20.72 Ofcom told us that the take-up of fibre and the expansion of BT's fibre network (including through BDUK)⁸⁰³ 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.⁸⁰⁴ 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.
- 20.73 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 because of the high price of those inputs.⁸⁰⁵
- 20.74 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 2020.⁸⁰⁶ However, as it told us that it does not plan to offer SFBB off-net (ie 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.
- 20.75 As described earlier (see paragraph 20.71) Vodafone launched superfast broadband services in June 2015 for the consumer segment [REDACTED]. This will provide additional competitive constraint to BT.⁸⁰⁷ However, Vodafone told us that it [REDACTED].⁸⁰⁸

⁸⁰¹ 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.

⁸⁰² [Vodafone hearing summary](#) and [response to provisional findings](#).

⁸⁰³ See paragraph 19.11 for more details.

⁸⁰⁴ In the context of an Ofcom market review.

⁸⁰⁵ [Sky response to issues statement](#), paragraph 3.14, [TalkTalk initial submission](#), paragraphs 3.42–3.43

⁸⁰⁶ [Enders Analysis UK broadband, telephony and pay TV trends Q4 2014](#), pp2 & 17.

⁸⁰⁷ Note that Vodafone is not included in the Ofcom projected shares of supply in SFBB referred to in Appendix L.

⁸⁰⁸ [Vodafone hearing summary](#).

- 20.76 However, 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 paragraph 19.212).
- 20.77 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.
- 20.78 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. This suggests that the merger would not make entry or expansion less likely.

Conclusion on likelihood of expansion/entry

- 20.79 We sought evidence on any plans for CPs to expand their broadband operations in rural areas, but did not receive any.⁸⁰⁹ 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). We have also taken into account our assessment of wholesale broadband in Chapter 18 leading to our finding that the merger would not lead to an SLC in that market, and therefore we expect that the merger would not change the terms on which CPs could purchase that wholesale product. Our conclusion, therefore, is that on the basis of the evidence 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.

Conclusion on reduction in competition for retail fixed broadband in Market A

- 20.80 Our assessment has looked at the supply of retail fixed broadband in rural areas, defined as Market A, where no or only one PO has unbundled or is forecast to unbundle the local exchange.
- 20.81 In these areas, EE has a far smaller retail customer base in Market A for both SBB and SFBB than BT and other major competitors, and although there are a very small number of exchanges where both EE and BT have significant shares of supply, these represent a tiny proportion of UK exchanges.
- 20.82 Across Market A, EE applies a significant surcharge for SBB that exceeds any surcharge applied by its main competitors within this area (including the

⁸⁰⁹ For example, [X].

surcharge applied by BT for business SBB product). While EE does not charge a surcharge for its SFBB product, the evidence we have seen 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.

- 20.83 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.
- 20.84 While large CPs have little current appetite for providing broadband in off-net areas, our investigation revealed 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.
- 20.85 Our conclusion 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 fixed broadband (SBB and SFBB) in Market A.

21. Retail fixed 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 conclusion. More details of our analysis can be found in Appendix M.

Outline of theory of harm

21.2 As described earlier (see paragraph 19.3), 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 segment⁸¹⁰ [%]. [%], 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 [%]⁸¹¹

⁸¹⁰ We note that this estimate for BT's share ([%]) is different to the estimate from Ofcom [%]. See Appendix M for Ofcom figures.

⁸¹¹ [BT/EE response to the issues statement](#), paragraph 17.4.

Third parties' views

- 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 from the merger will be quickly upgraded to SFBB, increasing its share of SFBB customers.
- 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.
- 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.⁸¹²

Our assessment

- 21.11 To assess this theory of harm and determine to what extent EE is and could be a competitive constraint on BT in the provision of SFBB, we considered whether EE was in fact 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 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.

⁸¹² [Ofcom response to issues statement](#).

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 2015.⁸¹³ Data from Ofcom indicates that over the last two years, [REDACTED].⁸¹⁴
- 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. As described in paragraph 20.72, we note that Virgin Media's current network expansion, 'Project Lightning', will extend its network to approximately 4 million additional premises over the next five years, estimated to increase the number of homes and businesses within the Virgin Media network area from 44% to 57% of UK premises by 2020.⁸¹⁵ However, it does not supply SFBB outside its network area and has told us it has no plans to do so. We therefore also consider the competitive situation in the area outside the Virgin Media network.
- 21.15 While we do not have data on shares of supply outside Virgin Media's network areas, we note the UK trend for upgrading to SFBB and overall trends in shares of supply described earlier. Data provided by the parties on shares of supply for fibre customers, excluding Virgin Media, show that [REDACTED].⁸¹⁶ We observed that:
- [REDACTED]
 - [REDACTED]:
 - [REDACTED]
 - [REDACTED]
 - [REDACTED]
- 21.16 It is therefore 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

⁸¹³ See Appendix M, Table 1.

