

**ACHIEVING
COMPETITION
IN THE LIBERALISED
TELECOMMUNICATIONS
MARKET**



CONSUMER COUNCIL

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Executive Summary

1. The liberalisation of the fixed telephone network in July 1995 marked a turning point in the development of the telecommunications market. It was the most important evidence of the Government's commitment to competition rather than monopoly provision as the best way forward for the industry and Hong Kong.
2. The issue of three new Fixed Telecommunications Network Service (FTNS) licences is, however, very much a beginning. Unlike the deregulation of the telecommunications industry in other countries, deregulation of the fixed network has not been accompanied by liberalisation of the international telecommunications market, which is only due to take place in 2006.
3. The Consumer Council welcomes what has been achieved to date - the liberalisation of the FTNS market and development of a competitive retail market for the provision of mobile, Internet, and other value-added services; and the establishment of the Office of the Telecommunications Authority (OFTA).
4. We believe that competition will: bring about productive and allocative efficiency; increase consumer choice; reduce prices; and improve quality.
5. At this early stage of liberalisation, the dominant fixed network operator still accounts for 99% of basic telephone services and 88% of outgoing international calls¹.

Objectives of the study

6. Telecommunications services are a major utility in Hong Kong. In view of the major changes undergone by the industry, this study aims to:
 - (a) examine competition issues arising from the transformation in the local Fixed Telecommunications Network Services (FTNS) market as the monopoly provider gives way to multiple suppliers;
 - (b) identify barriers to competition; and
 - (c) make recommendations to promote effective competition and maximise benefits to consumers.

¹ New FTNS operators and Public Mobile Radiotelephone Service (PMRS) operators account for 7% of international calls originated from Hong Kong, and call-back operators 5%.

7. The study focuses on the need to maintain momentum in the opening up of the fixed network market, and on ways to promote competition in international retail tariffs given the continuing monopoly on the processing of incoming and outgoing international traffic.

The FTNS market

8. A local fixed network, which is a 'public switching telecommunications network' (PSTN) connecting to almost all residential and business premises, is by far the most important part of the infrastructure for most forms of telecommunications services. The cellular network, which has established a strong market presence in recent years, serves as a complement to, rather than a direct substitute for, a fixed network. It remains to be seen whether Personal Communication Services (PCS) will be in direct competition with FTNS.

9. Consumers and service providers have to have access to a PSTN in order to receive and provide services (or usage) through the network.

10. Before liberalisation, all consumers and service providers had to rely on only one network owned by Hong Kong Telephone Co Ltd (HKTC) and pay HKTC an access fee (Appendix 1). The fees include:

(a) Local tariffs

Currently, consumers pay \$65 per residential line and \$98 per business line. This includes access and free usage of basic voice services. As part of a package of tariff reforms, the Government introduced limits or 'price caps' on the amount by which HKTC can increase local tariffs, while requiring international tariffs to decrease by a certain percentage within a prescribed period.²

(b) Interconnection charges

Value-added service (VAS) providers, e.g. mobile operators, pay an interconnection charge (or access charge) of 9 cents per minute. This allows them to provide services to consumers on HKTC's network.

² The price cap formula, which was imposed in August 1993, restricts increases in the residential line rental charge to the rate of inflation (CPI) - 3%, and CPI - 4% for local tariffs as a whole. The price caps only apply to HKTC, as the dominant provider, and will be subject to review in August 1996. Since 1993, international tariffs have been reduced by about 12%.

(c) Delivery fees.

The international carrier, Hong Kong Telecom International Ltd (HKTi), must have access to the HKTC network in order to deliver international calls from and to consumers. The access charge paid by HKTi is often referred to as the delivery fee, which is determined on a revenue-sharing basis.

11. Following liberalisation, three new operators, Hutchison Communications Limited (HCL), New T&T Hong Kong Limited (NT&T) and New World Telephone Company Limited (NWT) have begun building an alternative network to compete with one another and HKTC for local customers, contracts with service providers and for the delivery of international calls (Appendix 2). They also compete in the provision of value-added services.

12. In order to fulfil their licence conditions, the three new FTNS operators are obliged to build a trunk network by 29 December 1996. They are currently negotiating with the Mass Transit Railway (MTR) company to build a network along the MTR lines. With new technologies such as fibre optics, the cost of building a network is much reduced and the installation causes much less disturbance than was previously the case. Nevertheless, the new network will take some time to roll out and will not provide full coverage throughout the territory. The new FTNS operators have to rely on interconnection with HKTC's network to provide services to their customers, for which they pay HKTC interconnection charges. Therefore interconnection between the FTNS operators is an important issue at this early stage of liberalisation.

13. There is no legal reason why competition for local fixed network services cannot be introduced, bringing with it more choice for consumers. However, for commercial reasons, the FTNS operators have concentrated on other activities e.g. international and value-added services, which are more profitable.

14. In this competition study, the Consumer Council looks at barriers that may prevent the development of competition in certain markets. We take as our guiding principle the requirement for:

- (a) increased efficiency;
- (b) non-discriminatory practice;
- (c) disclosure and transparency of information;
- (d) fair and reasonable tariffs and interconnection charges;
- (e) an equitable arrangement for the provision of universal service; and
- (f) reasonable regulatory safeguards.

Challenges for new entrants to the FTNS Market

15. The new entrants have to overcome significant market and structural barriers in order to offer a viable fixed network service. The key challenges facing new entrants to the FTNS market are:

- (a) the **competitive advantage** of the incumbent in the control of the existing network; and
- (b) **organisational integration** between related companies of the incumbent in different telecommunications markets.

Competitive advantages

16. HKTC has inherited obvious advantages: comprehensive network coverage, economies of scale and large customer base.

17. The near universal coverage of the network gives HKTC control of gateways between networks for which it can make interconnection charges. Ownership of gateways also allows HKTC to determine the capacity passing through a particular line or network.

18. In terms of building a network, new entrants may have difficulties in finding suitable sites for local exchanges particularly in developed areas. The incumbent by contrast, already has sites on which to accommodate its local exchanges, most of which are leased through private treaty grants from the Government. In these circumstances, **the Consumer Council supports** the Government policy to facilitate sharing of land for local exchanges equitably between operators. **The Council recommends** that the Government, in consultation with industry, continues to monitor the FTNS operators' discussions on the sharing of facilities so that the agreement reached to facilitate an equitable access to sites for local exchange among all parties.

19. In terms of building a customer base, it is important that consumers are able to change operator without having to change telephone numbers (number portability). The Consumer Council commends OFTA's role in introducing number portability to the liberalisation process. To increase its convenience to consumers, number portability should be delivered in an efficient manner, and there should be no discriminatory and preferential treatment. New operators, nevertheless, have to offer something extra, for example, reduced charges or value added services, in order to persuade consumers to go to the trouble of changing operator. Although their ability to reduce costs is constrained by the tariff structure inherited from the single supplier period, new entrants are striving to reduce costs through improved efficiency.

Organisational integration

20. HKTC competes with the new FTNS operators in the provision of services, but is also a major supplier of essential network facilities to the new entrants and information and value-added service providers.

21. As part of an international conglomerate dealing in various spheres of telecommunications business, e.g. infrastructure provision, international and domestic telephone services, HKTC inevitably enjoys an advantage over the new FTNS operators. The Telecommunications Authority (TA), who is the Director General of OFTA, has already required HKT to divide its functions and maintain separate accounts for each of its companies in accordance with the TA's Accounting Manual. The affiliate companies must deal with each other at arm's-length. In practice, HKTC still enjoys a competitive advantage from the close connection with other HKT affiliates, especially in the sharing of information, product development research, and the provision of network facilities essential for the distribution of services to customers.

22. ***The Consumer Council suggests*** that the TA requires reasonable disclosure of the accounts of HKT and its affiliate companies to enable the public to have a more informed view.

23. ***The Consumer Council also sees a need*** for the TA to exercise its power to facilitate the sharing of information, e.g. network technology plans for interconnection, provided that the information is not commercially sensitive. The TA should also ensure that services, particularly in areas where a telecommunications conglomerate has monopoly or near-monopoly power, are available to all licensees on a non-discriminatory basis, i.e. that there should be no discriminatory or preferential treatment in the price, quality, availability and efficiency of the services offered by any telecommunications operators to their affiliates or other companies.

Factors affecting the development of competition

24. The extent of competition also depends very much on the arrangements in the following areas:-

- (a) **tariff structure** for local and international calls;
- (b) **universal service obligation**;
- (c) **interconnection arrangements**.

The tariff structure

25. The Consumer Council has been informed by Hongkong Telecom and the Government, local tariffs are artificially set below cost and are subsidised from international revenue. The new FTNS operators regard the local tariffs as too low to provide an incentive to compete in the market. Nevertheless, certain operators have provided basic services for businesses at a lower price than that charged by HKTC.

26. This raises the following two questions: (a) what is the basis on which the subsidy from international to local services is calculated; and (b) is there a need to remove such a subsidy in order to bring both local and international tariffs closer to costs (a process described as tariff rebalancing).

Extent of subsidy

27. The amount of cross-subsidy, often referred to as the "access deficit", is the shortfall between the revenue collected from local tariffs and the expenses incurred by HKTC in providing a basic service and fulfilling its universal service obligation (paras 30-34 below refer). The amount of subsidy, however, is unknown to the public. ***The Consumer Council therefore recommends*** that OFTA should ensure the amount of access deficit including the methodology used in allocating fixed and common costs to different services offered by HKTC and its depreciation policies, is publicly available. This will enable the public to understand how much of the international revenue transferred to HKTC has been used to cross-subsidise local basic telephone services.

Tariff rebalancing

28. Assuming there is a subsidy, we have to consider whether, as a matter of policy, Hong Kong should proceed with tariff rebalancing. If so, when and how.

29. In a fully liberalised market, charges for international and local calls would be determined by market forces, and consumers as a whole would derive long-term benefit from the lower prices of telephone calls due to competition. However, Hong Kong's case is unique in that deregulation of the telecommunications market did not extend to international telecommunications. For consumers, tariff rebalancing means that as the subsidy, if any, is removed, local tariffs may be increased, while international tariffs reduced. The full benefit to consumers from tariff rebalancing will be realised only when full and fair competition comes into play. However, the liberalised FTNS market is still in the early stages of development and will take some time to bring about competition.

30. *The Consumer Council maintains that* consumer interests must be protected and that, in the present situation where there is no clear and concrete information indicating how consumers may benefit, tariff rebalancing should remain as a long-term objective, phased in along with the realisation of effective competition in the market.

Restructuring of local tariffs

31. Restructuring of local tariffs is another issue of critical concern to the consumer. The Council is conducting its own analysis of possible options, but needs more cost and price information to make a full assessment of the financial and social implications for consumers. The Government will shortly be issuing a consultation paper on various alternative structures of local tariffs. The Consumer Council will provide its views once it has such further information.

Universal Service Obligation (USO)

32. Under the current arrangement, HKTC has an obligation to provide a basic telephone service (access and voice usage) to all who request it. HKTC charges these customers a uniform rate for telephone installation and flat monthly rental, even if HKTC incurs a loss in doing so. This is known as the universal service obligation. The new entrants, who do not carry such an obligation, have to contribute by paying HKTC an amount known as the Access Deficit Contribution (ADC), which now stands at 35.8 cents per minute of international call³.

33. The amount of ADC not only includes the actual cost of universal service but also a share of the cross-subsidisation from international revenue to HKTC for keeping its local tariffs at a low level. Even though OFTA is committed to replace ADC with a Universal Service Contribution (USC) after the current ADC expires on 31 July 1996, there is an obvious need to separate and reveal the amount of two elements: cross-subsidies and the cost of the USO.

34. *The Consumer Council recommends* that an independent Universal Service Fund should be established and managed by OFTA, with every FTNS operator contributing an equitable share. OFTA should also explore other means of allowing the operators to share the Universal Service Obligation, in order to give the new entrants some incentive to provide basic services to consumers. For example, OFTA can identify some "uneconomic areas" and invite all FTNS operator to bid by stating

³ The ADC charge of 35.8 cents has been effective since 1 October 1995, it represents a reduction of 9.2 cents from the previous 45 cents.

the amount of subsidy they would require from the Universal Service Fund for providing this service.

35. **The Consumer Council also recommends** that OFTA should separate clearly the cost of universal service provision from the cross-subsidisation from international revenue to HKTC. OFTA should examine other pricing methods for the calculation of universal service costs, for example, the Long-run Average Incremental Costs (LRAICs) method (used in Australia and the U.K) or other alternative methods. The calculation should take into account the separate costs for the provision of access and usage.

36. There is also a question as to how the cost of the USO should be shared. Currently the main source of Universal Service funds is international revenue. In view of the growing revenue generated from information and value-added services which also make use of the network, a new and equitable funding arrangement needs to be found. **The Consumer Council therefore recommends** that OFTA expands the source of universal funding to include the growing number of value-added services.

Interconnection arrangements

Customer interconnection

37. Interconnection between customers and FTNS operators is vital if consumers are to have access to the services offered by the operator of their choice. There may be some consumers who cannot be directly connected to new operators because (a) the new FTNS operators will take a number of years to roll out their services; and (b) there is no room for the new FTNS operators to install cabling inside their existing office building or residential block. In that case operators will have to continue to rely on interconnection via the existing cable or 'local loop' owned by HKTC. Access to the local loop (known as 'type II interconnection'), and the terms on which it is available are therefore of crucial importance in ensuring fair competition and consumer access in the near future. The development of new technology such as cordless access systems, may reduce the need for type II interconnection in the long term.

38. **The Consumer Council recommends** that HKTC should allow new entrants to interconnect with its local loop at a price (Type II Interconnection). Interconnection being such a critical issue in competition, OFTA should have the power to determine as necessary such that this price must be set at a reasonable level, in the consumer's interest, and that it will enhance the competitiveness of the new entrants and also encourage investment

in network infrastructure. *The Consumer Council recommends* that Guidelines⁴ for new buildings, requiring developers to provide ducts and reasonable space for telecommunications facilities and to allow non-exclusive free access by all network operators, should be given statutory force through amending the Telecommunication Ordinance or the Buildings Ordinance. The TA should also discuss with the Building Authority, relevant Government departments, the professional institutions and Real Estates Developers' Associations design details to be stipulated in the law and to exclude floor space reserved for such telecommunications facilities from the plot ratio of building projects.⁵

39. *The Consumer Council also recommends that* the TA should take measures to increase public awareness of provisions for non-discriminatory access and publicise its powers to deal with complaints about denial of access to operators by owners' corporations or by a conglomerate giving favourable treatment to its associate telecommunication companies.

Network interconnection

40. Interconnection or access charges constitute a major portion of the operating costs of the new FTNS operators, information and value-added service providers. Hence, their competitive edge and commercial viability are very sensitive to the level of charges. These charges are also of public interest, as consumers ultimately have to bear the cost.

41. The Government's policy is to allow terms and conditions of interconnection to be determined by commercial agreement. If agreement cannot be reached, or the TA considers the terms and conditions reached to be anti-competitive and against the public interest, the TA has the power to determine the terms and conditions itself⁶.

42. Currently all service providers e.g. FTNS, PMRS and Internet operators,⁷ pay a 9 cents per minute charge to access HKTC's network for incoming and outgoing traffic. This amount was determined by the TA and appears to have been based on the charge for a multiple-to-multiple point of voice message interconnection such as that applied to

⁴ Guidelines for Property Owners, Developers and Managers for the Provision of Facilities within Property Developments for Access to Public Telecommunications and Broadcasting Services, OFTA, May 1995.

⁵ Space reserved for public utility usage in some commercial buildings has been excluded from calculation of the plot ratio.

⁶ Section 36A of the Telecommunication Ordinance refers.

⁷ Internet providers are legally defined as Public Non-Exclusive Telecommunications Service (PNETS) licensees.

mobile operators. *The Consumer Council asks the TA to consider*, at an appropriate review point, whether the simpler one-to-multiple point of electrical data interconnection by FTNS and Internet providers to the HKTC network should be charged on the same basis.

43. When the terms and conditions are determined by the TA, as in the case of the 9 cents per minute charge discussed above, or delivery fees received by the local operators in carrying international calls, the public can find out about the charges and the rationale behind them. However, terms and conditions reached under commercial negotiation are not disclosed to the public, even though some of the terms may be of public concern. *The Consumer Council therefore suggests* that the TA makes the terms and conditions of interconnection between FTNS operators and between FTNS operators and HKTi available for public consumption, provided that the information disclosed is not commercially sensitive.

International telecommunications

44. Hong Kong's case is unique in that liberalisation of the telecommunications market did not extend to international telecommunications. The international call market will not be fully open to competition until 2006, when HKTi's exclusive franchise is due to expire. HKTi relies on the FTNS operators and PMRS network to deliver the calls to and from consumers.

45. Competition has been developing at the retail level with call-back services, in particular, opening new avenues of competition. While HKTC delivers most incoming calls, its share of the outgoing call market has fallen to 88%, with other FTNS and PMRS operators accounting for 7% and call-back operators 5% of the market share. Thus consumers have some choice and lower tariffs for international calls.

46. New operators' ability to reduce tariffs is constrained by the amount of delivery fee they receive from HKTi on a revenue-sharing basis and the Access Deficit Contribution (ADC). The delivery fee is the per minute revenue share received by local operators. The rest of the revenue share goes to HKTi covering its operating costs, profits and net payments to overseas operators for delivering international calls. And the amount of net payment to overseas operators depends on the settlement rates (the 'accounting rates'), which are the result of HKTi's bilateral negotiations with its overseas counterparts.

47. In the remaining ten years of HKTi's exclusive franchise, the Consumer Council believes that it is important for the Government to make strenuous efforts to safeguard consumer welfare. The Consumer Council welcomes the move undertaken by the TA to clearly define the

coverage of HKTI's exclusive franchise and to examine whether International Simple Resale (ISR) is consistent with HKTI's franchise.

48. To protect public interests in HKTI's bilateral negotiations with overseas operators over accounting rates, *the Consumer Council sees a need* for closer liaison between Government and HKTI. In the event that OFTA finds the accounting rates negotiated not to be in the public interest of Hong Kong, OFTA should ask HKTI to explain.

Ensuring consumer welfare

49. A more competitive market does not automatically guarantee to deliver all the benefits the consumer should enjoy, and regulatory safeguards will be needed to ensure a universal service of acceptable quality to all customers.

Achieving affordability and accessibility

50. The study supports the Government's declared policy on universal service to enable consumers anywhere in the territory to receive basic and emergency services within a reasonable period of time. In view of rapid technological advances, *the Consumer Council recommends* that OFTA reviews and expands as necessary, the definition of services which can be regarded as basic. In particular, the needs of consumers for whom the telephone is a lifeline, should be given special consideration, as telephone services have become a major utility. This Council welcomes Government's move to set aside \$50M to install telephone for families under the Comprehensive Social Security Assistance Scheme.⁸

Ensuring quality for consumers

51. While liberalisation of the fixed network provides consumer choice, the Consumer Council believes that certain regulatory measures and oversight will be necessary to enhance the quality of basic services. The Consumer Council welcomes the FTNS licence condition requiring FTNS operators to have a customer charter. *The Consumer Council recommends* that operators should be obliged to publish such a charter on a regular basis. In addition, *the Consumer Council recommends* that OFTA reviews the operators' performance targets from a consumer perspective and formulates a standard reporting format for all operators.

⁸ Arising from Financial Secretary's budget speech on 6th March 1996.

Automatic compensation schemes, and proper publicity for them, should be encouraged wherever possible.

Regulatory safeguards against anti-competitive practices

52. The Consumer Council commends the competition provisions in the FTNS licences, setting out the ground rules for fair competition. Other telecommunications service operators, e.g. HKT, have no similar provisions in their franchise/licences.

53. The provisions are broad and liable to subjective determination by the TA. This is not dissimilar with the U.K. telecommunications regulator. In addition to being a regulator, the TA has taken on the role of arbiter on competition matters. As Hong Kong does not have an independent, general competition agency, the possibility remains that the regulator might be caught between having to enforce anti-competition provisions and preserving the well-being of the industry.

54. As far as sanctions against breaches of the competitive provisions are concerned, the Consumer Council sees certain limitations in the provisions. For example, the current financial penalties (a maximum amount of \$20,000 for the first occasion, \$50,000 for the second occasion, and \$100,000 for any subsequent occasion) are limited. The ultimate sanction - revocation of licence - may not be practicable.

55. ***The Consumer Council recommends*** that competition provisions should also be applied to international service and other telecommunications service operators, and enshrined in the proposed comprehensive telecommunications legislation. ***The Council also recommends*** that the penalties for breaches of the competition provisions are set at levels where they act as an effective deterrent; and in appropriate circumstances, that third parties be given the right to seek redress for breach of these provisions.

56. The study reveals the advantage to the TA, the telecommunications industry and third parties, in having a general competition agency in Hong Kong to complement and underpin the current industry-specific competition provisions. Justification for introducing such an agency will be examined in detail in the Council's main report on Competition Policy.

Policy development responsibilities

57. Recognising the convergence of broadcasting, telecommunications and communication technology, ***the Consumer Council reaffirms its earlier recommendation*** for integration of policy development

responsibility for these areas under a Secretary for Broadcasting, Telecommunications and Communications Technology.⁹

58. Under the proposal, the regulatory role of OFTA, headed by the TA should remain unchanged in order to implement the Government's telecommunications policy. At present, GIC makes regulations which OFTA then implements. It is important that OFTA retains responsibility for dealing with issues affecting the development of effective competition in the industry, e.g. interconnection arrangements, in the initial period of liberalisation.

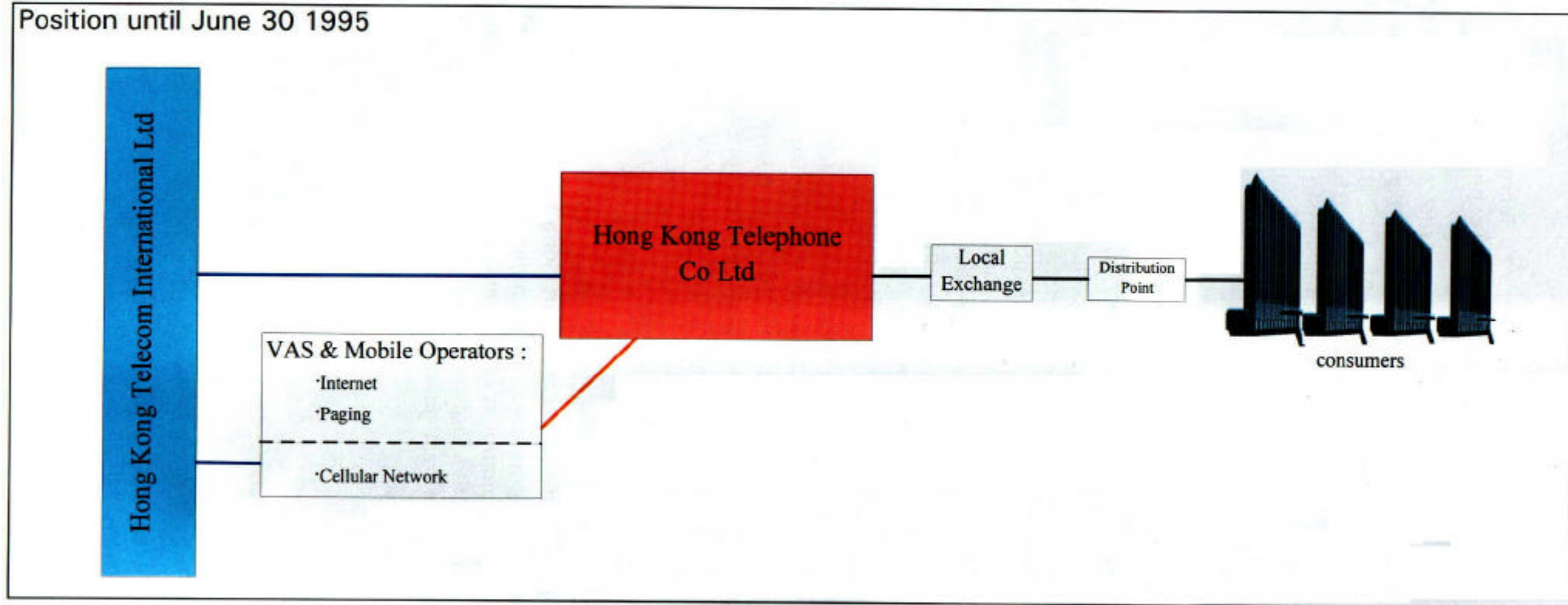
59. In order to keep abreast with technological advances and changing market structure, *the Consumer Council sees the need for* comprehensive telecommunications legislation providing clear guidance for market players. *The Consumer Council recommends* that the Government should, in its proposed comprehensive Telecommunications Ordinance, clearly define the TA's responsibilities and ensure that the TA has sufficient power to carry out its responsibilities. At present, the TA seeks representation from the industry and members of the public before making its determination on competition and technical matters and publishes its determination for public consumption. It is advisable to include such consultative procedures in the legislation and ensure TA's determinations are made available to the public.

60. We note that OFTA has already set up advisory committees on specific issues. In line with general government administrative and legislative procedures and to provide checks and balances, *the Consumer Council recommends that* the Government consider setting up an Advisory Board to tender advice to TA on key telecommunications issues.

The Consumer Council believes that the Government's primary responsibility is to ensure a consistent, long term policy which fosters a fair, open, and progressive environment conducive to investment, competition and development in the telecommunications industry as well as providing an effective legislative and regulatory framework to facilitate the same. This is the best guarantee for consumers.

⁹ See Consumer Council, "Ensuring Competition in the Dynamic Television Broadcasting Market", 20 January 1996.

