

**APPLICATION BY REACH LIMITED
FOR DECLARATION OF NON-DOMINANCE
IN THE MARKET
FOR EXTERNAL BANDWIDTH SERVICES**

Statement of the Telecommunications Authority

15 March 2002

INTRODUCTION

The Telecommunications Authority ('TA') has received from Reach Limited ('Reach') an application on behalf of Reach Networks Hong Kong Limited ('Reach Networks') for Reach Networks to be declared non-dominant in the market for 'external bandwidth services' (the 'Reach Application').

2. In addition to being declared non-dominant, the Reach Application asks the TA to direct that certain licence obligations should not apply to Reach Networks in respect of the relevant market.

3. The Reach Application was made at the same time as an application by PCCW-HKT Limited ('PCCW-HKT'), on behalf of PCCW-HKT Telephone Limited ('PCCW-HKTC'), for PCCW-HKTC to be declared non-dominant in the 'external bandwidth services' market (the 'PCCW Application').

4. Both applications raise similar issues. However there are differences, revolving around the fact that PCCW-HKTC targets mainly corporate customers while Reach Networks targets only licensed carriers (network operators) and service providers who use the external bandwidth services as an input in their own telecommunications networks and services.

5. The TA issued a consultation ('Consultation Paper') on 19 October 2001 seeking views from the industry on the Reach Application. In response, the TA received ten submissions from the following respondents. Public versions of these submissions have been posted on OFTA's website:

- PCCW-HKT Limited ('PCCW-HKT')
- CLP Telecommunications Limited ('CLPT')
- AT&T Asia/Pacific Group Limited ('AT&T')
- Cable & Wireless Global Network (Hong Kong) Limited ('C&W')
- Reach Limited ('Reach')

- Wharf New T & T Limited ('WNT&T')
- Asia Global Crossing Limited ('AGC')
- Hutchison Global Crossing Limited ('HGC')
- MCI WorldCom Asia Pacific Limited ('MCI WorldCom')
- New World Telephone Limited ('NWT')

6. The TA also issued a consultation paper on 26 October 2001 seeking views from the industry on the PCCW Application. In response, the TA received nine submissions. Public versions of these submissions have also been posted on OFTA's website. A decision on the PCCW Application will be taken in due course.

7. Since the release of the consultation papers, Reach announced on 19 December 2001 that it was acquiring the Asian assets of a facilities-based competitor, Level 3 Asia. A further consultation paper on this material development was issued on 21 December 2001 ('Supplementary Consultation Paper') calling for comments in relation to both the Reach and PCCW Applications. In response, the TA received ten submissions from the following respondents. Public versions of these submissions have also been posted on OFTA's website:

- NWT
- WNT&T
- CLPT
- C&W
- HGC
- Reach
- PCCW-HKT
- Galaxy Satellite Broadcasting Limited ('Galaxy')
- NTT Com Asia Limited ('NTT')
- Teleglobe Hong Kong Limited ('Teleglobe')

8. This Statement analyses whether Reach Networks is dominant in the 'external bandwidth services' market after taking into account the industry submissions and other information. Depending on the conclusion, the Statement will also consider whether to direct that certain licence obligations under the Fixed Telecommunications Network Services ('FTNS') Licence held by Reach Networks should not apply and whether the direction should be subject to any conditions.

BACKGROUND

9. In Hong Kong, local wireline-based fixed network services were originally provided by Hong Kong Telephone Company Limited ('HKTC') under an exclusive concession under the Telephone Ordinance. External¹ telecommunications networks and

¹ 'External' means communications with places outside Hong Kong and includes international communications as well as communications between Hong Kong and the rest of China.

services were originally provided under an exclusive licence under the Telecommunications Ordinance held by Hong Kong Telecom International Limited ('HKTI'). Both HKTC and HKTI were wholly-owned subsidiary companies of Hong Kong Telecommunications Limited ('HKT'), now called PCCW-HKT Limited ('PCCW-HKT') following an acquisition by Pacific Century CyberWorks Limited ('PCCW').

10. Exclusivity for local wireline-based fixed network services lasted until the end of June 1995 when four new local FTNS licences were issued to HKTC (now 'PCCW-HKTC'), New World Telephone Limited ('NWT'), New T&T Hong Kong Limited (now Wharf New T & T Limited, 'WNT&T') and Hutchison Communications Limited, now Hutchison Global Crossing Limited ('HGC').

11. Competition in external services and external facilities commenced in January 1999 and January 2000 respectively. At the end of March 1998, the exclusive licence was surrendered by HKTI. The local FTNS licence held by HKTC was modified to include the right to operate external services and facilities and to be jointly and severally held by HKTI, HKTC and a third company² within the HKT group. At that time, the licences for the three new local FTNS licensees also had their licences modified to include the right to operate external services and facilities, but there was a prohibition on them providing external services before 1 January 1999 and external facilities before 1 January 2000.

12. In January 2001, re-structuring of the HKT (then called Cable & Wireless HKT) group took place. From 31 January 2001, the FTNS licence jointly and severally held was split, one for external facilities and services to be held by Cable & Wireless HKT International Limited which became Reach Networks. Reach Networks is wholly-owned by Reach Limited, which in turn is owned 50/50 by PCCW-HKT and Telstra Corporation Limited.

13. The market for the provision of external services has been fully liberalized since 1 January 1999. Service-based operators are licensed under public non-exclusive telecommunications service ('PNETS') licences. The market for the provision of external facilities has been liberalized since 1 January 2000. Facilities-based operators are licensed under FTNS or fixed carrier licences for the operation of:

- non-cable facilities (e.g. satellite and terrestrial radio links); and
- cable facilities based on direct investment in 'new'³ physical cables to Hong Kong.

² Hong Kong Telecom CAS Limited

³ Defined in 'Guidelines for the Submissions of Proposals Applying for Fixed Carrier Licence for the Operation of External Fixed Telecommunications Network Services in the Hong Kong Special Administrative Region' dated 18 May 2001 as those cables for which the 'Management and Construction Agreement' was signed on or after 5 May 1999.

From 1 January 2003, the market for external facilities will be fully liberalized. Licences may be issued to operate cable or non-cable facilities and whether based on capacity in directly invested physical cables or acquired under indefeasible rights of use ('IRUs').

REGULATORY FRAMEWORK

14. Reach Networks holds an external FTNS licence which has its origin from the local FTNS licence issued to HKTC on 29 June 1995, amended on 31 March 1998 to include external facilities/services and split on 31 January 2001, allowing it to provide external telecommunications facilities and services between fixed points in Hong Kong and points outside Hong Kong, or between points outside Hong Kong but routed in transit through Hong Kong.

15. Its licence does not include the right of providing internal (local) telecommunications facilities and services. Customer access to its external facilities and services must be through local network licensees. This parallels the absence of right under PCCW-HKTC's FTNS licence, last modified on 31 January 2001, to establish its own external facilities.

16. However, Reach Networks is permitted to self-provide its 'backhaul' between a point of interconnection with a local network and Reach Networks' cable landing stations, satellite earth stations or terrestrial radio link stations.

17. Reach Networks' licence contains a number of competition-related conditions designed to prevent the abuse of any dominant position that Reach Networks may have in the market. A dominant position is defined in General Condition ('GC') 16(2) of Reach Networks' licence:

“A licensee is in a dominant position when, in the opinion of the Authority, it is able to act without significant competitive restraint from its competitors and customers. In considering whether a licensee is dominant, the Authority will take into account the market share of the licensee, its power to make pricing and other decisions, the height of barriers to entry, the degree of product differentiation and sales promotion and such other relevant matters which are or may be contained in guidelines to be issued by the Authority.”

18. In respect of a market in which Reach Networks is dominant, GCs 17, 20, 21, 22 and 23 of its licence require it to, amongst other things, adopt certain accounting separation practices as specified by the TA (in an Accounting Manual), charge no more or no less than the published tariffs (unless otherwise approved by the TA) and seek TA's approval for tariffs for new services and changes in tariffs.

19. GC 44 of Reach Networks' licence provides that if the TA forms the opinion that the licensee is not in a dominant position within the meaning of GC 16(2) of the licence with respect to any market for telecommunications services provided under

the licence, he may direct that the obligations, either completely or as to any particular obligations, imposed by GCs 17, 20, 21, 22 and 23, shall not apply to the licensee for such period and on such conditions as the TA may determine.

20. Accordingly, in considering the Reach Application, the TA has to determine whether:

- Reach Networks is dominant in the relevant market;
- if it is dominant, he should lift all, some or none of the licence obligations referred to in GC 44; and
- over which period the obligations should be lifted and whether the lifting should be subject to any conditions.

