

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

Statement of the Telecommunications Authority

1 June 2002

INTRODUCTION

The Telecommunications Authority ('TA') has received from PCCW-HKT Limited ('PCCW-HKT') an application 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').

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

3. The PCCW Application was made at the same time as an application by Reach Limited ('Reach'), 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').

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 paper ('Consultation Paper') on 26 October 2001 seeking views from the industry on the PCCW Application. In response, the TA received nine submissions from the following respondents. Public versions of these submissions have been posted on OFTA's website:

- PCCW-HKT
- CLP Telecommunications Limited ('CLPT')
- Cable & Wireless Global Network (Hong Kong) Limited ('C&W')
- Reach Limited
- Wharf New T & T Limited ('WNT&T')

- Asia Global Crossing Limited ('AGC')
- Hutchison Global Crossing Limited ('HGC')
- New World Telephone Limited ('NWT')
- NTT Com Asia Limited ('NTT')

6. The TA also issued a consultation paper on 19 October 2001 seeking views from the industry on the Reach Application. In response, the TA received ten submissions. Public versions of these submissions have also been posted on OFTA's website.

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. After considering the industry submissions and other relevant information in relation to the Reach Application, the TA issued a Statement on 15 March 2002 concluding that Reach Networks is not dominant in the market for the supply of 'external bandwidth services', so defined, at the wholesale level.¹

9. This Statement analyses whether PCCW-HKTC is dominant in the 'external bandwidth services' market after taking into account the industry submissions and other relevant 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 PCCW-HKTC should not apply and whether the direction should be subject to any conditions.

¹ TA Statement on Application by Reach Limited for Declaration of Non-Dominance in the Market for External Bandwidth Services, 15 March 2002 ('Reach Statement'), para 147.

BACKGROUND

10. 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. External² telecommunications networks and 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').

11. 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').

12. 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 company³ 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.

13. 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.

14. 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

² 'External' means communications with places outside Hong Kong and includes international communications as well as communications between Hong Kong and the rest of China.

³ Hong Kong Telecom CAS Limited.

- cable facilities based on direct investment in ‘new’⁴ physical cables to Hong Kong.

15. 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

16. PCCW-HKTC’s FTNS licence issued on 29 June 1995, as amended on 31 March 1998 and 31 January 2001, allows it to provide local fixed telecommunications networks and services as well as external telecommunication *services* (but not facilities) between fixed points in Hong Kong and points outside Hong Kong, or between points outside Hong Kong but routed in transit through Hong Kong.

17. To supply external services, PCCW-HKTC must use the external networks of other external FTNS or carrier licensees as PCCW-HKTC’s licence does not authorize it to establish or maintain external networks. This parallels the absence of authorization for Reach Networks to establish or maintain its own internal network facilities and services.

18. PCCW-HKTC’s licence contains a number of competition-related conditions designed to prevent the abuse of any dominant position that PCCW-HKTC may have in the Hong Kong telecommunications sector. A dominant position is defined in General Condition (‘GC’) 16(2) of PCCW-HKTC’s 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.”

19. In respect of a market in which PCCW-HKTC 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.

⁴ 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.

20. GC 44 of PCCW-HKTC's 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.

21. Accordingly, in considering the PCCW Application, the TA has to determine:

- whether PCCW-HKTC is dominant in the relevant market;
 - and if it is not dominant,
 - whether 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

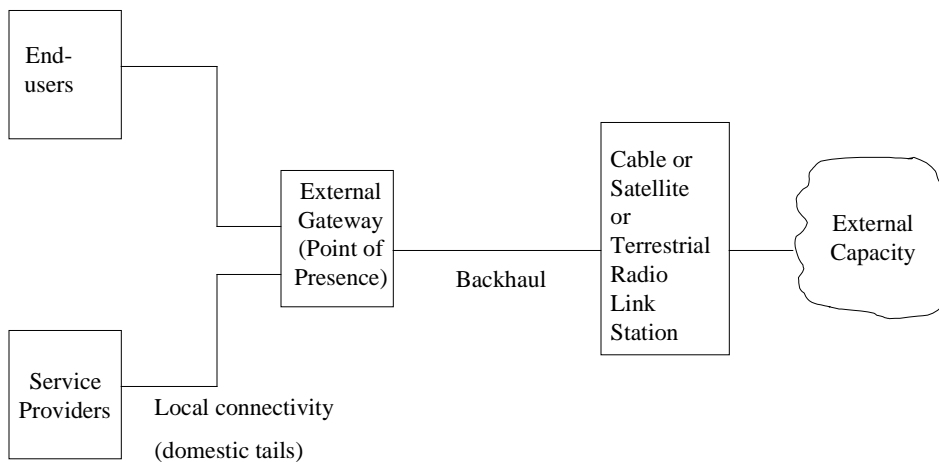


Figure 1 - Structure of external networks

22. An external telecommunications network consists of a number of elements (Figure 1). 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.

23. 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’).

24. 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).

25. 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.

26. 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

27. 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.

28. The principles of market definition are well-established and have been described elsewhere, including in OFTA's Competition Guidelines.⁵ 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 field of competition within which one can assess whether there is competition or its antithesis, market power and dominance.

