Anticipated merger between Level 3 Communications Inc and Global Crossing Limited

ME/5025/11

The OFT's decision on reference under section 33(1) given on 30 August 2011. Full text of decision published 6 September 2011.

Please note that the square brackets indicate figures or text which have been deleted or replaced in ranges at the request of the parties or third parties for reasons of commercial confidentiality.

PARTIES

1. **Level 3 Communications Inc** (Level 3) is a US company which offers a range of communications services. Within Europe these are predominately at the wholesale level related to its infrastructure. Its fibre optic network covers North America and Europe (including transatlantic subsea cables).

2. The parties have categorised Level 3's activities into Internet connectivity services, global telecommunications services (GTS) and carrier services. It also offers content delivery network services.

3. Level 3's 2010 worldwide turnover was £[ ] of which £[ ] was earned in the UK.

4. **Global Crossing Limited** (Global Crossing) is a Bermuda registered company which offers a range of communications services. Global Crossing has a more extensive fibre optic network than does Level 3. Its network covers North, Central and South America, Europe, parts of Asia and the Pacific. It also has transatlantic subsea cables. In all, its network is present in 70 countries and serves more than 700 cities worldwide.

5. Global Crossing provides Internet connectivity services, GTS and carrier services.

6. Last year, Global Crossing's turnover was around £[ ] of which £[ ] was earned in the UK.

TRANSACTION

7. On 10 April 2011 the parties signed an Amalgamation Agreement. Under the terms of the agreement, Global Crossing will amalgamate with a wholly owned subsidiary of Level 3 (Apollo Amalgamation Sub Limited), with the amalgamated company being renamed Level 3 GC Limited. Global Crossing shareholders will receive 16 shares of Level 3 common stock for each share that they own in Global Crossing. At the time of the agreement this valued the deal at US$3 billion (or around £1.8 billion).

JURISDICTION

8. As a result of this transaction Level 3 and Global Crossing will cease to be distinct. The UK turnover of Global Crossing exceeds £70 million, so the turnover test in section 23(1)(b) of the Enterprise Act 2002 (the Act) is satisfied. The Office of Fair Trading (OFT) therefore believes that it is or may be the case that arrangements are in progress or in contemplation which, if carried into effect, will result in the creation of a relevant merger situation.

9. The OFT's administrative deadline in this case was 3 August 2011.

MARKET DEFINITION

10. Both parties are active in the supply of Internet connectivity, GTS and carrier services.

Product market: Internet connectivity

11. The Internet comprises a vast array of interconnected networks of varying reach and capacity. Such interconnected networks allow

Internet users to receive and send content from and to other users anywhere in the world.

12. No one operator's physical cable network has global coverage. Instead, network operators come to arrangements with each other to ensure that Internet traffic gets to its destination. There are two broad arrangements which network operators can use; peering and paid-for IP transit.[1] Annexe A provides a discussion of how Internet traffic is transited according to each of these arrangements.

13. In 2005 the European Commission (the Commission) analysed Verizon/MCI on the basis of peering by top level (that is, Tier 1) network providers separately from other networks.[2] This was because the Tier 1 network providers could achieve comprehensive Internet connectivity almost exclusively through peering and therefore they were not constrained by IP transit prices.

14. Also in 2005, the OFT examined SBC/AT&T on the basis of Tier 1 providers being separate from other network providers.[3]

15. In this case the parties submitted that in light of market developments since 2005 (especially the fall in IP transit prices) there is now a single product market for the wholesale provision of Internet connectivity (that is, peering and IP transit combined). This is discussed below.

Peering

16. Peering is the mutual and usually free exchange of Internet traffic between two networks. In this model network operator A will allow content from network operator B to pass through its network, usually without a fee, as long as B likewise allows A's content to pass through its network. Therefore, with peering agreements in place, a customer of a particular network operator can be sure that its

[1] 'IP' is Internet Protocol, the principal communications protocol used to transmit packets of data across the Internet.
[2] M.3752 Verizon/MCI. It should be noted that in this case the Commission did not conclude on market definition.
[3] Anticipated acquisition by SBC Communications Inc of AT&T Corporation, Case ME/1584/05, 23 August 2005.

Internet content can be accessed across the World Wide Web despite the fact that its chosen network operator is not ubiquitous.

17. Since peering involves a reciprocated service it is restricted to networks passing on similar volumes of traffic (otherwise one network bears a disproportionate cost in the arrangement).[4] The parties submitted that those networks which could rely almost entirely on settlement-free peering arrangements are classified as Tier 1 providers.[5]

18. The parties submitted the criteria that they use for selecting with whom to peer. Level 3's peering policy (which Level 3 submitted that it published in 2007[6]) is that the peering partner must:

- have the capability, processes and tools to assure a high degree of network performance, upgradeable capacity, full diversity and robust security
- have a physical network that is complementary and/or similar to Level 3's IP network in terms of size, reach, scale, diversity and reliability
- have a robust traffic exchange capability both in terms of the quantity of traffic exchanged and the number and size of private traffic exchange points
- maintain an acceptable traffic exchange profile.

19. Similarly, Global Crossing's peering policy is:

- All Private Peering will be implemented at speeds of no less than 1,000 Mbps, unless otherwise specified in the Regional requirements outlined in this document.

[4] Besides the volume of traffic being passed between networks, other key considerations are the location and number of interconnection points and the routing practices to be used by both operators.
[5] There is no established definition of a Tier 1 provider but the ability to establish settlement-free peering is a necessary condition of the various definitions.
[6] www.level3.com/en/Products-and-Services/data-and-internet/internet-services/IP-Traffic-Exchange.aspx

- Each of the peering partners' (Global Crossing and Peer) peering hubs must be connected to at least two other backbone hubs on its own network. A 'peering hub' is simply defined as a location in which a peering interconnect is terminated—even though that location may not be used for the express purpose of peering.