OVERVIEW OF EXTERNAL NETWORKS

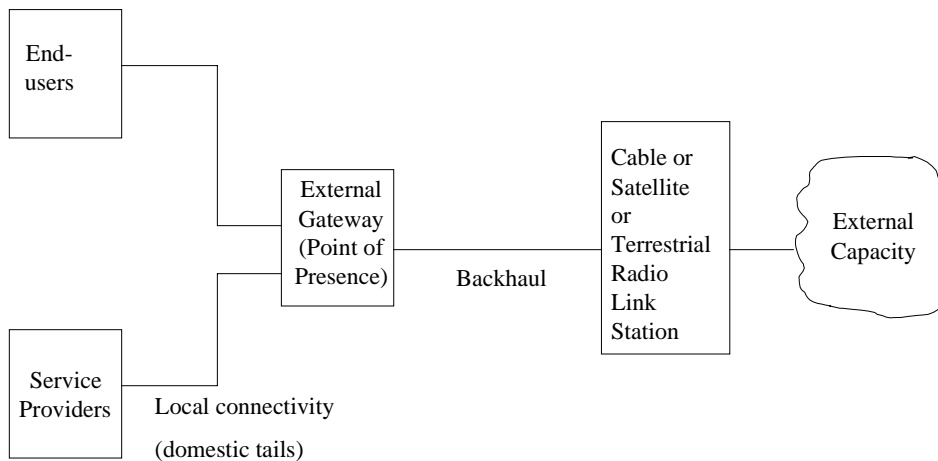


Figure 1 - Structure of external networks

21. An external telecommunications network consists of a number of elements. The core of the network is generally known as the ‘external circuits’ from the ‘external gateway’ (or ‘Point-of-Presence’) in Hong Kong to the ‘external’ or ‘international’ gateway of the distant end. The external capacity is typically provided over submarine cable, overland cable, terrestrial radio or satellite links operated by facilities-based operators.

22. An element of the external circuits is the ‘backhaul’. Backhaul refers to the circuits (usually high-capacity fibres) connecting the point of landing of the external circuits (which may be a cable landing station, a satellite earth station or a terrestrial radio link station) to a point of interconnection with a local network (usually the external operator’s ‘external gateway’ or ‘Point-of-Presence’).

23. In addition to facilities-based operators, a number of service-based operators (service providers or resellers) have entered the market. They acquire external bandwidth or capacity from the facilities-based operators to be used as an input for:

- simple resale of the capacity in the form of external circuits of smaller capacity; or
- adding value (e.g. switching, redundancy, reliability, network management functions, etc.) before resale (e.g. managed network services).

24. Customers of the external circuits include corporate customers and service providers that operate ‘switched’ or ‘on-demand’ external services (as distinct from dedicated circuit services provided by service-based operators referred to in the preceding paragraph) such as International Direct Dialling (‘IDD’) services, Internet access services or Virtual Private Network (‘VPN’) services.

25. It is necessary to connect the customers to the external circuits through local circuits (called the ‘domestic tails’) supplied by a local network operator. If the provider of the external circuits does not operate a local network, it acquires the domestic tails from a local network operator to provide connectivity from the customers’ premises outwards to the distant destinations.

MARKET DEFINITION

26. In order to determine whether a firm is in a dominant position in a telecommunications market, it is crucial to first define the relevant market or markets. Identification of the relevant markets provides the framework within which one can then systematically analyse whether there is any dominance in those markets or whether they are competitive.

27. The principles of market definition are well-established and have been described elsewhere, including in OFTA’s Competition Guidelines.⁴ In essence, the relevant market is defined in its product, functional and geographic dimensions. The market so defined identifies all the suppliers of close substitutes and, hence, the relevant

⁴ ‘Guidelines to Assist the Interpretation and Application of the Competition Provisions of the FTNS Licences’, June 1995 (‘OFTA Competition Guidelines’). For an EC overview of the principles of market definition in telecommunications, refer to ‘Draft Guidelines on Market Analysis and the Calculation of Significant Market Power under Article 14 of the proposed Framework Directive on a Common Regulatory Framework for Electronic Communications Networks and Services’, EC Working Document, COM(2001) 175 final, Brussels, 28 March 2001 (‘Draft EC Guidelines’).

field of competition within which one can assess whether there is competition or its antithesis, market power and dominance.

Reach's description of its product

28. Reach's promotional material describes Reach Networks' product in terms of offering seamless, global 'end-to-end' connectivity services for carriers and providers of voice, data and IP services. In the Reach Application, Reach advises that it only supplies this product to other licensed carriers and service providers who re-sell it as end-to-end international telecommunications services.⁵ In short, Reach is offering a 'wholesale' product (i.e. a product not supplied to end-users).

29. This description, which emphasises end-to-end connectivity, differs from Reach's more narrow view of the appropriate product for dominance analysis, which does not include local connectivity (at least at the Hong Kong end):⁶

“5.4 Reach believes that the appropriate product definition is international bandwidth services provided over either submarine cable or satellite networks - but excluding domestic connectivity.

5.5 The capacity sold by Reach Networks commences at the customer side of the international gateway and extends outwards to overseas destinations, including the backhaul between the international gateway and the cable station, as illustrated in Figure 5.1 below.

5.6 The relevant product market does not include domestic capacity, which is supplied to Reach Network's wholesale customers by HKTC or another of the FTNS Licensees. Reach may resell domestic tails acquired from HKTC, but the Reach Networks' wholesale customers are free to choose whether to acquire from HKTC directly or from another FTNS operator.”

30. The differing descriptions introduce the first issue for analysis: whether 'local connectivity' should be included in the appropriate definition of the 'external bandwidth services' market.

Local connectivity

31. A number of respondents submitted that the product for analysis of the Reach Application should include the bundle of local and external connectivity. NWT considered that the market should be that for the provision of external circuits connected to the customer premises in Hong Kong through local connectivity. As such the market should include the local connectivity. WNT&T expressed a similar view that the product dimension should be the connectivity supplied from the customer's premises outwards. AGC does not consider that customers can freely choose providers of external bandwidth

⁵ Reach Application, paragraph 5.13.

⁶ Reach Application, paragraphs 5.4 - 5.6.

services independent of local connectivity. It argued that local connectivity is one of the bottleneck facilities in the supply of external capacity to the customers. It referred to the dependence of other operators on PCCW-HKTC for the supply of local connectivity.

32. Whether or not the local connectivity should be included in the product market definition revolves around whether, as Reach Networks claims, wholesale customers are 'free' to choose whether to acquire local connectivity from the four wireline-based local FTNS licensees. In a market definitional sense, 'free' means that the wholesale customers view the separate acquisition of local and external connectivity as a close substitute to 'end-to-end' connectivity. If separate acquisition is not viewed by a significant number of wholesale customers as a close substitute, it would be appropriate to define the relevant market as a 'cluster' market comprising a bundle of local and external connectivity.⁷

33. In a 'cluster' market, the costs of unbundling are such that, on the demand-side, customers find it cheaper to accept a small but significant price increase for the bundled product rather than acquire the components of the bundle separately.⁸ These costs typically arise from the additional search, transaction and switching costs involved.

34. On the supply-side of a 'cluster' market, suppliers of the component products in a bundle incur higher costs in supplying their component products separately through diseconomies of scope. The higher costs of separate supply in turn make the price of the bundle cheaper than the aggregate price of its component parts, enabling the supplier of bundled products to raise prices to a small but significant degree (constrained only by the relative price of the unbundled products and competition from suppliers of bundled products) without turning customers away.

35. In short, in a 'cluster' market, competition and substitution revolve around the joint supply of economically distinct but complementary products because of consumer convenience in acquiring them jointly and economies of scope in supplying them jointly. A firm supplying the components separately would not be able to compete on a cost basis.

36. Turning to the product in question, Reach has argued in its product market description above that the product does not include local connectivity. Essentially, Reach

⁷ The concept of 'cluster' markets has been particularly used in US antitrust analysis to identify markets in the banking and health care sectors where a number of different products are traditionally sold from the one 'shop'. See Deena Shiff, Henry Ergas and Mitchell G Landrigan (1998), 'Telecommunications Issues in Market Definition', *Competition and Consumer Law Journal*, Vol 6, No 1, pp 32-51, for an overview in relation to telecommunications.