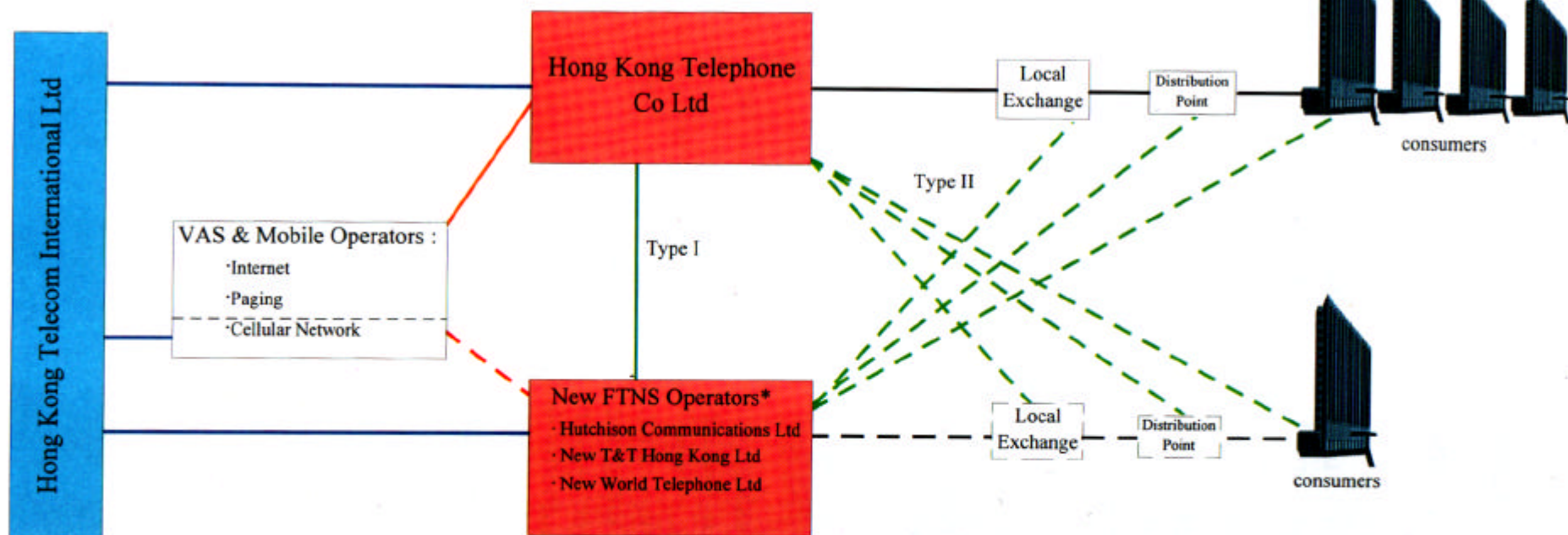
Position until June 30 1995



- International Interconnection
- Interconnection Between HKTC and Value-added Service and Mobile Operators
- Customer Interconnection

VAS = Value-added Services

Position in March 1996



International Interconnection

- Interconnection between HKTI, FTNS and Cellular Network Operators
- Revenue share of FTNS and Cellular Network Operators:
(Delivery fees : \$2.23 rest of world; \$0.63 China Short-haul; \$1.60 China Long-haul)
- Revenue share of HKTI
(International tariffs charged by HKTC minus delivery fees)

Interconnection Between FTNS, Value-added Service (VAS) and Mobile Operators

- HKTC and VAS and Mobile Operators
Access charges: VAS and Mobile Operators to FTNS Operators (9 cents per minute)
- - - New FTNS and VAS and Mobile Operators (future)
Access charges: Determined by commercial negotiation

Local Interconnection (Between FTNS Operators)

- Type I interconnection
(9 cents per minute for terminating traffics)
- - - Type II (future) (charges unknown)

Customer Interconnection

- HKTC's local loop
(linkage from local exchange to distribution point to customer premises)
- - - New FTNS operators' local loop (future)

FTNS = Fixed Telecommunications Network Services
 VAS = Value-added Services
 (including Public Non-Exclusive Telecommunications Service (PNETS) licensees)

* : Type I and Type II interconnections also apply between the new FTNS operators

Chapter 1

Introduction

1. The telecommunications industry has undergone rapid changes on a global level. Hong Kong has kept abreast of these changes and has taken steps to develop one of the most sophisticated telecommunications systems in the world.

2. In January 1994, Hong Kong Government issued a position paper on "Hong Kong's Telecommunications Policy"¹. The pronounced policy objectives are:-

- (a) that the widest range of quality telecommunications services should be available to the community at reasonable cost;
- (b) that telecommunications services should be provided in the most economically efficient manner possible; and
- (c) that Hong Kong should serve as the prominent communications hub for the region now and into the next century.

3. In pursuit of these objectives, the Government took two steps of major importance to the development of the telecommunications industry in Hong Kong. These were: to introduce competition to the Local Fixed Telecommunications Network Services (FTNS) market, which is the last remaining area of monopoly provision in the local telecommunications sector; and to establish the Office of the Telecommunications Authority with the necessary powers to regulate and oversee competition within the industry.

4. On 1st July 1995, the Government granted three new FTNS licences to enable other companies to compete with Hong Kong Telephone Company Limited (HKTC). The new operators are Hutchison Communications Limited (HCL), New T&T Hong Kong Limited (NT&T) and New World Telephone Limited (NWT). Hong Kong is witnessing changes to the market as a result of these new competitive forces.

¹ "Position Paper - Hong Kong's Telecommunications Policy" *Economic Services Branch* Jan 1994

Objectives

5. As telecommunications are a major utility and in view of the dramatic developments in the telecommunications market, this study aims to:
 - (a) examine competition issues arising from the transformation in the local Fixed Telecommunications Network Services (FTNS) market as the monopoly provider gives way to multiple suppliers;
 - (b) identify barriers to competition; and
 - (c) make recommendations to promote effective competition and maximise benefits to consumers.

Scope

6. The study focuses on network-based competition, i.e. on the local fixed telecommunications network. This is the most fundamental feature of the market for two reasons:-
 - (a) local fixed telecommunications network services are instrumental to competition in the provision of basic voice telephony, data and facsimile services, mobile communications, and value-added services, such as Internet; and
 - (b) local fixed telecommunications network services are integral to the provision of international telecommunications services. The latter are provided under an exclusive licence held by Hong Kong Telecommunications International Limited (HKTI) until 30th September, 2006.
7. This study also forms a part of the Council's competition policy studies of particular sectors of the Hong Kong economy.
8. The Council has responded separately to OFTA's call for views on the following issues:-
 - (a) Feasibility and Cost Benefit Analysis of Number Portability in Hong Kong
 - (b) Introducing Pricing Mechanisms to Spectrum Management in Hong Kong
 - (c) Payphone Regulation in Hong Kong
 - (d) The Regulation of Mobile Telecommunications Services - The Way Forward

(e) Calling Number Display - Consultation Paper

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Chapter 2: Changing Market Structure

9. Chapter 2 gives an overview of the changing structure and competitive environment in telecommunications markets. It also looks at emerging technologies with the potential to serve as substitutes for the existing, capital-intensive telecommunications infrastructure. It illustrates the importance of the liberalisation of the Fixed Telecommunications Network Service (FTNS) market in promoting both service and network competition.

Chapter 3: Barriers to Competition

10. The formal barrier against entry to the FTNS market was lifted when Hong Kong Telephone Company Limited (HKTC)'s exclusive right to operate a public voice telephone service by wire within Hong Kong expired. This chapter discusses how the relative advantages of the incumbent might inhibit competition, and current measures to counter-balance such barriers to competition.

Chapter 4: Network Interconnection

11. Chapter 4 looks into interconnection arrangements and the role of the regulator in ensuring these arrangements are made on a fair and non-discriminatory basis. The operator's right of access to buildings and the relationship between property developers and network operators are also discussed.

Chapter 5: International Telecommunications

12. Chapter 5 briefly describes the means by which FTNS operators and call-back companies can generate competitive pressure and the impact of competition on the international carrier. We then attempt to explore ways to enhance competition further. The role of HKTI in the negotiation of international accounting rates is examined in the context of changing market structure.

Chapter 6: Tariff

13. The liberalisation of the FTNS market raises the question of whether to move both local and international tariffs towards cost by removing the cross-subsidisation through tariff rebalancing. This chapter looks into the issues in the context of Hong Kong's unique liberalisation process. It also evaluates the consumer's likely gain and loss from tariff rebalancing given the development of competition in the short and long term.

Chapter 7: Universal Service

14. The policy of universal service has a significant impact on competition in the telecommunications industry. This chapter examines whether the universal service obligation and contribution are appropriate in a competitive environment. It also examines the relationship between the universal service provision and consumer welfare in respect of affordability and quality of service.

Chapter 8: Effects of Competition on Consumers

15. Chapter 8 looks at the effects of increased competition on consumer interests by drawing together the evidence in previous chapters about the likely effects on retail prices, choice, convenience, and development of new and innovative products. It also looks at the implications of competition for quality of service.

Chapter 9: Regulatory Safeguards and Policy Development Responsibilities

16. The regulatory framework is important in defining the rules of the game and creating a level playing field in the liberalised market. This chapter gives an overview of the legislative framework governing the changing telecommunications industry. Most importantly, this chapter examines the content and enforcement of competition provisions and their effectiveness in combating anti-competitive practices.

17. The report concludes by giving the Council's view on policy development responsibilities.

Steering Group on Telecommunications Policy

18. This study was carried out by the staff of the Consumer Council under the guidance of the Steering Group on Telecommunications Policy. The Steering Group reports to the Committee on Competition Studies and comprises:

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Mr. Fod BARNES
Mr. Milton MUELLER
Mr. Henry WISE

Chapter 2

Changing Market Structure

Introduction

1. This chapter describes the different services which constitute the telecommunications sector and examines the level of competition which currently exists for the provision of these services. It illustrates the importance of the liberalisation of Fixed Telecommunications Network Service (FTNS) market in promoting both service and network competition.

Telecommunications Markets

2. In the past, telecommunication services were only provided by an operator who owned a network. In the provision of local telephone services, HKTC, used to be the only network operator and service provider. And HKTl has been the only carrier of incoming and outgoing international calls in Hong Kong.

3. Rapid technological advances in recent decades have significantly transformed the telecommunications sector. The introduction of fibre optics, satellite and cellular technologies has substantially increased network capacity and reduced the cost of entry. This has enabled competitors to enter the market from three directions:

- (a) leasing spare capacity from the existing network: Many information services providers, for example, Internet providers and suppliers of data communications, can provide innovative services to customers simply by attaching computer nodes that communicate with subscribers over existing lines;
- (b) building an alternative network using new technologies: the capital investment in building a network using cellular technology is lower than that needed to build a fixed network. In Hong Kong, four operators have provided mobile communication services since the early 80's. Nevertheless, these cellular networks still have to connect to the existing

Public Switching Telecommunications Network (PSTN) operated by HKTC ; and

- (c) building a competing network infrastructure: the use of ring-topology instead of the conventional star-topology used in the existing network and the use of digital technologies have substantially reduced the cost of building a fixed network. In Hong Kong, three additional local fixed telecommunications network service (FTNS) operators - Hutchison Communications Limited (HCL), New T&T Hong Kong Limited (NT&T), and New World Telephone Company (NWT) - have entered the FTNS market to compete with HKTC.

4. In order to promote competition, the Government has in the last decade issued various non-exclusive licences to many service providers and a whole range of new services such as paging, cellular, CT-2 and Internet have been introduced.

5. As a result, the traditional market structure of two-network-operators (i.e, local and international) and one-service-provider has been replaced by a market with a number of network operators and multiple service providers.

6. The changing market structure also creates two separate but interrelated markets: retail and wholesale markets. In the retail market, service providers and network operators compete with each other in the provision of usage or services to consumers. And consumers must have access to the existing network in order to receive services or usage. In the wholesale market, service providers must have access to the existing network owned by network operators to transport and supply retail services to consumers. It is therefore important to distinguish between the concepts of access and usage in the telecommunications market.

7. Table 2-1 gives an overview of the types of services and their providers in both retail and wholesale markets. In the retail market, the services are grouped into four categories: basic services, value-added and mobile services, information services, and international services.

Table 2-1: Telecommunication Services by Categories

Category	Services	Service Providers (non-exhaustive)
<u>Retail market</u>		
Basic services	Voice telephony (calls made using an ordinary telephone) and fax	FTNS operators: HKTC, HCL, NT&T, NWT
Value added and mobile services	Call-waiting, personal number, voice mail, cellular, paging	FTNS operators: HKTC, NT&T, NWT, PMRS operators: Hutchison Communications, CSL, Pacific Link, Smartone Paging: CSL, Hutchison, New World, Star
Information services	Database, internet	Supernet, AT&T, IBM, PlaNNet, Compuserve
International services	International direct dial (IDD)	HKTC, HCL, NT&T, NWT
	Call-back	AT&T, CTI, GrandTel, ElephantTalk, SmartNet, AIC Telecom
<u>Wholesale market</u>		
Local fixed network	Transport of retail services (apart from mobile) within Hong Kong	HKTC, HCL, NT&T, NWT
International telecommunications network	International Private Leased Circuit (IPLC) Transport of retail services in and out of Hong Kong	HKTI and international carriers in overseas countries

Assessment of Competition

8. Competition can be assessed at two levels: service competition in the retail market and network competition in both retail and wholesale markets (as network operators also compete in the retail market).

Service competition in the retail market

9. Service competition in the retail service market brings to consumers more new services to meet the large, varied and rapidly changing demands of all types of users.

10. The four types of services, i.e. basic services, value added, information, and international services are generally distinct markets. Although competition takes place within and also between each type of service, there tends to be a high product differentiation between each type of service. For example, even though e-mail can be transmitted through Internet to both domestic and overseas users, it is not a perfect substitute for fax or voice services. This is because the sender of an e-mail cannot always get an immediate response from the receiver who may not link up to the Internet at the time the e-mail is sent. It is recognized, however, that the degree of substitutability may change as technologies improve.

11. Also, the substitutability sometimes can go in one direction but not the other. For example, mobile communication services can substitute for basic telephone calls, but not the other way round.

12. Keen competition exists among both information and value-added services. Examples are Internet, mobile and paging. This is because the cost of entry for suppliers is low as they can either build a value-added network using modern technologies or lease spare capacity from existing network operators.

13. At present, the degree of competition for the provision of basic services and international services is comparatively low, due to the fact that liberalisation of the local network has only just started and that these services are mainly provided by network operators. Nevertheless, the introduction of new technologies such as call-back has allowed a certain degree of competition in international services. In general, competition at the service level depends very much on the development of network competition.

Network competition in retail and wholesale markets

14. Network competition refers to the competition between network operators, competing with each other in both retail and wholesale markets. Network operators include FTNS operators, international network operators and mobile network operators. Competition is important to consumers and operators because:

- (a) networks provide access to customers. This is essential for the supply of all telecommunication services (i.e., usage);
- (b) network competition gives service providers a choice in how to carry their services to customers. This, in turn, increases competition in the wholesale market. As a result, the price of leased circuits and the operating costs of service providers will be reduced, and consumers in the retail market will benefit from lower prices; and
- (c) network operators also compete in the retail market as they provide services such as basic voice, fax, call forwarding and call waiting. These services are not usually available from service providers.

15. The liberalisation of the FTNS market has or will allow three new operators (HCL, NT&T and NWT) to compete with one another and HKTC for:

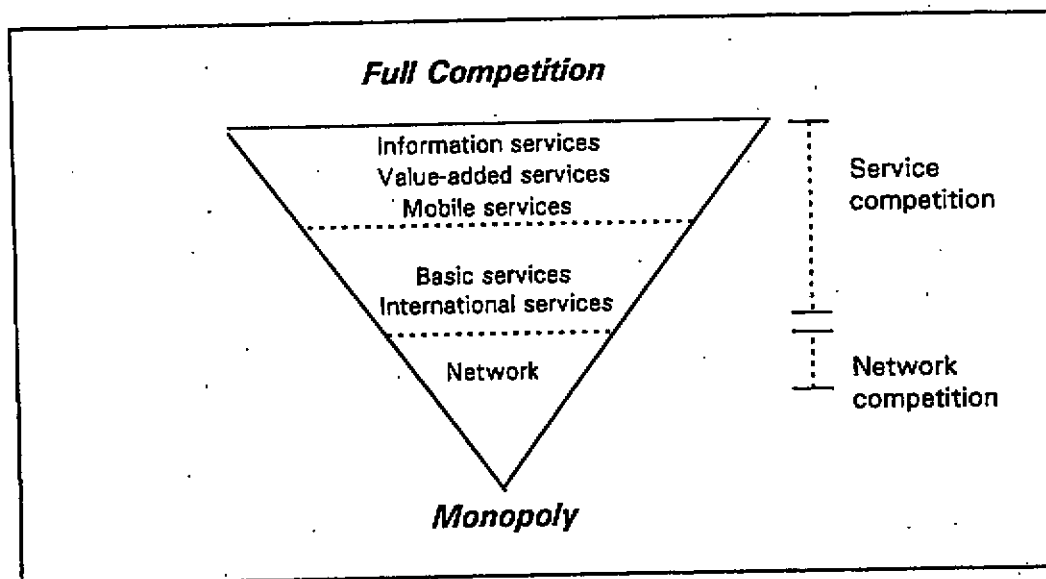
- (a) local customers;
- (b) contracts with service providers, and
- (c) the delivery of international calls (See Appendix 2-1).

16. FTNS-operators also compete with one another and other providers of value-added services.

17. Liberalisation in Hong Kong is very different from that in other countries, as it is confined to the domestic market. Since HKTl holds an exclusive franchise until 2006, there is an absence of network competition in international telecommunications.

18. Figure 2-1 shows the degree of competition for both service competition and network competition. It is however important to point out that the degree of competition presented in Figure 2-1 is only true in a relative and static sense. In a dynamic telecommunications market, the degree of competition within one type of service will change in relation to other services. More importantly, competition will become more intense in all areas with the introduction of network competition.

Figure 2-1: Degree of Competition in Telecommunications



Scope of the Study - FTNS Market

19. The liberalisation of the FTNS market is expected to promote both service and network competition in the domestic telecommunications sector. It will also encourage innovation and bring benefits to consumers in the supply of basic, as well as other retail, services in terms of high quality of service and greater choice of innovative services at least cost.

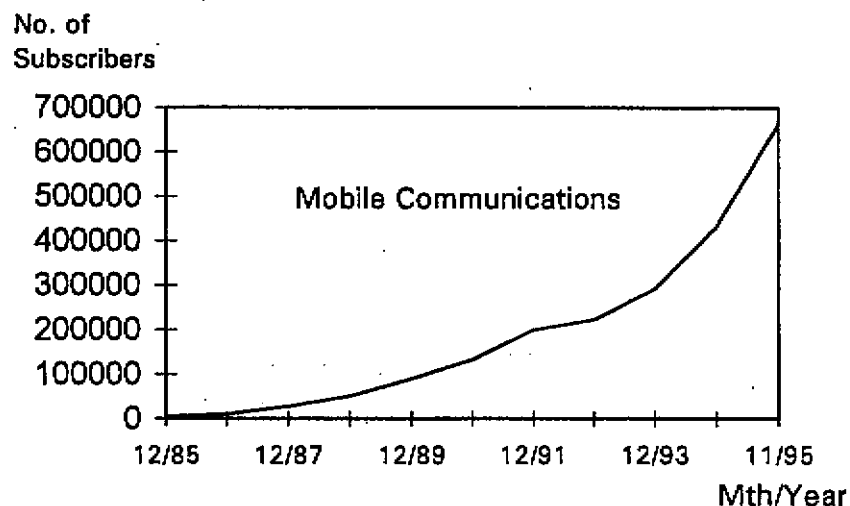
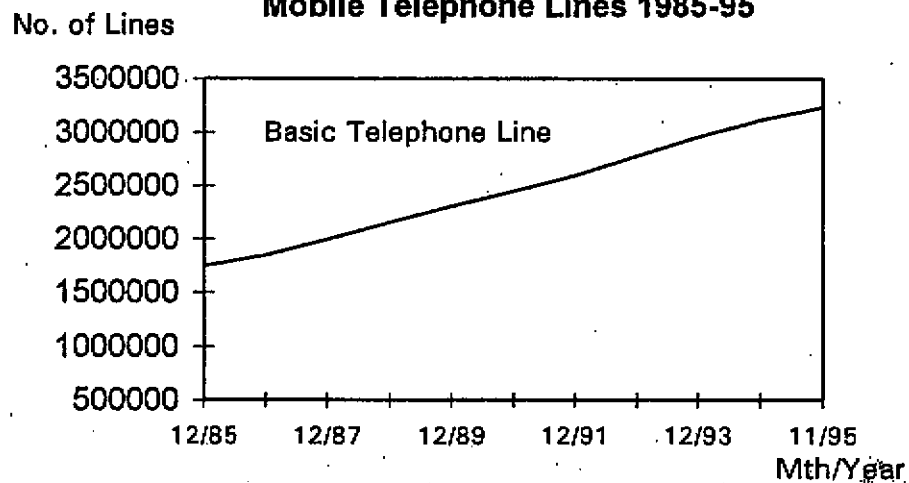
20. This study focuses on competition among the FTNS operators. As liberalisation is just a starting point for introducing competition into the FTNS market, many issues and arrangements such as the regulatory framework, interconnection and universal service, have to be designed or reengineered to bring about effective competition.

Wireless network as a potential substitute for fixed network

21. This study does not look into direct competition between FTNS and mobile communications. Even though wireless and mobile communication networks are seen by some as a source of substitution and competition to the wire-based fixed local networks, this is only true in service competition where mobile communication can substitute for fixed telephone services in terms of call usage. In terms of subscription lines (or access) and the provision of access to other value-added providers in the wholesale market, mobile communications are still more of a complement to, than a substitute for, wire-based telephones.

22. In the past decade, mobile communication has established a strong market presence in Hong Kong. However, despite its exponential growth, cellular telephones have so far served specialised or niche markets rather than competing as a direct substitute for fixed line access. The demand for fixed telephone lines has not declined during this period. See Figure 2-2.

Figure 2-2: Growth in Number of Basic and Mobile Telephone Lines 1985-95



23. One of the reasons for this is the higher tariffs for cellular services than for standard fixed line services. Even though the level of capital investment required to build a cellular network is lower than for a fixed network, the operating costs are higher due to reliance on the spectrum. The spectrum, which is a scarce resource, constrains the supply of cellular services, and therefore

sets a bottom limit on the level to which prices may fall. The other reason is that so far the cellular network only offers voice telephony rather than the full range of services ('full service') available on the fixed wire network.

24. The impending introduction of new Personal Communications Services (PCS) licences will enhance competition in the mobile market. PCS have "the ability to provide personal and portable telephone services with a greater degree of functional flexibility than current mobile or fixed services, either in conjunction with those services or as a substitute for them"¹. Through personal number portability, PCS will be readily acceptable to consumers, whether they subscribe to fixed, paging, or wireless services. However, PCS are only just beginning to be explored, both technologically and in the marketplace, in other countries.² Experience will tell whether PCS will in fact provide an effective substitute for fixed networks.

25. On the other hand, wireless technology and its proven cost advantages are expected to provide viable technological alternatives for fixed network infrastructure. An example is the use of a wireless (or cordless) access system in the local loop.³ The future development of broadband technology and the convergence of voice, data, interactive, video and television services and the capacity required to provide these services will, however, limit the substitutability between wireless infrastructure and high-capacity wire-based fixed networks for such services.

Market presence of FTNS operators in value-added services

26. All FTNS operators have a strong market presence in the telecommunications sector, as they compete not only with each other in the FTNS market but with operators in mobile communications and other telecommunication services markets (see Table 2-1).

¹ *The Regulation of Mobile Telecommunications Services - The Way Forward*, a consultative document, OFTA, February 1994.

² See Hadden, Alan David. *Personal Communications Networks: Practical Implementation*, London: Artech House, 1995.

³ Local loop refers to the part of a local network that connects the local exchange to the subscriber's home.

**Table 2-1: Market Presence of FTNS Operators
in Value-added Services**

Company	Market (Subsidiaries)	Market Share
Hongkong Telecom	FTNS (HKTC)	
	- basic telephone service	99%
	- outgoing internat'l calls	88%
	International traffic (HKTl)	100%
	Cellular (CSL)	33%
	Paging (CSL)	4%
Hutchison	Customer Premises Equipment (CSL)	n.a.
	FTNS (HCL)	*
	Cellular (HTL)	17%
Wharf	Paging (HTL)	31%
	FTNS (NT&T)	*
New World Telephone	Cable TV (Wharf Cable)	+
	FTNS (NWT)	*
	Paging (NWL)	n.a.

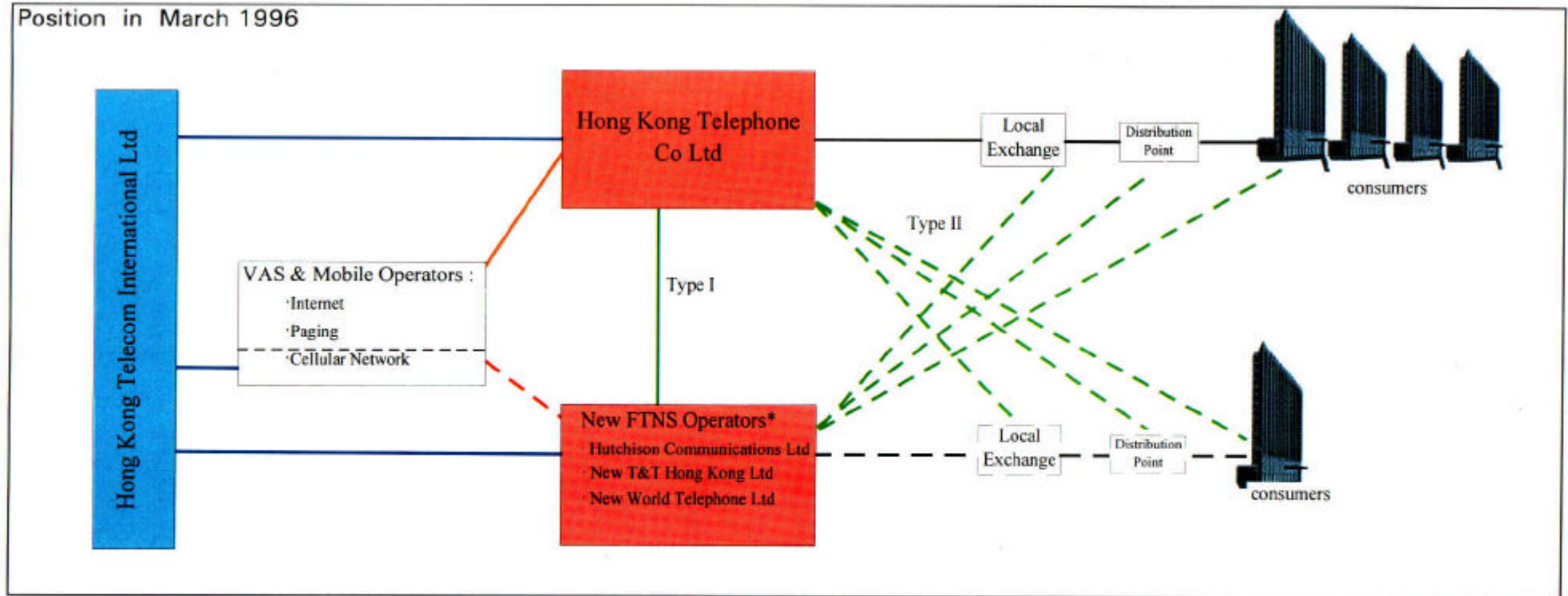
n.a. = Not available.