⁸¹⁴ See Appendix M, Figure 2.

⁸¹⁵ [Enders Analysis UK broadband, telephony and pay TV trends Q4 2014](#), pp2 & 17.

⁸¹⁶ See Appendix M, Table 2.

customers. This will help us to assess the extent to which third parties may be able to exert competitive constraint on the merged entity post-merger.

- 21.18 We observe that the source of new SFBB customers varies between competitors. For [X] and [X], currently most SFBB acquisitions are from competitors, whereas around two years ago most SFBB acquisitions were from existing SBB customers upgrading to SFBB. For [X] and [X], the source of most SFBB acquisitions continues to be existing customers upgrading from its standard broadband service and/or from other services ([X] or [X]).⁸¹⁷
- 21.19 We note that [X]. Sky's pay TV service is the biggest in the UK, with [X] 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 [X] by Q3 2014.⁸¹⁸
- 21.20 We note that our review of BT Consumer's internal strategy documents on broadband indicated that [X], and that [X] was seen as a particularly strong competitor.
- 21.21 [X] BT noted that a number of third parties were encouraging their customers to take up SFBB through various promotions. For example:
- [X]
 - [X]
 - [X]

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

⁸¹⁷ See Appendix M, paragraphs 23 to 30

⁸¹⁸ Analysys Mason (February 2015), [Report on UK Telecom market](#), p7.

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.⁸¹⁹

21.24 For instance, an internal EE document dated Q4 2013 notes that SFBB pricing is becoming increasingly competitive and CPs are pushing aggressive price promotions to encourage SFBB uptake.

21.25 Supporting this view, [REDACTED].

Our conclusion 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 [REDACTED], 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 a 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 finds that the merger will not make the test materially less effective.⁸²⁰

21.29 Our conclusion is therefore that the evidence shows 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 providers of SFBB, the pricing of EE SFBB compared to its competitors, and whether EE's position in mobile or SBB provided it with a competitive advantage over other operators.

⁸¹⁹ See Appendix M, paragraphs 9–13, and paragraph 19.40.

⁸²⁰ See Chapter 0 for further discussion.

Share of supply

- 21.31 Evidence provided by Ofcom shows that EE is one of a few competitors to BT in SFBB, but it has an extremely small share of supply.⁸²¹ It has a national share of supply of only [X]%, significantly behind the other major players.
- 21.32 In addition, looking at the trends in shares of supply, the Ofcom data indicates 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 is currently being expanded from 44% to 57% of UK premises covered. 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 As described earlier in paragraph 21.13, evidence provided to us indicates that Sky and TalkTalk have made significant gains in retail share over the past two years, whereas while EE's share has increased, it is still small (see Appendix M, Table 1).
- 21.35 It therefore appears that although EE is one of a small number of competitors to BT in SFBB, when compared with its competitors both in and outside the Virgin Media network area its share of supply is minimal. Furthermore, its previous growth rate has been less than that of its 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.

• Parties' views

- 21.37 The parties told us that EE was not especially price competitive on SFBB, being more expensive than TalkTalk, Vodafone and BT and Plusnet and

⁸²¹ For details of shares of supply, see Appendix M, paragraphs 14–17.

offering less attractive introductory offers (see Appendix M for further details).⁸²²

21.38 EE provided us with internal strategy documents indicating that [REDACTED].⁸²³

- *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 2015.⁸²⁴

- *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 shows that, excluding line rental,⁸²⁵ the monthly cost of EE's lowest cost superfast broadband package were considerably higher than those of 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.

Table 21.1: A comparison of the largest CPs' lowest cost superfast broadband services, April 2014

	<i>BT</i>	<i>Virgin Media</i>	<i>TalkTalk</i>	<i>Plusnet</i>	<i>Sky</i>	<i>EE</i>
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 for the UK as a whole, EE had higher prices for SFBB than its main competitors (see Appendix M for further details).

⁸²² See Appendix M, paragraph 32.

⁸²³ [REDACTED]

⁸²⁴ Ofcom (June 2015), [Latest customer complaint numbers](#). See Appendix M, paragraph 36, for more detail.

⁸²⁵ Differences in line rental prices are small.