⁸ A 'price-response' or 'SSNIP' test is commonly used as a tool in market definition. Under this test, the process of market definition is viewed as establishing the smallest area of product, functional and geographic space within which a hypothetical profit maximising monopolist would impose a small but significant and non-transitory increase in price (SSNIP) above the competitive level. This would only be possible if all sources and potential sources of close substitutes for the product in question have been included in the market definition.

is arguing that its product is not a ‘cluster’ market. It notes that, while Reach Networks may resell domestic tails acquired from PCCW-HKTC, its wholesale customers are free to choose whether to acquire the tails from PCCW-HKTC directly or from the other three wireline-based local FTNS operators. In short, Reach Networks is offering a ‘mixed’ bundle where there is a choice between taking the bundle or taking the component of external connectivity only (or even deciding to not take the bundle or the component).

37. Given that this is a ‘wholesale’ product and not a mass ‘retail’ product, there will be relatively fewer potential customers with relatively higher outlays per customer. The wholesale customers who will be seeking to acquire external bandwidth capacity may be categorised as follows:

- external network operators seeking international bandwidth to complement their own external capacity (e.g. when they do not have sufficient capacity over a particular route);
- local fixed or mobile network operators seeking external bandwidth to operate external telecommunications services (‘ETS’) which may be accessed through their local networks; and
- service providers or resellers seeking external bandwidth over which they provide circuit services or ‘switched’/‘on-demand’ services.

38. In short, they are network operators, service providers and resellers rather than the ‘mass’ retail end-users. Given the sophistication of the wholesale customers and the fact that the cost of unbundling for each of these customers is likely to be relatively small compared to their outlays for telecommunications, there are incentives to ‘shop-around’ for the separate components if the price of the bundle is not ‘right’. This in-principle point alone would tend to indicate that the market is not a ‘cluster’ market but rather separate markets for local and external bandwidth capacity.

39. The point is reinforced by the considerations from the customers’ perspective in choosing suppliers for external connectivity. Obviously, the core component of external telecommunications is the external circuit. Wholesale customers are essentially demanding this component, with the domestic tail being a necessary but secondary consideration after the external core. Accordingly, demand and hence competition is more likely to be focused more around the external component than the local component.

40. In the Consultation Paper, OFTA indicated that it would need to verify that customers are free to choose their local capacity. It also indicated that if this was verified, local capacity should not be included in the relevant market.⁹

⁹ Consultation Paper, paragraph 52.

41. Although respondents such as NWT, WNT&T and AGC submitted that the customers prefer ‘end-to-end’ connectivity or ‘One-Stop-Shop’ service, no evidence has been put forward that customers are bound to acquire the local connectivity supplied or resold by the suppliers of ‘external bandwidth services’. The dominant supplier of local connectivity has the obligation under its FTNS licence of supplying the domestic tails to all customers, including the customers of Reach Networks and those of Reach Networks’ competitors, on a non-discriminatory basis. Thus the customers in evaluating the services of Reach Networks and its competitors should focus on the price and performance of the external connectivity.

42. After taking into account the submissions received, the TA concludes that the relevant ‘external bandwidth services’ market in relation to the Reach Application does not include local connectivity for the reasons outlined above.

Satellite and cable

43. The product dimension suggested by Reach includes capacity provided over either cable or satellite networks. Elsewhere in its application, Reach suggests that the two are regarded as substitutable, at least at some levels of the market and amongst ‘marginal’ customers.¹⁰

44. In the Consultation Paper, OFTA expressed the preliminary view that, for certain uses (e.g. point-to-multipoint or broadcasting transmission), cable was not a close substitute for satellite. Conversely, for other uses such as high capacity point-to-point connections, it was considered that satellite was not a close substitute for cable.

45. The submissions received generally confirm this view. Cable is not a close substitute for satellite for point-to-multipoint or broadcasting transmission. In other words, any conclusion regarding the non-dominance or otherwise of Reach Networks for services for point-to-point transmission cannot be automatically extended to the point-to-multipoint or broadcasting transmission services by satellite as the cable-based services of Reach Networks’ competitors would not necessarily be effective restraints on Reach Networks’ point-to-multipoint or broadcasting transmission services.

46. For point-to-point transmission services, as cable and satellite have different technological characteristics, satellites are not close substitutes for cables. In particular:

- satellite capacity is small relative to submarine cable capacity; and
- satellite transmission quality is lower relative to cable because of its greater signal propagation delay time, echo effects and susceptibility to climatic conditions.

¹⁰ Reach Application, paragraph 3.2.

Thus in the analysis of restraints on Reach Networks in the supply of point-to-point transmission services, the effect of satellites may be disregarded.

47. While some marginal customers may find satellite circuits to be substitutes, the issue from a market definition perspective is whether a sufficient number of customers view them as close substitutes such that they would constrain a small but significant increase in cable prices. The TA does not consider that to be the case.

48. However, for point-to-point transmission, cable is likely to be viable substitute for satellite. Thus if Reach Networks is found to be non-dominant in the market for cable-based point-to-point transmission services, this conclusion can be extended to satellite-based point-to-point transmission services as the prices of cable-based circuits would impose a restraint on the prices of satellite-based circuits.

Product market

49. In the Consultation Paper, OFTA indicated that it would consider whether the relevant market should include International Private Leased Circuits ('IPLCs'), but should exclude managed network services or switched circuits such as those provided by Internet Protocol ('IP') and Asynchronous Transfer Mode ('ATM') technologies.

50. C&W considered that cable capacity, long-term IRUs, IPLCs and other smaller or shorter term units of external capacity should form separate individual markets as one may not be a substitute of the other.

51. WNT&T considers that the product dimension should exclude the managed network services or switched circuits based on IP and ATM technologies as these are special applications with a different protocol from a normal IPLC and as such not viable substitutes to external bandwidth services provided by external facilities operators.

52. Reach and PCCW-HKT submitted that 'switched' or 'on-demand' services are not within the 'external bandwidth services' market.

53. The TA considers that the 'external bandwidth services' are basically for the supply of capacity dedicated to the customers. As such, 'switched' or 'on-demand' services which provide capacity to the customers upon request and the capacity is shared by customers are basically value-added services using the 'external bandwidth services' as input. 'Switched' or 'on-demand' services, including IDD, Internet and VPN services are therefore not in the 'external bandwidth services' market relevant to the Reach Application. The TA considers that services based on the ATM or IP protocols and for which the customers pay volume-sensitive prices belong to this category.

54. On the other hand, IPLCs are external capacity dedicated to the customers. IPLCs are at present the main type of products in the market for 'external bandwidth services'.

55. The TA does not agree that the longer term form of leases, such as IRUs, is in a market separate from IPLCs as proposed by C&W. The prices of IPLCs are likely to be restrained by prices of IRUs. From the supply substitutability point of view, suppliers of IRUs can also supply IPLCs. Service providers with IRUs can also make use of the capacity under the IRUs to supply IPLCs. Thus longer or shorter term of leases of external capacity should be in the same product market.

56. Managed network services are value-added services provided over external capacity supplied by facilities-based operators. There is a range of managed network services with different functionalities provided to the customers. Those managed network services that provide what appears to customers as dedicated capacity (e.g. guaranteed constant bit rate transmission) would be close substitutes to IPLCs. These services merely provide redundancy, reliability and network management functions. These services should be included in the market for 'external bandwidth services'. Other lesser forms of managed network services may be closer to 'switched' or 'on-demand' services. Where managed network services are included in the product market, the underlying 'raw' capacity should be considered in computing market shares in order to avoid double-counting.

Functional market

57. The Consultation Paper raised the issue of whether the relevant market in relation to the Reach Application should be considered at the wholesale level, at which Reach Networks operate, separate from the retail level. In the Consultation Paper, OFTA noted differing views between PCCW-HKT and Reach about whether there should be a functional split between the retail and wholesale levels.¹¹

58. Many respondents did not agree that the market should be analysed separately at the wholesale and retail levels. PCCW-HKT considered that in the market for external bandwidth services, there is no meaningful distinction between wholesale and retail functional levels of the market. There is blurring between the two levels as the result of substitutability of products at the two levels and the fact that it is difficult to draw a distinction between an end-user, larger consumer, carrier and reseller. C&W considered that the functional levels are related. AGC submitted that the structure of the market and types of transactions that occur in the provision of external bandwidth services make it very difficult, if not impossible, to split the retail and wholesale functions of the market. WNT&T submitted that the functional dimension should be assessed at the wholesale level and retail level and said that Reach Networks have difficulty in entering the lower market segment involving the sale of T1 to 64 kbps circuits. NWT considered that the distinction between the wholesale and retail functional level is artificial as Reach Networks and PCCW-HKTC are providing a seamless service to Hong Kong.