PCCW's description of its product

29. In addition to external 'on-demand' or 'dial-up' switched voice and data services (such as IDD services) provided at the retail level by PCCW-HKTC and accessed through its local fixed public telecommunications network, the company also provides external bandwidth services that are essentially 'dedicated' circuits mainly to companies in the business sector.

30. PCCW-HKT's external bandwidth services can be provided at different levels of added value, ranging from the provision of 'raw' bandwidth (such as its various Dataline Fractional T1 services) up the value-added chain to an end-to-end fully managed service. A service offering management options is the International Managed Data Service ('IMDS'), which is described thus:⁶

“International Managed Data Service (IMDS) consists of Frame Relay and Asynchronous Transfer Mode (IMDS ATM). The service offers a fully managed network solution operated on a backbone infrastructure with comprehensive trunk diversities. Its high-performance and cost-effective integrated technology enables IMDS ATM to support broadband multimedia service under certain quality-of-service guarantees. It offers direct non-stop global data communication service 24/7. Data can be seamlessly transferred among Australia, Japan, Singapore, US, UK and Hong Kong through a single network. Optionally, traffic can be connected to more than 60 countries via PCCW's interconnections with other service partners.”

PCCW's description of the product market

31. For the purposes of market definition, PCCW-HKT describes the 'external bandwidth services' market in the following terms in its Application:⁷

⁵ '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').

⁶ Information obtained from PCCW web site 'www.hkt.com'.

⁷ PCCW Application, para 2.1.

“The market for external bandwidth services includes the provision of all external bandwidth services including international transmission capacity services (e.g. international private leased circuits), international internet protocol services, international broadcast services, international managed bandwidth services and other similar services. These services are essentially capacity offerings (i.e. transmission pipes) which may be adapted by the user or service provider to add value and to meet specific user requirements. However, the external bandwidth services market would exclude on-demand services of the type already included in the "external call service" market definition adopted by the TA for the purpose of previous non-dominance declarations in relation to Category A and Category B external call services.

...external bandwidth services include the transmission segment comprising the capacity external to Hong Kong plus the backhaul capacity that connects such POPs [points of presence within Hong Kong] to a cable landing station or a satellite landing station. However, external bandwidth services exclude the domestic connectivity services between these networks POPs and customer premises.”

32. The description raises a number of issues for analysis, including whether local connectivity, satellite services, ‘on-demand’ call services, international private leased circuits and managed services should be included in the relevant market. Before coming to a conclusion on the relevant market, the functional and geographic dimensions will also be considered.

Local connectivity

33. A number of respondents submitted that the product for analysis of the PCCW 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 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.

34. Whether or not the local connectivity should be included in the product market definition revolves around whether, as PCCW-HKT claims, its retail customers are ‘free’ to choose whether to acquire local connectivity from the four wireline-based local FTNS licensees:⁸

⁸ PCCW Submission, 27 November 2001, p 9.

“As customers are free to choose the local connectivity from any wireline FTNS operators including PCCW-HKTC, PCCW-HKTC has no competitive advantage over its competitors. Not only does PCCW-HKTC have no “seamless” provisioning or pricing advantage over its competitors, PCCW-HKTC’s competitors can provide and bundle their domestic and international bandwidth services together. In short, all of PCCW- HKTC’s competitors have the choice and ability to package their products with the local connectivity supplied by either PCCW-HKTC or other FTNS operators, and such offerings may be fully bundled and discounted as these operators are not constrained by dominant carrier pricing restrictions and they can discount off their published tariff at any time and at any rate.”

35. In a market definitional sense, ‘free’ means that the retail 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 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.⁹

36. 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.¹⁰ These costs typically arise from the additional search, transaction and switching costs involved.

37. 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.

38. 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

⁹ 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.

¹⁰ 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.

them jointly. A firm supplying the components separately would not be able to compete on a cost basis.

39. On the other hand, if there are no significant transaction costs in acquiring complementary products separately, and there are no significant diseconomies in separate supply, customers would be able to acquire separately and firms would be able to supply separately on a competitive basis in the event of a small but significant price increase for the bundled product. In such circumstances, separate supply acts as a constraint on the price of a bundled product and it would be appropriate to consider the separate products as being in separate markets (even though they may be commonly supplied and acquired as a bundle).¹¹

40. Turning to the product in question, PCCW-HKT has argued in its product market description above that the product does not include local connectivity. Essentially, PCCW-HKT is arguing that its product is not a ‘cluster’ market. It notes that customers are free to choose the local connectivity from any wireline FTNS operators including PCCW-HKTC. In short, PCCW-HKTC 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).

41. PCCW-HKTC’s external bandwidth service offerings are not a ‘mass’ retail product. Rather, they are offered to businesses at the corporate end of the retail market. Given the relative sophistication of these customers and the fact that the cost of unbundling for each of them 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. As PCCW-HKT observes:¹²

Customers acquiring external bandwidth services are typically sophisticated buyers, who are very price and quality sensitive. Such customers usually include carriers as well as multinational corporations operating network servicing the internal needs of a corporate group. These customers are very well informed, are able to make detailed price and quality comparisons, and have significant negotiating leverage.