- 21.42 When considering this theory of harm we looked at the importance of pricing in the choice of broadband provider. Evidence suggested that pricing was an important reason for the choice of CP for individuals who had recently made residential fixed broadband purchases.⁸²⁶ We have not seen evidence to show that the relative importance of factors influencing buying decisions for SFBB are different from broadband as a whole.
- 21.43 Given these price differentials, and the importance of price in consumers' buying decisions, the evidence supports the proposition that EE is unlikely to exert a strong competitive constraint on BT in superfast broadband unless it offers significant promotions. Additionally, factors around quality and other product differentiation features such as mobile bundles will apply.
- 21.44 However, 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, [X] of new fibre customers were subscribers to EE's mobile phone service and only [X]% of new fibre customers were new to EE.⁸²⁷ (see Appendix M, Table 4). We note that [X]. 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

⁸²⁶ See Appendix M, paragraph 40 and Figure 5. For example, [X].

⁸²⁷ See Appendix M, Table 4.

Q1 2015,⁸²⁸ 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, [REDACTED].⁸²⁹

21.49 Our 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 through 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,⁸³⁰ and there was still a sizeable pool of standard broadband customers who have not converted to SFBB.⁸³¹ However, evidence provided to us suggested that the proportion of SFBB acquisitions acquired from upgrading from SBB, rather than being acquired from competitors, was decreasing.⁸³²

21.53 We observed from the evidence that there was variation across competitors in the extent to which SFBB customers were acquired through upgrade rather than competition in the market. For [REDACTED] and [REDACTED], currently most SFBB acquisitions were from competitors, whereas around two years ago most SFBB acquisitions were from existing SBB customers upgrading to SFBB.

⁸²⁸ CMA analysis of Enders Analysis data. See Appendix M, Table 3 for SFBB customer acquisitions data.

⁸²⁹ See Appendix M, Table 4.

⁸³⁰ BT notes that analysts estimate that superfast fibre connections will exceed copper connections by 2017.

⁸³¹ 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.

⁸³² See Appendix M, Tables 4 and 5.

- 21.54 For [X] and [X], the largest source of most SFBB acquisitions continued to be existing customers upgrading from its standard broadband service and/or from other services ([X] or [X]). [X]⁸³³
- 21.55 We note that while EE had around [X] million standard broadband customers in Q4 2014,⁸³⁴ this is far less than the numbers for Sky ([X] million) and TalkTalk ([X] 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 [X]% to [X]%.
- 21.56 However, [X].⁸³⁵ 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 [X]% 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 conclusion on potential competitive advantage of EE*

- 21.59 Based on the analysis above, we therefore 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 smaller share of supply of SFBB compared with its main competitors, and this ability has not in fact led it to increase its number of SFBB customers at a faster rate than its competitors.

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

⁸³³ See Appendix M, Table 4 for more details.

⁸³⁴ EE had [X] fixed broadband domestic customers, of which [X] standard on 31 May 2015.

⁸³⁵ See Appendix M, Table 5.

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.

- 21.61 As discussed above,⁸³⁶ our 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 [REDACTED] 2015.⁸³⁷ TalkTalk previously announced an ambition to reach 10 million households with FTTP within a five- to ten-year period if York trials are successful.⁸³⁸
- 21.63 However, as we have 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.

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 fast-evolving market, with [REDACTED]. 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, [REDACTED].
- 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, we observe from BT internal strategy documents that EE is not seen as a major competitor.

⁸³⁶ Paragraph 20.77.

⁸³⁷ 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*.

⁸³⁸ Cityfibre initial submission; Enders Analysis UK broadband, telephony and pay TV trends Q4 2014.

21.67 On the evidence we have seen, our 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 loss of competition in the supply of SFBB.

22. Competitive assessment: other theories of harm and interrelated effects

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).⁸³⁹

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.⁸⁴⁰

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 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. In addition, evidence that the firms

⁸³⁹ See [Merger Assessment Guidelines](#), section 5.5.

⁸⁴⁰ [TalkTalk initial submission](#).

in the market were coordinating pre-merger can be relevant to our assessment.

- 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). Moreover, we found that the retail market, in which four MNOs are active, was currently competitive, and we note that the merger does not bring about a material change to the retail market to the extent that coordinated effects would become more likely.⁸⁴¹ Therefore the merger is unlikely to create a greater risk of coordinated effects. The merger does increase contact between operators in fixed and mobile markets, but not in a way which is likely to increase the risks of coordination.
- 22.6 We 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.⁸⁴²
- 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 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

⁸⁴¹ The loss of BT would not mean that an important disruptive force would be eliminated.

⁸⁴² See [Merger Assessment Guidelines](#), paragraph 5.6.13.