¹¹ Consultation paper on PCCW Application, paragraphs 51 - 53.

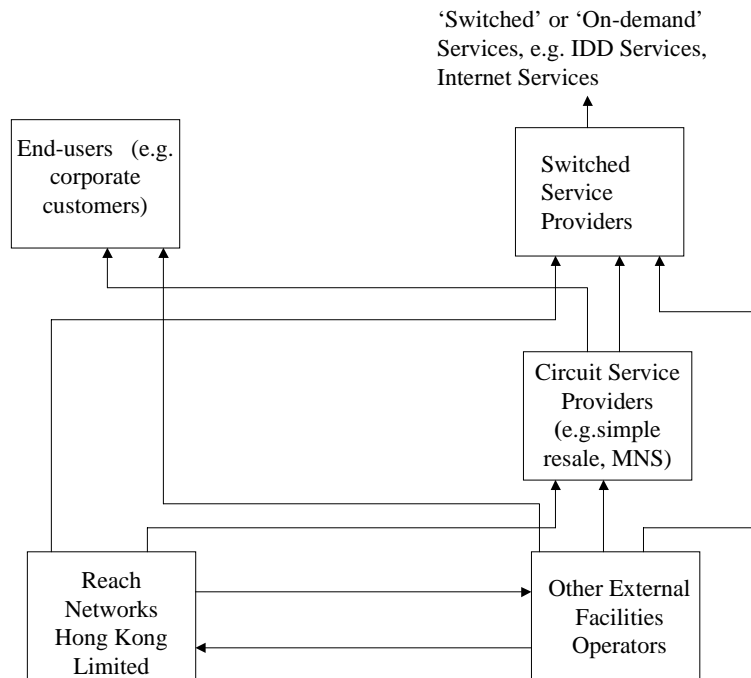


Figure 2 - Functional levels of the 'external bandwidth services' market

59. Having considered the submissions, the TA considers that the 'external bandwidth services' market can be conceptually analysed at the wholesale and retail levels as illustrated in the diagram above. The external facilities operators, of which Reach Networks is one, are supplying the underlying 'raw' bandwidth.

60. External facilities operators may supply the underlying 'raw' bandwidth to each other to complement the capacity of the purchasing operators. The underlying 'raw' bandwidth may be supplied by the external facilities operators to the end-users and service providers direct. The service providers use the bandwidth to operate external 'switched' or 'on-demand' services of various types, such as IDD services or Internet services. The 'raw' bandwidth may also be supplied to circuit service providers or resellers who break down the capacity into smaller channels, or provide added-value to produce 'managed network services' ('MNS'). These circuit service providers or resellers resell the bandwidth to the end-users and service providers (of external 'switched' or 'on-demand' services). The external facilities operator may also operate at this level of the market by selling bandwidth with or without the added value to the end-users and service providers.

61. In the above modes of supply and purchase, normally the supply of the services to end-users is regarded as supply at the 'retail' level.

62. The point is that there is a spectrum along which end-users and service providers can acquire external bandwidth from different levels of suppliers in the market with different levels of value-added. Suppliers may supply at both the retail and

wholesale levels. Customers may purchase from retail and wholesale suppliers. Prices at the wholesale level would constrain the prices at the retail level (although not necessarily in the opposite direction). This apparently supports arguments that no distinction should be drawn between the wholesale and the retail levels in the analysis of the relevant market.

63. However the Reach Application is concerning supply at the wholesale level of the 'external bandwidth services' market. It is in relation to this functional level that the TA needs to make an assessment. Any decision of the TA should apply to this functional level, not necessarily at the retail level of the market. The TA therefore concludes that, for the analysis of the relevant market in relation to the Reach Application, the appropriate functional market is the market for 'external bandwidth services' at the wholesale level. This functional level of the market is participated by facilities-based operators, circuit service providers and resellers.

Geographic market

64. Assessing the relevant geographic market involves identifying the geographic area in which Reach Networks and suppliers of close substitutes currently supply 'external bandwidth services', or can supply at short notice, and to which customers can conveniently turn in response to a small but significant price rise.

65. External telecommunications markets have traditionally been defined in terms of routes with paired origin/destination as the external circuits tended to be route specific with relatively little opportunity for hubbing through third places. A number of submissions have been made that this should continue to be the appropriate approach to the definition of the relevant market. C&W considered that 'hubbing' via a distant hub to a third destination is not a real alternative today to direct routing to the destination. As such it advocated to stay with 'route-by-route' geographic analysis.

66. Other respondents considered that the geographic dimension of the market should be wider, to cover Hong Kong, but not the region. WNT&T submitted that the market geographical definition should be considered in the context of Hong Kong. Likewise, AGC submitted that the market should be looked at from the point of view of customers in Hong Kong rather than the broader role of Hong Kong as a hub for international bandwidth.

67. In its Application, Reach submits that the relevant market should be a regional Asia Pacific market as wholesale suppliers in Hong Kong are competing with the other cities in the region to be the hub of an Asia Pacific bandwidth market.¹²

68. PCCW-HKT supported Reach Networks' view that the market for external bandwidth services is a global market because the customers are simply seeking global connectivity and not restricted to connectivity from Hong Kong. It also submitted that

¹² Reach Application, paragraph 5.16.

the regional and international market dynamics apply price discipline to Hong Kong and therefore have a direct impact on dominance assessment in the Hong Kong geographic market.

69. In considering the geographic dimension of the market, reference has been made to the TA Statement of 10 August 2001 on a non-dominance application in the retail market for external call services for certain Category B routes. In that Statement, the TA defined the retail market on an individual route-by-route basis.¹³ However, as the TA stated in August 1999 in relation to another application for non-dominance in relation to paired routes:¹⁴

“...like all other market definitions – in particular in a fast moving market like the telecommunications market – the definition can never be static and that in the future this may no longer be appropriate.”

70. The TA considers that, for external bandwidth services, with ample capacity to hubs outside Hong Kong, circuits routed through these hubs would provide close supply-side substitutes for customers seeking particular routes of paired origin/termination. Thus the TA considers that the geographic market for external bandwidth services should not be on a ‘route-by-route’ basis.

71. The TA considers that for a corporate customer who operates an office in Hong Kong, or a service provider supplying ‘switched’, ‘on-demand’ or value-added services to customers in Hong Kong, the external capacity required by these customers is that to and from Hong Kong. Thus the external capacity supplied by operators in other cities is not close substitute to that supplied by Hong Kong operators.

72. Accordingly, the TA concludes the relevant geographic market is a single Hong Kong market rather than a regional market or separate markets on a ‘route-by-route’ basis.

73. However, as also noted in the Consultation Paper, the broader Asian regional dimension of the market will necessarily act to some degree as a supply-side constraint on prices in Hong Kong through a ‘ripple effect’. This effect will be taken into account in the assessment of dominance.

¹³ TA Statement ‘Application for a Declaration of Non-Dominance in the Retail External Call Services Markets for Category B Observation List Routes by PCCW-HKT Telephone Limited’ (‘Category B non-dominance statement’), 10 August 2001, paragraph 22.

¹⁴ TA Statement ‘Application for a Declaration of Non-Dominance in the International Call Services Market for Non-China Routes by Cable & Wireless HKT Telephone Limited’, 4 August 1999, paragraph 18.

ANALYSIS OF DOMINANCE

74. Having defined the relevant market in relation to the Reach Application, whether Reach Networks is in a position of dominance within that market is very much influenced by the structural features of the market such as market shares, market concentration, barriers to entry and vertical integration.

75. The TA will analyse the dominance or otherwise of Reach Networks in the relevant market in accordance with the framework set out in OFTA's Competition Guidelines. Essentially, Reach Networks is in a dominant position with respect to the relevant market when it is able to act without significant competitive restraint from its competitors and customers. The TA will take into account the following factors in assessing whether Reach Networks is subject to the said restraint:

- Market share and the degree of market concentration
- The power to implement decisions
- Height of barriers to entry
- Product differentiation and sales promotion
- The nature of corporate relationships

The TA will also examine other factors where relevant, such as the recent acquisition of the assets of Level 3 Asia and excess external capacity.

Market share and degree of market concentration

76. The Competition Guidelines sets out the following market share thresholds for determining dominance:

- a licensee with a greater than 75% market share will be presumed to be dominant;
- a licensee with a less than 25% market share will be presumed to be non-dominant; and
- a licensee with a market share of between 25% - 75% will not be subject to any presumption.