- A Global Crossing Transit customer may not peer with Global Crossing in the same region in which they maintain a transit connection to Global Crossing.

- Global Crossing will, from time to time, reevaluate existing private peering relationships to ensure they are in compliance with the current policy. If a relationship is non-compliant, a mutually acceptable timeline and plan will be established to bring that network into compliance.

- A potential peer will be able to demonstrate to our mutual satisfaction that their Regional Internet backbone network is comparable in size to Global Crossing's.

- The traffic flowing between networks as a result of the direct peering must be of a sufficient quantity to justify the existence of the direct interconnections.[7]

20. Peering can be further sub-divided into settlement-free and paid-for peering. The OFT understands that the bulk of Internet traffic carried via peering relationships is done so under settlement-free peering. If the traffic exchanged between networks is too unbalanced the parties involved may come to a paid peering agreement. However, paid peering will only give that network access to the network with which it has come to an agreement, unlike paid-for IP transit (discussed below) which gives the paying network access to the entire Internet.

21. Both parties [ ].

[7] Global Crossing 2009 Private Peering Policy. Global Crossing submitted that its peering policy has not changed since 2004.

22. [ ]. Moreover, the OFT has not received sufficient evidence to persuade it that those networks who, in the main, need to pay for peering constrain those who, in the main, can rely on settlement-free peering. Indeed, several third parties who the OFT spoke to said that they, or their customers, will specify that their network supplier (or a proportion of their network supplier) should be a Tier 1 carrier. The OFT has analysed this merger on the basis of Tier 1 network providers (using settlement-free peering).

23. Peering arrangements can be private or public. TeleGeography (a telecommunications market research company) reports that private relationships are the simplest and most commonly used form of peering.[8] Network connections via private peering can be established anywhere where both networks have a Point of Presence (POP) including in a co-location facility (such as an Internet exchange or a telehouse).[9] Public peering can only occur in co-location facilities and connections are achieved through neutral peering switches. TeleGeography reports that public peering generally takes place among minor peering partners.[10] Nevertheless, both parties are present in a considerable number of Internet exchange/telehouses within the UK and undertake both private and public peering.

24. The OFT has investigated the merger on the basis of private and public peering together.

IP transit

25. As noted above, the second broad method available to network operators is to pay a network provider for transit of content (IP transit). Transit differs from peering in that it gives the customer access to the whole Internet, not just to the network with which it is contracting (although some hybrid models – whereby a customer pays for IP transit in one region but peers in another – do exist).

26. As stated above, the parties consider that there is a single product market for Internet connectivity (that is, peering and IP transit

[8] TeleGeograpy, 'Global Internet Geography: market structure', page 2.
[9] A telehouse is a co-location data centre in which networks can connect with each other.
[10] TeleGeograpy, 'Global Internet Geography: market structure', page 2.

together). The parties submitted that the key reason for this is that transit prices have fallen from just below US$100/Mbps per month in 2005 to below US$10/Mbps per month in 2010 (that is, by 90 per cent) and, with respect to the parties, as low as US$[ ]/Mbps per month.[11,12] They argued that this demonstrates that IP transit pricing can be cheaper than peering (depending on traffic volumes).[13] The parties noted that the Commission, in Verizon/MCI, said that transit might be an option when the cost of reaching the peering point exceeds the cost of transit in that region.[14]

27. However, the OFT notes that peering is not an option for some customers. Indeed, the Commission found in Verizon/MCI that second tier Internet service providers (ISPs) are unlikely to be able to generate enough global traffic to warrant physically extending cable networks to a number of peering points at cost effective rates and such ISPs find it difficult or even impossible to peer with Tier 1 providers.[15] In its submission to the OFT the parties acknowledged that some customers will not have sufficient traffic volumes to make peering an economic option, but further submitted that since IP transit rates are low, such customers would not be disadvantaged as a result. As a consequence, the parties submitted, IP transit may be in the same market as peering.

28. Moreover, two market reports, one from TeleGeography and the other from drpeering.net website (a website run anonymously by individuals active in the IP transit industry), both conclude that IP transit can be cheaper than peering for those companies who have low traffic volumes.

29. Some customers corroborated this view, saying that it was uneconomic for them to peer at low traffic volumes, suggesting that

[11] Mbps refer to megabytes per second. Mbps is a measure of the speed that data is transmitted across the Internet in 1,000,000 of bytes per second.
[12] Internal pricing documents from the parties show that prices vary according to the port interface type and size being used, committed transit volumes and length of the contract period.
[13] The calculation as to whether to peer or pay for transit is not always clear. Although peering allows a network operator (A) to use another's network (B) for its Internet traffic without charge, A also has to allow B to pass its traffic on A's network, thereby imposing a cost on A. Likewise, for network operators, although IP transit imposes a cost when using another's network, it also provides revenue when others use the operator's own network.
[14] Paragraph 21.
[15] Paragraph 18.

IP transit may be separate from peering. As with any customer in its position, there is a trade-off between the costs of peering (locating where a connection can take place and investing and maintaining exchange ports) and the cost of paying for transit.

30. Almost all third party respondents to the OFT's questionnaire (both customers and competitors) agreed that it remains appropriate to consider peering by Tier 1 providers separately from IP transit, and no third party disagreed with the proposition. However, some said that it is not always clear. Two said that there are regional variations in the calculation of whether it is more cost effective to peer or pay for transit. Another said that payments for peering are sometimes subject to confidentiality obligations between networks and therefore downstream customers may consider networks to be connected via settlement-free peering but in fact are not. How prevalent a network engages in this could affect its status as a Tier 1 provider.

31. The OFT has not found it necessary to conclude on the product market with respect to IP transit in this case. On a cautious basis it has examined the merger on the basis of IP transit and peering separately.