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 view is that, to the extent this effect exists, it has been covered by our assessment of the other theories of harm. We find that the merger is not expected to result in an SLC as regards conglomerate effects.

Interrelated effects

- 22.12 As well as our assessments of the individual theories of harm, we also looked at whether any potential interaction between the theories of harm we considered could give rise to an SLC, or whether the overall effect of the merger on players in the UK telecoms sector would give rise to an SLC.

Third parties' views

- 22.13 TalkTalk submitted in response to our provisional findings that the CMA had not carried out a robust consideration of the composite effect of the merger across markets.⁸⁴³
- 22.14 Sky submitted in response to our provisional findings that the CMA should revisit its analysis of foreclosure in relation to small cell deployments in a more holistic way across backhaul, sites and spectrum, adding that the CMA would find an SLC in the retail mobile market if it followed this approach.⁸⁴⁴ According to Sky, the CMA should fully investigate the combination of the loss of dynamic retail competition in spectrum and wholesale input foreclosure in respect of the deployment of small cells.⁸⁴⁵
- 22.15 Vodafone submitted in response to the provisional findings that the CMA had not sufficiently considered the interrelated effects of the individual theories of harm and whether the overall effect of the merger can give rise to an SLC 'in the round'.⁸⁴⁶ It also pointed out that it agreed that there would not be an SLC in wholesale mobile against fixed MVNOs (that is, Chapters 13 and 14 of this report), provided backhaul, network sharing and spectrum issues are addressed.⁸⁴⁷

⁸⁴³ [TalkTalk response to provisional findings](#), paragraphs 3.8–3.12.

⁸⁴⁴ [Sky response to provisional findings](#), paragraph 1.7.

⁸⁴⁵ [Sky response to provisional findings](#), paragraph 3.4.

⁸⁴⁶ [Vodafone response to provisional findings](#), paragraphs 7.1–7.3.

⁸⁴⁷ [Vodafone response to provisional findings](#), paragraph 6.1.

Our assessment

- 22.16 None of the submissions we received during this investigation articulated clearly how a composite view of multiple theories of harm would lead to a different outcome of our competitive assessment of the merger.
- 22.17 Nonetheless, we looked at whether any potential interaction between individual theories of harm could give rise to an SLC, or whether the overall effect of the merger on players in the UK telecoms sector would give rise to an SLC. We considered for each theory of harm whether there were any aggravating factors which potentially could arise from other theories of harm or markets considered, and which could have an impact on our assessment. In line with our guidance,⁸⁴⁸ we thought that an overall expectation of an SLC could be based upon one theory only, or upon our composite view of multiple alternative theories.
- 22.18 In principle, a single theory of harm may have an insubstantial impact on competition when assessed in isolation, yet when combined with other theories, there may be a greater impact on the merged entity's incentives or an accumulation of anti-competitive effects, such that a significant effect on rivalry over time can be expected.
- 22.19 By their nature, the vertical theories of harm under consideration in our investigation are ultimately expected to affect consumers in the downstream retail markets in question, that is, the retail mobile and broadband markets (including fixed-mobile bundles). Therefore, the effects of any potential interaction between theories of harm and/or the overall effect of the merger on players in the UK telecoms sector would be felt by customers in those downstream retail markets (taking into account the possible convergence between retail mobile and fixed products as a result of fixed-mobile bundles).
- 22.20 With regard to vertical theories of harm, however, a combination of anti-competitive effects can only occur if the merged entity has the ability to cause harm to its downstream rivals for any individual input they require to compete at the retail level and the incentive to do so, or in the downstream market itself, taking all the relevant evidence in the round. We found in relation to the majority of theories of harm discussed in this report that there was an absence of ability or incentive,⁸⁴⁹ meaning that we did not expect an accumulation of effects in relation to those theories.

⁸⁴⁸ [Merger Assessment Guidelines](#), paragraph 4.2.6.

⁸⁴⁹ The exception is the potential foreclosure of Virgin Media in the wholesale mobile market, discussed in Chapter 14, where we also assessed effects. However, we found that any effects caused would be unlikely to have a material impact on competition.