* = Less than 1%.

+ = Wharf Cable is the only subscription TV operator in Hong Kong.

27. The above gives a brief overview of the telecommunications market in Hong Kong as background to the ensuing analysis of competition between the FTNS operators in the local fixed telecommunications network services market.

Position in March 1996



International Interconnection

- Interconnection between HKTI, FTNS and Cellular Network Operators
- Revenue share of FTNS and Cellular Network Operators:
(Delivery fees : \$2.23 rest of world; \$0.63 China Short-haul; \$1.60 China Long-haul)
- Revenue share of HKTI
(International tariffs charged by HKTC minus delivery fees)

Interconnection Between FTNS, Value-added Service (VAS) and Mobile Operators

- HKTC and VAS and Mobile Operators
Access charges: VAS and Mobile Operators to FTNS Operators (9 cents per minute)
- - - New FTNS and VAS and Mobile Operators (future)
Access charges: Determined by commercial negotiation

Local Interconnection (Between FTNS Operators)

- Type I interconnection
(9 cents per minute for terminating traffics)
- - - Type II (future) (charges unknown)

Customer Interconnection

- HKTC's local loop
(linkage from local exchange to distribution point to customer premises)
- - - New FTNS operators' local loop (future)

FTNS = Fixed Telecommunications Network Services
 VAS = Value-added Services
 (including Public Non-Exclusive
 Telecommunications Service(PNETS) licensees)

* : Type I and Type II interconnections also apply between
 the new FTNS operators

Chapter 3

Barriers to Competition in the Fixed Network Market

Introduction

1. The barrier to enter the FTNS market was lifted upon expiry of Hong Kong Telephone Company Limited's (HKTC) exclusive right to operate a public voice telephone service by wire within Hong Kong. However, the three new operators have to overcome a number of market barriers in order to bring about effective competition against the market dominance of the incumbent.
2. The main factors affecting competition in the fixed local network are:
 - (a) interconnection arrangements
 - (b) tariff structure
 - (c) customer base
 - (d) infrastructure (economies of scale and network availability)
 - (e) organisational integration and
 - (f) land space for local exchanges.
3. The first two factors and competition safeguards are examined in detail in later chapters. This chapter focuses on factors (c)-(f).

Customer Base

4. As the liberalisation of telecommunications infrastructure has just begun, the market is naturally dominated by HKTC, the previous monopoly provider. HKTC still accounts for 99% of basic telephone services and 88% of outgoing international calls¹.
5. The enormous customer base inherited by HKTC provides additional marketing information essential to the company's strategic business plan. New entrants have to compete vigorously with the incumbent on price, quality and the range of services provided in order to win customers. This is because in making a decision to change operator, consumers will have to be convinced that the benefits outweigh the

¹ New FTNS operators and Public Mobile Radiotelephone Services (PMRS) operators account for 7% of international calls originated from Hong Kong, and call-back operators 5%.

effort of changing. Consumers who elect to "do nothing" will remain with the existing operator.

6. A survey conducted by Consumer Association in the UK in 1995 found that the vast majority (84 per cent) of telephone users in the survey said cheaper calls would tempt them to change telephone operator, 70 per cent said they would change if they could keep their existing telephone number, and 54 per cent of the users placed better and faster service as the primary factor for consideration.²

7. The Consumer Council commends OFTA's role to introduce compulsory number portability in 1995, enabling consumers in Hong Kong to retain their existing telephone numbers when they switch from the incumbent operator to any new FTNS operator. To increase its convenience to consumers, number portability should be delivered in an efficient manner, on a non-discriminatory basis. This is a positive and important policy which removes one obstacle preventing consumers from switching operator.

Infrastructure

Economies of scale

8. Pricing is affected by infrastructure development, economies of scale and tariff structure. HKTC's investment in a wide-coverage network infrastructure before liberalisation has given HKTC a very significant head-start.

9. Historically, telecommunications infrastructure has required a high level of initial investment or "sunk costs" and relied on significant benefits from economies of scale. For this reason, it has been treated as a natural monopoly. The technological advances and expansion of capacity in recent years have significantly reduced the cost of building new networks and increased economies of scale to the point where competition is now possible. Nevertheless, infrastructure is still capital intensive and new entrants have to make substantial investments in order to build networks practically from scratch. HKTC's network investments have now become "sunk costs" and the company can enjoy the economies of scale and higher productivity they have achieved. While the new entrants have between them committed to invest over \$10 billion in establishing local fixed networks from scratch over the next ten years, HKT invests a minimum of \$4 billion per year for upgrading their existing network.³

² Cullum, Philip and Colin Meek. "Barriers to Utility Competition" in *Consumer Policy Review*, 5(4), July/Aug 1995, pp. 127-30.

³ Information provided by the government and Hongkong Telecom.

Network availability and control

10. Further, while the three new FTNS operators are still building their networks, they have to rely on leasing capacity from the existing network in order to supply retail services. This puts HKTC in a very powerful position. This gives HKTC an advantage as it controls the network capacity supplied to its competitors as well as the gateway to access consumers.

11. Bottlenecks will occur if the new entrants are blocked at the gateway controlled by the incumbent or by other network owners. This will deter new entrants from starting up business and delay the introduction of competition, particularly, if the network owner is reluctant to open up certain parts of its network on a non-discriminatory basis. These issues are discussed in more detail in Chapter 4. In other cases, the new entrants may physically be unable to connect direct to customers due to lack of space for the installation of new cables.

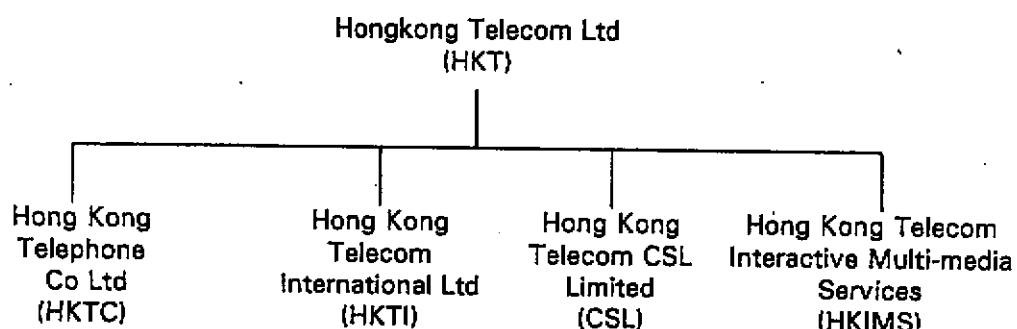
12. In other cases, the new entrants may physically be unable to connect direct to customers due to lack of space for the installation of new cables.

13. In addition, the current tariff structure affects price competition. According to HKTC and the Government, basic telephone services are provided at a price below cost, and the rates are subsidised from international revenue. This is discussed in Chapter 6.

Organisational Integration

14. Hongkong Telecom is a conglomerate in the telecommunications market, and its business coverage and market penetration cannot be matched by any of the new operators at present. Currently, Hong Kong Telephone Co Ltd (HKTC) owns the infrastructure network and leases it to new operators; with Hong Kong Telecom International Ltd's (HKTI) exclusive right to operate international calls, all international calls to and from the new operators must be handled by HKTI; Hong Kong Telecom CSL Ltd (CSL) engages in retail business; and Hong Kong Telecom Interactive Multi-media Services (HKTIMS) is newly established to develop Video-on-Demand (VOD) and other inter-active media services.

Figure 3-1: Subsidiaries of Hongkong Telecom



15. It is obvious that HKT is a dominant player and, simultaneously, the new entrants' competitor in the retail market and supplier of inputs in the wholesale market. Accounting separation within the telecommunications conglomerate is therefore a particularly important issue.

16. To ensure that all transactions or arrangements between the affiliate companies are kept at arm's length, and that there is no discrimination in the pricing of services supplied to its competitors, the Government has set out the need for accounting separation between the subsidiaries of HKT in its position paper.

17. Nevertheless, accounting separation does not neutralise the competitive advantages enjoyed by HKT as a result of organisational integration. HKT's affiliates will still be able to share market information and technical expertise for product development research. For example in the case of Video-on-Demand (VOD), before the setting up of HKTIMS, HKTC undertook a commercial trial of VOD. The results of the trial will be used by CSL and HKTIMS to explore the feasibility of expanding broad bandwidth in order to offer other new services. HKTIMS has now been established as a separate company providing the service on the HKTC network at non-discriminatory prices, HKTC's involvement in the VOD trials raises the question of whether HKTC would allow other service operators to carry out similar trials. HKTC confirmed that they would.

18. Another example is interconnection. To interconnect two networks, there has to be co-ordination and sharing of technical information so that the technologies used by the interconnecting networks are compatible. New entrants need to take a long-term view when planning the type of technology to be used in building a network. Investment in a new piece of equipment can be expensive and the consequences very serious if the equipment fails to interconnect technically with the existing network. With rapid technological progress, network operators constantly have to make plans to upgrade their networks. Sharing of information on these technology plans, provided that the information is not commercially sensitive, is particularly necessary as the telecommunications industry evolves towards a kind of "network of networks". While there is no barrier to the sharing of information between networks of a company, e.g. HKTC, HKT, CSL and HKIMS, there seems to be a reasonable case for the dominant player to disclose information as necessary to their competitors as well. This requires regulatory assistance.

19. General condition 27 of the FTNS licence requires network operators to make plans of their networks available to the Telecommunications Authority (TA) within a reasonable period. To ensure that sufficient network information is available to all network operators, it is the TA's duty under general condition 18(2) to disclose the information as much as possible. The Consumer Council believes

that the TA should use these powers to make more information available. Also, the same requirement should be imposed on other types of networks, including international and mobile networks, so that all network operators are able to obtain the same amount of information and to compete on a fair basis.

20. The competitive advantage of combined corporate power can also be illustrated in the case of international calls. We understand HKTI has made a proposal to all four FTNS operators (HKTC and the three new entrants) that they become HKTI's agent to distribute discount on international tariffs directly to their large volume customers. There are two issues involved:

- (a) whether such an arrangement would make FTNS operators agents of HKTI, such that FTNS operators would lose their freedom to compete in international tariffs. If this were so, such a discount package would be detrimental to competition and should be prohibited. Also, TA sees the relationship between HKTI and FTNS operators is a kind of "carrier-to-carrier" rather agency relationship (Appendix 4.1 refers);
- (b) whether the discount package would entail discriminatory pricing, for example, giving discount only to large volume users but not general consumers.

21. Further, unlike HKTC, which is bound by the competition provisions in its licence, there are no similar provisions in HKTI's franchise. Organisational integration would be much less of a problem if HKTI were not integrated with HKTC and if HKTI were not a monopoly player. Chapter 5 discusses competition issues in international telecommunications.

Land for Local Exchanges

22. HKTC's past position as the only telecommunications utility company has enabled the company to lease land from the Government under private treaty grants in order to build local exchanges and accommodate switching equipment. Even though HKTC paid a market rate, the land leased from the Government is more secure and less exposed to fluctuations in the property market than commercial property. This is important because moving the switching equipment from one location to another can be expensive and may cause temporary disruption to the supply of services.

23. As new entrants, the three new FTNS operators will have difficulties in acquiring land for developed areas through private treaty grants from the Government, given the space constraint in Hong Kong. Having their switching equipment located on commercial property

exposes the new entrants to the risk of unstable tenure. Sharing of space is therefore necessary, and Hutchison (HCL) is negotiating with HKTC to co-locate its facilities in HKTC's local exchanges. The Consumer Council supports the Government's policy of encouraging the sharing of facilities under General Condition 31 of the FTNS licences. It is important for the TA to ensure that the terms and conditions for sharing facilities are non-discriminatory.

24. For new projects, FTNS operators discuss the arrangements for sharing facilities between themselves. Arrangements for sharing responsibility for installing cable on the Western Harbour Crossing and the shared exchange at Tung Chung have been working well.

Recommendations

Recommendation 1: Separation of function

25. The Consumer Council supports the policy of accounting separation between HKT, HKTC, CSL and HKIMS.

26. In order to safeguard against the possibility of a telecommunications conglomerate from being able to use its monopoly power in one market to give its subsidiary company a competitive edge, ***we suggest*** that OFTA closely monitors the dominant company's activities to ensure that a clear separation does, in practice, exist between the functions of the conglomerate group company and its affiliate companies.

27. ***The Consumer Council suggests*** that the TA requires reasonable disclosure of the accounts of HKT and its affiliate companies to enable the public to have a more informed view.

Recommendation 2: Sharing of information

28. ***The Consumer Council believes*** that the TA should exercise its power to facilitate the sharing of information among all telecommunications operators on a non-discriminatory basis, e.g. network technology plans to facilitate interconnection, provided that the information is not commercially sensitive. The sharing of information should not only be promoted horizontally within a market but vertically across various markets including the international and value-added markets.

29. ***The Consumer Council also sees a need*** for the TA to exercise its power to ensure that services, particularly in areas where a telecommunications conglomerate has monopoly or near-monopoly

power, are available to all licensees on a non-discriminatory basis, i.e. that there should be no discrimination in the price, quality, or availability of the services offered to other companies compared to those offered to the dominant company's affiliates.

Recommendation 3:

Future sharing of land space and facilities

30. ***The Consumer Council supports*** the Government policy to facilitate sharing of land for local exchanges equitably between operators and ***recommends*** that the Government, in consultation with industry, continues to monitor the discussions of FTNS operators on the sharing of facilities so that the commercial agreement concluded is equitable to all parties.

Chapter 4

Network Interconnection and Customer Access

Introduction

1. Network interconnection describes "the arrangement for linking up two networks and the conveyance of calls and exchange of information from one [telecommunication network] to the other".¹ The linking up of networks can take place between a diversity of telecommunication networks, from fixed to mobile; to cable; to satellite or to paging. Interconnection is important to all telecommunication networks in order for calls from users of one network to be connected to users in another telecommunication network.
2. It is necessary and also required under general condition 13 of FTNS licence that all FTNS operators have to interconnect their networks and services with each others. More importantly, the new FTNS operators have to interconnect with the HKTC's network which is already linked up to almost every residential and business user in Hong Kong.
3. Apart from the conveyance of calls, the interconnection arrangement also involves the extent to which the new FTNS operators can have access to the existing network facilities for the provision of services. This is important not only because of the fully developed network already laid by HKTC but also due to capacity constraints in existing buildings. The existence of such "bottlenecks" can form barriers for the new FTNS operators in linking up their networks to consumers.
4. Pricing is another important interconnection issue which directly affects the development of competition. Experience in countries where the telecommunications industry has long been liberalised shows that interconnection charges are a key element in new entrants' costs and that terms and conditions on which interconnection is available can determine the viability and the market presence of new entrants. Interconnection charges also provide price signals which influence new entrants' decisions on infrastructure development, i.e., when to interconnect with the existing network and when to build their own network. This lease-or-build decision, in turn, determines how competition will evolve at both service and infrastructure levels.
5. Operators' right of access to buildings and the relationship between property developers and network operators are also discussed in the

¹ Office of Telecommunications (U.K.). Policy on Separation and Interconnection - A Statement by the Director General of Telecommunications. 1992, p.1.

following paragraphs. As interconnection arrangements involve complicated technical matters, the Council confines its discussions to general principles rather than detailed arrangements.

Government Policy

6. The Government adopts a light-handed regulatory approach to interconnection, leaving the FTNS operators to determine the terms of interconnection through commercial negotiation. Only when the negotiation fails or when terms and conditions reached are not in the public interest will the Telecommunications Authority (TA) intervene and make a determination under section 36A of the Telecommunication Ordinance (Cap 106).

7. The TA is also empowered under section 36A(8) of the Telecommunication Ordinance (Cap 106) to issue guidelines on interconnection issues. "Guidelines on Interconnection" was the first statement issued by the TA when the FTNS operators commenced negotiations in late 1993. A series of statements on guidelines and principles have been issued by the TA since 28 March 1995 to facilitate the process, bearing in mind that delays in reaching agreement on interconnection would deprive consumers of the benefit of receiving services in a liberalised market until a later date. The subject of the TA's statements are listed in Appendix 4-1. These statements mainly set out the principles on which the TA will apply his powers of determination when required.

8. The terms and conditions of interconnection have been reached, in the first instance, through commercial negotiation among FTNS operators. At present, NT&T has asked the TA for his determination on Type II interconnection, i.e., interconnection at HKTC's local loops.

9. On international interconnection, i.e. interconnection between local networks and the international carrier (HKTII), the TA determines the charge for the delivery of the signals by the local operators from and to local consumers. This is known as the delivery fee and will be discussed in Chapter 5. The TA also determined the interconnection charges paid by Public Mobile Radiotelephone Services (PMRS) operators and Public Non-Exclusive Telecommunications Services (PNETS) licensees to the local fixed network operators.

Interconnection and Access to The Existing Network

10. Basic telephony involves extensive infrastructural work, which comprises three distinct but related sections:

- (a) the Customer Access Network (CAN) or Local Loop

A system of dedicated links, usually a pair of copper wires, joining customer premises to their nearest distribution points and then to local exchanges (represented by the line joining point A to point D in Figure 5-1).

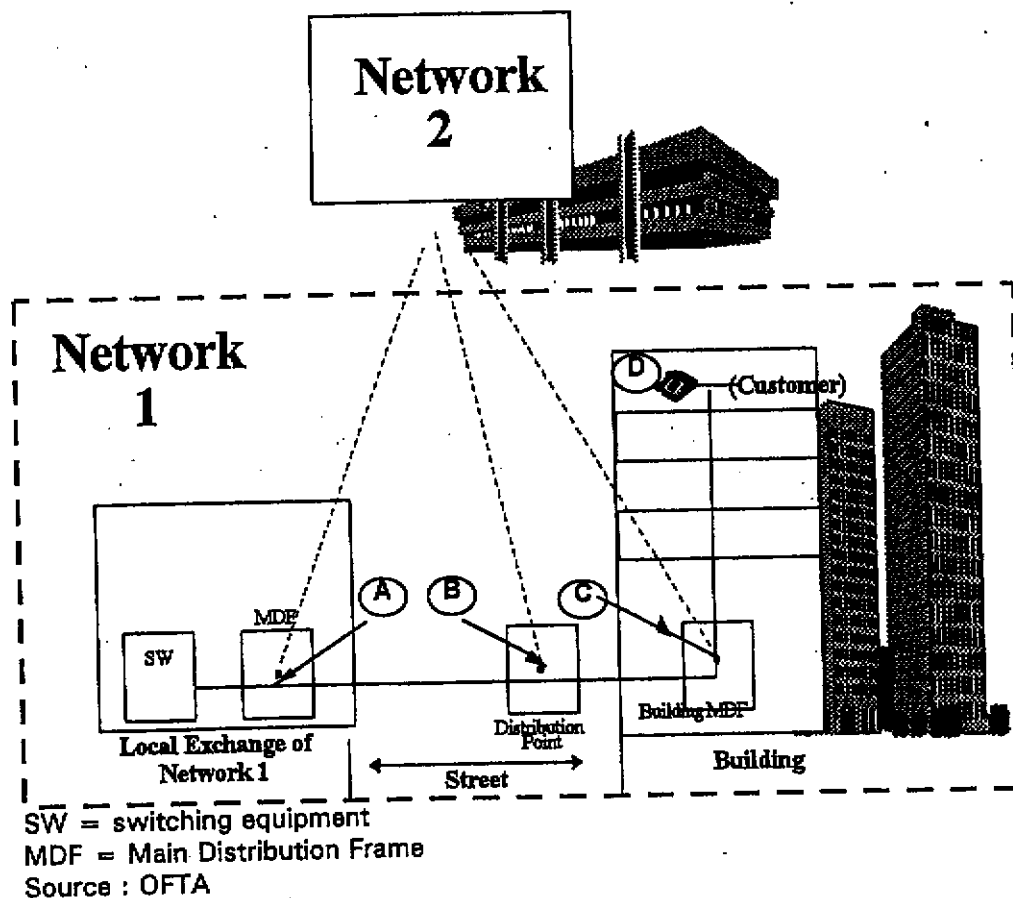
- (b) the Local Network

A system of local trunks, which may be fibre optic, microwave or satellite, linking different local exchanges with each other.

- (c) the Trunk Network

A system of trunks, usually fibre optic, microwave or satellite, linking the local network to a regional tandem exchange.

Figure 5-1: Interconnection at the Local Loop



11. Prior to liberalisation, calls were routed from one customer to another through the switching equipment located in every exchange within the company's own network. With four players in the market, there has to be an interconnection arrangement to allow calls originating from customers of one network to transmit to customers of another network. This involves the calculation of interconnection charges or access fees for conveyance of a call and also the agreement on the points where the networks will interconnect.

12. The Office of Telecommunications Authority proposed two interconnection configurations: "Type I" provides indirect access to consumers; and "Type II" (not yet in operation) will provide direct access to consumers.²

Type I Interconnection

13. Type I connects operators' trunk networks at the regional tandem or local exchange. Type I interconnection generally involves two types of services: (a) linkage between two local fixed networks allowing customers of one network to call customers of the other network; and (b) indirect access by one FTNS operator to network facilities of the other operator, allowing customers of one network to receive services provided by other FTNS operators.

14. In view of the prohibitive cost involved in building a duplicate local fixed network with territory-wide coverage, the new FTNS operators, in their special licence condition, are committed to build a network covering certain geographical areas.³ Hence, they might only build direct links to consumers in certain parts of the territory (e.g., commercial districts and densely populated areas), supplying services to the rest of the territory through indirect access. Type I interconnection also allows the new FTNS operators to offer services to consumers before the construction of their network is complete.

15. However, the new entrants cannot compete with HKTC in the provision of a full service⁴ if they solely rely on Type I interconnection (indirect access). This is because Type I (indirect access) confines an

² "Indirect access" allows consumers to receive services from any new FTNS operators or service providers (e.g. internet providers) through the telephone line linked to HKTC's network; "Direct access" refers to the provision of telephone line by any FTNS operators to consumers.

³ HCL has a commitment to establish a customer access network within 1½ years of the date of issue of the license (30 June 1995) to provide access to at least 80 buildings and 4½ years to 200 buildings. Its network will cover Hong Kong Island from Central District to Quarry Bay as well as Kowloon from Tsimshatsui to Lam Tin on MTR line. NT&T is to provide network access to 75 buildings within the 1st year of the date of issue of the license, 125 in the 2nd year, and 175 in the 3rd year. NWT is committed to provide network access within 1½ years to build optical fibre trunk network on Hong Kong Island from the area of Central to Quarry Bay and across Victoria Harbour covering the area of Tsim Sha Tsui to Kwun Tong along the MTR routing.

⁴ Full service refers to the whole range of telecommunications services that a network operator can provide in both the retail and wholesale markets.

operator to a smaller range of services that can be offered. For example, local exchange based services, e.g., call-waiting, call-forwarding and call-conferencing can only be provided through a direct access.

Bottlenecks

16. To provide a direct access service, apart from establishing the skeletal network, i.e., local and trunk networks, new entrants need to build a customer access network (CAN) or local loop to link up to customers. However, due to the congested environment and the limited space inside many buildings, it may be difficult for the new entrants to build their own local loops. For instance, to introduce fibre optics to a building, transmission equipment has to be installed near the Main Distribution Frame (MDF). This is usually located in a ground floor room, accommodating also electric wiring and air conditioning. In many buildings, the space inside the room has already been filled by the equipment installed by HKTC. This creates bottlenecks which make it impracticable for the new entrants to connect to their customers.

17. Also, as discussed earlier in Chapter 3, the new FTNS operators face difficulties in finding suitable sites for local exchanges particularly in developed areas. The existence of bottlenecks and lack of suitable space for switching equipment, if not properly addressed, will create barriers to entry and impede competition.

Type II Interconnection

18. Type II interconnection (i.e., allowing the new entrants to interconnect at the existing local loops) is a way to overcome the bottleneck problem. Commercial negotiation on interconnection at HKTC's local loop commenced since June 1995, sometime before the new FTNS operators received their licence to provide services. To facilitate the negotiation, the Telecommunications Authority (TA) issued a guideline for an arrangement which is referred to as Type II interconnection. Type II interconnection enables the new entrants to quickly roll out their services to consumers. Otherwise, market entry can be restricted due to bottlenecks.

19. Technically, Type II interconnection allows new entrants to interconnect with HKTC's local loop either at the local exchange, distribution point or MDF inside a building, indicated as point A, B and C in Figure 5-1. If the customer at point D decides to switch from HKTC to a new entrant for the provision of access and usage services, i.e., the basic telephone service, then interconnection will come into play.