42. 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. Business customers are essentially demanding this component, with the domestic tail being a necessary but

¹¹ Recall that the fundamental purpose of market definition is to identify potential constraints on a company in relation to the conduct in question. Even though most market activity may be based around the supply and acquisition of bundled services, the bundle does not necessarily define the market if the supply and acquisition, or potential supply and acquisition, of separate components of that bundle exercise a constraint on the bundle’s price.

¹² PCCW Application, para 2.2.

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.

43. This point is further reinforced by the fact that the external circuit costs considerably more than the domestic tail. This may be seen from the tariffs lodged with OFTA by PCCW-HKTC in relation to its domestic tail service (called the “Datapak DDS Dataline” service)¹³ and by Reach Networks for its external bandwidth services (filed as its “International Private Leased Circuit” service).¹⁴ The basic domestic tail service is around only 5% or less of the total end-to-end cost. The various tariffed discounts offered by Reach Networks on its external bandwidth services prior to its declaration of non-dominance (recalling that PCCW-HKTC only resells Reach Networks’ services) would increase the cost proportion of domestic tails to, at the most, about 27% of the total cost. Of course, the cost proportion would be greater still if Reach Networks is now offering greater discounts.

44. 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.¹⁵

45. Although respondents such as NWT, WNT&T and AGC submitted that the customers prefer ‘end-to-end’ connectivity or a ‘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’.

46. Separate supply is facilitated by licence conditions imposed on both PCCW-HKTC and Reach Network requiring them to interconnect their networks and services with the networks and services of other licensees on an efficient and non-discriminatory basis. These conditions apply irrespective of whether they are considered dominant.

47. Apart from the technical feasibility of separate supply of domestic tails to Reach Network’s international gateway, information available to OFTA indicates that an increasing amount of Reach’s external bandwidth capacity is breaking-out on to domestic tails other than those of PCCW-HKTC. Indeed, for system diversity and integrity, and redundancy, some customers source domestic tails from more than one supplier.

48. The TA considers that separate supply of local and external connectivity on a competitive basis is available in Hong Kong and that customers are free to choose that separate supply. Indeed, the evidence discussed above indicates that customers are

¹³ Refer to S. No. 6 to Gazette No. 41/1995, PN 8773 and S. No. 6 to Gazette No. 52/1995, PN 11297.

¹⁴ For example, refer to S. No. 6 to Gazette No. 32/1998, PN 9082 and PN 9090-9098, S. No. 6 to Gazette No. 6/2000, PN 1695-1701, S. No. 6 to Gazette No. 14/2001, PN 4667-4672 and S. No. 6 to Gazette No. 37/2001, PN 12553.

¹⁵ Consultation Paper, paragraph 48.

exercising that choice on an increasing basis. After taking into account the submissions received, the TA concludes that the relevant ‘external bandwidth services’ market in relation to the PCCW Application does not include local connectivity for the reasons outlined above.

Satellite and cable

49. In its submission on the Consultation Paper, PCCW-HKT considered that cable and satellite were close substitutes but acknowledged that they were not perfect substitutes.¹⁶

50. 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.

51. 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 PCCW-HKTC 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 PCCW-HKTC’s competitors would not necessarily be effective restraints on PCCW-HKTC’s point-to-multipoint or broadcasting transmission services.

52. 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.

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

53. 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.

54. However, for point-to-point transmission, cable is likely to be viable substitute for satellite. Thus if PCCW-HKTC is found to be non-dominant in the market

¹⁶ PCCW Submission, 27 November 2001, p 10.

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

55. In the Consultation Paper, OFTA indicated that while International Private Leased Circuits ('IPLCs') should be within the relevant market, it would consider whether the relevant market at the retail level should include managed network services or switched circuits such as those provided by Internet Protocol ('IP') and Asynchronous Transfer Mode ('ATM') technologies as these services might well be viable substitutes to IPLCs for corporate customers and some service providers.

56. 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.

57. 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.

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

59. 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 PCCW 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.

60. 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'.

61. 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.

62. 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', be it at the wholesale level or retail level. Other lesser forms of managed network services may be closer to 'switched' or 'on-demand' services and should be excluded from the relevant market even at the retail level as they are not substitutes to 'dedicated' circuits. 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

63. The Consultation Paper raised the issue of whether the relevant market in relation to the PCCW Application should be considered at the retail level, at which PCCW-HKTC operates, separate from the wholesale 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.¹⁷

64. 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 there is often a very fine line between the definition of retail and wholesale markets and believed that PCCW-HKTC could easily supply external bandwidth services at either the retail or wholesale levels. 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.

¹⁷ Consultation paper on PCCW Application, paragraphs 51 - 53.