Recent market developments

32. The parties also submitted that since 2005 there have been a number of developments in the marketplace which have blurred the boundaries between Tier 1 and other providers of Internet connectivity to the extent that the OFT should not necessarily rely on market definitions from the 2005 cases.[16] Indeed, the parties submitted that there are some alternate pathways available to customers enabling them to largely bypass the Tier 1 network altogether.

33. For example, the parties submitted that the emergence of 'hyper giants' has prompted significant changes in the distribution of Internet traffic, and has fundamentally altered the order of the Internet. Hyper giants can be best described as being very large content providers or hosting sites and therefore have a very large

[16] Verizon/MCI and SBC/AT&T.

demand for network capacity. Although no strict definition exists for these network users, they are said to include Google, Amazon, Facebook, Yahoo!, Microsoft and You Tube. Within the UK, the BBC's i-Player is considered by the parties to be sufficiently content-rich to classify as a hyper giant. The importance of the largest Internet companies is highlighted in a report by ATLAS which states that the 30 largest of them generate around 30 per cent of all Internet traffic around the world.[17]

34. The parties also submitted that along with content providers, hyper giants also include content distribution networks (CDNs), such as Akamai, Limelight and Level 3. CDNs provide content storage and distribution at various nodes along the network so that IP traffic does not need to repeatedly travel across the entire network (from point of origin to the end user), which generally improves both speed and quality. Instead, CDNs are located close to end consumers so that their traffic predominately travels along local networks.

35. Some hyper giants (such as Google) are investing in their own network infrastructure and therefore becoming less reliant on the networks of the Tier 1 providers. Further, the business models of CDNs also make their IP traffic less reliant on Tier 1 networks.

36. The OFT's market testing with third parties has confirmed both these trends within the industry. The evidence does show a reduction in the reliance on Tier 1 networks for the delivery of content to end consumers. Nevertheless, these hyper giants are still reliant on transit arrangements with Tier 1 networks to deliver a proportion of their content to their customers. For example, despite having some network of its own, [ ].

37. All third parties who responded to the OFT investigation (both customers and competitors, including some of the companies classified as hyper giants) do not consider hyper giants to operate in the same market as top-level networks or provide competition to these networks.

[17] ATLAS Internet Observatory, 2009 Annual Report.

38. Importantly, while some Internet traffic is no longer delivered by the Tier 1 networks, the hyper giants are not providing competition for global Internet connectivity (since they do not offer their networks to third parties). The parties argue that hyper giants do compete with them indirectly since every time one of them connects with a consumer ISP, for example, Level 3 and Global Crossing (and other network providers) lose the opportunity to provide that IP traffic flow for the hyper giant and/or the ISP.

39. In addition, the parties submitted that the importance of national incumbent operators (such as BT in the UK), who provide the last mile of connectivity to consumers, has greatly increased due to the increase in content-rich traffic. The parties submitted that this has led to these operators being able to reduce their use of Tier 1 networks by directly peering with each other through establishing POPs at certain Internet exchanges. They further submitted that it is the very threat of moving traffic away from a transit provider which has helped drive IP transit prices down.

40. While there is evidence of an increase in peering relationships for some Internet connectivity suppliers third parties have provided further evidence that national incumbents do not bypass purchasing transit from Tier 1 networks and would not in the event of a price rise in the region of five per cent.

41. Internet exchanges do allow for this to some extent. Internet exchanges allow ISPs to connect to each other directly rather than through third party network providers. They allow data to be accessed and transmitted locally, rather than using an upstream IP transit provider.

42. In this way the parties submitted that Internet exchanges could be substitutes for IP transit in some circumstances. One third party told the OFT that for some range of prices Internet exchanges (such as LINX) are substitutable for IP transit since exchanges enable locally-based peering.[18] Although this third party does use some exchanges in Europe it mostly finds the exchanges too costly to use given its

[18] LINX is the London Internet Exchange. Other key Internet exchanges in Europe are in Amsterdam, Frankfurt, Stockholm, Madrid, Paris and Milan.

requirements. It considered that the cost of using the exchanges and the effort in getting connected means that Internet exchanges are not a strong constraint on IP transit prices for it. In any case, even with direct peering within exchanges, in order to gain access to the entire Internet ISPs and other customers would still need to pay for IP transit.

43. For all the above reasons, while the changes that have occurred over the last five years may have reduced the reliance of some customers of IP transit services there is still a high demand for this service and, on a cautious basis, the OFT has examined this merger on the basis of Internet connectivity provided by Tier 1 network providers for both peering and IP transit as discussed above. However, the OFT has taken account of non-Tier 1 providers in its assessment where customers have indicated that these providers are alternatives for them.

Geographic market: peering and IP transit

44. With respect to the market for Tier 1 networks provision of Internet connectivity through peering and/or IP transit, the parties submitted that the relevant geographic market is global in scope. This is consistent with previous investigations[19] and was confirmed by customers and competitors in the OFT's market testing exercise.

45. However, in KPNQwest/Ebone/GTS the Commission left open the geographic market definition and assessed the merger on a global basis and a European-wide basis in order to examine the merger's affect on intra-European Internet traffic.[20] Similarly, assessing this merger the OFT has borne in mind that there are important regional distinctions in terms of the competitive dynamic for Internet connectivity, especially with respect to IP transit. For example, some third party customers provided evidence to the OFT that their ability or incentive to peer with a network operator in one region (say Europe) may be different to that in another region (say North America) given the differences in choices available.

[19] For example, MCI/Verizon and M.1741 MCI/Worldcom/Sprint.
[20] M.2648 KPNQwest/Ebone/GTS.

46. A TeleGeography report agrees. It says that 'not all IP transit is sold on a global basis. With partial or regional transit products, the transit provider sells the customer access to a specific set of routes, often grouped by geographic region'.[21]

47. The OFT has not found it necessary to conclude on the geographic market in this case. It has assessed the merger on a global basis and also on UK-wide and Europe-wide bases.