20. In other words, when a customer decides to terminate the basic telephone service currently supplied by HKTC and subscribe to the service operated by a new FTNS operator, this new operator can, if it is feasible, choose between (i) laying cable connecting to this customer or (ii) leasing the already linked-up cable from HKTC under Type II interconnection provisions.

Arguments for and against Type II Interconnection

21. Since the commercial negotiation between New T&T Hong Kong Ltd (NT&T) and HKTC failed, NT&T sought the TA determination on terms and conditions for Type II interconnection in September 1995. To date, no agreement has been reached on the appropriate arrangements and the amount of charges.

22. One of the reasons for the delay is because HKTC opposes Type II interconnection and contends that:

- (a) cables installed by HKTC are assets of the company and therefore HKTC being mandated to hand over the local loop completely to another operator for use is a kind of "deregulatory taking";
- (b) commercial unbundling of local loops to provide wholesales voice grade circuits to the new FTNS operators addresses the bottleneck issues equally well. This is equivalent to a commercial leased circuit; and
- (c) the pricing method used by the TA in his determination will not sufficiently compensate the company for its investment in the local loop and will create a disincentive for both HKTC and NT&T to invest in the future.

23. The TA's position is that Type II interconnection is not a kind of "deregulatory takings" because it asks HKTC to lease to the new entrants its connecting line (copper wires or optical fibre) from its local exchanges to customer premises only upon customer's request. This means that the arrangement can allow HKTC and the new entrants to make use of the existing wires which otherwise will be left idle if the new entrants install a new connecting line.

24. Invoking Type II interconnection in such circumstances puts the otherwise spare network facility of HKTC to good use and does not prevent HKTC from using the connecting line for provision of value-added services, therefore encouraging an efficient use of resources.

25. Moreover, Type II interconnection is conducive to competition because:

- (a) it gives consumers a choice of suppliers for basic services. The initiative and request will always come from the consumer, who determines for himself or herself which network operator he or she wishes to interconnect with. The operators must therefore compete for customers and only the successful one will have access to Type II interconnection; and
- (b) it provides an immediate solution for the new entrants to overcome bottlenecks which occur due to the lack of space in many existing buildings. Hence, it can bring about

competition in the provision of basic service sooner than otherwise it will take before the new entrants can install cordless access system to supply services to consumers.

26. The pricing of Type II interconnection is another issue of concern to the operators. Due to the constraints explained above, HKTC, who owns the local loops including the wires inside all of the existing buildings, has become a natural monopoly in the supply of interconnection services. To safeguard the public interest, the TA should have a responsibility to ensure that the charges for Type II interconnection is set at a reasonable level. Moreover, the level of charges can affect the viability for the new entrants in providing basic service and their ability to compete with the incumbent.

27. Under Type II interconnection, the TA has the power under section 36A of the Telecommunication Ordinance to make determination on charges and ensure that the charges are conducive to the public interest. Whereas, the TA may not have such power if the access by the new entrants is provided under a commercial arrangement, i.e., HKTC's proposed option of leasing a voice grade circuit at a commercial rate is adopted.

28. The Consumer Council's position is that:

- (a) Consumers should have choice of FTNS operators for the supply of basic telephone service;
- (b) Commercial negotiation between operators to reach an agreement is encouraged. But as it has failed in this case, the TA's intervention would be needed; and
- (c) As the level of charges can affect both the interest of the industry and consumers, the TA should be entrusted with the power to make a determination in order to ensure a balance of interests.

29. Based on the above criteria, the Consumer Council supports OFTA's proposal on Type II interconnection.

30. Although the discussion on Type II configuration appears to have targeted at HKTC's local loops, the same rules should apply in future to other FTNS network operators under similar circumstances.

Pricing Principles for Type II interconnection

31. When determining charges for Type II interconnection, the TA applies the method of Long-run Average Incremental Costs (LRAIC), including costs of capital. The method is consistent with the economic concept of marginal (or incremental) cost pricing. The actual level of charges will largely depend on what will be considered by the TA as

costs (or incremental costs) incurred by HKTC in providing Type II interconnection.⁵

32. Both HKTC and Hutchison Communications Ltd (HCL) prefer the Bamoul-Willig Efficient Component Pricing Rules (ECPR) to LRAIC as the pricing method for interconnection (Type I and Type II). In brief, reasons are:

- (a) the method of LRAIC provides no linkage between interconnection charges and retail tariffs. Also, it does not allow for mark-ups over the incremental cost in order for operators to recover its fixed costs, especially significant economies of scale are involved in telecommunications network;
- (b) the method of ECPR is conducive to economic efficiency as (i) it ensures that only efficient operator can enter the market and (ii) it allows the operators to recover its fixed costs and creates an incentive for them to invest in building network. (Further illustration on ECPR and Ramsey Pricing is provided in Appendix 4-2).

33. The interconnection charges determined by ECPR equals LRAIC plus an incremental opportunity cost. In other words, charges determined by the two methods will be the same if the incremental opportunity cost is zero.

34. The difficulties involved in the application of ECPR on Type II interconnection is how to define the incremental opportunity cost. The estimated interconnection charges based on ECPR and LRAIC will be the same if we consider that the opportunity cost is zero because of the zero profits, in average, generated by HKTC in the provision of basic telephone services at a subsidised rate. However, HKTC considers that the opportunity costs that they will incur should include value-added services (e.g. call-waiting, call-forwarding, and Video-on-Demand) that they can otherwise supply through direct access without Type II interconnection. HKTC's argument is controversial because (a) only basic services will be provided by NT&T under Type II interconnection and (b) with Type II interconnection HKTC can still use its local loops to supply value-added services; and (c) some of these value-added services are supposedly provided not by HKTC but by its affiliated companies, HKIMS and CSL on an arm's length basis.

35. The controversies involved in the pricing issues of Type II interconnection make it more important for the TA to have a reserved power to ensure an appropriate method is used to determine reasonable charges.

⁵ For example, charges will be higher if the TA considers that the costs incurred by HKTC for supplying Type II interconnection include the installation of new telephone line in the local loop; while it will be lower when only maintenance costs are considered.

36. In the short run given the present market condition and tariff structure in the retail market, there may not be any significant difference whether the TA uses ECPR or LRAIC (with no mark-ups) as the pricing method. As the retail market develops, there is a need for the TA to review the pricing principles. Also, in the long-run, the question is whether interconnection charges based on LRAIC without any mark-ups to enable the operators to recover fixed cost will discourage both the incumbent and new entrants to invest in network expansion in the long-run, therefore hindering the development of network competition.

37. Interconnection charges are vital to the development of network competition between the FTNS operators. An optimal interconnection charge provides the correct signal for the new entrants to make a "lease or build" decision which is conducive to economic efficiency and the development of effective competition. Most importantly, the pricing of interconnection should strike a balance between (a) the introduction of competition by reducing the risk of the new entrants in entering the market; and (b) the promotion of sustainable network competition in the long-run.

38. To consumers, while they would like to make it possible for new entrants to use the local loop facilities of HKTC, they would also like to benefit from operators building competing local loops. The availability of alternative local loops enable consumers to:

- (a) simultaneously enjoy direct access services from different FTNS operators.
- (b) receive innovative services made possible through a broader bandwidth. At present, copper wires rather than fibre optics are still used in many local loops. With competition, fibre optics will be used when new entrants build competing local loops or when HKTC upgrades the existing facility.

Non-discriminatory Interconnection and Disclosure of Information

39. The terms and conditions for Type I interconnection were the results of separate negotiations between each new FTNS operator and HKTC, and therefore differ as the business plan of each new entrant may require different interconnection arrangements.

40. In areas where all interconnecting parties share common interests, e.g. per minute charge for conveying a call from one network to the other, it is important that there are no discriminatory deals. The TA therefore reviews each commercial agreement to ensure that the terms and conditions of interconnection do not unduly favour any one or more parties. The TA would step in should it discovers any discriminatory terms and conditions which are not in the public interest.

41. When the terms and conditions are determined by the TA, as in the case of the 9 cents per minute charge paid by PNETS licensees, or

delivery fees received by the local operators in carrying international calls, the public can find out about the charges and the rationale behind them. However, terms and conditions reached under commercial negotiation are not disclosed to the public, even though some of the terms may be of public concern. A higher level of disclosure is therefore important, particularly in areas involving public interest. This will reduce the possibility of discriminatory practice in any future interconnection agreements and increase public awareness of the issue.

Access Facilities In New Buildings

42. In many existing buildings, Type II interconnection is essential to help new entrants overcome bottleneck problems. Section 14(1) of the Telecommunication Ordinance ensures that all FTNS operators can have the right to build access facilities in buildings where it is feasible to do so. To prevent bottleneck problems in future, the TA encourages the sharing of facilities among operators and has issued guidelines for property owners, developers and managers encouraging them to provide standard access facilities when constructing properties.⁶

43. In the guidelines, the TA urges property developers to provide either:

- (a) cabling facilities or
- (b) access facilities.

44. In the case of the former, the developer provides, free of charge, the space and ducts required for cables and ancillary equipment. The network operator installs and owns the cables connecting up to individual customers.

45. In the case of the latter, the developer installs cables and ancillary equipment, to a standard prescribed by the TA. In this case, property owners eventually own the access facilities. Network operators then discuss with the owners on the terms and conditions for use of cables and ancillary equipment. When they fail to agree reach an agreement, the operators can either (a) seek a determination by the TA; or (b) install their own access facilities in addition to the facilities installed by the developers. Such arrangement provides a safeguard to ensure that

- (a) access by operators is provided on a non-discriminatory basis; and

⁶ Office of the Telecommunications Authority (OFTA), *Guidelines for Property Owners, Developers and Managers for the Provision of Facilities with Property Developments for Access to Public Telecommunications and Broadcasting Services*, May 1995.

- (b) individual occupants of the building, whether owners or tenants, should be able to connect to the operator of their choice.

46. In practice, access of a resident may be overridden by the decision or policy of the owners' corporation of the building. Under the Deed of Mutual Covenant (DMC), the owners' corporation can act on behalf of the interests or decision of the majority owners. In this case, the corporation can deny access to FTNS operators, and TA's intervention will also be required.⁷

47. The Consumer Council welcomes the obligation these guidelines place on developers to provide the proper facilities for telecommunications and for broadcasting companies to gain access.

48. However, as the TA can only urge property developers to comply, and developers may, in some cases, not be open to such persuasion, the Council considers it necessary to give the guidelines a statutory force to ensure compliance across the board. It is important that the developers should be asked to provide sufficient cabling facilities, including duct space and MDF room to accommodate cables and other ancillary equipment of all network operators. On the other hand, it may not be necessary to require the developers to provide also cables and ancillary equipment, i.e., access facilities.

49. Further, we see a strong justification for discounting the floor space reserved for the necessary cabling and access facilities from the plot ratio of building projects. This will provide real incentive for developers to making such provisions at the design and construction stage. Support from the Building Authority or other relevant government department would be instrumental to make this possible.

50. In cases where certain operators have fully occupied the cabling facilities provided by developers, other operators should be allowed to interconnection (Type II) with the occupant operators on terms and conditions on an equitable basis.

Recommendations

Recommendation 1: Type II Interconnection

51. *The Consumer Council supports* OFTA's recommendation that HKTC should be obliged to allow entrants to interconnect with HKTC's local loop (Type II interconnection). And HKTC only have to allow access to its local loops by the new entrants upon customers' request.

⁷ The TA and network operators who are authorised by the TA have the right of access to buildings under section 14(1) of the Telecommunication Ordinance (Cap. 106).

52. *The Consumer Council suggests* the TA to review its pricing principles currently adopted in the future taking into consideration the changing market structure in the retail market. This is to ensure a level of charges which is reasonable and yet still encourages both HKTC to invest in the existing network and new entrants to invest in new networks.

Recommendation 2:

Non-discriminatory access to buildings

53. *The Consumer Council recommends* that for new buildings, OFTA's "Guidelines for Property Owners, Developers and Managers for the Provision of Facilities with Property Developments for Access to Public Telecommunications and Broadcasting Services should be given statutory force through amending the Telecommunication Ordinance or the Buildings Ordinance. This will require developers to provide ducts and reasonable space for telecommunications facilities and to allow non-exclusive access to all network operators.

54. *The TA should also discuss* with the Building Authority, relevant Government departments, the professional institutions and Real Estates Developers' Associations to design details to be stipulated in the law and to exclude floor space reserved for such telecommunications facilities from the plot ratio of building projects.⁸

55. To safeguard against discriminatory or anti-competitive practices, *the TA should be empowered* to request a copy of commercial agreements between developers and network operators.

56. *The TA should also take measures* to increase public awareness of the provision for non-discriminatory access and publicise his power to deal with complaints about denial of access to operators by owners' corporations or by a conglomerate giving favourable treatment to its associate telecommunication companies.

Recommendation 3:

Review of Interconnection Charges

57. *The Consumer Council asks* the TA to consider, at an appropriate review point, whether the simpler one-to-multiple point of electrical data interconnection by the FTNS and Internet providers to the HKTC network should be charged on the same basis.

Recommendation 4:

Disclosure of Information

Arrangements reached under commercial negotiation between the operators may involve public interest. *The Consumer Council* therefore *recommends* the TA to disclose to the public more information on

⁸ Space reserved for public utility usage in some commercial buildings has been excluded from calculation of the plot ratio.

interconnection arrangements, i.e., the arrangement among FTNS operators and that between FTNS operators and HKTI, which are of public interest and not commercially sensitive.

Appendix 4-1

**List of Statements by Mr Alexander Arena
The Telecommunications Authority of Hong Kong
on
Interconnection and Related Competition Issues**

Statement No.1	28 March 1995	
Statement No.2	19 May 1995	HKTI to FTNS Relationships
Statement No.3	19 May 1995	Resale
Statement No.4	20 May 1995	Carrier-to-Carrier Relationship
Statement No.5	20 May 1995	Exchange of Traffic between Interconnected Networks
Statement No.6	3 June 1995	Interconnection Configurations and Basic Underlying Principles
Statement No.7	10 June 1995	Carrier-to-Carrier Charging Principles
Statement No.8	10 June 1995	Point of Interconnection
Statement No.9	15 June 1995	Forecast of "Indirect Access" Traffic and Treatment of Overflow Traffic
Statement No.10	21 June 1995	Guidelines on Availability of Ducts in Public Streets for Sharing

Appendix 4-2

Methods of Calculating Mark-ups on LRAIC

Baumol-Willig Efficient Component-Pricing Rules (ECPR)

1. Mark-ups on LRAIC calculated using this approach equal the incremental opportunity cost incurred by the operator providing interconnection service. Opportunity cost refers to the lost contribution to fixed and common costs resulting from the loss of revenue that the operator can otherwise generate from providing retail service.

2. This approach was first used to address the access pricing in the purchase of trackage rights of railroad in the U.S. It's application to the telecommunication industry include the Access Deficit Charge in the U.K. and the acceptance by the court to apply the concept on interconnection charges in New Zealand. Well-known economists including William J Baumol, J Gregory Sidak and Robert D. Willig are advocates of this approach.

3. The merit of ECPR is that economic efficiency is taken into consideration in the pricing of interconnection charges. It ensures that a competitor will only provide the retail service through interconnection only if it is as efficient as the incumbent firm. A sustainable competition based upon economic efficiency can be achieved in the long run.

Ramsey Pricing

5. Under this approach, mark-ups on LRAIC for an interconnection charge will be based on the demand condition of the retail service provided through interconnection. Interconnection arrangement used to provide retail services which have relatively high price elasticity of demand would be subject to lower mark-ups, whilst services with lower price elasticity of demand would be subject to higher mark-ups.

6. In general, the demand for international call is more elastic than that for local access and usage service. Ramsey pricing means lower mark-ups for interconnection service provided by international carrier and higher mark-ups for interconnection between local networks. However, this is not consistent with the current tariff structure in the retail market which does not reflect the actual demand condition of the market due to the cross-subsidisation between local and international calls. Hence, the application of Ramsey pricing approach to interconnection charges would reduce the ability for new entrants to compete.

Chapter 5

Competition Issues in International Telecommunications

Introduction

1. International telecommunications refers to the market in international retail and wholesale services including International Direct Dial (IDD), call-back services, international leased lines, and self-provisioning¹ via international telecommunications satellites.

2. Despite the availability of these services, all the international traffic in both incoming and outgoing calls has to pass through the international telecommunications network operated by Hong Kong Telecom International Ltd (HKTi). The company was granted an exclusive licence over all international telecommunications in 1981 for a term of 25 years. Until the licence expires in 2006, HKTi remains the sole carrier of international traffic, with responsibility for negotiating international accounting rates with its counterparts in overseas countries.

3. Since the innovation of call-back technologies and the liberalisation of the local fixed network market, a degree of price competition has entered the retail market. Consumers therefore have a choice of various service providers offering differently priced packages for international calls.

4. This chapter briefly describes the means by which the FTNS operators and call-back companies can generate competitive pressure and the impact of competition on the international carrier. We then attempt to explore ways to enhance competition further. The role of HKTi in the negotiation of international accounting rates will be examined in the context of changing market structure.

Competition from the Liberalisation of the FTNS Market

Interconnection between HKTi and FTNS operators

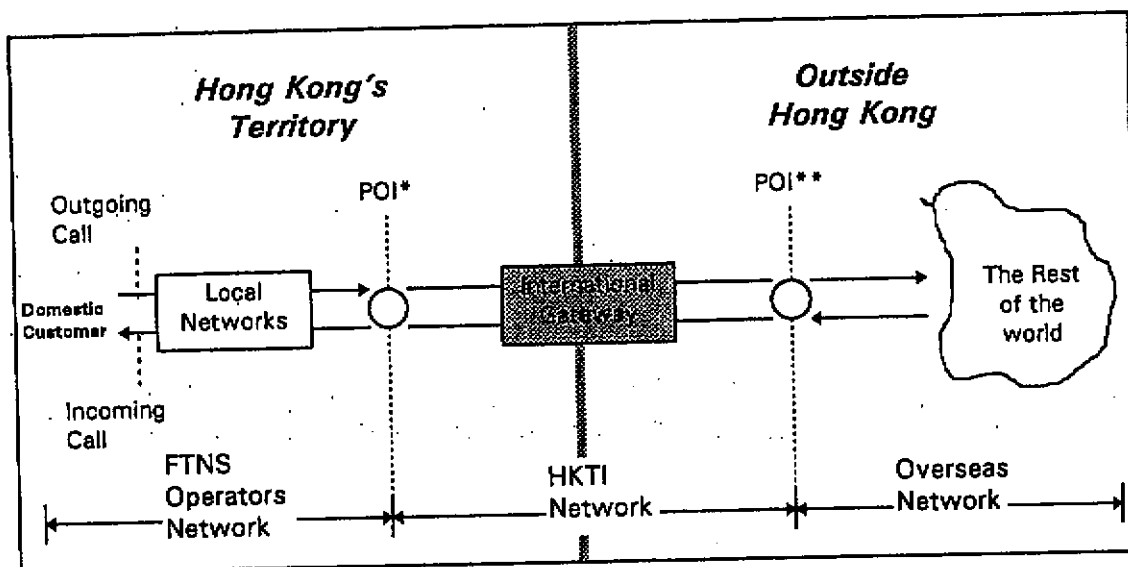
5. As HKTi does not have direct links to consumers, it has to supply services through the local networks provided by FTNS and Public Mobile Radiotelephone Services (PMRS) operators by interconnection. To distinguish the interconnection arrangement

¹ "Self-provisioning" allows companies and organizations with the appropriate licence to provide their own external circuits for intra-corporate traffic between Hong Kong and overseas countries.

between HKTl and local carriers from that among the FTNS operators, we refer to the former as "*international interconnection*" and the latter as "*local interconnection*". To convey a call to overseas countries, HKTl also has to interconnect with the carrier in the other part of the world.

6. Figure 5-1 maps out the international interconnection between HKTl and the FTNS operators and interconnection between HKTl and overseas carriers.

Figure 5-1: HKTl and FTNS Relationship



*POI = Point of International Interconnection

**POI = Point of Interconnection between HKTl and overseas carriers

Source : Modified from OFTA, "HKTl TO FTNS Relationships", Annex 3, Interconnection and Related Competition Issues, Statement No. 2, 19 May 1995.

Interconnection and delivery fees

7. The interconnection arrangement between HKTl and local operators is based on revenue sharing basis. The revenue share is based on the ratio of 40:60 and 60:40, for short-haul routes and the rest of the world, respectively.²

8. The revenue share received by local operators is expressed in terms of delivery fees per minute of international calls. The level of delivery fees is determined by the Telecommunications Authority (TA) under section 36A of the Telecommunication Ordinance (Cap 106). The

² Historically when HKTC was operated under an exclusive license, the company entered into an international revenue sharing arrangement with HKTl. The share of revenue between the two companies was determined by the Government in 1980, with a 40:60 split between HKTl and HKTC for short-haul routes (Macau, Shenzhen and Guangdong province) and 60:40 for the rest of the world. The revenue received by HKTC covers the cost of delivering international calls to its customers as well as contributing to the cost of fulfilling its universal service obligation.

fees were first set out in September 1992 and revised on 29 September 1995.³

9. Although local operators receive a fixed amount of delivery fees on both incoming and outgoing traffic, there is a fundamental difference between the interconnection arrangements for an outgoing and incoming international call. For an outgoing call, HKTI provides interconnection services to FTNS operators. In the case of an incoming call, FTNS operators provide the interconnection service to HKTI by delivering the call to the party being called.

Delivery fees and competition

10. Previously, when the local fixed network was operated in a monopoly environment, all the revenue received from originating outgoing international calls was retained by HKTC. With the introduction of competition, the new FTNS operators can determine their retail international tariffs at a level lower than HKTC's international tariffs. However, as a dominant carrier, HKTC is prohibited by the TA from undercutting its international retail tariff.

11. How far the FTNS operators can drive down the cost of international retail tariff depends on the level of delivery fees (or the revenue-sharing arrangement), the Access Deficit Contribution (ADC) (35.8 cents per minute), the local interconnection payment to HKTC (9 cents per minute), and the margin that they can obtain from using call-back technologies.⁴ ADC is paid to HKTC for providing a universal telephone service in Hong Kong. This is discussed in Chapter 7.

12. In the TA's second review of the delivery fee arrangement, conducted in September 1995, delivery fees for outgoing and incoming calls were harmonised at the rates shown in Table 5-1 below.

Table 5-1: Delivery Fees (per minute)

All Outgoing and Incoming Calls	China Short-haul	China Long-haul	Rest of World
	\$0.63	\$1.60	\$2.23

13. This is expected to enhance competition in two ways:

- (a) the increase in the level of delivery fees allows the FTNS operators to compete on a wider margin;

³ See OFTA, "Delivery Fees Determination", Statement by Mr. Alexander ARENA, the Telecommunications Authority of Hong Kong, 29 September 1995.

⁴ A securities company estimated that call-back technology has allowed one FTNS operator to receive \$5.33 per minute margin from an outgoing call to the U.S. This represents 97% of the retail tariff of \$5.50 per minute set by the operator.

- (b) the change of outgoing delivery fee from a tariff-sensitive fee to a fee fixed in nominal terms shields local network operators from the impact of any tariff reductions by HKTC;

14. Equalisation of the incoming and outgoing delivery fees tends to reduce the incentive for FTNS operators to offer call-back services.

An alternative arrangement: cost-based interconnection charges

15. As discussed in Chapter 4, the Telecommunications Authority is expected to adopt a cost or opportunity cost-based pricing method in determining local interconnection charges. However, the TA applied a revenue-sharing pricing method in determining international interconnection charges. The TA acknowledged that revenue sharing is "an arbitrary division" and bears "little relationship to underlying costs".⁵

16. One way to stimulate competition in international tariffs would be to increase the delivery fees further while reducing the revenue share of HKTI. The FTNS operators would then have a wider margin to reduce tariffs to consumers' advantage.

17. Under the present arrangement, any reduction in retail international tariffs is funded from the local operators' share of international revenue. The other part of the international revenue goes to HKTI and is not subject to competitive pressure. A cost-based interconnection arrangement would reduce the revenue share of HKTI to an interconnection charge based on costs, therefore giving more margin for local operators to reduce international tariffs.

18. However, such cost-based international interconnection would erode the current cross-subsidy from international to local services. If competition were to drive down the revenue from international calls, the source of funds for subsidising the local basic telephone would be reduced. Hence, cost-based pricing for international interconnection should be considered together with the Government policy on tariff rebalancing -- a process that brings both local and international tariffs in line with costs. (Chapter 6 discusses issues related to tariff rebalancing).

19. Moreover, a cost-based interconnection arrangement would change the source of revenue for FTNS operators. They would no longer be able to generate profit from incoming calls or call-back services because the interconnection charge that they received from HKTI would only cover their costs.

⁵ OFTA. *Review of Delivery Fees*, Annex to the Determination Made by the Telecommunication Authority under section 36A of the Telecommunication Ordinance on 29 September 1995.

20. International accounting rates are another important factor to be considered in deciding whether to adopt a cost-based pricing method. International accounting rates are determined by HKTI and its overseas counterparts in bilateral negotiations. The accounting rate is not itself a cost - it only becomes a cost to HKTI when there is net outgoing international traffic (i.e., excess outgoing over incoming international calls) from Hong Kong to other countries. If a cost-based delivery fee were to be used for international interconnection, it would be set at the level of HKTI's actual costs by making an estimate of the historical pattern of international traffic⁶. As such, it would not provide sufficient incentive for HKTI to negotiate favourable accounting rates.

21. Despite the merit of a cost-based pricing method in promoting competition in international tariffs, the matter cannot be considered in isolation in view of its implications for tariff rebalancing and accounting rates. Hence, OFTA should examine the case for introducing a cost-based charge for international interconnection, together with its policy on tariff rebalancing, taking into account the net benefits to consumers.

Technological Development and Competition

22. Despite the fact that HKTI's exclusive franchise prohibits other service providers and operators from competing in international telecommunications, the development of new technologies allows many service providers to get around the restriction. Call-back services are an example.