77. In August 1999, when the TA considered an application for declaration of non-dominance in the international call services market for non-China routes by Cable & Wireless HKT Telephone Limited, the TA has applied an additional set of criteria.

“The TA has considered that if a firm has a market share persistently above 50% it is likely that it is dominant. Therefore when looking at the other market conditions he needs to satisfy himself that these demonstrate that the market is competitive and/or contestable before he would classify a firm with market share above 50% as non-dominant. The opposite applies where the market

share is consistently below 50%. In these cases the TA will consider that it is more likely that the firm is not dominant and in examining the other market conditions he will look to see if these are such that make the market non-competitive and/or non-contestable before he would classify a firm with market share below 50% as dominant.”¹⁵

78. Critical to a presumption of dominance is the basis for measuring market share. In the Consultation Paper, OFTA identified the following potential measures of market share:

- revenue;
- activated capacity (the capacity of external circuits actually being used by customers, as defined by OFTA in the published statistics. It is effectively equivalent to sold capacity);
- equipped capacity (the capacity of external circuits, equipped with the necessary termination equipment so that the capacity is readily available to customers in Hong Kong upon request, as defined by OFTA in the published statistics);
- total available capacity (activated, equipped and remaining capacity – e.g. unlit fibre); or
- upgradeable capacity (available capacity after upgrading – e.g. installing DWDM transmission technology).

79. Obviously, market share can vary depending on the measure chosen. No submission had advocated the use of the revenue measure. No information was supplied to the TA for the estimation of market share based on revenue. The revenue measure has not been adopted in previous cases on applications for declaration of non-dominance considered by the TA. In any case, the TA considers that the revenue measure is not appropriate for a market characterised by bulk sales of an increasingly commoditised product.

80. Reach submits that the appropriate measure should be total available capacity, not just capacity that is activated or equipped, since available capacity can be activated on a day-to-day basis. On the basis of this measure, Reach Networks would be presumed to be not dominant.¹⁶ PCCW-HKT took similar position in advocating the use of upgradeable or remaining available capacity for the computation of market share as such capacity constrains prices.

¹⁵ Paragraph 44 in TA Statement of 4 August 1999 on ‘Application for a Declaration of Non-Dominance in the International Call Services Market for Non-China Routes by Cable & Wireless HKT Telephone Limited’.

¹⁶ Reach Application, paragraphs 5.44-5.47.

81. Other submissions cautioned against using available or upgradeable capacity. For example, it was argued that dark fibre cannot be used to quickly enter the market and should not be counted as part of current market share.¹⁷ C&W did cautioned against using total available capacity or upgradeable capacity. C&W considered that it should not be automatically assumed that capacity upgrades are economic. The market share should be based on capacity available for use. AGC said that in a state of flux, an accurate analysis should not rely on potential capacity that might be available if all the new constructions or upgrades materialized. NWT submitted that the activated or sold capacity or equipped capacity should be used as the basis for the calculation of market share.

82. On both the activated capacity measure and the equipped capacity measure, based on periodic statistics submitted to OFTA by licensees, the market share of Reach Networks had displayed a declining trend since the availability of statistics in 2000. Up to the end of June 2001, Reach Networks' market share was above the 50% level. At the end of December 2001 has dropped below 50%¹⁸. The market was concentrated in that the largest four suppliers supply 89% and 90% of the market for the quarters ending June 2001 and December 2001 respectively.

83. According to the criteria applied from August 1999 onwards, Reach Networks would not be considered dominant unless there are other market conditions which indicate that the market is still non-competitive and/or non-contestable. OFTA notices that the drop was only as the result of the activation of one new cable by a competitor of Reach Networks in the third quarter of 2001. The measures of activated or equipped capacity can result in volatile swings in market shares in response to the signing of new large-capacity contracts. Therefore OFTA should not put undue weight to the market share information for one quarter and would examine the other market conditions in the rest of this paper.

84. Given that high market shares are a necessary but not sufficient condition for determining dominance, the TA considers that he does not have to be conclusive on the issue of market share at this stage of the analysis.

85. It is noted that, even with high market shares, ease of market entry can provide effective constraints on market behaviour. Accordingly, should upgradeable capacity not be considered an appropriate basis for measuring market shares, it may nonetheless be a determinative indicator of the ease of market entry.

The power to implement decisions

¹⁷ Cable & Wireless Submission, 20 November 2001, p 8.

¹⁸ This figure was computed before the acquisition of Level 3 Asia assets by Reach, but the market share of Reach Networks and Level 3 combined remained below 50% at the end of December 2001.

86. No significant comments were made on this factor in the submissions. In a manner, this factor is similar to the basic consideration of ‘dominance’ of whether the licensee is able to act without significant competitive restraint. As such the consideration of this factor is covered under the other factors, such as ‘barriers to entry’.

Height of barriers to entry

87. Barriers to entry in infrastructure markets such as bandwidth markets are broadly of the following kinds:

- regulatory barriers;
- sunk cost nature of infrastructure investment;
- the existence of spare capacity;
- advantages of incumbency; and
- possible ‘bottleneck’ facilities such as cable landing stations and backhaul.

Regulatory barriers

88. From 1 January 2000, the external facilities market has been opened to competition. There is no prescribed limit on the number of licences. Although applications for licences for cable-based external facilities must meet certain minimum criteria (directly investing in new¹⁹ physical cables brought into Hong Kong, and in the case of submarine cables, minimum capacity and capital expenditure of 1 Gbps and HK\$ 150 million in 3 years’ time), these criteria do not constitute any significant regulatory barrier at all for the entry by serious investors. Since the liberalization of the external facilities market, 9 non-cable based and 14 cable-based licences have been issued (which are in addition to the 4 FTNS licences modified in 1998 to include the right to operate local and external facilities).

89. From 1 January 2003, the external telecommunications sector in Hong Kong will be fully liberalized, removing any remaining regulatory barriers to entry:²⁰

“The current telecommunications regulatory framework has already included all the necessary elements to implement the full liberalization of the FTNS market. The TA will adhere to the liberalization policy to license the operation of additional local wireline-based fixed networks from 1 January 2003 and the operation from 1 January 2003 of external facilities based on submarine or land cables. All restrictions relating to the submission of applications for fixed

¹⁹ ‘New’ physical cables means that the Management and Construction Agreement was signed on or after 5 May 1999 (the date on which the Government announced the policy decision of licensing additional external FTNS operators).

²⁰ TA Statement ‘Implementation of the Full Liberalization of the Local Fixed Telecommunications Network Services Market from 1 January 2003’, January 2002 (‘Full Liberalization Statement’), paragraph 16.

carrier licences effective from 1 January 2003 will be lifted. Thus licences may be granted to those who have directly invested in cable capacity, or acquired capacity through the purchase of IRUs of cables. No distinction between “new” cables and “existing” cables (as defined in the “Guidelines for the Submission of Proposals Applying for Fixed Carrier Licences for the Operation of External Fixed Telecommunications Network Services in Hong Kong Special Administration Region” issued on 18 May 2001) will be drawn. For all fixed carrier licences issued for operation from 1 January 2003, there will be no preset limit of the number of licences and no performance commitments.”

90. The TA therefore considers that there is no or little regulatory barrier to entry to the relevant market.

Sunk cost nature of infrastructure investment

91. There are significant sunk costs involved in constructing submarine cables for facilities-based entry. However, there has been an upsurge in the construction of international bandwidth infrastructure despite the sunk costs involved. Reasons for entry vary but include projections of high levels of demand.

92. The fact of the recent upsurge in bandwidth capacity indicates that barriers to entry due to sunk cost nature of infrastructure investment have clearly decreased, with a corresponding increase in the contestability of the ‘external bandwidth services’ market.

The existence of spare capacity

93. It is generally accepted in the submissions that there are considerable amounts of spare capacity available in the external bandwidth market. And with the development of Dense Wavelength Division Multiplex (DWDM) technology, there is the potential to increase this capacity greatly, although respondents cautioned that such upgrades could not be automatically assumed.

94. The presence of spare capacity can send signals to potential entrants that incumbents have the means to strategically deter new entrants by quickly lowering their prices. However, the fact is that entry has occurred. Furthermore, having ‘sunk’ the infrastructure costs, there are incentives for the new entrants to make use of relatively low marginal costs to offer competitive prices and gain much-needed revenue flows.

95. There have been falling global prices for international bandwidth capacity, including in Hong Kong. While this may be partly due to decreasing infrastructure and transmission costs, it is considered that the existence of excess capacity is also a factor.

96. CLPT considers that the growth in the external capacity is effectively constrained by the supply of backhaul and it is also not clear whether the total capacity within the new cables would be put into service. This will be discussed further under the factor of access to bottleneck facilities.