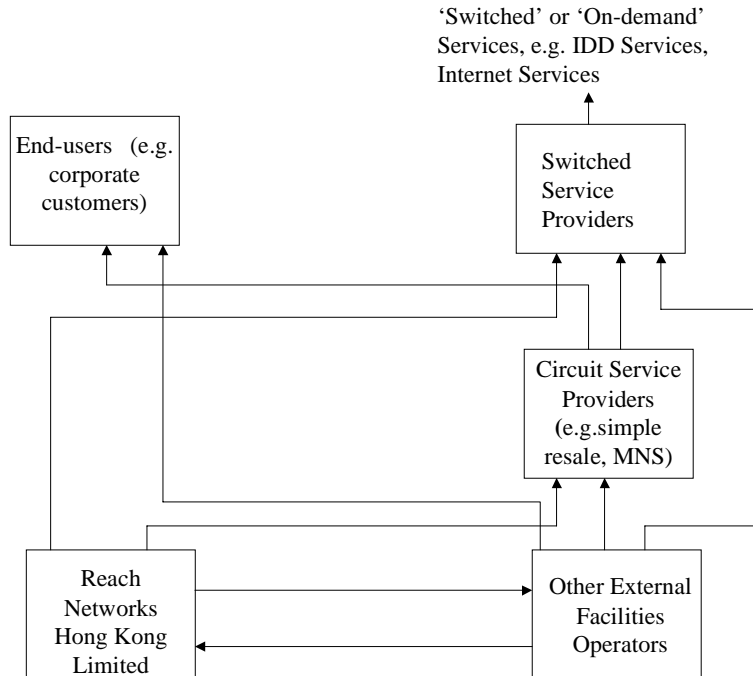


Figure 2 - Functional levels of the 'external bandwidth services' market

65. Having considered the submissions, the TA maintains his view expounded in the Statement of 15 March 2002 on Reach Application that the 'external bandwidth services' market can be conceptually analysed at the wholesale and retail levels as illustrated in Figure 2. The external facilities operators are supplying the underlying 'raw' bandwidth.

66. 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.

67. 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. However, this definition of 'retail' level may contain some uncertainties. For example, the switched service provider in Figure 2 might well be regarded as the 'end-user' as far as the external

circuits are concerned because the switched service provider uses the external circuits to provide 'switched' or 'on-demand' services.

68. 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.

69. The PCCW Application also does not draw a distinction between the two levels of the market. It merely seeks a declaration of non-dominance in the 'external bandwidth market'. Because of the uncertainties of the exact boundary of the 'retail' level of the market, certain modes of supply of PCCW-HKTC may well not be at the 'retail' level. The TA therefore considers that, for the analysis of the relevant market in relation to the PCCW Application, he will assess the dominance or otherwise of PCCW-HKTC at both the retail and wholesale functional levels.

Geographic market

70. Assessing the relevant geographic market involves identifying the geographic area in which PCCW-HKTC 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.

71. 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.

72. 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.

73. PCCW-HKT submits 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 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.¹⁸

74. Reach supported PCCW-HKT's view 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.¹⁹

75. 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.²⁰ However, as the TA stated in August 1999 in relation to another application for non-dominance in relation to paired routes:²¹

“...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.”

76. 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.

77. 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.

78. 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.

79. 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

¹⁸ PCCW Submission, 27 November 2001, p 11.

¹⁹ Reach Application, paragraph 5.16.

²⁰ 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.

²¹ 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.

constraint on prices in Hong Kong through a ‘ripple effect’. This effect will be taken into account in the assessment of dominance.

ANALYSIS OF DOMINANCE

80. Having defined the relevant market in relation to the PCCW Application, whether PCCW-HKTC 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.

81. The TA will analyse the dominance or otherwise of PCCW-HKTC in the relevant market in accordance with the framework set out in OFTA’s Competition Guidelines. Essentially, PCCW-HKTC 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 PCCW-HKTC 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.

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

Market share and degree of market concentration

83. 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.

84. 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.”²²

85. 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).

86. 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.

²² 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’.

87. PCCW-HKT advocates the use of upgradeable or remaining available capacity for the computation of market share as such capacity constrains prices.²³ Reach took a similar position in submitting 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.²⁴

88. 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.²⁵ 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.

89. As observed in the TA Statement declaring Reach Networks non-dominant (the 'Reach Statement')²⁶, where market shares are based on both activated and equipped capacity, the market share of Reach Networks has 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 it dropped below 50%²⁷. 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. OFTA noticed 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. As 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, OFTA indicated that it should not put undue weight to the market share information for one quarter and would examine other market conditions.

90. As PCCW-HKTC is reselling the capacity supplied at the wholesale level by Reach Networks, the market share of PCCW-HKTC at the retail level (and at the wholesale level if supply to switched service providers is regarded as supply at the wholesale level) cannot be higher than that of Reach Networks at the wholesale level. If figures for the September and December 2001 quarters were used, PCCW-HKTC would have a market share that is well below the 50 per cent market share thresholds for

²³ PCCW Submission, 27 November 2001, p 12.

²⁴ Reach Application, paragraphs 5.44-5.47.

²⁵ Cable & Wireless Submission, 20 November 2001, p 8.

²⁶ Reach Statement, *op. cit.*, para 82.

²⁷ 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.

dominance applied from August 1999 onwards and outlined in paragraph 84.²⁸ For these quarters, PCCW-HKTC would not be considered dominant unless there were other market conditions which indicated that the market was still non-competitive and/or non-contestable. However, as previously noted, market share figures can be volatile and PCCW-HKTC's market share may not necessarily remain below 50 per cent in future quarters.