Call-back services

23. Call-back services "use a number of different technical methods to allow consumers to take advantage of any differential that may exist between the prices for outgoing and incoming international calls, thus effectively allowing consumers to decide whether to establish the call from Hong Kong or from the other end of the international circuit".⁷ Since the TA announced on 30 March 1995 that "call-back services do not infringe HKTI's licence to provide exclusively certain external circuits and services", they have grown in popularity.⁸

24. As call-back operators are able to offer consumers cheaper international tariffs, they exert some degree of pressure on HKTC's market share in international calls. At present, the Consumer Council

⁶ This is possible because net international traffics between countries are rather stable over years and not very sensitive to the level of tariff.

⁷ Ibid

⁸ OFTA, "The Regulatory Status of Call-back Services", Statement by Mr. Alexander ARENA, the Telecommunications Authority of Hong Kong, 30 March 1995.

estimates that call-back operators have gained about 5% of the outgoing international calls. Nevertheless, the competitive pressure generated by call-operators is confined to the range of countries that consumers can call through call-back companies. Call-back companies usually offer lower rates for calls to countries such as the U.S., Canada, the U.K., Australia and Japan. Although the competitive pressure that call-back services exert on IDD tariffs is limited, such services do offer choice to consumers.

25. Also, the use of call-back technologies by the new FTNS operators allows them to generate higher revenue margins and increases their ability to reduce international tariffs.

26. Call-back services do not have a direct competitive impact on HKTi because of HKTi's exclusive right to manage all international traffic. However, HKTi could be affected indirectly as call-back services could alter the traffic stream e.g. by supposedly outgoing traffic becoming incoming traffic. Given that the accounting rates remain unchanged, an increase in incoming traffic will reduce the amount HKTi pays out in net settlement rates to other countries.

27. In fact, call-back services may reduce the net outgoing international traffics from Hong Kong to overseas countries, therefore reducing the amount of net settlement rates (or accounting rates) that HKTi has to pay. In 1994-95, the volume of outgoing traffic amounted to about 1.58 billion, which was 0.13 billion more than the volume of inbound traffic. With the increased use of call-back services in 1995-96, it is expected that the net outflow of traffic will be smaller. Nevertheless, the benefit may not be substantial if HKTi faces pressure from overseas operators to adjust the accounting rates to take into account the increase of incoming traffic resulting from call-back services.

Promotion of competition through new technologies and International Simple Resales (ISR)

28. With HKTi's exclusive franchise prevailing, the operators may develop innovative products to deliver international calls, bringing competitive pressure for lower prices to consumers.

29. The Telecommunications Authority is examining the HKTi franchise to clarify the defined areas where HKTi has exclusive operating rights, for example, whether International Simple Resales (ISR) are permissible. The Consumer Council considers TA's move to be necessary for the benefit of the incumbent as well as operators with an interest in the field.

International Negotiation on Accounting Rates and Other Issues

30. The accounting rate system is a kind of revenue sharing mechanism between the international carrier in the call-originating country and the carrier in the call-terminating country (Figure 5-1).

31. The accounting rate is a per minute monetary value set by the international carriers in two countries through bilateral agreement. For most countries, the accounting rate is split 50:50 between them, and this 50% of the accounting rate is called a settlement rate. When a call is originated in Hong Kong, HKTl has to pay the carrier in the other country a settlement rate for completing the call, whilst HKTl will receive the same amount of settlement rate when there is an incoming call to Hong Kong.

32. In theory, accounting rates should reflect the cost of providing the local network services needed to convey international traffic. However, in practice, the arrangement encourages telecommunications carriers to set the accounting rates in favour of their interests to maximise revenue or minimise loss. For example, if Country A has net incoming traffic from Country B, then operator in Country A has an incentive to increase accounting rates while its counterpart in Country B will want to decrease them. The outcome of the negotiations depends on the bargaining power of the two operators.

33. The bargaining power of the operators may involve other commercial and political factors which go beyond the question of international traffic, e.g., foreign investment projects and foreign exchange revenue.

34. With growing liberalisation of the telecommunications industry, in some countries accounting rate negotiations take place with more than one party. For example in the U.S., HKTl deals with three major international carriers (AT&T, U.S. Sprint and MCI). The U.S. Federal Communications Commission (FCC) imposes a requirement on all three carriers to make an agreement with overseas carriers that the volume of incoming traffic will be shared among the three U.S. carriers in proportion to the amount of traffic that each of them originates to that overseas country (i.e. a system of proportional returns). In this way, individual U.S. carriers cannot compete for a higher volume of incoming calls by offering favourable accounting rates. As the U.S. Government has no authority to control the accounting rates, proportional returns is a method of discouraging any discriminatory accounting rates and also low level accounting rates which would affect the USA's balance of payments. A similar requirement is imposed on British Telecommunications (BT) and Mercury, the two international carriers in the U.K.

35. In Hong Kong, the issue of proportional returns will not arise as long as HKTl is the only international carrier. At present, there is an

incentive for international carriers in North American countries to provide International Private Lease Circuits (IPLCs) providing a link up to their switching equipment to call-back companies in Hong Kong. This is because for calls that are converted into incoming calls to Hong Kong, these individual overseas international carriers can receive from HKTl an equal amount of outgoing calls. If HKTl refuses to observe the practice of proportional returns and does not return the amount of calls generated from call-back services, call-back services will immediately be affected. This is because the continued leasing of IPLCs from the U.S. to call-back companies may cause the U.S. carriers a net payment of accounting rate to HKTl. This would remove their incentive to provide IPLCs.

36. It is international practice for accounting rates to be negotiated through bilateral agreement between telecommunications operators. Governments have no involvement in the negotiation unless the telecommunication operator is a state-owned enterprise. Also, in many countries, it is not common practice for accounting rates to be disclosed for public consumption. At present, the U.S. is the only country where accounting rates have been publicly disclosed. The Director of Office of Telecommunications (OFTEL) in the U.K. has recently announced his intention to do so⁹.

37. In Hong Kong, the Government has no power to oversee HKTl's conduct in the negotiation of accounting rates and other international arrangements. Under normal circumstances, HKTl should have an incentive to negotiate terms and conditions which are favourable to the interest of both the company and the general public of Hong Kong. On the other hand, there is a continual need for Government to monitor the situation, so that accounting rates may not be used as a bargaining tool in commercial deals to obtain benefits for the operator, rather than for the best public interest. No matter how remote this possibility may be, precautionary measures should be put in place to prevent this from happening. One option would be to encourage a closer liaison between the Government and HKTl. Also, the Government may wish to consider whether disclosure of accounting rates would provide a natural balancing force be in Hong Kong's interest.

Recommendations

38. Before HKTl's exclusive licence expires in 2006, the extent of competition in international calls is limited. However, the Consumer

⁹ "The Director General's decision to publish accounting rates arose from the need to stimulate further reductions in international call charges. High international accounting rates, which are unrelated to a telecom operator's costs, but which can contribute to its profit, act as a barrier to lower prices for consumers." OFTEL (U.K.) International Accounting Rates, statement issued by the Director General of Telecommunications Dec 1996.

Council believes that the Government can still take some positive steps to enhance competition where circumstances permit.

Recommendation 1

Defining HKTl's exclusive operating right

39. The Consumer Council supports TA's move to examine HKTl's defined areas of exclusive operating right. This will be beneficial to the incumbent and especially to parties which may develop new products for consumers, for instance, the offer of call-back services. To this end, the TA should continue to monitor closely and make determinations where necessary in this area to maintain competition.

Recommendation 2:

Closer liaison between the Government and HKTl on issues related to international arrangements

40. To protect public interests in HKTl's bilateral negotiations with overseas operators over accounting rates, ***the Consumer Council sees a need*** for closer liaison between Government and HKTl. In the event that OFTA finds the accounting rates negotiated not to be in the public interest of Hong Kong, OFTA should ask HKTl to explain.

Chapter 6

Tariff

Introduction

1. In most countries, tariff setting in telecommunications aims at achieving certain social and public objectives, hence tariffs may not be set in direct relation to costs. Some forms of cross-subsidisation may occur, e.g. the cross-subsidisation from international to local tariffs in Hong Kong¹.
2. The liberalisation of the FTNS market raises the question of moving both local and international tariffs towards cost by removing the cross-subsidisation through tariff rebalancing. Some critics consider such rebalancing to be necessary in order to achieve effective competition in the market. This Chapter looks at the need to introduce tariff rebalancing.

Cross-subsidisation Between International and Local

International tariffs

3. International tariffs are freely determined by local operators, including FTNS operators and Public Mobile Radiotelephone Services (PMRS) operators, except in the case of HKTC. As a dominant carrier, changes in HKTC's tariff have to be approved by the Government.
4. The international tariffs consist of two important components, namely interconnection charges between local and international carriers and settlement rates (or accounting rates) which HKTl agrees with overseas carriers. Both charges are based on revenue-sharing arrangements rather than on costs.
5. The revenue-sharing between local and international carriers is on the ratio of about 40:60.² Local operators (both FTNS operators including HKTC and Public Mobile Radiotelephone Services operators) retain 40% while HKTl receives 60% of the total international revenue. The 40% from international revenue and the 35.8% of Access Deficit Contribution (ADC) received by HKTC provides the cross-subsidy to local tariffs.

¹ According to HKT and the Government, the local tariffs is artificially set below cost and is subsidised by international tariff.

² Recent determination on delivery fees may have slightly changed the ratio.

Local tariffs

6. Local tariffs refer to the prices that HKTC charges for the provision of the basic telephone service, which include access and usage of telephony. The charges paid by consumers include (a) connection charges of \$530 and (b) a flat monthly rental rate (\$65 for residential line and \$98 for business line). The flat monthly rental rate provides unlimited usage of basic voice telephony.

7. The rate of increase in local tariffs has been subject to price-cap regulation since June 1993. The price-cap restricts increases in the rental of residential lines to 3% below the rate of inflation (or CPI (A)-3%), and increases in the overall local tariffs to CPI (A)-4%. Before price-cap regulation was imposed, HKTC was subject to a scheme of control with its rate of return restricted to no more than 15%.

8. HKTC contends that the 40% share of international revenue cross-subsidises the provision of the basic telephone service. According to HKTC, the current level of local tariffs do not generate sufficient revenue to cover the costs of providing the basic telephone service, resulting in a *gross access deficit*. This deficit is derived from the method of Fully Distributed Cost (FDC) agreed between the Government and HKTC.

Extent of cross-subsidy

9. According to HKTC, the 40% international revenue share which cross-subsidises local tariffs, is also used to cover HKTC's expenditure in fulfilling its Universal Service Obligation (USO), a responsibility placed on HKTC to provide services to certain "uneconomic areas" where costs incurred are higher than revenues generated. As the amount of the gross access deficit is not public information, we do not know what portion of the 40% is used on local service and USO respectively, and how it is distributed between business and residential users. Therefore, the two deficit contributing factors, i.e., cost of universal service and cross-subsidy need to be separated.

Tariff Rebalancing

10. Tariff rebalancing refers to the process of bringing both HKTC's local and international tariffs closer to costs. Tariff rebalancing would allow HKTC to increase its revenue from local tariffs while reducing its international tariffs by eliminating the subsidy (or 40% of international revenue share) for local services.

11. In theory, tariff rebalancing means removing all forms of subsidy thereby promoting effective competition in a free market. There are fundamental benefits to be gained from market competition and consumer welfare. However, we must be wary of Hong Kong's unique

circumstances: tariff rebalancing, if embarked now, would not be accompanied by adequate competitive pressure since the international telecommunications market is not yet liberalised. It would therefore be an immense challenge to the regulator to ensure at least a revenue- and profit-neutral rebalancing process. It would be even more beneficial to all parties if the tariffs came closer to cost. The practical difficulties the regulator would encounter include: how to determine the "right" price so that consumer interests are safeguarded against "excessive charges" and whether the less well off consumers will have access to basic telephony service.

Tariff rebalancing without competitive pressure

12. In the U.K. and U.S., the need for rebalancing arose because competition in the markets for long-distance and international calls had driven tariffs towards cost. As profits previously generated in these markets and used to cross-subsidise local tariffs had been whittled away by competition, price regulation over local tariffs had to be eased or removed in order to allow local tariffs to move closer to costs. In these cases, consumers had enjoyed the benefits of competition in the long-distance and international telecommunications market before they were asked to pay local tariffs at cost.

13. As international calls have not been liberalised, there is not much competitive pressure to drive Hong Kong's international tariffs to cost. Although the new FTNS carriers compete with HKTC by using the (40%) international revenue share that they could receive to undercut HKTC's international tariffs, the competitive pressure is very limited. This is because the 60% of the international revenue share retained by HKTI will not be subject to any competitive pressure until 2006.

14. With tariff rebalancing, all consumers will have to pay more for local tariffs but, as yet, due to lack of competition, they will be unable to benefit from full-scale reduction of international tariffs.

Shortcomings of rebalancing tariffs by regulatory measures

15. In the absence of an effective market mechanism, tariff-rebalancing, can only be achieved through regulatory measures. The TA needs accurate estimations of costs to set tariffs and to decide on a reasonable rate of tariff increase. This is a difficult task because:

- (a) The estimated costs and subsidy are affected by the accounting method adopted by the company to allocate cost between different services, even though OFTA requires a

standardised accounting practice.³ For example, the magnitude of the cost associated with common network facilities⁴ which is apportioned to the basic telephone service can vary significantly, depending on the cost allocation method chosen⁵ and the period allowed for the depreciation of network facilities.

Also, the Fully Distributed Cost (FDC) method used to allocate common costs bears no relationship to marginal-cost pricing.⁶

- (b) The methodology adopted to derive cost-based tariffs may be controversial.

Even if the economic concept of marginal (or incremental) cost is applied to derive a cost-based local tariff, the methodology chosen to provide for certain mark-ups over the marginal cost to allow for the recovery of fixed costs will be open to debate.⁷

- (c) A static estimation of costs based on the current system is not desirable.

With the entry of new FTNS operators, it is possible that the provision of basic voice telephony could be supplied by

³ OFTA has published an Accounting Manual to guide HKTC to separate the company's accounts between its subsidiary companies, but no guidelines on accounting practice have been imposed on each of its subsidiary companies, e.g. HKT and others. The other FTNS operators are also required to follow the accounting practice set out in the Accounting Manual, except the accounting separation sections which are applied to the dominant player, HKTC, only.

⁴ Network facilities are used for various services (local calls, international calls, calls from users of mobile telephone, data communications, etc.) and by various users (consumers, international carriers and many value-added operators).

⁵ For example, more costs would be attributed to basic telephone service if the allocation were based on network usage, especially as consumers tend to make relatively more local calls when they are charged at a flat monthly rate than when they are subject to per call charges as they are for international and other value-added services. On the other hand, as revenue generated from value-added services and interconnection charges (from Public Mobile Radiotelephone Service (PMRS), Internet, and new FTNS operators) is a growing source of total revenue, less costs should be apportioned to basic telephone service if the allocation method is based on either gross revenue or profit. Moreover, if the costs of upgrading certain network facilities are assigned to all services on the basis of increased efficiency of service provision, then the basic telephone service has to bear the cost burden despite the fact that the upgrading of the facility may be necessary only for the provision of, say, data communication services. In this case, the introduction of new services using common network facilities will add pressure to, rather than reduce, the cost of providing the basic telephone service.

⁶ The accounting method usually based on the proportion or contribution of a service in terms of (a) network usage, (b) gross revenue, (c) net revenue (or profit), or the casually attributable costs.

⁷ As substantial economies of scale exist in the provision of basic telephone service, the setting of tariffs based on marginal cost may not allow even an efficient operator to recover its fixed costs. Therefore, certain mark-up may be necessary.

using new technologies e.g. wireless technologies, which will be much cheaper than the conventional wireline network. And wireline networks are in the future likely to be used for other value-added services which require high speed transmission and broader bandwidth. In this case, a static estimation of costs based on the current system used by HKTC may fail to take into account the future cost reductions which new entrants may be able to bring about, and the improved efficiency brought about by technological advances. All these factors may enable new entrants to compete even without any increase in local tariffs.

16. The above analysis demonstrates the problems associated with tariff rebalancing and the area where they might be subject to dispute. The Council therefore considers tariff rebalancing at this juncture would be premature and might not serve the best interest of consumers. However, the Consumer Council supports the view that tariff restructuring should remain a long-term telecommunications policy objective of the Government, phased in along with the realisation of competition in the market.

Restructuring of Local Tariffs

17. The need for, and implication of any reform in local tariffs on consumer welfare and competition in the telecommunications market is a subject of interest for this study. However, the Consumer Council is aware that the Government will be issuing a consultation paper soon (March 1996) to collect views from the public on various alternative structures of local tariffs. Therefore, the Consumer Council prefers to comment on the subject after it has studied Government's consultation paper.

Recommendations

Recommendation 1:

No tariffs rebalancing without full market competition

18. ***The Consumer Council maintains*** that consumer interests must be protected and that, in the present situation where there is no clear and concrete information indicating how consumers may benefit over time, tariff rebalancing should remain as a long-term objective, phased in along with the realisation of effective competition in the market.

19. Notwithstanding such reservations, if the TA decides to use an administrative measure to rebalance tariffs, it is necessary for the TA, with information from HKT, to produce for public consumption, information showing estimated price increases and decreases under

different time scales for rebalancing the tariff structure, e.g., the amount of reduction in international tariffs and the amount of increase in local tariffs.

20. Also, an administrative measure to reduce international tariffs should be introduced, for example, through a determination of cost-based interconnection charges between local and international operators (The method is discussed in para. 18 in Chapter 5). This is to ensure that consumer welfare is sufficiently protected in the event of a full-scale tariff rebalancing.

***Recommendation 2:
Disclosure of Information***

21. The TA should consider making relevant cost information transparent and available to the public. The information will enable the extent of current cross-subsidy from international to local tariffs to be known to the public. The disclosure of the following information is necessary:

- (a) The level of gross access deficit, the method of cost allocation, and the period of depreciation adopted by HKTC; and
- (b) An separate estimation of costs for the provision of access and usage.

Chapter 7

Universal Service

Introduction

1. Access to telecommunications is of great importance in enabling all individuals to participate fully in the social and economic activities of modern life. Universal service for telecommunications refers to the public policy goal of spreading telecommunications services to most members of society and of making available the necessary funds.¹ A certain degree of cross-subsidisation and revenue re-distribution are therefore necessary to achieve the policy objective.
2. In the transition to a fully competitive telecommunications market, the Hong Kong Government has maintained a universal service obligation (USO) on HKTC, the dominant carrier, to provide basic telephone services to any consumer anywhere in the territory. At the same time, all local FTNS and Public Mobile Radiotelephone Services (PMRS) carriers are required to make an Access Deficit Contribution (ADC) to HKTC for it to discharge its USO.
3. There is no doubt that the policy of universal service has a significant impact on competition in the telecommunications industry. This chapter examines whether the USO and the contributions for universal service are appropriate in a competitive environment. It also examines consumer welfare concerning universal service in respect of affordability and quality of service.

Aims of Universal Service

4. A universal service policy adopted by governments can be justified on both social and economic grounds. On social grounds, all citizens should have access to telephone services as a means of communicating with others. On economic grounds, universal service provides economies of scale as the greater the number of people connected to a telecommunications network, the more useful it becomes to the users.
5. However, the aims of universal service do vary from country to country. In the USA, universal service aims at providing a telephone service for all at a reasonable price but does not imply a uniform service with a uniform tariff. In the European Union, universal service aims at universal

¹ Noam, Eli M. "Beyond Liberalisation III - Reforming Universal Service" *Telecommunications Policy* 1994, 18(9), p. 687.

geographical availability and equal access in terms of price and/or service, but does not imply reasonable cost or affordability.²

6. In Hong Kong, the aims of universal service, i.e. universal geographical accessibility, universal uniform price and affordable service, are enshrined in the following policy statements³:

"To ensure that reasonably priced telecommunications services are available to all, the Government will maintain -

- (a) a universal service obligation (USO) on the HKTC; this requires it to provide public switched voice telephone services to any consumer anywhere in the territory, within a reasonable period of time, in circumstances where HKTC remains the dominant local carrier;*
- (b) a territory wide tariff structure of HKTC; that is not allowing it to charge a surcharge for USO to remote or isolated parts of the territory; and*
- (c) a system of price regulation for HKTC designed to provide incentives for the Company to improve efficiency and productivity, while ensuring that the charges for socially important services remain affordable for all sectors of the community."*

Universal Service Contribution (USC)

7. So far only HKTC has a universal service obligation in the provision of public telephone services. The USO is specified in the special conditions of HKTC's FTNS licence. Historically international telephone revenues have been the major source of funds used by HKTC to fulfil its USO. HKTC and HKTl have arrangements for international telephone revenue sharing. Part of the revenue share received by HKTC covers its delivery fees for originating or terminating IDD calls and the rest cross-subsidises local calls and the cost of providing a universal service.

8. With the liberalisation of the fixed telephone network in July 1995, HKTC is allowed to receive a contribution, in term of an Access Deficit Contribution (ADC) from the Public Mobile Radiotelephone Service (PMRS) operators and the new FTNS carriers to meet the cost incurred by HKTC in discharging its USO. Under the current arrangement, the PRMS and the new

² OECD *Universal Service and Rate Restructuring in Telecommunications*, Information Computer Communications Policy 23, Paris: OECD 1991

³ *Position Paper: Hong Kong's Telecommunications Policy*, issued by the Economic Service Branch, Government Secretariat, Hong Kong Government, January, 1994.

FTNS carriers have to pay HKTC an ADC of 35.8 cents per minute⁴ of international traffic passing between the HKTI gateway and interconnecting local PRMS and FTNS carriers.

9. The amount of ADC payable is determined by the TA and is subject to regular review. The current ADC is derived from a formula agreed between the Government and HKTC in 1992. A review on the level of ADC payable was made in 1995. The prevailing method for the calculation of ADC is shown at Figure 7-1.

Figure 7-1: Calculation of ADC

<p>Gross Access Deficit</p> <p>Based on the Cost and Revenue Allocated to Basic PSTN Service:</p> <p>Revenue <i>less</i></p> <p>Expenses <i>less</i></p> <p>Cost of Capital</p> <hr/> <p>Gross Access Deficit</p>	<p>Share of International Services Profit</p> <p>Profit making service categories:</p> <p>#1 International Services #2 Value-added Services #3 Dedicated Network Services #4 Non-telecommunications Services</p> <p>Share of International Services Profit:</p> <p><u>Profit #1</u></p> <p>$\frac{\text{Profit \#1}}{\sum \text{Profit \#n} \quad n = 1,2,3,\text{and}}$</p>
<p>Access Deficit Contribution = $\frac{\text{Gross Access Deficit} \times \text{Share of International Services Profit}}{\text{Total International Call Minutes}}$</p>	

Source: OFTA, *Access Deficit Contribution and Delivery Fees: Context and Methodology*, Information Paper, October 1994.

10. As you can see from the formula, the level of ADC payable is determined by historical data. However, the amount of ADC receivable by HKTC within a certain period would actually depend on the volume of international traffic rather on the actual cost of providing the universal service within that period. With the rapid growth of international telecommunications traffic, it is highly likely that HKTC would receive more than it actually needs. And there is no mechanism to ensure the excess ADC is ploughed back into funds used for universal service purposes.

⁴ The ADC was set at 45 cents per minute before 1 October, 1995.

Level of Universal Service

Basic Service

11. Under the existing USO, as specified in the special conditions of its FTNS licence, HKTC is required to:

"provide, maintain and operate the network to the satisfaction of the [Telecommunications] Authority in such manner as to ensure that, a good, efficient and continuous basic service is reasonably available, to all persons in Hong Kong...."

12. The content of basic service is specified in the licence conditions. It covers the provision of a public switch telephone service (including service connection, provision of telephone number, directory listing, billing etc.), public payphone service (including a reasonable number of payphones for both the hearing impaired and the physically disabled) and ancillary services such as directory enquiries, fault reporting, weather warnings and emergency calls.

Moving target of Universal Service

13. Hudson (1994) pointed out that the conventional concept of universal service should be re-examined and redefined to take into account the economic benefits of access to information for individuals, schools, social services and businesses.⁵ In the UK, the Office of Telecommunications (OFTEL) has also recognised that "as new services and technologies develop, so the definition of universal service will need to be reviewed".⁶

14. With the rapid development of telecommunications services, consumer expectations of basic telephone services are much higher than the level of universal service provided in the licensing conditions. Since Hong Kong has the world's first fully digitalized telephones with a comprehensive optical fibre network⁷, it is well equipped to provide a great variety of supplementary or value-added telephone services, such as 'selective call barring', 'call diversion' and 'call waiting'. Rapid growth in the use of Internet services has also stimulated demand for the provision of a higher level of basic service to meet the social and economic objectives of selected groups of telecommunications service users.

⁵ Hudson, Heather "Universal Service in the Information Age" in *Telecommunications Policy*, 1994, 18(8), pp 658 - 67.

⁶ Office of Telecommunications (U.K.), "Residential Customers and the Universal Service Obligation (USO)", Chapter 12 in *A Framework for Effective Competition*, A consultative document on the future of interconnection and related issues, p.46.

⁷ Hong Kong Annual Report 1995 published by HK Government in 1994.

Disadvantaged groups

15. Basic service might have different meanings for different customer classes or groups. For instance, to some elderly people or people with disabilities, the telephone service is often a lifeline. The recent long spell of cold weather has revealed the problem of the aged living alone and the critical need for such a lifeline. In the UK, the dominant supplier has a commitment to provide a Free Priority Fault Repair for customers in this category, to ensure priority treatment in the event of a fault. Also, hearing impaired customers may need special telephone equipment compatible with use of a hearing aid, or which amplify voices, and visually impaired customers may need braille or large print bills.