Advantages of incumbency

97. In the Consultation Paper, the TA indicated that he would consider if an established customer base, knowledge about the market, customer confidence through past relationship, etc. would give Reach Networks any market power or deter market entry.

98. CLPT identified the advantage enjoyed by Reach Networks of inheriting the bilateral relationships with overseas carriers under the monopoly era. New operators often find it difficult to conclude similar arrangements on equivalent terms. NWT said that Reach Networks has built up a network that provides diversification and redundancy that the other competitors would take years and huge investment to build in order to effectively compete with them.

99. AGC argued that the extensive legacy networks that include essential bottleneck facilities such as backhaul have given Reach Networks significant incumbency advantages. Further incumbency advantages come from established relationships with technology and equipment suppliers, established customer base and greater access to capital than new companies competing with Reach Networks.

100. The TA has considered these matters and found no evidence that Reach Networks had been able to strategically use any advantages of incumbency to deter new entry. Indeed, entry has occurred to such an extent that there is now considered to be a significant amount of over-capacity.

Possible 'bottleneck' facilities, such as cable landing stations and backhaul

101. In entering the market for the supply of 'external bandwidth services' as a facilities-based operator based on investment in capacity in cables already landed, access to the existing cable landing stations for those cables is essential.

102. AT&T, without taking any position as to whether the application from Reach should be accepted or rejected by the TA, stated its understanding and expectation that Reach Networks will remain under its current obligations to provide cable landing station access and co-location pursuant to the Cable Landing Station Statement, section 36AA of the Telecommunications Ordinance and GC 31 of Reach Networks' licence. Operators which expressed view that access to cable landing stations is potential entry barrier included C&W, AGC and NWT.

103. The TA has issued a Statement on 19 September 2000 on 'Access to and Co-location at Cable Landing Stations' which set out the TA's position in the interpretation of the obligations of Reach Networks, under section 36AA of the Telecommunications Ordinance and GC 31 of Reach Networks' licence, in allowing competing facilities-based operators access to and co-location at cable landing stations

owned and operated by Reach Networks. The TA therefore considers that access to existing cable landing stations does not constitute a barrier to entry.

104. 'Backhaul' is another potential 'bottleneck'. Reach Networks and the three new FTNS licensees which entered the market in 1995 are also allowed to self-provide their backhaul. However, the other external facilities licensees are not allowed to self-provide their backhaul until full liberalization on 1 January 2003:²¹

105. OFTA noted in the Consultation Paper that self-provision of backhaul enables Reach Networks:

- to provide its external bandwidth services in a timely manner (in that there is no requirement to negotiate contracts for the supply of backhaul from other operators);
- to acquire the capacity in the backhaul that it needs to exploit the capacity in the submarine cables (the TA noting that the local FTNS licensees have generally been reluctant to supply dark fibres to Reach Networks' competitors); and
- to acquire the backhaul capacity at possibly lower operating costs compared with its competitors who have to acquire the backhaul from the local FTNS licensees.

106. The TA has received complaints from external facilities-based licensees about difficulties in getting access to the backhaul facilities of the four operators currently licensed to provide such facilities. In this context, he has stated that if commercial agreements could not be reached for backhaul, he was prepared to determine the terms and conditions under section 36A of the Telecommunications Ordinance.

107. The TA has acknowledged in the Consultation Paper that a number of commercial contracts have been concluded between local and external FTNS licensees for backhaul. However, the TA has received feedback from industry that the capacity supplied and the costs of the backhaul might not be entirely fulfilling the requirements and expectation of the external FTNS operators.

108. The competitive disadvantages from not being able to self-provide backhaul and the apparent difficulties in acquiring access to backhaul facilities were major concerns of respondents. In their view, the current regulatory restriction on the self-provision of backhaul is a barrier to entry for the external facilities operators and, through it, would perpetuate any dominance of Reach Networks.

109. CLPT and WNT&T considered that the backhaul right gives Reach Networks advantages in terms of costs and unlimited capacity expansion. MCI

²¹ Full Liberalization Statement, *op. cit.*, paragraph 54.

WorldCom considered that the ability to self-provide backhaul gives Reach Networks significant advantage in terms of speed and ease with which it can supply its services to customers and submitted that Reach Networks' restriction as a dominant operator should be lifted only after other external FTNS operators enjoy the same right of self-provision of backhaul. AGC argued that backhaul and local connectivity are essential bottleneck facilities for suppliers of external bandwidth services.

110. The TA has requested from licensees under licence conditions further information on the backhaul situation. Some of it is commercial-in-confidence. The information indicates that difficulties remain in acquiring backhaul on non-discriminatory terms. However, the TA is also aware of more occurrences of backhaul being acquired on more beneficial and flexible terms.

111. Despite TA's repeated indications that he was prepared to intervene under section 36A should the external FTNS licensees encounter difficulties in concluding backhaul agreements, no licensees had come forward to seek the TA's assistance. Interconnection agreements filed with the TA have indicated that the external FTNS licensees have, in one form or another, made commercial agreements to secure the backhaul that meet their requirements. Backhaul deals for capacity from STM-1 to STM-16 and to dark fibres have been struck.

112. The wireline-based FTNS operators which entered the market in 1995 have under their licences the right to self-provide backhaul. One major external FTNS licensee in the market has close relationship with one of the wireline-based FTNS operators and would have no difficulty in acquiring backhaul capacity to meet its market demand.

113. On balance, the TA concludes that backhaul continues to place the external facilities-based licensees at a competitive disadvantage to Reach Networks but the disadvantage is not of such magnitude that, by itself, it would retain a position of dominance (particularly given the ability to self-provide backhaul from 1 January 2003).

114. Respondents like the NWT considered that the domestic tails are 'bottleneck' in the supply of external bandwidth services. NWT considered that customers normally favour 'One-Stop-Shop' suppliers. AGC referred to PCCW-HKTC's 'over 90%' control of the domestic fixed line market and the difficulties encountered by PCCW-HKTC's competitors to gain access to PCCW-HKTC's local loops. The TA observes that the AGC's comments are more related to supply of public switched telephone line services rather than the supply of domestic tails. As discussed earlier, local connectivity is outside the relevant market. Thus the supply of domestic tails should not act as a barrier to entry into the market for the supply of external bandwidth services.

Production differentiation and sales promotion

115. Reach did not consider that Reach Networks has benefited from any advantages arising from reliability, redundancy and network management functions. PCCW-HKT submitted that product differentiation and sales promotion are less relevant to the external bandwidth services market as the products are quite often standardized with little or no differences. C&W expressed similar views.

116. As product differentiation does not seem to be a relevant issue or an issue of concerns to the competitors of Reach Networks, and the TA does not disagree with such views of the industry, it is not necessary for the TA to analyse this factor further.

The nature of corporate relationships

117. Reach Networks (when it was still called Cable & Wireless HKT International Limited) and PCCW-HKTC²² jointly and severally held an FTNS licence with right to operate both local and external facilities/services originally issued on 29 June 1995 and amended on 31 March 1998. Since 31 January 2001, Reach Networks has been issued a separate external FTNS licence and amendment was made to the licence held by PCCW-HKTC so that it includes the right to operate local facilities/services and only external services (but not external facilities).

118. Since 31 January 2001, Reach Networks' external operations were structurally separated from PCCW-HKTC's local operations. The ownership structure of the companies is also different. Reach Networks is wholly-owned by Reach Limited, which in turn is owned 50/50 by PCCW-HKT and Telstra Corporation Limited. On the other hand, PCCW-HKTC is wholly-owned by PCCW-HKT. There are continuing relationships between Reach and PCCW-HKT and their respective subsidiary operating companies. Such relationships can still raise competition issues even though there has been a structural separation.

119. The continued relationships between Reach Networks and PCCW-HKTC have been the major area that respondents to the Consultation Paper have expressed concerns about. Respondents including WNT&T, AGC, HGC, NWT wrote at length on why the Reach Application should be rejected on the ground of such concerns. As the relationships between the two companies cover a range of issues, the TA considers that it is necessary to examine the concerns individually.

120. The Consultation Paper raised two broad structural separation issues:

- any 'over-arching benefit' that Reach Networks may enjoy through its previous structural relationship with PCCW-HKTC, including benefits of vertical relationships, close staff ties and shared board members; and

²² Together with a third company, Cable & Wireless HKT CAS Limited within the Cable & Wireless HKT group.