Product market: GTS and carrier services

48. The Commission has, on a number of occasions, defined a single market for the supply of GTS.[22] In the most recent investigation of this market (*MCI/Verizon*) the Commission defined the market as being the supply of 'telecommunications services linking a number of different customer locations, generally in at least two different continents and across a larger number of different countries. They are generally purchased by multinational companies with presence in many countries and a number of continents. The services provided are enhanced services – going beyond the provision of simple services such as basic voice and fax – to provide customers with package solutions including virtual private networks for both voice and data services and enhanced functionalities.'

49. In addition the Commission has previously defined a separate market for the provision of carrier services as 'comprising the lease of transmission capacity and the provision of related services to third-party telecommunications traffic carriers and service providers.'[23]

50. The parties argue that there is a single market combining GTS and carrier services. The parties acknowledge that the customers for the two services are different, thus on the demand-side the two services are not in the same market. But the parties also submitted that the services themselves are essentially the same and as such carrier services form part of a larger GTS market by virtue of ease of supply-side substitution.

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[21] 'Global Internet Geography: market structure', 2009, page 2.
[22] For example, MCI/Verizon and MCI/Worldcom/Sprint.
[23] M.1069 MCI/WorldCom, paragraph 16

51. However it should be noted that OFT/Competition Commission guidance says that the OFT will generally only consider demand-side factors in forming a product scope but supply-side factors may be relevant when production assets can be used by firms to supply a range of different products that are not demand-side substitutes.[24] In this case while some carrier service providers may also be able to supply GTS it is not necessarily the case that GTS providers can supply carrier services. This is evidenced by competitors to the parties in the GTS market also being customers of the parties for carrier services (and therefore are unable to offer carrier services to third parties).

52. Third party customers and competitors confirmed the continued relevance of previous investigations by the Commission with separate markets for GTS and carrier services based on supplying services to retail customers such as multinational companies and government agencies for GTS and telecommunications customers for carrier services.

53. The OFT has not found it necessary to conclude on the market definition in this case. However, on the cautious basis the OFT has examined the merger on the basis of GTS being separate from carrier services.

Geographic market: GTS and carrier services

54. With respect to the two markets for GTS and carrier services the parties submit that in both instances the relevant geographic market is global in scope. This is consistent with previous Commission investigations and was confirmed by customers and competitors. Third parties to this case agreed.

55. The OFT has analysed the merger's effect on GTS and carrier services on a global basis.

[24] Merger Assessment Guidelines', OFT1254, September 2010, paragraph 5.2.17

HORIZONTAL ISSUES

Market shares: Internet connectivity

56. There are no reliable data available for market shares for Internet connectivity. The parties submitted that within the industry market shares are reported on the basis of IP traffic flow, IP transit revenues, the number of Autonomous Source (AS) connections in a network and the number of connected countries within a network.[25]

57. However, each of these measures has shortcomings in providing an indication of a network provider's competitive position in the marketplace. For example, AS connections and the number of countries connected will provide a measure of how extensive or well connected a network is, but these measures do not provide an indication of how well used a network is. Traffic flows do measure how well used a Tier 1 network is, but it captures traffic from all sources on a Tier 1 network (given the presence of peering relationships) and therefore they do not necessarily present a measure of how successful a network is in winning IP transit customers. Revenue data are not readily available and, in any case, they are difficult to interpret given confidentially paid-for and settlement-free peering arrangements.

58. The parties provided some share estimates based on IP traffic flows, IP transit revenues and AS connections. Whilst none of these shares submitted suggest that the merged entity would hold market power, the OFT considers that the shortcomings of all of these measures diminishes their usefulness. As a result the OFT has decided not to place significant weight on estimated share figures in this case.

IP transit

59. During its investigation the OFT received a number of customer concerns pertaining to IP transit. Most third parties told the OFT that the merger parties are close competitors in the provision of Internet connectivity

[25] An AS is a collection of connected routers under the control of one or more network operators which forms a unified network through which data can be transmitted to other parts of the Internet. AS numbers are unique to these routers and enable each network to exchange routing information with neighbouring networks.

services (with some third parties drawing particular emphasis to IP transit services). Some were concerned that after the merger the parties will be able to increase prices or degrade the quality of service (that is, worsen network paths, interconnection quality with other networks or increase traffic disturbances).

IP transit as a commodity

60. The parties submitted that IP transit is a commodity-type product with sufficient alternative providers, including Tier 2 providers, to competitively constrain the merged entity. Some customers and competitors disagreed that IP transit is a commodity product. These customers said that they select network providers on the basis of a variety of factors which may include price, their coverage, latency (the speed at which traffic can travel through a network), reliability, the number of hops typically involved in the transit and whether it is Tier 1.[26]

61. Further, customers told the OFT that IP transit prices are not uniform but rather differ between providers. This further indicates that the service is not commoditised across different networks.

62. One customer explained to the OFT that the traffic of its different customers has different network requirements. For example, some of its customers are highly price sensitive but less sensitive to latency or global coverage (since latency does not vary very much between the main providers and some content providers require a certain comprehensive network coverage – say UK-wide – but beyond that is not essential for them). Other customers, however, are quality sensitive and will select a network provider or ISP on the basis of non-price factors. One customer of one of the parties told the OFT that it had not contracted with one network provider even though it offered the lowest price because it considered the non-price factors were below the standard that it was looking for.

63. In addition, all customers that the OFT spoke to were concerned about redundancy; that is, when a network is down, disrupted or suffering from over-capacity. For this reason, and for the reason of the spread of

[26] A hop is when traffic passes through a connection point as it moves from one network to another.

qualitative demands from a network, customers will typically multi-home. Multi-homing is simply being connected to more than one network so that if, for whatever reason, traffic cannot be transited through one network the customer can still send its traffic across other networks.