- 22.21 In addition, we considered the way in which competitors would require inputs from the merged entity across several markets. The merged entity's rivals at the retail level require at least one upstream input, including those supplied by the merged entity:
- to be active in the retail broadband market, MNOs and fixed-MVNOs require wholesale broadband services from the merged entity, except where they have their own network (as is the case for Virgin Media) (see Chapter 18); and
 - to be active in the retail mobile market, fixed-MVNOs require wholesale mobile services, which are offered by the four MNOs, one of which will be the merged entity (see Chapters 13 and 14); and MNOs require mobile backhaul services which in practice are supplied at least in part by the merged entity (either Openreach or BT Wholesale) (see Chapters 15 and 16).
- 22.22 We assessed the extent to which foreclosure in one or more of these upstream markets could, taken together with other theories of harm, change the merged entity's ability and/or incentive to cause harm to its rivals in a different market (MNOs and/or fixed-MVNOs). Where we found no ability to cause harm, the existence of related markets would not change that assessment. Where we found a possible ability, we took into account the existence of related markets in assessing incentives.
- 22.23 Specifically in relation to the issues raised by Sky, we have found that the merged entity would not have the ability to cause harm to rival MNOs in respect of the deployment of small cells by limiting MNOs' access to suitable sites or to fibre backhaul products (see paragraphs 16.62 to 16.77). Given the absence of that ability, our view is that this specific theory of harm cannot change the merged entity's incentive to foreclose by bidding strategically in the Public Sector Spectrum Release auction. Consequently, our conclusions on the loss of dynamic retail competition in spectrum (see Chapter 12) would not change under a 'holistic' approach, as suggested by Sky.
- 22.24 We considered a potential combination of the theories of harm relating to mobile backhaul and wholesale mobile. In theory, the merged entity could attempt to increase MNOs' costs in mobile backhaul (the theory of harm assessed in Chapter 16), which MNOs may in turn pass on in the wholesale mobile market to their fixed-MVNO customers, thus raising fixed-MVNOs' costs in the process (raising fixed-MVNOs' costs in wholesale mobile is

discussed in Chapter 14).⁸⁵⁰ This could have an impact on the merged entity's incentive to engage in foreclosure in backhaul and/or its ability and incentive to cause harm to its rivals through foreclosure in wholesale mobile, as the overall profitability of these strategies may be different if taken together.

- 22.25 However, in relation to fibre mobile backhaul, we found in relation to strategies 1, 2 and 3 that the regulation to which BT is subject would make it unlikely that MNOs could be harmed by means of these strategies. In relation to other strategies,⁸⁵¹ we found that the merged entity would not have the ability to cause harm to MNOs by engaging in a number of suggested foreclosure strategies in mobile backhaul. That assessment does not change when taking a composite view of the merger's impact on the wholesale mobile and the mobile backhaul markets.
- 22.26 The mobile backhaul foreclosure strategies that remain are strategies 4 and, in the case of foreclosure of H3G, 5, for which we found that the merged entity may have the ability but would not have the incentive to engage in them. When analysing those strategies, we assumed that any foreclosure would affect both the relevant MNO and all MVNOs hosted by that MNO, because backhaul cost increases would eventually be passed-through into wholesale mobile prices (see paragraphs 16.6 and 16.126(c)). As a sensitivity, we have considered what would happen if, as a result of foreclosure in the wholesale mobile market, the number of retail customers buying directly from rival MNOs slightly increased (because customers divert from foreclosed MVNOs to MNOs): we found that our conclusion was unchanged. As backhaul foreclosure is thus likely to be unprofitable even in combination with foreclosure in the wholesale mobile market, the analysis of the latter would not change whether considered in isolation or in combination with backhaul foreclosure.
- 22.27 We also considered whether the wholesale broadband markets discussed in Chapter 18 should be included in this composite analysis. However, since we find that the merged entity does not have the ability to cause harm to rival CPs in relation to wholesale broadband, it is also not possible for the merged entity to include foreclosure in wholesale broadband in a wider foreclosure strategy.

⁸⁵⁰ We concluded that there was no vice versa concern, as an increase in the fixed MVNOs' costs would not be passed on to MNOs, as the MNOs operate upstream from the fixed MVNOs.

⁸⁵¹ Strategy 6 and, for the case of foreclosure of Telefónica and Vodafone, strategy 5.

- 22.28 We did not, therefore, reach a different assessment of whether there was an SLC as a result of the interaction between the various theories of harm we considered.
- 22.29 We further considered whether the theories of harm could interlink or amplify each other as a result of consumer behaviour and in particular the possible increased popularity of fixed-mobile bundles when assessing the merged entity's incentives (as described in paragraph 16.126b). For reasons set out earlier in this report we did not find an SLC on this basis.
- 22.30 In addition to the potential interactions between the various theories of harm, we considered whether the evidence and findings in relation to the different theories supported an SLC finding in one or more markets when considered in the round and on a cumulative basis. We did not think that the evidence supported a finding that an SLC is nonetheless to be expected on this further or alternative basis.

23. Our findings

We 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.