91. However, even with apparently low market shares that may give rise to a presumption of non-dominance, further inquiries may be needed before being determinative on the issue. Special factors may arise where dominance can be achieved despite relatively low market shares, for example where it can be leveraged in from other related markets (such as those in which domestic tails are provided). Given PCCW-HKTC's dominance in certain local markets, the TA does not consider that he has to be conclusive on market-share, or the basis for measuring market share, at this stage of the analysis.

The power to implement decisions

92. 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

93. As the focus of analysis is on the supply of external bandwidth services at the retail level, it would be the barriers for entry into retail service provision that are relevant. The suppliers at this level include facilities-based as well as service-based operators such as PCCW-HKTC. The entry barriers are reviewed under the following:

- regulatory barriers;
- sunk cost nature of infrastructure investment;
- the existence of spare capacity;
- production differentiation and sales promotion;
- advantages of incumbency; and
- possible 'bottleneck' facilities such as domestic tails.

Regulatory barriers

94. 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

²⁸ Bandwidth data for calculation of market-shares provided in confidence to OFTA by PCCW-HKT.

criteria (directly investing in new²⁹ 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. As of May 2002, 8 non-cable based and 16 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).

95. From 1 January 2003, the external telecommunications sector in Hong Kong will be fully liberalized, removing any remaining regulatory barriers to entry:³⁰

“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 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.”

96. At the retail level of the ‘external bandwidth services’ market, operators include circuit service providers. PCCW-HKTC is in fact one of these service-based operators. Service-based operators need to obtain only a Public Non-Exclusive Telecommunications Service Licence for which applications may be accepted at any time. The TA therefore considers that there is no or little regulatory barrier to entry to the relevant market at both the wholesale and the retail levels.

Sunk cost nature of infrastructure investment

97. 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.

²⁹ ‘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).

³⁰ 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.

98. The fact of the recent upsurge in bandwidth capacity indicates that barriers to entry at the wholesale (facilities) level due to sunk cost nature of infrastructure investment have clearly decreased, with a corresponding increase in the contestability of the 'external bandwidth services' market. In any case, 'sunk cost' of investment in infrastructure is not a relevant barrier to service-based operators at the retail level of the 'external bandwidth services' market.

The existence of spare capacity

99. 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.

100. 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.

101. 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.

102. 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.

Production differentiation and sales promotion

103. 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. Reach did not consider that Reach Networks has benefited from any advantages arising from reliability, redundancy and network management functions.

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

Advantages of incumbency

105. In the Consultation Paper, the TA indicated that he would examine evidence of whether there were other significant barriers to entry such as incumbency advantages, strategic barriers and access to local network for the domestic ‘tail’.

106. The TA has considered these matters and found no evidence that PCCW-HKTC 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. However, access to domestic ‘tails’ and the ability to leverage any ‘bottleneck’ power over domestic tails into the ‘external bandwidth services’ market have been raised as significant issues. These two issues will now be discussed in turn.

Possible ‘bottleneck’ facilities: domestic tails

107. Access to cable landing stations and backhaul were significant issues addressed in the Reach Statement on non-dominance in view of Reach Networks involvement in the operation and control of such facilities.³¹ However, as PCCW-HKTC’s licence does not include the right to establish its own external facilities, these issues do not arise in relation to the PCCW Application. Indeed, because of its inability to own cable landing stations and backhaul facilities, PCCW-HKTC may be considered to be at a competitive disadvantage vis-a-vis licensees who can own and control such facilities, at least until the date when the restriction on operation of external facilities ends under its covenants given to Reach.

108. However, as stated in the Reach Statement, PCCW-HKTC is considered dominant in the market for local fixed telecommunications services, including the supply of domestic tails for access to external bandwidth services.³² In certain circumstances, such dominance can be leveraged into the ‘external bandwidth services’ market. Further, as access to domestic tails is obviously essential for the provision of end-to-end external bandwidth services, they could be used to adversely affect the competitive position of suppliers of external bandwidth services who resell domestic tails as a bundled end-to-end service.

109. In its submission, 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 such.

³¹ Reach Statement, *op. cit.*, paras 101-113.

³² Reach Statement, *op. cit.*, para 127.

110. This issue of access to domestic tails will now be addressed in the following section as one of a number of issues arising from the corporate relationship between PCCW-HKTC and Reach Networks. The leverage issue will be addressed in the section after that.

The nature of corporate relationships

111. PCCW-HKTC and Reach Networks (when it was still called Cable & Wireless HKT International Limited)³³ 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).

112. 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.

113. 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, and NWT wrote at length on why the PCCW 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.

114. In considering the Reach Application, the TA said he needed to consider 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
- 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

³³ Together with a third company, Cable & Wireless HKT CAS Limited within the Cable & Wireless HKT group.

source a majority of domestic tails, decreasing over time, from PCCW-HKTC.³⁴

Likewise, in assessing the PCCW Application, the TA needs to consider the vertical benefits that PCCW-HKTC enjoys through its relationship with Reach Networks, in particular, the competitive advantage of PCCW-HKTC's seamless access to external connectivity provided by Reach Networks.

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

116. While PCCW-HKT in its response to the Consultation Paper advised that it does not control or influence the day-to-day activities of Reach Networks and vice versa, 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.

117. Related to the issue of whether PCCW-HKTC is receiving vertical benefits from its relationship with Reach Networks, PCCW-HKT submitted that the respective companies have different financial objectives and there is no reason for one company to cross-subsidize the other.