64. The parties submitted that around 90 per cent of customers multi-home. Based on data from Renesys and their own customer lists, the parties submitted that in the UK the number of networks selected in a multi-home connection is typically around four.

65. Some customers told the OFT that, since Internet traffic has differing network demands in terms of coverage, speed and other factors, they would select networks in their multi-home based on how they differ with the other networks chosen. By way of example, if a customer had four slots in its router it might choose one or two Tier 1 networks, a lower priced network and a Tier 2 network with a strong network in a particular region, for example an incumbent network such as BT, Deutsche Telekom or France Telecom. Therefore, some customers considered that even if they multi-homed, it did not mean that all their chosen networks were the same or closely substitutable for each other. Indeed, some customers complained to the OFT that the merger would reduce their choice of who the high quality Tier 1 providers would be on their multi-home router (given, in their opinion, Level 3 and Global Crossing are close competitors in this regard).

66. Despite this, some customers said that they allowed their traffic to travel 'naturally' through the multi-homed networks which indicates that the differing networks are substitutable, although others said that they managed the traffic (that is, selected through which networks the traffic travelled).

67. Given the views of third parties above and the reasons for multi-homing, the OFT has not considered IP transit to be a homogenous, commodity type product. Instead, the OFT considers that some network providers differ in their offerings and has examined how closely the parties competed before the merger.

Closeness of competition

68. Some third parties stated that the parties were close competitors based on the quality of their non-price offering as they are amongst the largest operators in terms of the number of customers, are less reliant on peering relationships, have the same unmatched large network scale and high quality of services in Europe.

69. This proposition is corroborated to some degree by Level 3's [ ]. The parties submitted reports from the first quarter 2008 to the first quarter 2011. These reports indicate that Level 3 considered [ ] as close competitors over this period. For example, the documents say:

- [ ] and

- competition remains fierce. [ ].

70. However, the same internal documents also identify other competitors as competing against Level 3, namely [ ]. For example, the documents say that competition is 'fierce' with [ ] leading prices down and that [ ] prices aggressively. In addition, another Level 3 internal document (from March 2011) names [ ] (along with [ ] and [ ]) as its competitors for IP transit. This document also states that customers are increasingly [ ] and that Level 3 does not consider it is able to [ ].

71. A document prepared by Goldman Sachs on behalf of Global Crossing identified [ ]. However, the OFT notes that since the document was prepared in consideration of the merger it has less probative value than a document prepared in the ordinary course of business.

72. OFT questioning of third party customers revealed that there are a number of network providers that customers can use as viable alternatives to the merger parties within Europe. NTT and TeliaSonera were the most frequently cited Tier 1 alternatives within Europe but customers also told the OFT that they could use TiNet. Further, customers named a number of Tier 2 providers including Colt, Interoute, KPN, France Telecom, Deutsche Telekom and AboveNet. Level 3 submitted evidence that it has recently lost tenders for UK customers to [ ].

73. The parties submitted that in addition to these providers others were available within the UK and Europe including Savvis, Verizon, Cable & Wireless and Qwest.

74. In addition, the parties provided evidence of multi-homing to identify which other network providers offered customers the best alternative. Using Renesys data on AS connections the parties were able to identify around 70 customers multi-homed to at least one other provider in addition to the merger parties. By number of customer connections, the most common alternate providers for these UK customers were AboveNet, Cogent, Tata, KPN, TiNet, NTT, TeliaSonera and Sprint.

75. Whilst some of these network providers may be credible alternatives to the merger parties, the OFT is conscious that some customers have said that they look for a range of networks and that the networks chosen are not necessarily close competitors to each other (indeed, not all of these providers are commonly classified as Tier 1 networks).

76. In addition, one customer told the OFT that it would not like its network provider to be a competitor in another, downstream activity. Therefore, this customer told the OFT that some vertically integrated network providers, such as Verizon and AT&T, are not credible alternatives to the merger parties. Moreover, the customer told the OFT that some of the alternative providers for other customers are either too small (in terms of AS connections and peering partners) or do not provide the requisite standard of quality for their requirements.

77. The OFT considers that even if customers would not wish to acquire IP transit services from a downstream competitor (because such an agreement would contain unfavourable terms) other network providers would remain after the merger. For example, TeliaSonera and TiNet (as Tier 1 network providers) would remain post merger to offer competition for customers based in the UK and Europe, as would KPN, Tata, AboveNet and Interoute. The below discussion on GTS and carrier services shows that these network providers are not significant competitors in these downstream activities.

78. Based on third party questioning and the above evidence submitted by the parties, the OFT considers that Tier 1 providers TeliaSonera, NTT and

TiNet will offer competitive constraints on the merged entity for customers based in the UK/Europe. It may also be the case that other providers, including Tier 2 providers such as Tata and KPN, may provide a degree of constraint on the merged entity.

79. In examining closeness of competition the OFT can have regard to the merger parties' experience of bidding for contracts.[27] Therefore, in this case the OFT sought bidding data from the parties. Both parties were able to submit bidding data on a global basis and on a UK-only basis (that is, for UK-based customers). In both sets of bid data there are a significant number of bids made where the companies do not know (or did not record) the competitors. Further, typically only one competitor was recorded in those instances when the companies knew of at least one of the competitors. The drawbacks to the data make interpretation difficult. For example, that only one competitor was named for each bid means that the recorded direct bids that the parties made against each other are the minimum number of instances of direct competition. On the other hand, it may also mean that other competitors are under-recorded in the data sets. Moreover, some customers would have multi-sourced leading to the possibility that both merger parties bid for a contract and both won some proportion of it. After careful consideration the OFT has decided not to place significant weight on the bidding data.

80. On the basis of the available evidence the OFT does not consider that a realistic prospect of a substantial lessening of competition arises with respect to IP transit (on price or quality grounds) for UK customers on a UK/Europe-wide basis.