- the contractual relationships between the parties including commitments for PCCW-HKTC to purchase the majority of its external bandwidth services from Reach Networks and commitments by Reach Networks to source a majority of domestic tails, decreasing over time, from PCCW-HKTC.²³

121. The specific concern raised in the Consultation Paper related to first issue is the possibility of exchange of information between Reach Networks and PCCW-HKTC as a result of their previous close relationship.

122. While Reach Networks in its response to the Consultation Paper denied the existence of such exchange of information, the TA has noted the various concerns expressed in the submissions from other respondents (e.g. CLPT, C&W, HGC, etc.) about the continuing relationship between PCCW-HKTC and Reach Networks, in particular the effects of close staff ties and shared board membership which it is considered have the ability to determine Reach Networks conduct and strategy. C&W in its submission argued that the shareholding structure of Reach Networks and the right of PCCW to appoint 50% of the board of Reach Networks, the right of veto decisions in the board, and the rotation right to appoint the chairman of the board have given PCCW-HKT decisive influence over Reach.

123. Related to the second issue, the Reach Application said that there is ‘no rational possibility’ for cross-subsidization of PCCW-HKTC by Reach Networks without diluting Telstra’s economic interest, or of Reach Networks by PCCW-HKTC as 50 percent of the benefit would accrue to Telstra. However, the Consultation Paper said that there would still be an incentive for PCCW-HKTC to sell domestic tails to Reach Networks at less than competitive prices if the cost to PCCW in doing so was smaller than the benefits gained through strengthening of Reach Networks’ position in the market.

124. In the submissions, C&W, WNT&T, etc. echoed the view in the Consultation Paper. It was concerned that the price and service conditions under the arrangement between Reach Networks and PCCW-HKTC are not available to the competitors of Reach Networks. AGC mentioned the opportunities and incentives for cross-subsidization between Reach Networks and PCCW-HKTC. Similar concerns were expressed by respondents such as CLPT and WNT&T, about more favourable treatment by PCCW-HKTC of Reach Networks in terms of prices, lead time, etc.

125. In the response to the Consultation Paper, Reach Networks discounted this as a hypothesis only as PCCW-HKTC is required under its licence to treat all external facilities operators on a non-discriminatory basis and the TA can take regulatory action against PCCW-HKTC if PCCW-HKTC should supply domestic tails to Reach Networks at prices other than those approved by the TA under tariffs. Similar views were expressed by PCCW-HKT. NWT submitted that the relationship between Reach

²³ Contractual relationships set out in Reach Application, paragraph 2.9.

Networks and PCCW-HKTC enables both operators to promote a ‘One-Stop-Shop’ image.

126. As argued earlier, the TA considers that the customers who purchase from wholesale suppliers such as Reach Networks are sophisticated enough to separately acquire external capacity and domestic tails if that would give them price advantages. The TA also considers that the other concerns can be adequately addressed by the existing dominant operator regulation for local FTNS.

127. PCCW-HKTC is dominant in the market of local fixed telecommunications network services, including the supply of domestic tails for access to external bandwidth services. The market power of PCCW-HKTC in the local fixed network market can be leveraged to the market for the external bandwidth services only if the competitors of Reach Networks, or their customers, would somehow have difficulties in acquiring the domestic tails supplied by PCCW-HKTC or would be required to acquire them at less favourable terms than Reach Networks. OFTA notes PCCW-HKT’s comments in this respect:²⁴

“As customers are free to choose the local connectivity from any wireline FTNS operators including PCCW-HKT, Reach Networks has no competitive advantage over its competitors. Not only does Reach Networks have no “seamless” provisioning advantage over its competitors, Reach Network’s competitors can provide and bundle their domestic and international bandwidth services together. In short, all competitors have the choice and ability to package their products with the local connectivity supplied by either PCCW-HKTC or other FTNS operators, and if with the latter such offerings may be fully bundled and discounted.”

128. The TA notes the following licence conditions under PCCW-HKTC and/or Reach Networks’ FTNS licences that limit PCCW-HKTC’s ability to give, and Reach Networks’ ability to receive, preferential treatment in the supply/purchase of the domestic tails:

- GC 10 which requires PCCW-HKTC to supply its network services to a customer who is prepared to pay the charges under the published tariffs - thus PCCW-HKTC cannot refuse to supply the domestic tails to Reach Networks’ competitors or customers of these competitors who wish to acquire the external bandwidth and domestic tails from separate suppliers;
- GC 13 which requires PCCW-HKTC to interconnect with the external networks and services of other licensees - this means that the competitors of Reach Networks have the right of interconnection with the local network of PCCW-HKTC;

²⁴ PCCW Submission, 20 November 2001, p 11.

- GCs 15 and 16 which prohibits anti-competitive conduct by PCCW-HKTC, including price discrimination, and GC 15 which prohibits Reach Networks from receiving undue preference from PCCW-HKTC; and
- GC 20(4) which prohibits PCCW-HKTC from offering unauthorized discounts on its published tariffs - thus PCCW-HKTC may not supply domestic tails to Reach Networks or its customers at prices other than those under approved tariffs, unless prior consent of the TA has been obtained; and
- GCs 21 and 22 which require the TA's approval for revised tariffs and new services of PCCW-HKTC.

129. To address the two potential concerns raised in the Consultation Paper concerning the relationship between Reach Networks and PCCW-HKTC, Reach Networks in its submission has offered acceptance of a number of conditions as a safeguard against the relationship between Reach Networks and PCCW-HKTC²⁵. These include the following:

- Reach Networks providing the TA with a quarterly report on the prices it pays PCCW-HKTC for the domestic tails;
- Reach Networks supplying further technical information about changes in Reach Networks' network relevant to end-to-end service quality on a non-discriminatory basis to all four local FTNS, by a process approved by the TA;
- Reach Networks maintaining records of all connection requests to capacity of the four local FTNS operators, together with time taken to process and connect;
- Reach Networks undertaking not to build additional backhaul to connect any facilities other than another External FTNS external gateway without the consent of OFTA until the expiry of the moratorium of the local FTNS (end-2002).

130. The TA has considered the various views expressed on this issue. After taking into account the regulatory controls in place and the commercial incentives created by structural separation and joint ownership of Reach Networks, the TA has found no evidence that the competitors of Reach Networks or their customers are being disadvantaged in obtaining domestic tails from PCCW-HKTC. The TA has come to the conclusion that the continuing relationships between Reach Networks and PCCW-HKTC post-structural separation do not in themselves create, protect or significantly enhance a position of dominance for Reach Networks. However, the TA decides to accept the first three conditions proposed by Reach Networks:

²⁵ Reach's submission in response to Consultation Paper, paragraph 8.2.

- Reach Networks providing the TA with a quarterly report on the prices it pays PCCW-HKTC for the domestic tails and the lead time for obtaining such tails from PCCW-HKTC;
- Reach Networks to propose within one month for the approval of the TA a process for supplying further technical information about changes in Reach Networks' network relevant to end-to-end service quality of external circuits on a non-discriminatory basis to all licensees²⁶ who rely on such information in the provision of external circuits;
- Reach Networks maintaining records of all requests from the local FTNS and fixed carrier licensees for connection to external capacity, together with time taken to process and connect.

Regarding the fourth condition, the TA does not consider it relevant or necessary.

131. HGC submitted that should Reach Networks be declared non-dominant in the external bandwidth services market, the TA should impose a condition that neither Reach Networks or PCCW-HKTC should be allowed to bundle the other's products with its own. The TA considers that a prohibition on Reach Networks to arrange for the supply of the domestic tails would not be appropriate, but Reach Networks should be required to separately price its external bandwidth services and domestic tails acquired from local FTNS and fixed carrier licensees, and allow its customers the freedom of choice of the suppliers for the domestic tails.

Acquisition of Level 3 Asia

132. On 19 December 2001, Reach announced the acquisition of the Asian assets of the US-based international cable operator, Level 3 Communications, Inc. This transaction has now been completed.

133. In its announcement, Reach stated that the acquisition:

"...will provide Reach with substantial Asian and trans-Pacific capacity at a fraction of the new build cost, while accelerating Reach's entry into the Japanese, Korean and Taiwanese markets.

Under the terms of the transaction, Reach will take over Level 3's Asian assets and operations including customers, in-country networks, data centres, US\$90 million of working capital and Level 3's ownership interests in the Tiger and Japan-US cable systems...