118. In addressing the same issue in its Application, Reach said that there is 'no rational possibility' for cross-subsidization of PCCW-HKTC by Reach Networks without diluting Telstra's economic interest.

119. In the submissions, C&W, WNT&T, etc. echoed OFTA's views expressed in the consultation papers. 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.

120. In declaring Reach Networks non-dominant, the TA has accepted three conditions proposed by Reach Networks:

- Reach Networks to 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;

³⁴ Contractual relationships set out in Reach Application, paragraph 2.9.

- 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 licensees³⁵ who rely on such information in the provision of external circuits;
- Reach Networks to 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.

121. The second and third conditions in the preceding paragraph were to prevent Reach Networks giving any undue preference to PCCW-HKTC, in terms of receipt of technical information and connection time, in the supply of external bandwidth services at the wholesale level compared with supply of the services to the competitors of PCCW-HKTC. The TA considers that the above conditions imposed on Reach Networks, coupled with the fact that Reach Networks is no longer dominant in the market for the supply of 'external bandwidth services' at the wholesale level and competitors of PCCW-HKTC have access to external capacity supplied by competitors of Reach Networks, are sufficient to address the potential concerns of PCCW-HKTC receiving vertical benefits through the relationship with Reach Networks.

122. HGC submitted that should PCCW-HKTC (or Reach Networks) be declared non-dominant in the 'external bandwidth services' market, the TA should impose a condition that neither Reach Networks nor PCCW-HKTC should be allowed to bundle the other's products with its own. The TA considers that a prohibition on PCCW-HKTC to arrange for the supply of the domestic tails would not be appropriate, but PCCW-HKTC should be required to separately price its external bandwidth services and domestic tails, and allow its customers the freedom of choice of the suppliers for the domestic tails. A similar condition was also applied on Reach Networks.

Dominance through leverage of control over local tails

123. As mentioned above, PCCW-HKTC is considered dominant in the market of local fixed telecommunications network services, including the supply of domestic tails for access to external bandwidth services.

124. Noting that local tail circuits are essential in the provision of end-to-end external bandwidth services, C&W has argued in its submission on the PCCW Application that its ubiquitous dominance in the provision of domestic tails also gives it market power in the provision of external bandwidth services. C&W expands its argument as follows:³⁶

³⁵ This should include all licensees, including PNETS licensees, who rely on the external capacity of Reach Networks in the supply of external circuits.

³⁶ C&W Submission, 27 November 2001, p 5.

“PCCW-HKT exclude these local tail circuits from their definition of “external bandwidth services” (see Section 2.1 of the PCCW-HKT application). Nevertheless, with IPLCs especially, these tail circuits are essential to provide retail services to customers and so should be included within the assessment of competition. As international bandwidth prices fall (for the true inter- country section of the route), local tail costs will absorb a progressively higher proportion of the overall costs. PCCW-HKT’s dominance in this component of the retail offering may actually give it increasing market power in external bandwidth services.”

125. Essentially, the C&W argument assumes that the links between the two markets are so close that PCCW-HKTC’s dominance will automatically be leveraged from one into the other such that it is deemed to be dominant in both. In this respect, C&W refers in its submission to Article 13 of a draft EC telecommunications framework directive which states:³⁷

“Where an undertaking has significant market power on a specific market, it may also be deemed to have significant market power on a closely related market, where the links between the two markets are such as to allow market power held in one market to be leveraged into other markets, thereby strengthening the market power of the undertaking.”

126. The most likely means of leveraging dominance would be a strategy of pricing low in a competitive market with the short-term losses being subsidised by profits from a market in which a company has market power or is dominant. A hypothetical example would be where PCCW-HKTC charged low prices for the external segment of an IPLC and subsidised the losses from ‘monopoly’ profits made from the provision of domestic tail circuits.

127. In considering this issue, it should be mentioned at the outset that a company in a position of dominance will not necessarily abuse that position for anti-competitive purposes. Reflecting this, the dominance provisions in the *Telecommunications Ordinance* do not prohibit dominance *per se*. The provisions only prohibit the abuse of any dominance.

128. Furthermore, it would not often be the case that the linkages between two markets are so close such that dominance in one would automatically mean dominance in the other. It tends to get obscured in the analysis of leveraging dominance from domestic tails into external bandwidth services that the TA is focussing on dominance in the ‘external bandwidth services’ market, not in the domestic market, however defined. With this in mind, for PCCW-HKTC to be automatically ‘deemed’ dominant in the ‘external bandwidth services’ market in terms of the competition provisions of the *Telecommunications Ordinance*, four basic conditions must be met:

³⁷ Commission proposal for a Directive on a common regulatory framework for electronic communications networks and services COM(2000) 393 (OJ C 365 E, 19.12.2000), p 198.

- PCCW-HKTC must be dominant in the domestic market in which domestic tail circuits are provided;
- PCCW-HKTC charges low prices in the ‘external bandwidth services’ market that cannot be met by equally efficient competitors (i.e. they are below-cost);
- competition must remain substantially restricted in the domestic market such that it can continue to charge monopoly prices sufficient to recoup its losses; and/or
- competition must be prevented or substantially restricted in the ‘external bandwidth services’ market such that it can charge monopoly prices in the future sufficient to recoup its losses.