Peering

81. A limited number of network providers and ISPs who have peering arrangements with one or both of the parties were concerned about potential changes to these arrangements with the parties post merger. Some told the OFT that the merger will create an entity which will become so large that it will no longer enter into settlement-free peering arrangements. Therefore, many of those who currently peer with the parties would need to pay for transit after the merger or move to a paid

[27] See, for example, Anticipated acquisition by Nike Inc of Umbro plc, ME/3419/07, 16 January 2008, paragraph 18.

peering arrangement.[28] The OFT is aware that Level 3 has had peering disputes before (with Cogent, Comcast and XO).

82. Some third parties are not concerned about being de-peered directly but rather that their next best alternative IP transit providers outside of the merged entity would be de-peered. They submitted that this would increase the cost of doing business with these alternate providers.

83. In terms of the first concern – that the merged entity would have a network size so large as to reach a tipping point where it could induce a move from settlement-free peering to IP transit or paid peering with the majority of other network providers – the evidence in this case indicates that the merged entity may be the largest Tier 1 network in the world and in Europe. For example, rankings from ATLAS,[29] TeleGeography[30] and Renesys[31] show that the parties will be the largest Tier 1 provider on a global basis. The parties' internal documents provide some corroboration of this.[32] Further, the parties submitted that Renesys' UK rankings show the parties to be two of the top three network providers (with TiNet) based on their customer base and Level 3 is the leading network provider based on backbone customers and wholesale customers (although the same Renesys rankings show Savvis, TiNet and Cogent ranked highly).

84. The OFT notes that no third party provided the OFT with any evidence as to where the tipping point might lie.

85. Further, although the OFT received some concerns about widespread de-peering from a limited number of network providers, the majority were not concerned about this.

86. In conclusion the OFT has not been presented with sufficient evidence for it to find that the merger will lead to a realistic prospect of a 'tipping point' being reached beyond which the merged entity will undertake a

[28] The point of de-peering would be to get peering partners to pay for Internet connectivity.
[29] Based on IP traffic flows (ATLAS Internet Observatory, 2009 Annual Report).
[30] Based on AS connections, not IP traffic volume, revenue or capacity (TeleGeography, 'Global Internet Geography: market structure' 2009, page 7).
[31] Based on AS connections, not IP traffic volume, revenue or capacity (Renesys Market Intelligence, www.renesys.com).
[32] A Level 3 Board paper says '[ ]' (March 14, 2011). A presentation to investors document says '[The transaction] creates the world's broadest and most efficient end-to-end fibre-based network' (Singapore, 2 February 2010).

widespread programme of de-peering (and a substantial lessening of competition arising as a result).

87. In terms of the second area of concern – selective de-peering of network providers which would raise the cost of rivals – the parties responded that the merged entity would not have the incentive to engage in the selective de-peering of competitors.

88. First, the parties submitted that the large bulk of IP transit customers (around 90 per cent) multi-home and therefore could still access the parties network if one of their IP transit providers was de-peered, by relying on the other network providers they home with. Therefore, de-peering in this circumstance would not result in peering partners paying for connectivity with the merged entity.

89. In addition, for those customers who currently use both parties on their multi-homing routers with a combination of peering and transit arrangements the post merger situation will not result in an increased asymmetry of traffic flow between the parties and these customers (and therefore the merger would not alter any incentive to de-peer).[33]

90. Moreover, it is not clear to the OFT that customers and/or large content providers would tolerate peering disputes between Tier 1 network providers. The parties submitted that in Level 3's peering dispute with Cogent (in 2005) [ ]. As such if a settlement-free peering arrangement was ended it could be the case that to re-establish connectivity the merged entity may have to purchase transit from the de-peered network or another rival network which may increase the costs of the merged entity.

91. Finally, the OFT notes that the incentives or ability of the merged entity to de-peer other networks may differ in Europe than in other parts of the world. This is because incumbent network providers in Europe maintain strong positions and the parties' relationship with some of these varies from region to region (this is mentioned in paragraph 21). For example, [ ]. Similarly, [ ]. An internal document prepared for the purpose of evaluating

[33] Since before the merger the peer handled traffic from Level 3 and Global Crossing and after the merger this will still be the case – albeit the parties submitted evidence showing that combining networks does not result in the sum of their parts since traffic peered between them will be double counted.

the merger says '[ ]'.[34] Another internal document, discussing peering within the EU says

[ ].[35]

92. The evidence indicates that the strength of the incumbents' position in Europe (who, after all, offer access of content to end consumers) is likely to prevent widespread de-peering to occur within Europe. On a regional scale, the OFT considers that after the merger there will be a sufficient number of networks available with whom the parties will continue to form peering relationships with in order to protect ISPs, content providers and end users from harm, although this is without prejudice to what the situation may be in other regions of the world.

93. On the basis of the evidence available the OFT does not consider that the merger raises a realistic prospect of a substantial lessening of competition with respect to network peering on a regional basis within Europe.

Barriers to entry and expansion

94. The OFT assesses entry and expansion within the framework of it being timely, likely and sufficient to prevent any harm to competition.[36]

95. Entry in this case would need to be the entry of a Tier 1 network provider able to enter into large scale settlement-free peering arrangements.

96. Third parties were not able to identify any significant new entrants over the past five years (offering wholesale Internet connectivity services). One third party told the OFT that entry of this type would cost hundreds of millions of pounds, take several years (if not a decade). Moreover, the third party noted that the entrant would need to be willing to undertake this investment against a backdrop of falling IP transit prices.

97. The OFT is not aware of any third party currently planning to enter into the supply of Tier 1 network provision.

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[34] [ ].
[35] [ ].
[36] OFT / CC 'Mergers Assessment Guidance', OFT1254, September 2010, paragraphs 5.8.1–5.8.15.

98. In terms of expansion, the OFT accepts that existing Tier 1 network providers could easily expand up to the point of their existing capacity constraints. There is some evidence available from the parties and third parties that there are not material capacity constraints in the industry at present.