²⁶ This should include all licensees, including PNETS licensees, who rely on the external capacity of Reach Networks in the supply of external circuits

The Tiger network assets that will be transferred include three fibre pairs in the cable loop linking Japan, Korea, Taiwan and Hong Kong, which is in the process of being completed. The lit capacity of this system is 80 Gbit/s, which is upgradeable to a maximum of 1,350 Gbit/s. The transaction also includes approximately 40 Gbit/s of data capacity in the Japan-U.S. submarine cable system.”

134. Submissions made in response to the Supplementary Consultation Paper largely focused on the increased in market share of Reach Networks after the acquisition and, it was claimed, increased dominance as a result.

135. In essence, the arguments were re-runs of the arguments used to argue for or against Reach Networks’ dominance before the acquisition. The views of Teleglobe were similar to those of respondents opposing the Reach Applications in response to the Consultation Paper. Galaxy and NTT submitted that the acquisition has further strengthened Reach Networks’ position.

136. Since the liberalization of the external facilities market, a number of high-capacity new submarine cables have landed in Hong Kong. These include the Flag/Level 3 (80 Gbps/80 Gbps), East Asia Crossing (80 Gbps), APCN2 (80 Gbps) and C2C (160 Gbps) cables²⁷. Four new overland fibre optic cables of capacity comparable to those operated by Reach Networks have also been laid into the Mainland by Reach Networks’ competitors (two of which are Mainland carriers). The additional capacity acquired by Reach Networks in the Level 3 Asia transaction is just part of the considerable new capacity brought to Hong Kong. Examination of the statistics available to OFTA has indicated that the impact of the acquisition on the market share (as at the end of December 2002) of Reach Network was insignificant if based on ‘activated’ capacity, and moderate if based on ‘equipped’ capacity. In this respect, the TA also notes the point made by Reach that while the acquisition relates mainly to the acquisition of capacity, little of the capacity has been sold.²⁸ In any case, based on either the ‘activated’ capacity or the ‘equipped’ capacity measure, the combined Reach Networks/Level 3 would not have a market share (as at the end of December 2002) above the 50% threshold referred to in paragraph 44 of the TA Statement of 4 August 1999: there has to be further examination of other market conditions to establish dominance.

137. Accordingly, the analysis in previous paragraphs against the various factors related to the market position of Reach Networks remains as relevant to a combined Reach Networks/Level 3 entity as it does to Reach Networks alone.

138. Although the impact on Reach Networks’ position of the acquisition of Level 3 Asia is not significant, the TA recognizes that the supply in the ‘external bandwidth services’ is in a state of flux at present. Some suppliers are facing financial difficulties although the present indication is that they will stay in the market. The exit of

²⁷ Capacity figures in brackets are ‘initial capacity’ of the cable systems.

²⁸ Reach Supplementary Submission, paragraph 2.1.

a major supplier could affect the competitive restraint on Reach Networks. MCI WorldCom in its first submission in response to the Consultation Paper expressed the worry that if Level 3 were acquired by Reach and AGC were to fail, MCI WorldCom would in the market have no viable alternative supplier to Reach Networks. In view of this fluid situation in the market, the TA considers it prudent to conduct a review of the market in 12 months' time if he concludes that Reach Networks is not dominant in the relevant market.

Excess capacity

139. The emergence of specialised wholesale bandwidth suppliers and the resulting significant expansion in bandwidth capacity has been noted. It is generally accepted that there is currently an over-supply of capacity. Reach suggests that, with capacity likely to exceed demand in the medium term, there are powerful incentives for suppliers of such capacity to maximise usage by offering prices which fall towards incremental costs.²⁹

140. The suggestion has been borne out by subsequent market developments as indicated by this observation in relation to the recent collapse of Global Crossing:³⁰

“The resulting fibre-optic glut, made worse by a technology recession that savaged corporate IT budgets and whole classes of customers, turned the industry’s economics upside down as prices collapsed. When Global Crossing set out, it costed customers hundreds of thousands of dollars a year to lease the world’s fastest telecoms circuits. Today, companies can lease circuits with up to nine times as much carrying capacity for as little as one-tenth of the price.”

141. As previously noted, having ‘sunk’ infrastructure, there are incentives to make use of relatively low marginal costs to offer competitive prices and gain much-needed revenue flows. Although Global Crossing has gone into Chapter 11 bankruptcy, the incentives still remain to keep the infrastructure in place and producing revenue, as evidenced by competing offers to buy a controlling interest in Global Crossing.³¹

142. The incentives to keep infrastructure in place impose significant constraints on an incumbent’s ability to act independently in a market. Spare capacity on sunk infrastructure is a form of imminent market entry in response to any pricing behaviour above competitive levels. And the threat of entry is viewed as the ultimate regulator of competitive conduct:³²

²⁹ Reach Application, paragraph 4.6.

³⁰ ‘Global Crossing’s bankruptcy’, The Economist, 2 February 2002, p 57.

³¹ ‘Global Crossing’s Asia Unit Delays Release of Earnings’, The New York Times, 16 February 2002.

³² *Re Queensland Co-op Milling Association Ltd and Defiance Holdings Ltd* (1976) ATPR 40-012 at p17, 246.

“Of all the elements of market structure, no doubt the most important is ...the condition of entry. For it is the ease with which firms may enter which establishes the possibilities of market concentration over time; and it is the threat of the entry of a new plant into a market which operates as the ultimate regulator of competitive conduct.”

143. The evidence of falling prices indicates a competitive market in which prices are set by the market. It is recalled that a firm in a dominant position has the power to set prices without significant restraint from the market. Rapidly falling prices in the market would tend to indicate that Reach Networks is not dominant.

CONCLUSION

144. The TA concludes that, in relation to the Reach Application, the relevant market is the market for the supply of ‘external bandwidth services’, which are services providing external transmission capacity, except services which may be provided by satellite circuits only for transmission on a point-to-multipoint or broadcasting basis, at the wholesale level between the point of interconnection with the local networks in Hong Kong (or commonly known as the ‘external gateway’ or ‘Point-of-Presence’) and the overseas destinations. The relevant market does not include the local connectivity (domestic tails).

145. In relation to the relevant market, the TA has considered the factors set out in the Competition Guidelines and other relevant factors in assessing whether Reach Networks is able to act without significant competitive restraint from its competitors and customers.

146. Although the market share of Reach Networks (after taking into account the acquisition of Level 3 Asia) based on ‘activated’ capacity and ‘equipped’ capacity has shown that Reach Networks should be presumed non-dominant unless there are other factors to show that Reach Networks is dominant in the market, the TA has *not* relied on this factor in arriving at the conclusion because of the existence of other measures for calculating market shares and the fact that the market shares could be volatile as a result of the purchase of one particularly large consumer of bandwidth and the existence of considerable unused and upgradeable capacity.

147. The TA has examined other factors in the Competition Guidelines, and other relevant factors, particularly those factors that are of concerns to competitors of Reach Networks, namely the significance of ‘backhaul’ as an entry barrier and whether the relationship between Reach Networks and PCCW-HKTC would give Reach Networks any significant market power in the relevant market. The TA has formed the opinion overall that Reach Networks is not dominant in the relevant market.

148. In view of fluid situation with regard to supply in the market, the TA will closely monitor the market for any changes in circumstances (e.g. acquisition of major

assets for external capacity) which may warrant a review of the decision in this case. Initially the declaration of non-dominance of Reach Networks in the relevant market should be for a period of 12 months, after which the TA may decide to extend the declaration for an indefinite period or a further period to be defined, after review of the market situation at that time.

149. In the light of this conclusion, the TA has decided to accede to the request of providing a written direction under GC 44 of Reach Networks' licence specifying that 20(4), 21, 22 and 23 shall not apply to Reach Networks in respect of the relevant market subject to the review stated in the preceding paragraph.

150. In view of the fact that the major concerns expressed by the competitors of Reach Networks' competitors are related to the relationship between PCCW-HKTC and Reach Networks, the TA considers it necessary to include the following conditions in the direction under GC 44:

- Reach Networks shall provide the TA with a quarterly report on the prices it pays PCCW-HKTC for the domestic tails and the lead time for obtaining such tails from PCCW-HKTC;
- Reach Networks shall propose within one month for the approval of the TA a process for supplying further technical information about changes in Reach Networks' network relevant to end-to-end service quality of external circuits on a non-discriminatory basis to licensees who rely on such information for the supply of external circuits;
- Reach Networks shall maintain records of all requests from the local FTNS and fixed carrier licensees for connection to external capacity, together with time taken to process and connect;
- Reach Networks shall separately price its external bandwidth services and the domestic tails acquired from local FTNS or fixed carrier licensees, and allow its customers the freedom of choice of the suppliers for the domestic tails.

Office of the Telecommunications Authority
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