16. We believe that these disadvantaged customers should be given special attention.

Access to information

17. It should be noted that telecommunications services now have diversified applications in many educational institutions and centres for public service customers such as libraries. Multimedia services allow students and teachers to use interactive teaching methods. The UK OFTEL has proposed that the provision of educational information super highway services should be put under a special universal service arrangement.

Affordability

18. The existing universal service policy assumes that every person or household can afford the basic telephone service within a given level of tariffs. We consider it necessary, as a matter of policy, to provide a basic telephone service to all who need it but cannot afford, as this is in line with the overall objective of universal service.

19. Under the Comprehensive Social Security Assistance Scheme (CSSA), subsidy for payment of telephone rental has been administered under stringent eligibility criteria. It is understood that OFTA has discussed this issue with the Social Welfare Department. In conjunction with the Hong Kong Council of Social Services, HKTC operates "a line a day scheme", providing a free telephone service to those in need. The Council welcomes Government's decision, "as a result of our experience of the recent cold spell,... to speed up the provision of special grants for such items as telephone for elderly CSSA recipients."⁸ It is understood that \$50 million has been set aside for the purpose.

⁸ Financial Secretary's budget speech on 6th March 1996

Cost of Universal Service

Uneconomic areas

20. In other countries, "uneconomic customers" and "uneconomic areas" are two factors contributing to the cost of universal service. "Uneconomic customers" refers to cases where the cost of connecting an individual customer are not recovered from the revenue (fixed rate connection and line rental charges and variable revenue from usage) generated by that customer. "Uneconomic areas" refers to areas where the cost of network coverage cannot be recovered from the total revenue collected from the customers in the area. However as in Hong Kong the local telephone tariff is charged at a flat monthly fee regardless of the volume of usage, the distinction between "uneconomic customers" and "uneconomic areas" is not applicable.

21. With the rapid speed of urbanisation in Hong Kong, "uneconomic areas" should disappear very quickly. This has led many people to cast doubt on the extent of the real need to use the profits generated from "economic areas" to subsidise the loss incurred in "uneconomic areas". It is therefore open to debate whether a loss incurred in an "uneconomic area" is due to fulfilment of the universal service obligation, or, in some instances, possibly due to the universal service provider not operating with maximum efficiency.

22. Also, with the availability of an increasing number of value-added services, customers in "uneconomic areas" who use such services will generate a considerable amount of revenue in the long term. This revenue should be taken into account in calculating whether, over a reasonably long pay-back period, an area is "economic" or not.

Cross-subsidisation

23. It is said that the local telephone tariffs are set at a level below costs and therefore have to be subsidised by international call revenues. For this reason, it has been suggested that "by fully funding all HKTC's access deficit, its Access Deficit Contribution is more 'compensatory' than equivalent arrangements in other countries"⁹.

24. Table 7-2 shows the estimated amount of ADC borne by HKTC and the three new FTNS operators.

⁹ Office of the Telecommunications Authority, "Carrier-to-Carrier Charging Principles", *Interconnection and Related Competition Issues*, Statement No.7 10 June 1995, p.11

Table 7-2: The Estimated Amount of Total ADC

Year	Total ADC ¹ (HK\$)	ADC by HKTC ² (HK\$)	ADC by Other FTNS Operators ³ (HK\$)	International Telephone Traffic (Minutes)
1992/93	965,710,350	898,110,626	67,599,725	2,146,023,000
1993/94	1,186,732,350	1,103,681,086	83,071,265	2,637,183,000
1994/95	1,361,147,400	1,265,867,082	95,280,318	3,024,772,000

Notes: 1.Total ADC for each year is calculated by multiplying the total international telephone traffic volume for that particular year by \$0.45

2.HKTC's ADC is calculated on the assumption that HKTC carried 93% of the international telephone traffic in the years in concerned. This assumption is consistent with HKTC's own estimate.

3.The remaining 7% of international telephone traffic and hence ADC are attributed to the three new FTNS operators and PMRS operators.

25. It should be noted that the total ADC of \$1.36 billion in 1994/95 is more or less equivalent to the cost of universal service in Australia in 1987/88.¹⁰ Given that Australia is more than 7000 times larger than Hong Kong and that its population density is about three person per km² as compared to 5790 persons per km² in Hong Kong, the cost of universal service should be much higher in Australia. This can only be explained by the fact that a substantial portion of the ADC is used to subsidise all local telephone tariffs and this is different from the normal practice of universal service in other countries.

26. As the ADC in Hong Kong is more compensatory than the equivalent arrangements in other countries and that other FTNS operators have to pay the ADC to HKTC, calculation of the ADC has a great impact on competition in the telecommunications industry. We can therefore see that there is an urgent need to make the calculation of ADC more transparent by separating the accounts of cross-subsidisation from that of the normal universal service.

Fully Distributed Cost vs Long-run Average Incremental Cost

27. Apart from cross-subsidisation, it has been suggested that the relatively high cost of universal service in Hong Kong, despite its high population density, could be due to the Fully Distributed Cost (FDC) method currently adopted by the Telecommunications Authority in calculating the Universal Service Contribution (USC). Another method which has become more widely adopted by regulators in other countries is the Long-run Average Incremental Cost method (LRAIC). The experience of Australia has shown that the LRAIC approach could provide lower USO estimates than the FDC approach.

¹⁰ *The Cost of Telecom's Community Services Obligations*, Bureau of Transport and Communications Economics, Report 64, September 1989.

28. In Hong Kong, OFTA will use the LRAIC method when called upon to review the interconnection charges between FTNS operators.¹¹ We believe that as it has a direct bearing on the competitiveness of the telecommunications industry, there is good justification for reviewing the existing method of calculating the USC.

Universal Service and Competition

29. Delivery of universal service can be considered as a kind of "privilege" for rather than an "obligation" on the incumbent.¹² Universal service provides an opportunity for the incumbent to expand its network coverage. The expansion allows the incumbent to enjoy a competitive advantage through economies of scale and thereby expand its market share and maintain market dominance.

30. The new FTNS operators do not enjoy a similar competitive advantage. Beyond their initial commitments, the new FTNS operators will have to make a commercial decision whether or not to extend their network to other parts of the territory. Such decisions are subject to higher business risks because the losses, if any, cannot be covered by USC.

31. Theoretically, allowing the incumbent to be the sole provider of universal service will be more efficient than sharing the obligation between several providers. However, without competition, the regulator will have no basis to compare and monitor the incumbent's efficiency in delivering universal service.

32. In the UK, the Office of Telecommunications (OFTEL) has proposed to adopt a competitive approach to maintaining universal service in a competitive environment. All FTNS operators are allowed to compete to become a universal service provider on an area-by-area basis through a franchising or bidding process. They have the choice to "play or pay" i.e. to participate in the provision of universal service, or contribute to others' costs in providing it.

33. The introduction of competition for the provision of universal service would give:

- (a) new entrants a more level playing field;
- (b) ensure universal service was provided efficiently (operators would bid for the level of fund required to fulfil the USO); and

¹¹ OFTA, "Carrier-to Carrier Charging Principles" *Interconnection and Related Competition Issues*, Statement No.7, 10 June, 1995.

¹² Blackman, Colin. "Universal Service: Obligation or Opportunity?" in *USO in a Competitive Telecom Environment: Proceedings of the Expert Symposium*, Magdalene College, Cambridge, December 1994, edited by Nick Gray, Analysis Publications 1995.

(c) make the cost of universal service more transparent.

34. It is understood that OFTA is currently conducting a review on the provision of universal service, USO and USC.

35. We support this move and therefore propose that OFTA should consider to adopt, at the appropriate stage, the Australian approach of allowing all FTNS operators to bid for the provision universal service or to consider other viable arrangements in order to enhance competition.

Sources of Funds for Universal Service

Contributions to Universal Service

36. At present, the main sources of funds for universal service come from the Access Deficit Contribution (ADC) contributed by FTNS and PMRS carriers. Although the method of calculating the Universal Service Contribution has implicitly taken into account contributions from HKTC's profits from services other than international retail services, the contributions from PMRS and other FTNS carriers are solely based upon their revenue from international calls.

37. One of the reasons for making international call revenue the source of funding for universal service is that the local fixed network is essential to the delivery of international calls. However, the revenue generated from value-added services which are provided through the access to the local fixed network, are not required to contribute to universal service.

38. Nor is the ADC imposed on all international calls. Companies (usually large companies) which apply for an external private telecommunications system licence can "self-provide" their own external circuits for calls to their offices abroad. This traffic does not have to access the local fixed network and it therefore seems reasonable that they should not be required to contribute towards universal service. However, the implication is that while these corporations are receiving a cross-subsidised local telephone service, they are exempted from making a contribution to the local deficit from their international calls.

39. In order to enhance competition, it is necessary to ensure that the identifiable and legitimate costs of universal service are shared fairly, proportionately and transparently among all the operators in the market. We believe the time has come for the Government to rationalise the sharing of universal service cost across the industry.

A Universal Service Fund

40. At present the funds contributed by PMRS and the FTNS carriers including HKTC, are kept and managed by HKTC. It is estimated to be accumulating at the rate of \$1.36 billion or more annually.¹³

41. The U.K. OFTEL has proposed setting up an independent Universal Service Fund to be managed by OFTEL or a neutral, industry-funded body. We believe there is a strong case for setting up such a fund in Hong Kong. The fund can be managed by OFTA, or by an independent body, if OFTA and the industry so prefer. The proposed body should be empowered to apply rules and calculate payments in and out of the Fund. This measure would certainly go a long way to foster a more competitive environment in the telecommunications industry in Hong Kong.

Recommendations

Recommendation 1:

Upgrade definition of universal service

42. *The Consumer Council recommends* that definition of universal service should be reviewed urgently with a view to:

- (a) upgrading the level of universal service to reflect technological advances and higher customer expectations, e.g. by including call waiting in the definition of basic service;
- (b) catering for the needs of disadvantaged groups such as: people for whom the telephone is a lifeline, e.g. by providing a priority repair service; the hearing impaired e.g. by providing specially adapted telephone sets; and the visually impaired e.g. by providing large print bills;
- (c) the Council hopes that the grant to elderly Comprehensive Social Service Assistance (CSSA) recipients to access telephone service be made a long term policy;
- (d) devising a special universal service arrangement for the provision of educational information superhighway services.

¹³ Estimated total ADC for 1994/95 in Table 7-2 above.

Recommendation 2:**Cost and responsibility for universal service**

43. The current cross subsidy from international services, the Access Deficit Contribution, more than covers the cost of the universal service obligation. **The Consumer Council recommends** that:

- (a) TA should seek to separate out the costs of providing universal service from the general subsidy for provision of local services, when the concept of "uneconomic areas" is to be applied to replace the current access deficit contribution (ADC) with universal service contribution (USC) in August 1996. This will provide greater transparency and create pressure to fulfil the USO at reasonable cost;
- (b) TA considers an alternative basis for calculation of the costs of universal service, e.g. the application of Long Run Average Incremental Costs; and
- (c) TA allows all FTNS carriers to compete to provide universal service, e.g. through a bidding process.

Recommendation 3:**Establishing an independent universal service fund**

44. **The Consumer Council recommends that** an independent Universal Service Fund is established to:

- (a) provide a more open and fair management of the universal service mechanism;
- (b) to ensure all funds raised by the Access Deficit Contribution are used exclusively for universal service purposes.

45. The fund could be managed by OFTA or an independent body to be set up for the purpose.

46. To ensure the costs of universal service are shared fairly, proportionately and transparently among operators, TA should rationalise existing contributions and expand the sources of contribution for the Universal Service Fund. In particular, the TA should consider the case for seeking contributions from revenue generated from value-added services, including the provision of external private telecommunications systems. This, in turn will generate sufficient funds to provide more services within the scope of universal service and to cater for the special needs of certain groups of customers.

Chapter 8

Effects of Competition on Consumers

Introduction

1. This chapter looks at the effects of increased competition on consumer interests by drawing together the evidence in previous chapters about the likely effects on retail prices, choice, convenience, and development of new and innovative products. We also look in detail at the implications of competition for quality of service.

2. Experience in other countries shows that the benefits of increased competition are not automatically shared in full with consumers. Our objective is to look at ways to ensure consumers receive an equitable share of the fruits of competition, and recommend, where necessary Government action, in particular steps which should be taken by the TA given his responsibility for 'the protection of telecommunication consumer interests'¹.

Price

3. Reductions in prices are one of the main benefits of increased competition and, where even a limited amount of competition has been introduced, for example, in international calls, tariffs have already been reduced. In the case of fully competitive markets, for example the mobile telephone market, there is currently intense price competition.

4. Competition also encourages operators to produce innovative pricing packages. At present most of these are aimed at businesses². If residential users were also able to choose from a range of packages the one best suited to their particular calling habits, they too would be able to gain better value for money.

¹ Hong Kong's Telecommunications Policy, position paper issued by Economic Services Branch, Hong Kong Government, January 1994

² For example, NT&T offers a business service, including free call-waiting and voice message services for a connection charge of \$450 and monthly rental of \$83, compared to HKTC's business line connection charge of \$530 and \$98 monthly rental rate.

5. Currently, in the much less competitive market for provision of local services, new technology will lower the unit costs of telecommunications services, but the extent of the benefit to consumers in terms of price reduction and how far they result in higher profits for the operator will depend on the strength of price regulation (i.e. HKTC's price cap) and the pace of any tariff rebalance. Tariff rebalancing (discussed in detail in Chapter 6) will have the following effects on the price consumers pay:

- (a) consumers who make a large number of international calls are likely to see reductions in prices; but
- (b) consumers who make few if any international calls, are likely to receive less benefit in the short term. For this reason we suggest OFTA make an assessment of the short term effects before any decision is made.

6. Ultimately when the market becomes fully competitive, as in the UK example³, all consumers should benefit from a price determined in free competitive market.

Availability of Service

7. Provided that there is a continuing universal service obligation, competition should not affect the availability of a basic telephone service to all who request it. However competition will put pressure on cross-subsidies, for example, subsidisation of local tariffs from international. Tariff rebalancing, if pursued, might raise the price of the basic local telephone beyond the reach of some low income families. In this case, the Government should consider targeted subsidies to those households to ensure they are not deprived of such basic service. This is discussed in Chapter 7.

8. Provision of other cross-subsidised services at no cost or a subsidised rate may also come under threat as a result of competition. In the UK, for example, free directory services were abandoned after competition, with consumers having to pay for directory enquiries except when calling from public telephone boxes. (In Hong Kong, this particular service would not be under threat, since it is provided by HKTC free of charge under the Universal Service Obligation).

9. The Consumer Council recommends that OFTA should consult widely on any services currently outside the ambit of the universal service obligation, which consumers and welfare groups believe

³ BT's prices have come down by 40% in real terms in the last five years.

should continue to be available at a reduced or subsidised rate. These should be included in the universal service obligation and funded from the independent universal fund recommended in Chapter 7.

Choice

10. Obviously different groups of consumers will value some features of the telephone service more than others. These different needs can best be accommodated by wide choice. Competition from call-back companies and new FTNS operators is already providing some choice for consumers in international calls. The choice available to consumers is however limited by:

- (a) new operators' focus on business, where profits are highest and
- (b) lack of competition for local calls.

11. Even where there is a wide choice, for example, in value-added services, individual consumers may not be able to take advantage of them because of:

- (a) lack of information or understanding about what is available;
- (b) constraints on access to more than one operator within one building;
- (c) the cost of switching (high exit cost for leaving one company); and
- (d) limitations of existing telephone equipment.

12. It is obviously in business as well as consumers' interest to improve information and understanding of the options available, and make it easy to find and access services. Consultation between businesses and telephone user groups may encourage better directed and more informative advertising to overcome these problems.

13. Chapter 4 suggested some structural arrangements, for example giving statutory force to OFTA's guidelines on Access to Buildings and increasing public awareness of the problem to reduce constraints on access to other network operators.

14. We recommend that OFTA should monitor exit charges, i.e. the terms on which consumers can terminate their contract with one operator, to ensure that there are no uncompetitive practices in this area and that consumers are not being locked into use of one

company for an unreasonable period of time. This is currently more of a concern in other countries, mainly with regard to pager and mobile telephone service operators but OFTA should be watchful of any similar practices developing in telecommunications markets in Hong Kong.

Product Innovation

15. Product innovation is an aspect of choice highly valued by consumers in Hong Kong, contributing to the territory's reputation for being at the cutting edge of telecommunications technology. Competition or the prospect of competition has a radical effect on innovation, encouraging companies continually to invest and compete to offer new and improved products.

16. It also has a dramatic effect on market behaviour of the operators. Once consumers have a choice of service operators, companies will have to persuade consumers to use their services by offering innovative products. For example, for a time before liberalisation, HKTC asked customers to install and pay for a separate digital line for operating a fax machine from home, even though it was possible to run a fax from their existing line. With competition, HKTC is seeking to enhance residential fax services, and has brought onto the market a new 'Homefax' service, which allows consumers to operate two separate numbers, a fax and telephone number, from one line, i.e. at the same line rental cost.

17. In another example, the liberalisation of the telephone equipment (customer premises equipment) market in the early 1980s (previously customers can only lease or buy telephones from HKTC) was quickly followed by widespread availability of new touch tone and push button telephone sets.

18. In the case of the liberalisation of the local fixed network, competition has added urgency to and increased investment in the development of cordless access service technology which the new FTNS operators hope to use, as an alternative to building new local loops or type II interconnection, to provide direct customer access. This is a new product which will indirectly benefit consumers, providing easier access to the network operator of their choice. Personal Communication Services (PCS) is another major new product which, if successfully developed, will have a very significant impact on consumers' choice of basic telephone service delivery.

19. The liberalisation of FTNS has stimulated substantial growth in new value-added services as FTNS operators use these to develop competitive advantage. HKTC's 'OneCall', technically

known as personal number portability, is an example. This allows consumers to choose their own number which people can call to locate them at up to four different telephone numbers. Call-identification, conference calls, are other examples. One of the biggest areas of new products in future will be inter-active media services such as home-banking, home-shopping and video-on-demand.

20. Other value-added service providers, who do not have an FTNS licence, are also investing in product innovation to take advantage of capacity increases following building of the second network and new network/broadbandwidth technology, and market growth.

21. Product innovation is therefore one of the greatest areas of benefit for consumers from competition. There are some risks for consumers, however, that need to be considered. For example, an increased risk of equipment becoming obsolete - with the plethora of new services and new service providers, consumers' equipment may only be able to interface with a limited range of products, e.g. mobile phones cannot be converted from analogue to digital and new equipment has to be purchased. Experience in other countries shows that companies may even pretend that equipment will only interface with certain products⁴.

22. It is particularly important, in terms of choice and ability to take advantage of new products, that:

- (a) customers know which equipment will work on which network(s), from information provided by the manufacturers;
- (b) that customers should be able to change to a different FTNS operator while using their existing equipment;
- (c) network and service providers should be encouraged to use standardised interfaces. This would allow bulk manufacture of customer equipment, thus keeping down prices (otherwise equipment suppliers would need to produce many different models for different interfaces at higher cost). It would also reduce the risk of: existing equipment becoming obsolete; and difficulty in obtaining spare parts;

⁴ For example, in the UK, consumers were persuaded that they had to buy a new hand set with a "Mercury" button in order to have access to Mercury (the new fixed network operator)'s services, when many existing models could easily be programmed to provide Mercury services.

- (d) operators engage in ethical trade practices and refrain from promoting product of a limited useful life due to rapid technological change.

23. In the UK, the telecommunications regulator, OFTEL, set up a committee composed of network operators, equipment suppliers, consumers and the regulator to agree which interfaces, including any new interfaces, needed to be standardised to ensure interoperability and affordability of equipment for consumers. This voluntary approach has not been entirely successful, for example, in the case of a new value-added service (Caller Line Identification). Because British Telecommunications plc (BT) and other operators could not agree on the way it would be delivered, the service is only available from the operators concerned on particular types of equipment. OFTEL is now considering introducing a licence requirement that would make FTNS operators give advance notice of a new or different interface, or reserve powers for OFTEL to prescribe use of a certain standard.

24. In Hong Kong, the existence of four new network operators will increase the possibility of a greater range of interface variations emerging. The interface issue will become increasingly important. The Consumer Council believes that OFTA should consider voluntary, and if necessary, mandatory measures to ensure FTNS operators:

- (a) co-operate in agreeing standardised interfaces wherever possible; and
- (b) make information about any new interfaces available to equipment manufacturers at the earliest possible stage so that manufacturers can make any changes required to equipment design as soon as possible.

25. OFTA may also wish to consider introducing a register of significant interfaces, which would make available necessary information on the existing network's interfaces to the new FTNS operators.

Quality of Service

26. Quality of service is an area on which companies compete for business. It can therefore be expected to improve automatically as a result of competition in highly profitable areas, such as services to business, value-added and international services. HKTC, for example, recently upgraded its target for installation of business telephone lines from 7 days to 5 days.

27. The Consumer Council greatly welcomes such improvements, and believes that competition will provide the greatest incentive to raise standards of service further.

Existing service indicators and customer pledges

28. In Hong Kong, as a condition of the new FTNS licences issued in June 1995, all FTNS operators, including HKTC, have to prepare a customer charter, 'which sets out the minimum standards of service to the licensee's customers and gives guidance to the employees of the licensee in their relations and dealings with customers.'⁵ The licence condition gives no details about how or what services should be covered, or the date by which the charter must be prepared.

29. HKTC has prepared one such charter. This is based on G-Force, an automatic compensation scheme launched in December 1994, which applies to line installation, telephone line repair, and provision of IDD service. Automatic compensation schemes, i.e. agreements by the network operator to compensate consumers by set amounts for failure to achieve agreed timescales for certain services, are valuable spurs to improve service quality. By giving consumers easy-to-claim financial benefits they provide an incentive to companies to meet advertised targets.

30. HKTC has also, since November 1993, operated a voluntary customer service commitment including quality of service targets (see Appendix 8.1). The results are discussed with OFTA on a monthly basis and published annually in HKTC's customer satisfaction review.

31. We note that HKTC, in response to a recommendation from the Consumer Council, established 4 Customer Advisory Groups, with business and residential consumer members, in 1993, to provide consumer feedback on HKTC's services and products. The company recognises that this provides a valuable link with consumers.

32. The Consumer Council welcomes HKTC's voluntary introduction of service quality targets and automatic compensation schemes for some services. However, we note that:

- (a) there is lack of public awareness of the automatic compensation scheme (although it was advertised in the press at the time of the launch, information has not been sent to individual customers except by request).

⁵ paragraph 11 of FTNS licences published in June 1995.

Hence its value as an incentive to improve services is not as strong as it might be;

- (b) there is lack of awareness of HKTC's performance against service targets (although copies are placed in shops at the time the results are released, they are not sent to individual customers except by request);
- (c) some targets could be more objective and informative⁶;
- (d) performance against targets is not independently monitored, i.e. OFTA is not directly involved in the monitoring process.

Principles for fair quality of service indicators

33. The Consumer Council believes that in order for consumer interests to be protected, FTNS operators should provide comprehensive customer charters, in a standardised format, and relevant quality of service information. OFTA should issue guidelines on and monitor the preparation of such charters. Operators should be encouraged to meet these standards and provide quality of service information voluntarily.

34. We recommend that guidance on quality of service indicators is based on the following principles. They should:

- (a) cover areas which consumers judge to be important, rather than what engineers, telecommunication managers or any other parties judge important;
- (b) be objective - not devised solely by operators to give the most impressive results. A target including the phrase 'met by agreed appointment' could, for example, hide a deterioration in service quality if customers, under pressure from the operator, agreed to longer waiting times;
- (c) be clearly defined in a way that is relevant to consumers;
- (d) be informative. Averages are often uninformative. For example, an average waiting time for telephone installation would not reveal whether or not some

⁶ For example the 'install residential lines within 7 days or a later date agreed with you' target enables HKTC to achieve very high (99.7% in 1995) achievement rates, but does not indicate whether installation times are in fact improving or whether instead many more consumers are agreeing to wait longer for installation.

customers had to wait much longer than the advertised period for their telephones to be installed;

- (e) be independently monitored. A survey in the UK showed that in monitoring performance against targets, the operator (BT)'s recorded results were much better than the results collected by OFTEL and, separately, a consumer group. In Hong Kong, OFTA would be the most obvious independent monitoring body;
- (f) be published and publicised. This puts pressure on the supplier to improve performance and enables consumers as well as the regulator to monitor service quality and value for money. As long as all operators use the same standard format, publication of service quality data will enable consumers to make direct comparisons and an informed choice of operator.

35. These indicators can be used to protect and, by setting targets, improve services to consumers. They can also help the regulator in monitoring the tariff regime - if the quality of service were to fall while the tariff charge remained the same, this could be construed as a concealed price increase.

36. The areas consumers consider important will vary in different places. In Hong Kong, for example, with widespread use of pagers, targets for pager connection rates are very important, but matter much less to consumers in other countries. We suggest that service quality targets should include, with automatic compensation schemes where applicable:

- (a) installation of residential service (in HKTC's present Customer Service Commitment);
- (b) telephone fault incidence;
- (c) telephone repair service (in HKTC's present Customer Service Commitment);
- (d) call connection (in HKTC's present Customer Service Commitment);
- (e) voice transmission quality;
- (f) billing accuracy;
- (g) accuracy of customer entries in directories*;
- (h) operator services* (general enquiry calls covered in HKTC's present Customer Service Commitment); and

- (i) payphones* (in HKTC's present Customer Service Commitment)

* applies to dominant supplier only.

Recommendations

Recommendation 1:

Consumer feedback on essential services

37. The Consumer Council recommends that OFTA should discuss with consumer and welfare groups any services currently outside the ambit of the universal service obligation, which welfare groups feel should continue to be available at a reduced or subsidised rate. These should be included in the universal service obligation and funded from the independent universal fund as recommended in Chapter 7.

Recommendation 2:

Technological changes and consumer welfare

38. The Consumer Council recommends that OFTA should consider voluntary, and if necessary, mandatory measures to ensure FTNS operators co-operate in agreeing standardised interfaces wherever possible to facilitate compatibility of existing customer equipment with services of other operators. OFTA may also wish to consider introducing a register of key interfaces, which would make available necessary information on the existing network's interfaces to the new FTNS operators.