99. Data submitted by Level 3 shows that its capacity utilisation in the EU over a week in July 2011 generally was below [ ] per cent (and the average by network route was below [ ] per cent). Level 3 further submitted that it uses only [ ] per cent of its deployed network capacity in Europe at peak times (and less on average overall). The parties told the OFT that it expects other network operators to be in a similar position.

100. Similarly, TeleGeography reports that in 2009 the average network utilisation for Internet traffic was below 30 per cent in Europe (whether measured as all of Europe or Western Europe) with a peak utilisation rate of under 45 per cent.[37]

101. However, given the outcome of the competition assessment the OFT has not found it necessary to conclude on barriers to entry and expansion in this case.

GTS

102. The parties provided estimates of market shares for the supply of GTS based on analysis of the annual reports of their competitors (table 1). The parties told the OFT that they were unable to find independent estimates of market shares in this market although the OFT was able to broadly corroborate their estimates by third parties (indicating that the estimates are sufficiently robust).

[37] TeleGeography, 'Regional Analysis: Europe. Capacity Trends', page 9.

Table 1: Share of supply of GTS, 2010 (per cent)

Company	Share
Level 3	[0–5]
Global Crossing	[0–5]
Combined	**[0–5]**
AT&T	[15–25]
Verizon	[15–25]
NTT	[15–25]
BT Global Services	[10–20]
Deutsche Telecom	[10–20]
Orange Business Services	[10–20]
Colt	[0–5]
Cable & Wireless	[0–5]

Note: Shares based on revenue.
Source: Parties own estimates

103. With respect to the provision of GTS the parties combined market share is around [zero - five] per cent with several other large suppliers such as AT&T, Verizon, NTT, BT and Deutsche Telekom present after the merger. Both customers and competitors were able to identify a number of alternatives to the merger parties for GTS.

104. There were no customer concerns raised about the merger with respect to GTS.

105. The OFT does not therefore believe there is a realistic prospect of an SLC in the supply of GTS.

Carrier services

106. The parties provided estimates of market shares for the supply of carrier services based on analysis of the annual reports of their competitors and an assumption that global carrier services revenue is equivalent to 25 per cent of GTS revenue.[38] The parties stated they were unable to find independent estimates of market shares in this market. Nevertheless, the parties' market share estimates were broadly supported by third party respondents.

[38] The assumption that carrier services are around 25 per cent of GTS revenue is based on an Ofcom report which says operator-reported wholesale revenue in the UK was £10.2 billion in 2009 out of total revenue of £40.6 billion (or 25 per cent); Ofcom, 'Communications Market Report', Research Document, 19 August 2010, figure 5.1. The parties submitted that although

Table 2: Market shares for carrier services, 2010 (per cent)

Company	Share of supply
Level 3	[5–10]
Global Crossing	[0–5]
Combined	**[5–10]**
Verizon	[20–30]
AT&T	[5–10]
BT Global Services	[0–5]
Colt	[0–5]
Others	[40–50]

Note: Shares based on revenues.
Source: Parties own estimates

107. With respect to the provision of GTS the parties combined market share is less than 10 per cent (increment of less than [zero - five] per cent) with several other large suppliers, such as AT&T, Verizon and BT, remaining after the merger.

108. One third party customer raised a concern with respect to the parties having significant market power in the provision of wholesale bandwidth and fibre optics. However responses from all other third party customers and competitors stated that they did not view the parties as possessing market power and that there were a large number of other providers of carrier services. One large customer stated that they believed the parties were not particularly close competitors and where their activities did overlap there are alternative suppliers offering comparable services.

109. Based on the available evidence of low shares of supply and third party statements (in particular, that the parties are not close competitors and sufficient other providers exist) the OFT does not believe there is a realistic prospect of a substantial lessening of competition in the supply of carrier services.

Transatlantic infrastructure

110. The parties are both active in the provision of transatlantic telecommunications infrastructure connecting the UK with North America via submarine cables under the Atlantic Ocean. The parties submitted that

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the revenue of £10.2 billion is likely to include revenues from activities other than GTS and carrier services it nevertheless provides a reasonable proxy for average carrier services revenues.

these cables support the provision of Internet connectivity services (whether IP transit or peering), GTS and carrier services.

111. The parties told the OFT that they are not aware of any authority identifying transatlantic capacity as a distinct market. They submitted that in:

- **BT/AT&T** the Commission analysed the merging parties' position in relation to transatlantic capacity in the context of the wider market for carrier services[39]

- **TeliaSonera/Telenor** the Commission identified separate markets for network infrastructure, at both long distance and international levels and considered that such markets covered all supplies of network infrastructure (including, therefore, transatlantic infrastructure)[40] and

- **Telefonica/Tyco/JV** the Commission considered the existence not only of a market for network infrastructure, but separate sub-markets for undersea telecom infrastructure, terrestrial networks and satellite communications. However, it left open market definition in this regard.[41]

112. Likewise in the current case the OFT has not found it necessary to conclude on these points.

113. Level 3 and Global Crossing each own 50 per cent of the 'AC-2'/'Yellow' transatlantic subsea cable. Global Crossing owns two other transatlantic subsea cables ('AC-1 North' and 'AC-1 South'). After the merger, the parties will own around [20–30] per cent (increment of [10–20] per cent) of used capacity of transatlantic subsea cables and around [zero–10] per cent of total capacity (with an increment of around [zero–five] per cent). Several other transatlantic subsea cables providers remain after the merger, namely the TAT consortium (which includes AT&T, Sprint, Telenor and Tele2), Apollo Cable Systems (an Alcatel/Cable & Wireless joint venture) and Hibernia Atlantic.