129. In respect of the first point, PCCW-HKTC is considered to be dominant in the domestic market (as mentioned above). On the second point, it is presumed for the sake of argument that PCCW-HKTC is charging below cost prices for external bandwidth services. However, it should be noted that no evidence has been put forward, or complaints made in the submissions, that PCCW-HKTC is engaging in such a strategy. Discussion will now focus on the latter two points.

130. In relation to the third point, the relevant segment of the domestic market for analysis is considered to be the business segment given that bandwidth services are generally not supplied to residential customers. Furthermore, PCCW-HKTC itself targets business customers as end-users.

131. In this business segment of the market, there is evidence that competition is emerging rather than remaining substantially restricted. Targeting businesses is a typical entry strategy adopted in previously monopolised markets because of the value-added opportunities they offer compared to the more commoditised mass markets (known as ‘cream-skimming’). A similar strategy has been adopted by the new fixed wireline FTNS licensees, as reflected by their greater gains in market share for business direct exchange lines (B-DELS) than residential direct exchange lines (R-DELS).

132. At first glance, it may appear that PCCW-HKTC is dominant in the provision of domestic tails because of the high prices relative to international benchmarks. It is also the case that the published tariffs for the other three providers of domestic tails are high, as indicated by the prices set-out in the following table for selected bandwidth services.³⁸

³⁸ PCCW-HKT tariffs are for the Dataline 64K (gazetted in S. NO. 6 to Gazette NO. 52/1995 at PN11297), Dataline 128K, Dataline T1 (G.703) and Dataline E1 (G.703) (gazetted in S. NO. 6 to Gazette NO. 41/1995 at PN8773), all of which form part of the Digital Datapak DDS (Digital Data Service). The equivalent tariffs for the other three FTNS operators obtained from PCCW-HKT submission, 27 November 2001, p 9.

Monthly rental for domestic leased services (HK\$ per month)

	PCCW	New T&T	Hutchison	New World
64 kbps	1200	1140	1138	n/a
128 kbps	1450	1430	1428	n/a
T1	3750	3560	3628	3560
E1	5550	5500	5500	5220

Installation charges for domestic leased services (HK\$ per month)

	PCCW	New T&T	Hutchison	New World
64 kbps	1950	1810	1800	n/a
128 kbps	2000	1900	1900	n/a
T1	3000	2250	3000	3000
E1	3000	2100	3000	3000

133. It would appear from the table that there may be an element of price leadership in an oligopolistic market (i.e. ‘joint dominance’) as the three others follow the prices of PCCW-HKTC which were initially published in 1995. Indeed, a requirement to publish tariffs can in itself facilitate price leadership. In the UK, OfTel raised the possibility of British Telecom (BT) acting as price leader for IPLCs partly due to a requirement for BT to publish changes to its tariffs 28 days in advance. It observed that price reductions by British Telecom tended to be followed by other operators, with prices being adjusted to just below BT’s level.³⁹ Following a review of the requirement, OfTel has recently decided on a trial basis to reduce the advance notification period to one day on the basis that advance warning of price changes may increase the likelihood of tacit collusion and price following.⁴⁰

134. However, there is no evidence available to OFTA that there is any significant degree of price leadership currently in Hong Kong. Indeed, OFTA has been informed of significant discounts on the published tariffs of the three new entrants which, of course, PCCW-HKTC cannot match without the approval of the TA because of its dominant position. The success of these discounts in causing customers to switch from PCCW-HKTC to the new entrants despite early termination charges in PCCW-HKTC’s term plans is demonstrated by the increasing market-share figures mentioned above.

135. In summary on the third point, while PCCW-HKTC may be considered to be dominant overall in a broadly defined domestic market, it is not considered that the

³⁹ “Competition in International Markets”, OfTel consultative document, 29 November 2001, para 6.12.

⁴⁰ “BT’s regulatory obligations to provide advance notification of price changes and to maintain a published price list”, OfTel statement, 26 March 2002.

published prices that PCCW-HKTC charges for domestic tails could continue to sustain by themselves a strategy of leveraging dominance into the ‘external bandwidth services’ market, if indeed there is such a strategy. The reason is simply the declining domestic business market-share of PCCW-HKTC, partly in response to the discounts offered by the new entrants and the increasing reach of their networks into central business districts.

136. For such a leverage strategy to work, losses would have to be recouped at least partially from the external services market. To do this, of course, it would have to prevent or substantially restrict competition in this market and then extract monopoly prices in the future. This brings us to the fourth point.

137. As noted below and also in the Reach Statement, having invested in external bandwidth facilities and infrastructure, there are incentives for facilities operators to make use of relatively low marginal costs to offer competitive prices and gain much-needed revenue flows. The incentives to keep infrastructure in place impose significant constraints on the ability of a company 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.⁴¹ These factors likewise constrain PCCW-HKTC in the ‘external bandwidth services’ market although PCCW-HKTC is not an investor in external infrastructure.

138. As evidence of falling prices indicates a competitive market in which prices are set by the market, it is difficult to conclude that PCCW-HKTC is dominant or become dominant in the ‘external bandwidth services’ market or in the relevant retail business segment of that market.