39. OFTA, in considering co-operation on interfaces and availability of information to equipment manufacturers, should bear in mind the effect on consumers' ability to keep, and obtain spare parts for, existing equipment.

40. OFTA should encourage telephone equipment manufacturers to indicate clearly to purchasers of telephone handsets the networks with which they are compatible.

Recommendation 3:

Quality of service targets

41. The Consumer Council recommends that OFTA provides comprehensive guidance on the preparation of customer charters. We recommend that quality of service targets, based on the following principles, are included in such charters:

- (a) indicators should be relevant to consumers, clearly defined, objective and informative;

- (b) all operators should be encouraged to use the same standardised format;
- (c) performance against targets should be monitored by an independent body such as the TA;
- (d) results should be publicised regularly through an effective medium, for example, on enclosures in communications to individual customers, and on the Internet⁷;
- (e) automatic compensation schemes, and proper publicity for them, should be encouraged wherever possible. Public awareness of existing schemes should be improved.

⁷ In the U.K., the telecommunications operator, BT, publishes its 'Code of Practice' on the Internet. The Code, agreed with the UK regulator, OFTEL, includes details of service standards, automatic compensation schemes, telephone bills, disconnection and reconnection policies, complaints procedures, etc.,.

Appendix 8-1

HKTC's customer service targets and performance (Nov 1995)

Residential telephone lines

*Target: install within 7 days or a later date agreed with you.
% within target: 99.7*

*Target: repair by the end of the next day or a later date agreed with you.
% within target: 99.9*

Business Telephone Lines

*Target: Install within 5 days or a later date agreed with you
(*previous target 7 days)
% within target: 99.0*

*Target: Repair by the end of the next day or a later date agreed with you
% within target: 100*

General Enquiry Call

*Target: Answer within 7 rings (*includes bill enquiry calls)
% within target: 87.9*

Enquiry Calls on Mobile Services

*Target: Answer within 3 rings
% within target: 83.2*

Mobile Phones

*Target: Connect within 1 hour
% within target: 97.6*

*Target: Repair within 4 working hours
% within target: 98.6*

Pagers

*Target: Connect within 3 minutes (*previous target 15 minutes)
% within target: 100*

*Target: Repair within 4 working hours
% within target: 99.6%*

Bill Enquiries

*Target: Reply within 3 working days
% within target: 99.0*

Public Payphones

*Target: 100% working
% within target: 98.8*

IDD Service

*Target: Provide service within 24 hours of application (*new target
for 1995)
% within target: 99.9*

Chapter 9

Regulatory Safeguards and Policy Development Responsibilities

Introduction

1. The regulatory framework is important in defining the rules of the game and creating a level-playing field in the liberalised market. This chapter gives an overview of the legislative framework governing the changing telecommunications industry. Most importantly, we examine the content and enforcement of competition provisions and their effectiveness in combating anti-competitive practices.
2. The chapter also discussess the most appropriate allocation of policy responsibilities and adminstrative framework for the development of the industry.

Existing Legislative Framework

3. The telecommunications industry is regulated by the Telephone Ordinance (Cap. 269) and the Telecommunication Ordinance (Cap. 106), which are mostly enforced by the Telecommunications Authority (TA) with the administrative support of the Office of the Telecommunications Authority (OFTA).

Telephone Ordinance (Cap. 269)

4. Parts of the Telephone Ordinance were repealed and amended on liberalisation of the FTNS market in 1995.
5. One important aspect of the amendment is the nationalisation of the numbering plan. Under the Telephone (Amendment) Ordinance 1995, the numbering plan, which was previously managed by HKTC, is now under the ownership and control of the TA. The TA can issue Codes of Practice which may include provisions relating to number portability. This is important in removing barriers for the new entrants to compete for customers as number portability allows customers of HKTC to retain their telephone number when they change the service provider or address.

6. Even though HKTC's monopoly status has ended, its dominant market position is expected to remain for some time. Therefore, the power of the Secretary for Economic Services¹ in setting price control arrangements on charges collected by HKTC still remains in the Telephone Ordinance (section 24 of the Ordinance refers).

Telecommunication Ordinance (Cap. 106)

7. All licensees of telecommunications services, including those whose licences are granted under section 8 of the Television Ordinance (Cap. 52), are governed by the Telecommunication Ordinance (Cap. 106). Apart from FTNS licences, other forms of telecommunications licence governed by this Ordinance are Public Non-Exclusive Telecommunications Service (PNETS) and Public Radiocommunication Service (PRS) licences, under which services such as mobile telecommunication, CT-2, pagers and Internet are provided.

8. The Ordinance covers many technical aspects in relation to the use of telecommunications apparatus and lines. It also gives the TA power to determine the terms and conditions of interconnection, to issue directions requiring licensees to take action to comply with their licence conditions or in relation to interconnection etc., and to impose financial penalties on a licensee for failure to comply with any direction.

9. Further, section 37 of the Ordinance enables the Governor-in-Council to make regulations. The regulations were amended in 1995 by the insertion of the general conditions of the FTNS licences, making the licence conditions transparent.

10. The general conditions of the FTNS licences included a number of competition provisions. The TA has also issued Guidelines to Assist the Interpretation and Application of the Competition Provisions of the FTNS Licence (March 1995) to give the FTNS licensees a better understanding of how the TA will administer these provisions.

Existing legislative framework and liberalisation

11. During the initial stage of liberalisation, one important task for the Government and the regulator, i.e., the TA, is to set the rules of the game to ensure that the incumbent and newcomers can compete fairly in a level-playing field. Once the rules of game have been defined, the regulator, like the referee of a ball game, is responsible for making sure that no market player violates them.

¹ The Government Secretary charged with the responsibility for telecommunications policy. The Consumer Council recommended in its report on the broadcasting industry, "Ensuring Competition in the Dynamic Television Broadcasting Market (Jan 96)", that telecommunications should come under a new Secretary for Television, Telecommunications and Communications Technology.

12. One major difference between a market and a ball game is that the market environment is constantly changing due to many external variables such as technological innovation and new entrants. All these give rise to new issues which are difficult to anticipate before they actually happen. It is therefore difficult for the Government and the regulator to have a set of specific rules to cover every situation before the market is open for competition. Even if rules are available, it is very likely that they will be subject to alteration when new issues arise.

13. Further, it is not possible to transplant wholesale a set of rules from a country with an already liberalised telecommunications market to Hong Kong. First, each country's market is unique; and secondly, there is no country in the world apart from Hong Kong where the local market has been liberalised without the long-distance international market being opened up.

14. The existing legislation has so far worked well in enabling the TA to tackle many issues arising from the initial liberalisation of the local fixed network. First, the existing Telecommunication Ordinance has given the TA broad powers which include the power to grant licences, give directions and make determinations, particularly on the very important matter of interconnection. Secondly, the TA is able to put in place, in the licence conditions, some general and specific requirements and provisions before they eventually become part of the primary legislation.

15. The existing legislative framework also provides a high degree of flexibility. The TA can react to the changing environment promptly by issuing new guidelines or making new determinations. If these guidelines and determinations were stipulated in an ordinance, the process by which the TA could seek to alter or supplement them would be more complicated.

16. Nevertheless, in the long run, as the market becomes more mature and competition becomes more intense, it is important for the TA to gradually reduce direct control and determination on issues and make way for more self-enforcement with specific rules to guide the market players. The TA shall be given more defined responsibilities in overseeing the implementation and enforcement of the overall policy. This will give market players a surer foundation from which to act and compete in the market.

The New Legislative Framework

17. In its telecommunications policy the Government stated its intention of "introducing a comprehensive package of reforms" on all telecommunications legislation with the aim of submitting it to the Legislative Council in late 1994.² However, the plan has been deferred to some time in the first half of 1996.

² *Position Paper: Hong Kong's Telecommunications Policy*, issued by Economic Services Branch, Government Secretariat, Hong Kong Government, January 1994.

18. According to the Economic Services Branch, the rapid changes in the market are the main reason for the delay of the new legislation. During the transition to a competitive market there are many new developments in the "increasingly competitive and complex telecommunications sector"³ which require time to review and design appropriate legislation to cope with new issues.

19. The new ordinance will incorporate all the existing regulations and FTNS licence conditions, and more specific rules to regulate the industry.

20. The Consumer Council supports the introduction of comprehensive legislation and is of the view that in principle the legislation should provide:

- (a) a set of clearly defined policy objectives and responsibilities for the TA;
- (b) sufficient power for the TA to carry out its defined responsibilities and attain the policy objectives;
- (c) a high degree of transparency in the TA's decision-making process;
- (d) a set of both general and industry-specific rules to create a level playing field and promote competition;
- (e) an effective deterrent against violation of rules; and
- (f) sufficient protection for those who may suffer damage as a result of a party's failure to comply with the rules.

Competition Provisions

21. The relevant competition provisions are currently contained in FTNS licences and will be incorporated into the primary legislation of the new Telecommunications Ordinance. They are general conditions 15, 16 and 20(4). The full text of these provisions appears in Appendix 9-1.

22. These provisions are both general and industry-specific. General competition provisions are not only an important safeguard in the long term,⁴ they are also necessary to make up for the absence of competition law in Hong Kong. In other countries, such as Australia and the US, the telecommunications industry is governed by a general trade practice act

³ Ibid

⁴ Based on the experience in the US, Larson (1991) pointed out that in a more competitive environment when the incumbent faces increasing competition from the new entrants, a trend away from industry-specific and asymmetric regulation would be beneficial to the industry. He also argued that as compared with some specific regulations, anti-trust's general and comprehensive safeguards provide greater pricing flexibility necessary for the incumbent to compete.

and anti-trust laws as well as industry-specific provisions in telecommunications legislation.

Anti-competitive conduct

23. Presently, a broad prohibition against anti-competitive behaviour is contained in general condition 15(1)(a) of the FTNS licence. This provides that a licensee shall not engage in "any conduct" which "in the opinion of" the TA has the "purpose or effect" of "preventing or substantially restricting competition" in the operation of the public fixed telecommunication network service or in any market for the provision or acquisition of telecommunications installations, services or apparatus. General condition 15(1)(b) specifies some of the types of conduct to which the prohibition may apply. This includes collusive agreements to fix the price for any apparatus or service, boycotting the supply of goods or services to competitors, entering into exclusive arrangements which prevent competitors from having access to supplies or outlets and agreements between licensees to share the available market along agreed geographic or customer lines.

24. General condition 15(2) further sets out specific prohibitions against agreements, arrangements or understandings which have an anti-competitive purpose or effect, tying arrangements and a licensee giving undue preference to associates.

Abuse of market position

25. General condition 16 provides that a licensee shall not abuse its position if it is "in the opinion of" the TA, "in a dominant position with respect to a market for the relevant telecommunication services". A licensee is in a dominant position when, "in the opinion of" the TA, "it is able to act without significant competitive restraint from its competitors and customers". A licensee which is in a dominant position is taken to have abused its position if, "in the opinion of" the TA, "it has engaged in conduct which has the purpose of preventing or substantially restricting competition in a market for the provision or acquisition of telecommunication installations, services or apparatus". Such conduct includes predatory pricing, price discrimination, harsh contractual terms, tying arrangements and discrimination in supply of services to competitors.

No discounting

26. General condition 20(4) prohibits a dominant player from offering any discount on its published tariffs, other than a discount calculated in a manner approved by the TA and published together with its tariffs.

General comments

27. The provisions are couched in broad terms. The Guidelines have indicated that the TA will give the provisions a broad interpretation.⁵ Given the breadth of the provisions and the approach which the TA is prepared to adopt, it appears that the provisions are broad enough to cover any new anti-competitive behaviour that may arise.

28. Broadly drafted provisions may be necessary at this stage in order to cover currently unforeseeable situations. However, when the market becomes more mature, more specific provisions can be devised so that all concerned are more certain of the rules of the game.

The Role of the Telecommunications Authority in Preventing Anti-Competitive Practice

29. The TA is responsible for determining whether a licensee has engaged in anti-competitive conduct, abused its position as a dominant player, or is a dominant player for the purposes of the prohibition against offering discounts. There are guidelines to assist the TA in its determination. Nevertheless, the circumstances in question, the factors selected for the determination, and the weight attached to each factor, are all matters for the TA alone to decide.

30. In addition to being a regulator, the TA has taken on the role of an arbiter of competition matters. In other jurisdictions, competition matters are usually handled by a separate competition agency. The latter arrangement would avoid any conflict that may, in certain circumstances, arise from having a single agency with a dual role. The possibility always remains that the regulator may be caught between having to enforce anti-competition provisions and preserving the well-being of the industry. A recent example of a single agency having to choose one role over another is the Hong Kong Monetary Authority's decision to defer further deregulation of the interest-rate rule in the interests of stability.

31. Perhaps it is useful to consider the experience in other jurisdictions. In the UK, the Director-General of Telecommunications carries certain duties similar to that of the Director-General of Fair Trading, in relation to anti-competitive practices in the production, supply or acquisition of telecommunications apparatus or services. If OFTEL considers that an operator is engaged in anti-competitive conduct, it can either seek undertakings from the operator, or refer the matter direct to the Monopolies and Mergers Commission (MMC) for investigation and determination as to whether the conduct of the operator is anti-competitive and against the public interest. The MMC will make a recommendation to the Secretary of State, who can then determine appropriate remedies, in the form of orders

⁵ See the Guidelines on the TA's approach to general conditions 15(1) and (2).

or undertakings. Even though most competition issues are dealt with by OFTEL, the MMC provides an independent channel to look into disputes.

32. In Australia, the Australian Telecommunications Authority (AUSTEL) deals with industry-specific competition issues, while the Australian Competition and Consumer Commission handles the general issues particularly those affecting consumer welfare.

33. In the US, competition issues in the telecommunications industry may be handled as follows:

- (a) by the Federal Communications Commission (FCC). The FCC is the regulator of the industry. It also looks at policy issues related to deregulation and competition. Disputes between market participants can be referred to the FCC;
- (b) by the Federal Trade Commission (FTC). This is an independent agency responsible for investigating anti-competitive practices, such as price-fixing arrangements, tie-in sales and exclusive dealings, etc.;
- (c) anti-trust suits may be brought either by the Department of Justice or private parties seeking damages. These actions need not be co-ordinated with the FCC, and in turn the FCC cannot overrule the order of the federal district judge.⁶ For example, in the case of Carterfone, the FCC's decision was overruled by the federal court to which an anti-trust action was taken. This marked the beginning of the deregulation of the telecommunications industry in the US.

34. Broadly speaking, although the powers and responsibilities of each of the regulators in the countries cited above in dealing with anti-competitive practices differ, each country has an independent competition agency. The TA in Hong Kong does not have the benefit of the support of such an agency which would have brought with it expertise in the competition area.

35. Recently, an issue arose over whether HKTC could offer a discount on certain services. Based on general condition 20(4) in the FTNS licence which prohibits a dominant player from offering discount to its tariffs for services provided, the TA did not approve the discount plan of HKTC. The issue is certainly not straight-forward. From a theoretical point of view, large discounts by the dominant player can be anti-competitive if

- (a) it enhances the advantages of scale and ubiquity which the dominant player already has, and therefore restricts new entrants from offering the service;

⁶ Brock, Gerald W. "Institutions of Telecommunication Policy", in *Telecommunication Policy For the Information Age: From Monopoly to Competition*, Cambridge, Massachusetts: Harvard University Press, pp. 49-60.

- (b) it is designed to exploit market power by bundling together monopoly and competitive services; and
- (c) it involves subsidies from other parts of the dominant player's business, in other words, predatory pricing.

36. On the other hand, allowing the dominant player greater price flexibility can increase the pressure on other operators to increase their efficiency. HKTC argues that the discount it offers does not bring tariffs below costs, and therefore is not predatory pricing. It says such a discount is simply its reaction to competitive forces.

37. This case demonstrates the benefits to all concerned if the affected party could resort to an independent agency for relief or review of the matter.

An Administrative Approach

38. The procedures in Hong Kong to curb anti-competitive behaviour in the telecommunications industry follow UK competition policy, which relies on administrative investigation rather than legal prohibition. This contrasts with the approach in Australia, Canada, the European Union, New Zealand and the US where legal prohibition is adopted.

39. The administrative approach centres on the regulator investigating and taking appropriate remedies in the form of orders or undertakings. The Australian Hilmer Report on National Competition Policy pointed out that "The disadvantages of the UK scheme [competition policy] have been seen as a relatively weak deterrence flowing from the absence of a prohibition;...".⁷ We understand that there is considerable concern in the UK over this lack of legal prohibition.

40. Apart from the deterrent effect, both approaches have their own advantages and disadvantages. This issue will be discussed in depth in the Consumer Council's main report on competition studies.

Sanctions

41. In a competitive market, self-regulation is more effective than close regulatory monitoring in the control of anti-competitive conduct. A regulatory framework should therefore act as a significant deterrent rather than concentrating on dealing with the consequences of anti-competitive conduct. For the Government and the economy as a whole, a system designed to deter anti-competitive conduct can minimize resources which would otherwise be needed for investigation.

⁷ Bryan-Brown, Michael. "Reforming Telecoms Competition Rules" in *Consumer Policy Review*, vol. 5(4), July/August 1995, pp.121-26.

42. The current system provides no significant deterrent against anti-competitive conduct. If it is satisfied that a licensee's conduct should be investigated, the TA will first give the licensee a reasonable opportunity to make representations. When it is satisfied that a condition of the licence is being contravened, it may then issue a direction to the licensee requiring it to take the necessary action to comply with the condition. Only when the licensee fails to comply with the direction can the TA impose financial penalties. The penalty is subject to a maximum of \$20,000 for the first occasion on which a penalty is imposed, \$50,000 for the second and \$100,000 for any subsequent occasion. The amount of penalty is insignificant compared to that in other countries. In Australia, for example, the regulator can apply to the Federal Court if a licensee is found contravening its licence condition. The maximum financial penalty that may be imposed by the Federal Court is A\$10,000,000 (or HK\$56,600,000). The amount of the penalty depends on, among other factors, the "nature and extent of the contravention and of any loss or damage suffered as a result of the contravention".⁸

43. The ultimate sanction for breach of a licence condition is revocation of the licence. The TA may at any time cancel, suspend or withdraw a licence in the event of contravention by the licensee of the Ordinance or of any condition to which the licence is subject. The Governor-in-Council also has the power to cancel or suspend a licence at any time if he considers it in the public interest to do so. These powers are likely to be exercised only under extreme circumstances. There is the added practical difficulty that if the licence of a dominant player which provides services to almost every household and business in the territory is cancelled, suspended or withdrawn, a new operator must be able to stand in immediately to ensure continuity of service. To this end, the FTNS licence condition does provide certain safeguards in such an emergency, e.g. take over of assets.⁹

Redress and Consumer Protection

44. The Government proposes to make the competition provisions currently contained in FTNS licences primary legislation by inclusion in the new Telecommunications Ordinance. We consider this to be necessary.

45. We also consider it important that the legislation gives aggrieved parties and other affected parties such as consumers, the right to seek redress for any loss suffered as a result of an anti-competitive conduct.¹⁰

⁸ Section 356(1)(a), Part 16, Telecommunications Act 1991, Australia.

⁹ General condition 41(1) of FTNS licence allows the Government to take over the undertaking and assets of a dominant player if, among others, its licence is revoked.

¹⁰ At present, competition provisions are contained in FTNS licence conditions. An aggrieved market player or consumers cannot therefore take private action to seek compensation for any damage suffered as a result of an anti-competitive conduct, because the provisions form a legal binding contract between the TA and the licensee in question only.

Consumers, in most instances, will have only limited knowledge of the industry and will have to rely on the regulator to protect their interests. Where consumers are given the right to act, they should also be given adequate remedy. In the US, suits can be brought by private parties seeking damages against anti-competitive behaviour under anti-trust laws. Severe penalties are often imposed on anti-trust violators in particular for price-fixing and horizontal market violations, where criminal sanctions also apply. Private citizens are given treble damages i.e. three times the amount of the loss incurred.¹¹ The penalty would not only compensate for the loss suffered by some market participants and consumers, it would also act as an effective deterrent against breaches and provide an incentive for actions against anti-competitive practices.

Mergers and Acquisitions

46. Competition in local telephone services will be jeopardised if horizontal mergers or acquisitions take place among any of the four FTNS operators.

47. General condition 4(1) of the FTNS licence provides a safeguard against an undesirable merger or acquisition. This condition provides that a licensee is required to obtain the consent of the TA prior to a transfer of its licence. In giving consent, the TA will take into account the effect which the transfer will have on "market structure and the financial and technical competence and viability of the transferee". Although this condition is broad enough to enable the TA to stop any merger and acquisition that would have an adverse impact on public interests, it would be desirable if objective criteria were devised to guide the TA's determination. These objective criteria could include methods such as the market share test and the assets test adopted by the MMC. The market share of a post-merger company is also one of the criteria for considering whether a merger should be prevented.¹²

48. Rapid technological development will bring about a convergence between different types of telecommunications as well as between broadcasting and telecommunications. Hence, in considering the impact of a merger or acquisition, the TA should define the relevant market broadly. A conglomerate merger and acquisition, say between Hongkong Telecom and Cable TV, may significantly affect the market structure in both the telecommunications and broadcasting industries.

¹¹ Calkins, Stephen (General Counsel, Federal Trade Commission), *Models of Fair Trading United States of America, International Conference on Fair Trading*, organized by Hong Kong Consumer Council, 28 June 1995.

¹² In U.K. or US, a combined market share of over 25% of a post-merger company will trigger an investigation by Monopolies and Mergers Commission (MMC) or Federal Trade Commission (FTC) on monopoly situation or anti-competitive practices.

49. Further, the licence conditions only allow the TA to prevent a total acquisition among the licensees. It does not cover any merger created by the purchase of sufficient shares of a licensee for the buyer (another licensee) to be able to influence materially the conduct of its business. Section 37 of the Telecommunication Ordinance (Cap. 106) empowers the Governor-in-Council to set regulations in relation to the control of a licensee's voting shares, and such regulations are currently being prepared by OFTA. The Consumer Council is of the view that the regulations should make any purchase or transfer of shares that would result in effective control between the licensees and their holding companies (in addition to a transfer of a licence) subject to the TA's prior consent. Also, the regulation should empower the TA to prevent any transfer which would be considered undesirable for market structure and against public interests.

Policy Development Responsibilities

50. One of the most significant developments for the telecommunications industry has been the gradual merging of broadcasting, telecommunications and information technologies. This is reflected in interests expressed by broadcasters and telecommunications operators in venturing into each other's traditional markets and activities. For example, Video-on Demand is the transmission of TV signals to consumers over telephone lines; voice signals and pictures can now be transmitted on the Internet.

51. However, this trend is not reflected in the present administrative structure, with two different Government Policy Secretaries having top level policy responsibility for broadcasting and telecommunications. The Broadcasting Authority (BA) works with the Secretary for Recreation and Culture, who is answerable to the Chief Secretary; whereas OFTA works to the Secretary of Economics, who is accountable to the Financial Secretary. Although they all converge at the Governor's desk, the management structure is not conducive to holistic planning at the policy formulation level.

52. Regulation of broadcasting is also couched in terms of the means by which the signals are transmitted, for example Star TV is licensed under the Telecommunications Ordinance while other broadcasters are licensed under the Television Ordinance. While the two regulatory bodies (BA and OFTA) do cooperate with each other, the separate lines of accountability require extra co-ordinating efforts by the parties concerned. This is discussed more fully in chapter 3 of the Consumer Council's report on the broadcasting industry.¹³

53. For these reasons, in that report, the Consumer Council expressed the desirability, which we reaffirm here, of bringing overall policy responsibility for broadcasting and telecommunications together under one

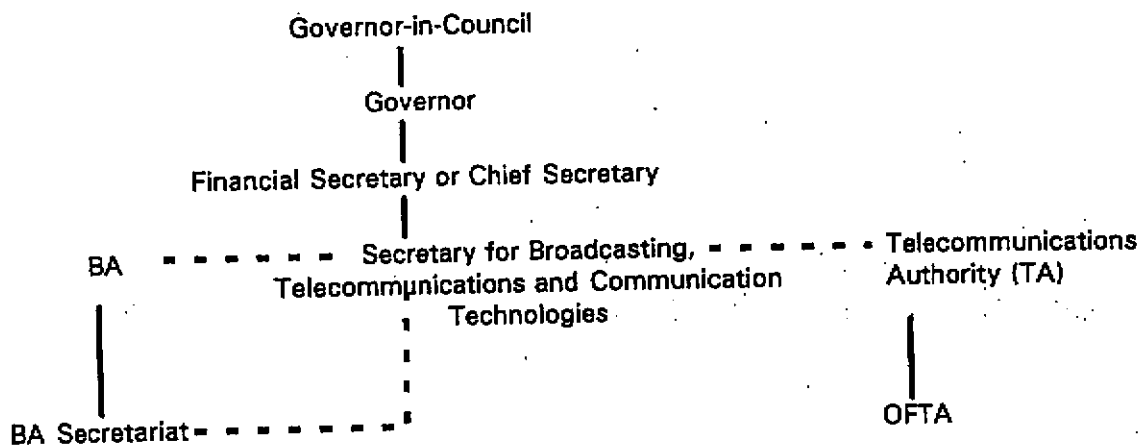
¹³ 'Ensuring Competition in the Dynamic Television Broadcasting Market' January 1996

policy secretary. The setting up of a Secretary for Broadcasting, Telecommunications and Communication Technologies would give the necessary focus on these high-tech, fast moving and converging areas.

54. This proposal rationalises and combines the regulation of both content and means of delivery of broadcasting and telecommunication signals. We also believe it will add momentum to and facilitate the development and access to the information superhighway in Hong Kong. The recommended new framework is illustrated below:

Figure 9-1

Proposed Regulatory Framework for Broadcasting, Telecommunications and Communication Technologies



Source : Consumer Council, "Ensuring Competition in the Dynamic Television Broadcasting Market", 20 January 1996.