[39] IV/JV.15
[40] M.1439
[41] M.1926

114. Third parties did not raise concerns about these cables.

115. Given the low increments to overall transatlantic utilised capacity and the amount of spare capacity in rival cables, irrespective of whether transatlantic cables are assessed on the basis of overall capacity for telecommunication services or segmented by IP transit, peering, GTS and carrier services, the parties' activities in the provision of these cable services does not affect the overall outcome of the OFT's competition assessment in this case.

THIRD PARTY VIEWS

116. The OFT received mixed views from third parties about the merger. Half of customers were concerned and slightly less than half of competitors were.

117. Concerns almost exclusively centred on Internet connectivity, whether IP transit or peering, and have been discussed above.

118. One third party expressed concern that the merged entity would not lease dark fibre cable to third parties, thereby restricting their ability to expand and compete.

119. The parties responded that others are far bigger suppliers of dark fibre in the UK and across Europe. For example, Geo, Neos and Vtesse whose principal business is the leasing of dark fibre.

120. A further third party told the OFT that the merger would create significant issues in CDNs, in that Level 3's CDN has some 'must have' content. The third party was concerned that having 'must have' content would give Level 3 some degree of upstream market power which would only be enhanced by Global Crossing's network, enabling the merged entity to increase prices to downstream customers (especially ISPs who require the 'must have' content). The issues surrounding IP transit and peering have been discussed above. That Level 3 has 'must have' content on its CDN business is not merger-specific (Global Crossing does not have a CDN business).

ASSESSMENT

121. The merger parties provide global telecommunication services pertaining to their physical networks. They overlap in the provision of Internet connectivity, global telecommunication services and carrier services. The OFT has assessed the merger on the basis of IP transit and peering (for Internet connectivity), GTS and carrier services.

122. For IP transit and peering, the OFT has focused on Tier 1 network providers, although its analysis does not exclusively focus on Tier 1s (either because the information is not available to it or because customers told the OFT that they do, or are willing to, use Tier 2 providers).

123. The OFT has taken a global view of IP transit and peering although it has also focused its analysis, where it can, on UK customers. This has involved using some evidence relating to the UK and other evidence relating to Europe.[42]

124. For GTS and carrier services the OFT has taken a global view.

IP transit

125. The merger parties are commonly viewed as close competitors among customers and competitors. Customers told the OFT that across the range of potential network providers they make distinctions between them based on price, coverage, peering relationships and latency. Therefore, the OFT assessed how closely the parties competed.

126. The OFT received some evidence that the parties are close competitors. In particular, third party comment and some internal documents supported this.

127. However, this same evidence also indicated that other suppliers were present and would constrain the parties post merger. In particular, internal documents and third parties identified TeliaSonera, NTT and TiNet as credible competitors to the parties for customers based in the UK/Europe. Others identified by internal documents and some third parties are Cogent, AboveNet, Colt, Interoute and KPN.

[42] The definition of Europe varies according to the evidence used.

128. That many third parties used some of these networks currently in their multi-homing routers (and allowed traffic to run naturally) provided some evidence that some (but not all) of these networks are, to some degree, substitutable. Even for customers who do not wish to connect with direct downstream competitors there will be sufficient choice and competitive constraint after the merger to prevent the merged entity from raising IP transit prices (in particular, TeliaSonera, TiNet, KPN, Tata, AboveNet and Interoute).

Peering

129. The OFT received concerns from some peering partners and customers of peering partners that the merger would result in a competitive disadvantage to them due to the merged entity de-peering them (or their Internet connectivity supplier).

130. The OFT does not consider that widespread de-peering will occur as a result of the merger. Most third parties who would be de-peered (if it were to occur) were not concerned and those who were concerned were not able to submit compelling evidence on where the tipping point lies.

131. In terms of selective de-peering the OFT does not consider that the merged entity would have the incentive to do so on a regional basis within Europe (the focus of concerns expressed to the OFT). The evidence indicates that the merged entity would not have the incentive to de-peer strong regional network incumbents within Europe. Therefore, the OFT considers that after the merger there will be a sufficient number of networks available with whom the parties will continue to form peering relationships with in order to protect ISPs, content providers and end users from harm, although this is without prejudice to what the situation may be in other regions of the world.

GTS and carrier services

132. For both GTS and carrier services the OFT's investigation found that the merger parties account for a small share of supply and sufficient other providers will remain post merger to offer competitive constraints.

133. Consequently, the OFT does not believe that it is or may be the case that the merger may be expected to result in a substantial lessening of competition within a market or markets in the United Kingdom.

DECISION

134. This merger will therefore **not be referred** to the Competition Commission under section 33(1) of the Act.

ANNEXE A: PEERING VERSUS TRANSIT

A.1 In order to achieve a global reach of Internet traffic, networks, ISPs, CDNs, content providers and other users of networks enter into agreements with a number of network providers. These agreements can be classified as either peering (settlement-free or paid-for) or paid-for IP transit. In terms of the extent of the network coverage that each agreement gives there are clear differences between them.

A.2 Peering allows for traffic to be exchanged between two networks. With peering it is simple to determine a network's reach – that is, its own network coverage plus its peered partner's network coverage. However, if the IP traffic requires a further network to reach its destination, the customer needs a further agreement (whether peering or IP transit) in place with that third network in order to get the traffic to its destination.

A.3 IP transit, however, gives broader scope than bi-lateral peering since it allows for IP traffic to pass through the network with whom the customer has a transit agreement as well as the other networks with whom that network has peering and transit agreements with.

A.4 For example, consider the below diagram. In this diagram, network A pays for IP transit with network B. Network B has a peering relationship with network C but not with network D. Network C, however, does have peering with network D. Therefore, IP traffic from B can only get as far as its neighbouring networks (A, through transit, and C, through peering). Likewise, D's traffic can only get to network C.

A.5 Network A's traffic, however, can get to C since it pays for transit with B who, in turn, peers with C. In exactly the same way, network C's traffic can get to network A.