139. Furthermore, the current case is concerned essentially with whether or not PCCW-HKTC is dominant in the ‘external bandwidth services’ market. It is not concerned with whether it will abuse any dominance if it is found to be dominant. Any concerns about the leverage of dominance into the ‘external bandwidth services’ market can be adequately addressed by the provisions relating to the abuse of dominance in the *Telecommunications Ordinance* and in PCCW-HKTC’s licence.

Acquisition of Level 3 Asia

140. 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.

141. 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.

⁴¹ Reach Statement, op. cit., paras 141-142.

142. 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.

143. The TA analysed these arguments in the Reach Statement on non-dominance.⁴² He concluded that the analysis of Reach Networks position in the 'external bandwidth services' market without the acquisition of Level 3 remained as relevant to a combined Reach Networks/Level 3 entity as it does to Reach Networks alone.

144. Although the impact on Reach Networks' position of the acquisition of Level 3 Asia was not considered significant, the TA recognized 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 a major supplier could affect the competitive restraint on Reach Networks. In view of this fluid situation in the market, the TA considered it prudent to conduct a review of the market in 12 months' time. The TA considered that a similar review should be conducted in relation to PCCW-HKTC should it be declared non-dominant in the relevant market.

145. In the Supplementary Consultation Paper, OFTA sought particular comment on how the acquisition affects Reach Network's position as a wholesale supplier of bandwidth to PCCW-HKTC at a retail level and the links that remain between the two vertically integrated companies.

146. WNT&T submitted that the pricing that PCCW-HKTC can now secure from Reach Networks would be even lower than that prior to the acquisition of Level 3, which will in turn enhance its dominance position in retail market. Galaxy submitted that the acquisition will also benefit PCCW-HKTC as Reach Networks can pass on the benefit it has obtained from the deal to PCCW-HKTC. HGC was of the view that, as Reach Networks will be in a stronger position, this will enhance PCCW-HKTC's competitive advantages.

147. Consistent with the conclusion in relation to the effect of the acquisition on Reach Networks, the TA considers that the submission in relation to the effect on PCCW-HKTC are re-runs of the arguments used to argue for or against PCCW-HKTC's dominance before the acquisition. As the TA has concluded that Reach Networks is not dominant in the 'external bandwidth services' market, PCCW-HKTC's competitors can obtain external capacity from competitors of Reach Networks. The ability of Reach Networks to offer even lower pricing to PCCW-HKTC after the acquisition of Level 3 Asia is not a relevant issue. Furthermore, the TA accepts that there is no economic rationale for Reach Networks to subsidize PCCW-HKTC as Telstra's interest would be

⁴² Reach Statement, *op.cit.*, paras 132-138.

adversely affected. The TA therefore concludes that the impact on PCCW-HKTC's position of the acquisition of Level 3 Asia by Reach is not considered significant.

148. As noted above, a review of the market will be conducted in 12 months time. In this review, the position of PCCW-HKTC in the supply of domestic tails and any leveraging effects in the 'external bandwidth services' market will also be taken into account.

Excess capacity

149. 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. PCCW-HKT in its submission argues that:

“the per unit cost of capacity is being progressively and irreversibly driven downwards. The market for EBS features excessive capacity, low incremental costs of supply and declining fixed costs of supply. Economic theory dictates that market prices will fall rapidly when supply substantially exceeds demand.”

150. 150. Although a number of submarine cable operators have gone into Chapter 11 bankruptcy protection, there is evidence of incentives to keep the infrastructure in place and producing revenue. The incentives to keep infrastructure in place impose significant constraints on any player'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:⁴³

“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.”

151. 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 PCCW-HKTC is not dominant at the wholesale or retail level of the relevant market.

⁴³ *Re Queensland Co-op Milling Association Ltd and Defiance Holdings Ltd* (1976) ATPR 40-012 at p17, 246.

CONCLUSION

152. The TA concludes that, in relation to the PCCW 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, 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).

153. 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 PCCW-HKTC is able to act without significant competitive restraint from its competitors and customers.

154. Although the market share of PCCW-HKTC based on ‘activated’ capacity and ‘equipped’ capacity has shown that PCCW-HKTC should be presumed non-dominant unless there are other factors to show that PCCW-HKTC 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.

155. The TA has examined other factors in the Competition Guidelines, and other relevant factors, particularly those factors that are of concerns to competitors of PCCW-HKTC, particularly the significance of access to domestic tails and whether the relationship between Reach Networks and PCCW-HKTC would give PCCW-HKTC any significant market power in the relevant market. The TA has formed the opinion overall that PCCW-HKTC is not dominant in the relevant market.

156. 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 PCCW-HKTC 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.

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

158. In view of the concerns expressed by the competitors of PCCW-HKTC about the dominance of PCCW-HKTC in the supply of domestic tails for ‘external bandwidth services’, the TA considers it necessary to include in the direction under GC 44 that PCCW-HKTC shall separately price its external bandwidth services and the

domestic tails and allow its customers of domestic tails the freedom of choice of the suppliers for the external bandwidth services and its customers of external bandwidth services the freedom of choice of the suppliers for the domestic tails.

Office of the Telecommunications Authority

1 June 2002