55. Under the proposal, the regulatory role of OFTA, headed by the TA, should, in order to implement the Government's telecommunications policy, remain unchanged. At present, GIC makes regulations which OFTA then implements. It is especially important that OFTA retains responsibility for dealing with issues affecting the development of effective competition in the industry, e.g. interconnection arrangements, in the initial period of liberalisation.

Checks and balances on the executive

56. In Hong Kong, the telecommunications regulator (ie OFTA) is a Government department, working under the Economic Services Branch and operating under a trading fund. It is headed by the Director General of Telecommunications, who is currently appointed as the Telecommunications Authority (TA) by the Governor. The TA is appointed under section 5 of the Telecommunication Ordinance and is "such public officer as [the Governor] thinks fit".

57. The Governor-in-Council makes regulations and issues licences. Like all Government departments, OFTA's handling of matters is subject to investigation by the Commission of Administration Review. Also, its decisions are subject to Judicial Review. Most of OFTA's decisions, particular its determinations, are final. This is necessary in areas of a highly technical nature in a fast moving market, and not dissimilar to the status of determinations on telecoms issues by regulators in the UK and US. The difference is that OFTEL, the UK regulator, is advised by statutory independent advisory boards, and the Federal Communications Commission (FCC), the US regulator, is an independent body with five commissioners appointed by different political parties.

58. It has been OFTA's practice to seek independent advice and consult the public. The Consumer Council welcomes the high degree of transparency in the TA's public consultation process through the issue of consultation papers to the industry and other concerned groups, such as the Consumer Council. In particular, we note that four consultative committees have been set up to seek public representations on a number of telecommunications issues.¹⁴ In line with general government administrative and legislative procedures and to provide checks and balances, we see merit in strengthening such public consultation by setting up an independent advisory board to offer advice on key telecommunications issues.

59. The present openness and high degree of public participation in telecommunications regulatory activity would be further enhanced if public consultation procedures and advisory bodies were to become statutory requirements.

60. Another important check and balance, is the provision of information on decisions once they have been made. At present, the TA is not under any duty to give reasons for its determinations. Nor is the TA obliged to make public the reasons for such determinations. The only requirement on the TA is that, before it issues any direction requiring a licensee to comply with any of the terms or conditions of the licence, it must be satisfied that it has afforded the licensee a reasonable opportunity to make representations. More transparency would benefit the public and help the industry in planning investments.

¹⁴ These four committees are (1) Standards Advisory Committee, (2) Radio Frequency Spectrum Committee, (3) Consumer and Users Advisory Committee, and (4) Telecommunications Numbering Advisory Committee. Source: Office of the Telecommunications Authority (OFTA), *Annual Report 1993-1994*.

61. These points are addressed in the following recommendations.

Recommendations

Recommendation 1:

Introduction of a comprehensive Telecommunications Ordinance

62. ***The Consumer Council supports*** the introduction of a comprehensive Telecommunications Ordinance and is of the view that it should be introduced as soon as possible. To safeguard consumer interests, ***we consider that the new legislation should provide:***

- (a) a set of clearly defined policy objectives and responsibilities for the TA;
- (b) sufficient power for the TA to carry out his defined responsibilities and attain its policy objectives;
- (c) a high degree of transparency in the TA's decision-making process;
- (d) a set of both general and industry-specific rules of the game to create a level playing field and promote competition. This is important in a freely competitive environment where the regulator should gradually shift the burden of regulation to self-enforcement by the market players;
- (e) an effective deterrent impact against violation of rules;
- (f) sufficient protection for those who may suffer damage caused by a party who fails to comply with the rules; and
- (g) a set of clearly defined guidelines on the circumstances under which consent may be given for proposed mergers and acquisitions.

Recommendation 2:

Strengthen competition provisions and financial penalties

63. ***The Consumer Council recommends*** that the competition provisions should be enshrined in the proposed comprehensive telecommunications legislation, and be made applicable to international service and other telecommunications service operators.

64. The current level of financial penalties has a limited deterrent effect against anti-competitive practices. This is because (a) no direct penalty is imposed when the TA determines that a particular conduct is anti-competitive; and (b) even though penalties can be imposed when an operator persists in pursuing a course of action which is the subject of a direction from the TA, the penalties are relatively insignificant in amount. Therefore, ***the Council recommends*** that the financial penalties be revised to a level which is commensurate with the likely gains or losses that may

result from the anti-competitive behaviour in order to act as an effective deterrent.

65. *The Council also recommends* that the new Telecommunications Ordinance should give third parties, including other market players and consumers, the right to seek redress. This right should be coupled with sufficient remedy to such party.

Recommendation 3:

A pro-active role in the protection of consumer interests

66. The Council recommends that OFTA takes a pro-active approach in undertaking studies relating to market behaviour and market competition, rather than solely responding to complaints. This is to ensure fair market practice. Because consumers, who only have limited knowledge of the operations of the industry, may not be aware that certain practices are working against their interests. Traders might also be hesitant to lodge a complaint for fear of offending the subject of their complaint.

Recommendation 4:

Independent competition agency

67. The analysis of the competition provisions reveals the advantage to the TA, the telecommunications industry and third parties, in having a general competition agency in Hong Kong to complement and underpin the current industry-specific competition provisions. This matter will be taken up in the Council's main report on competition policy.

Recommendation 5:

Policy development responsibility

68. Recognising the convergence of broadcasting, telecommunications and communication technology, *the Consumer Council reaffirms its earlier recommendation* for integration of policy development responsibility for these areas under a Secretary for Broadcasting, Telecommunications and Communications Technology.¹⁵

Recommendation 6:

Public consultation and transparency; An independent advisory board

69. The Consumer Council recognizes the importance of a regulatory agency such as OFTA to oversee the deregulation process and to enforce Telephone and Telecommunication Ordinances.

70. In order to enhance public consultation and strengthen OFTA's contribution to the policy making process, *the Consumer Council recommends that* the Government consider setting up an Advisory Board to tender advice to TA on key telecommunications issues.

¹⁵ See Consumer Council, "Ensuring Competition in the Dynamic Television Broadcasting Market", January 1996.

71. To ensure continued openness, we recommend that the new Telecommunications Ordinance makes the establishment of consultative committees and the continued issuance of consultation papers by OFTA statutory requirements. The TA should also be required to account for its determinations.

Appendix 9-1

TELECOMMUNICATION (AMENDMENT) REGULATION 1995

(Made by the Governor in Council under section 37 of the Telecommunication Ordinance (Cap. 106))

Schedule 3: Form of licences

Fixed Telecommunication Network Services Licence

GENERAL CONDITIONS

Transfer

4. (1) The licensee may only with the prior written consent of the Authority and subject to such reasonable conditions as the Authority thinks fit transfer this licence or any permission, right or benefit under this licence. In giving his consent the Authority will have regard to such matters as he thinks fit including but not limited to the effect which the transfer will have on market structure and the financial and technical competence and viability of the transferee.
- (2) Where a licensee is in a dominant position in a market for the provision of a public basic telephonic service over fixed telecommunication networks within the meaning described in General Condition 16(2), it may not without the prior written consent of the Authority, which can be withheld for the purposes of General Condition 10(1), assign, transfer or otherwise dispose of more than 15% of the licensee's assets constituting the Network, other than where the transfer or disposal of those assets is in the ordinary course of the licensee's maintenance, replacement or upgrading of the Network.

Anti-competitive conduct

15. (1) (a) A licensee shall not engage in any conduct which, in the opinion of the Authority, has the purpose or effect of preventing or substantially restricting competition in the operation of the Service or in any market for the provision or acquisition of a telecommunication installation, service or apparatus.
- (b) Conduct which the Authority may consider has the relevant purpose or effect referred to in subparagraph (a) includes, but is not limited to -
 - (i) collusive agreements to fix the price for any apparatus or services;
 - (ii) boycotting the supply of goods or services to competitors;
 - (iii) entering into exclusive arrangements which prevent competitors from having access to supplies or outlets;

- (iv) agreements between licensees to share the available market between them along agreed geographic or customer lines.
- (2) In particular, but without limiting the generality of the conduct referred to in paragraph (1), a licensee shall not -
- (a) enter into any agreement, arrangement or understanding, whether legally enforceable or not, which has or is likely to have the purpose or effect of preventing or substantially restricting competition in any market for the provision or acquisition of any telecommunication installations, services or apparatus;
 - (b) without the authorization of the Authority, make it a condition of the provision or connection of telecommunication installations, services or apparatus that the person acquiring such telecommunication installations, services or apparatus also acquire or not acquire any other service or apparatus either from itself or of any kind from another person; or
 - (c) give an undue preference to, or receive an unfair advantage from, a business carried on by it or an associated or affiliated company, service or person if, in the opinion of the Authority, competitors could be placed at a significant competitive disadvantage or competition would be prevented or substantially restricted within the meaning of paragraph (1).

Abuse of position

16. (1) Where the licensee is, in the opinion of the Authority, in a dominant position with respect to a market for the relevant telecommunications services, it shall not abuse its position.
- (2) 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.
- (3) (a) A licensee which is in a dominant position within the meaning in paragraph (1) shall be taken to have abused its position if, in the opinion of the Authority, it has engaged in conduct which has the purpose of preventing or substantially restricting competition in a market for the provision or acquisition of telecommunication installations, services or apparatus.
- (b) Conduct which the Authority may consider to fall within the conduct referred to in subparagraph (a) includes, but is not limited to -
- (i) predatory pricing;
 - (ii) price discrimination;
 - (iii) the imposition of contractual terms which are harsh or unrelated to the subject of the contract;

(iv) tying arrangements;

(v) discrimination in supply of services to competitors.

Tariffs

20. (4) The licensee shall not offer any discount to its published tariffs for a particular telecommunication service provided under this licence or customer equipment subject to paragraph (3) (other than a discount calculated in accordance with a formula or methodology approved by the Authority and published together with its tariffs), if, in the opinion of the Authority, the licensee is in a dominant position in any market for or which includes that telecommunication service.

Abbreviation

ADC	Access Deficit Contribution
AUSTEL	The Australian Telecommunications Authority
BA	Broadcasting Authority (Hong Kong)
BT	British Telecommunications
CAN	Customer Access Network
CSL	Hong Kong Telecom CSL Ltd
CSSA	Comprehensive Social Security Assistance
DMC	Deed of Mutual Covenant
ECPR	Efficient Component Pricing Rules
FCC	Federal Communications Commission (US)
FDC	Fully Distributed Costs
FTC	Federal Trade Commission (US)
FTNS	Fixed telecommunications network services
HCL	Hutchison Communications Ltd
HKMA	Hong Kong Monetary Authority
HKT	Hongkong Telecom Ltd
HKTC	Hong Kong Telephone Company Ltd
HKTI	Hong Kong Telecom International Ltd
HKTIMS	Hong Kong Telecom Interactive Multimedia Services Ltd
IDD	International Direct Dial
IMS	Interactive Multimedia Services
IPLCs	International Private Lease Circuits
ISR	International Simple Resales
LRAIC	Long-run Average Incremental Costs
MDF	Main Distribution Frame
MMC	Monopolies and Mergers Commission (UK)
NT&T	New T&T Hong Kong Ltd
NWT	New World Telephone Ltd
OFT	The Office of Fair Trading (UK)
OFTA	The Office of the Telecommunications Authority (Hong Kong)
OFTTEL	The Office of Telecommunications (UK)
PCS	Personal Communication Services
PMRS	Public Mobile Radiotelephone Services
PNETS	Public Non-Exclusive Telecommunications Services
POI	Point of Interconnection

PSTN	Public Switching Telecommunications Network
SW	Switching equipment
TA	The Telecommunications Authority (Hong Kong)
USC	Universal Service Contribution
USO	Universal Service Obligation
VOD	Video-on-Demand

Glossary

Access Deficit Shortfall of revenue generated from the provision of access services against the cost of their provision.

Access Deficit Contribution A contribution of 35.8 cents per minute of international call by the FTNS and PMRS operators to HKTC for the cost HKTC incurs in fulfilling universal service obligation.

Access facilities Telecommunications facilities, including space, ducts, cables and ancillary equipment installed inside a building.

Bandwidth A range of radio frequencies, measured in Hertz (Hz).

Broadband A channel of radio frequencies wider than a voice circuit 300 Hz to 3,000 Hz.

Cabling facilities Telecommunications facilities, mainly ducts and space, for network operators to install their cables and ancillary equipment for the connections between the public telecommunications and broadcasting networks and the individual premises of the occupiers within the property.

Call-back service It uses a number of different technical methods to convert an outgoing call to an incoming call. It enables consumers to take advantage of any differential that may exist between the prices for outgoing and incoming international calls.

Cellular network A telephone communication technology that uses radio frequencies organized in cells to allow mobile voice communications. The radio antennae are programmed to "hand on" the caller's signal as he or she moves from one cell to the other. The cellular arrangement not only assures mobility but also allows for more efficient use of radio spectrum capacity.

Circuit A physical means of directing communication along two or more channels.

Copper wire The basic medium used by local exchange telephone companies to transmit telephone signals from the local central office (CO) to the home or small business. Two copper wires are wrapped around each other to reduce interference. Wire pairs normally operate at a bandwidth of 4 kHz but, if conditioned for the purpose, can attain maximum transmission rates of 1.544 Mbps in a digital mode.

CT-2 Cordless Telephone Second generation. Used in the office and as telepoint outdoors (outgoing calls only).

Digital The formatting of information into binary code, '1' or '0' for discrete discontinuous communication, as opposed to analogue formatting which transmits as a continuous waveform.

Fibre optics A transmission technology that converts electronic signals to laser light for transport through glass fibre. Optical fibre cables are smaller, lighter, and less expensive than copper cables, and laser light has hundreds of times more capacity than lower bandwidth, electronic signals.

Flat Monthly Rental A fixed charge for local calls irrespective of time.

Interconnection The arrangement for linking up two networks and the conveyance of calls and exchange of information from one network to the other.

Internet A worldwide computer network. Internet began in 1969 as ARPAnet (Advanced Research Projects agency of the US Department of Defence) designed for strategic reasons as a distributed network. Through interconnection with universities' networks it has spread to become global, with private operators providing gateway access.

Leased circuits These are dedicated lines which are leased, usually from a public telecommunications operator by a particular customer or another operator.

Leased lines Telecommunications circuits dedicated to a particular customer and leased for a flat monthly fee. Because customers pay on a non-usage-sensitive basis, leased lines can be cheaper than public switched service for users who can ensure a high volume of traffic to specific points. Leased lines also give customers greater control over the capacity and availability of the circuit. Leased lines generally are not connected to the public switched network. Several of them can be connected to closed, private networks. Also referred to as private lines or dedicated lines.

Local loop or (Customer Access Network) The wires that run from the subscriber's premises to the nearest distribution point and then to the local exchange.

Local Network A system of local trunks, which may be optic fibre, microwave or satellite, linking different local exchanges with each other.

OFTA/TA It is an executive arm of the Economic Services Branch and is headed by the Director General of Telecommunications, who is a public officer concurrently appointed by the Governor as the Telecommunication Authority (TA).

PCS A British term for the European personal communications standard for DCS -1800 (Digital Cellular System) typically operating between 1.8 - 2 GHz.

Trunk Network A system of trunks, usually optic fibre, microwave or satellite, linking the local network to a regional tandem exchange.

Type I Interconnection The interconnection of trunk networks of operators at the regional tandem or local exchange.

Type II Interconnection Interconnection at the local loop.

Universal Service It refers to the public policy goal of spreading telecommunications to most members of society, and of making available, directly or indirectly, the necessary funds.

Universal Service Obligation (USO) An obligation that is required by the Government for HKTC to provide a basic telephone service to anyone anywhere in Hong Kong and to fulfill the objective of universal service.

Video-on-Demand (VOD) A potential application for IBNs in which residential users can access desired programming at any time, from multiple programming sources.



促使市場開放 邁向全面競爭 電訊市場研究報告

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電訊業競爭研究報告

摘要

1. 固定電話網絡於一九九五年七月開放市場，成為電訊業的轉捩點，開放市場的決定，反映政府認同市場由專營轉為開放競爭，是電訊業及香港未來發展的最佳方向。
2. 三家新的電訊固定網絡(固網)經營者陸續投入服務是一個開始。不過，目前開放的只限於固定電訊網絡，至於國際電訊市場的開放，須待香港國際電訊公司的專權於公元2006年屆滿，這開放步伐，有別於其他國家的情況--電訊業國際電訊和固網是同步開放的。
3. 消費者委員會滿意現階段的進展成果：除開放固定網絡和成立電訊管理局外，流動電話、國際電腦網絡(internet)和其他增值服務等零售服務的市場經已存在競爭。
4. 本會相信競爭足以提高資源分配和製造兩方面的效率，增加消費者選擇、降低產品/服務價格和加強服務質素。
5. 在市場開放的初期，最大的網絡經營商仍然佔很高的市場比率，基本電話服務佔99%，國際長途電話服務佔88%¹。

研究目的

6. 電訊業是重要的公用事業，本會關注電訊業的重大變化，進行這項研究的目的如下：
 - (a) 研究這轉變過程的競爭情況，(固定網絡市場由獨家專營轉變為競爭市場)；
 - (b) 研究妨礙競爭的因素；
 - (c) 建議如何促進有效的競爭，為消費者爭取最大利益。

¹ 新固網經營商和公共流動電話供應商佔本地接駁海外電話市場 7%，回撥服務經營商佔 5%

7. 研究指出須持續鼓勵固網市場的競爭，同時在國際長途電話仍是獨家專營的情況下，研究如何在國際電話零售服務方面，引進一些競爭。

固定電訊網絡市場

8. 本地電話服務網絡，亦即「公共交換電話網絡」"public switching telecommunications network" (PSTN)，接駁範圍幾覆蓋所有住宅和商業樓宇，是目前提供電訊服務的重要基本設施。近年在市場冒起的流動電話網絡，與固定網絡服務之間存在互相輔助作用，但並非其直接替代品。至於尚未敲定發牌的個人通訊網絡(PCS)，日後能否與固網絡經營商爭一日長短，仍有待觀察。
9. 消費者與服務供應商均需透過接駁「公共交換電話網絡」，方可接收及提供(或使用)服務。
10. 在市場開放之前，所有消費者和服務供應商都只能倚靠香港電話公司擁有的獨一無二網絡，並要付給電話公司接駁費(參閱附錄一)。支付的費用如下：

(a) 本地電話費

現時電話公司收取的本地電話費為：住宅電話每月收費 65 元，商業電話每月 98 元。這包括了接駁和使用基本話音傳送服務。政府於 93 年與電話公司達成協議，本地電話費的調整，須跟隨價格上限方程式，同時在指定時期內，國際長途電話收費須調低至某一百分比²。

(b) 聯網接駁收費

增值服務供應商，如流動電話經營商，支付每分鐘 9 仙的聯網接駁

² 據九三年六月實行的收費加幅上限公式，把住宅電話費增幅限於消費物價指數減 3%和消費物價指數減 4%而厘訂。收費上限適用於作為最大供應商的香港電話公司，並會於九六年六月檢討。自九三年開始，國際長途電話收費已減約 12%。

費，才可透過電話公司的網絡為消費者提供服務。

(c) 傳送費

作為國際電話經營商，香港國際電訊需要接駁香港電話公司的網絡，把國際電話傳送給消費者。由香港國際電訊支付的接駁費，一般稱為傳送費，是以收入分賬方式支付。

11. 市場開放後，三間新的固網經營商：和黃廣訊、新香港電訊及新世界電話，已着手鋪設網絡，俾能在市場上競爭(各公司之間，包括電話公司)，爭取本地顧客和服務供應商傳送國際長途電話(附錄二)、及爭取增值服務方面的客戶。
12. 三家新的固網經營商為履行發牌條件的規定，須敷設一定涵蓋範圍的管道網絡工程。他們現正與地下鐵路公司商討，沿地鐵路線敷設網絡。以現時日新的電訊科技，如光纖管道的科技，敷設網絡的成本較前大為減低，亦不會引很的不便。不過，新網絡投入服務還需要時間，亦不會全面涵蓋港九各區。新固網經營商還需倚賴香港電話公司聯網接駁，為客戶提供服務，並需要付給電話公司聯網接駁費。在市場開放的起初階段，各固網經營商之間聯網接駁，是一項重要的安排。
13. 固定電訊網絡之間的競爭，並沒有任何法律因素限制他們在提供本地基本服務層面上競爭，為消費者提供較低收費和選擇。但實際上，固網經營商從商業角度考慮，多會專注於盈利機會較高的服務種類，例如國際電話和增值服務。
14. 本報告探討電訊業內妨礙競爭的因素，以下各項是本會認為公平競爭須符合的基本原則：
 - (a) 提高服務效率；
 - (b) 同等看待，不存在歧視的經營方式；
 - (c) 公開資料和增加透明度；
 - (d) 公平和合理的收費及聯網接駁費；

- (e) 在提供國際服務方面作公平的安排；
- (f) 合理的監管制度以提供保障。

固定電訊網絡市場的新進經營商面對的挑戰

15. 新進經營商需要克服在市場和結構方面的重大障礙，才可順利在固網電訊服務業內分一杯羹。他們要面對的挑戰為：

- (a) 原有經營商在競爭方面所佔的優勢；
- (b) 原有經營商與附屬公司之間在不同電訊市場的集團業務結合，有利於對網絡控制、交換資料及研究工作。

競爭優勢

16. 香港電話公司原本是獨家經營的固定網絡經營商，該公司顯然在「先天」上具備了有利的條件，如涵蓋面廣闊的網絡，規模經濟和龐大的客戶基礎。
17. 由於香港電話公司過去為本港提供專營電話服務，敷設的網絡，幾達全港各地，這些網絡成為電話公司的寶貴資產，電話公司控制新固網商的接駁點(gateway)，線路容量(capacity)，新固網須付接駁費。
18. 在網絡鋪設方面，新進經營商要在適當地址，尤其在已發展地區內物色電話機樓，面臨相當大的限制。相反地，原有經營商早已建有機接，而該些機接大部分都是透過政府以私人批地契約取得。本會贊成政府在共用土地及機構方面的政策讓各經營商公平地共用設施，並建議政府諮詢電訊業後，繼續注視這方面的安排，使固網經營商之間制訂共同設施的合約，對參與的各方均是公平的。
19. 在擴展客戶數目方面，經營商提供「電話號碼可攜性服務」，是十分重要的，這即是說消費者在轉換經營商服務時，毋須同時更改原有的電話號碼。本會欣賞電訊管理局促使實施可攜性服務的安排，但在推行方面端賴原網絡經營商的合作，使顧客得到迅速的轉移服務。新進經營商當然也需要為顧客提一些額外的優惠，如減費或提供增值服務，才會促使消費者不怕麻煩，轉換服務供應商。新進經營商雖然可以自由訂價，但由於現存價格機

制的種種限制，影響了他們可以削價的水平，本會相信，他們仍可透過改善營運效率，讓成本減低，以作抵銷。

集團業務結合

20. 香港電話公司在提供服務方面，與新進固網經營商爭一日長短。另一方面，這些新進者和增值服務及資訊服務經營商必要依賴該公司的網絡設施。
21. 香港電話公司，作為國際電訊業集團，提供電訊業主要設施、國際和本地電話服務等等，無可否認比較新進固網經營商在市場上享有更優越地位。電訊管理局經已作出獨立會計的要求，香港電訊需要依據電訊局的會計守則，把各附屬公司的業務分立，並各自有獨立的會計賬目。各附屬公司在處理業務方面，必須保持一定距離(arms-length)，實際上，香港電話公司由於與香港電訊的其他附屬公司關係密切，在競爭上仍能享有較多方便，尤其在控制網絡，交換資料和產品發展的研究方面。
22. 本會建議，電訊局規定香港電訊在合理情況下，透露會計賬目和附屬公司資料，讓公眾參考。
23. 本會又認為，電訊局應行使權力，以促使所有持牌人分享一些非商業上敏感的資料如網絡術技標準，俾網絡間順利聯網，持牌人均有公平機會接受各類電訊服務並獲公平對待，尤其是由電訊業集團擁有獨攬或跡近獨攬的服務。亦即是說，由母公司向其附屬公司所提供的服務，無論是收費、提供服務的效率和質素方面，與該公司向其他經營者所提供的同樣服務均須公平，不存在特殊看待。

影響競爭的因素

24. 以下的安排對經營者的競爭，有很大影響：
 - (a) 本地及國際長途電話收費結構；
 - (b) 全面服務責任(universal service)；
 - (c) 聯網接駁安排(interconnection)。

收費結構

25. 據政府和香港電訊的資料，本地電訊收費的制訂，刻意低於成本，差額由國際長途電話收費補足。但新進固網經營商認為，經補貼的本地電話費，收費水平偏低，不足以鼓勵他們市場競爭。話雖如此，目前已有經營商以低於電話公司的收費，為商業電話用戶提供幾類基本服務。
26. 以上引申兩個值得探討的問題：(a)究竟這補貼是怎樣計算出來的；(b)是否需要取銷補貼，把本地電話和國際長途電話的收費水平拉至較為偏近成本。(重新平衡收費機制，tariff rebalancing)

補貼的程度

27. 本地電話虧蝕補貼是：香港電話公司提供本地基本電話服務的收入和履行全面服務責任(參閱第30至34段)的開支之間的差額。這差額補貼的款項多少，並非公開資料。本會建議，電訊局應公開本地電話虧蝕補貼的資料，包括電話公司如何分配各類服務的固定和一般成本及折舊政策，俾有一定的透明度，讓公眾瞭解國際長途電話的收益、補貼本地基本電話服務的實況。

取銷補貼、平衡收費機制的需要

28. 假如補貼真正存在，必須討論的是本港是否需要取銷補貼以平衡收費機制；如認為有需要，應如何厘訂和在何時實行。
29. 在全面開放競爭的市場，國際長途電話和本地電話的收費當會自由競爭。長遠來說，市場競爭應會降低電話服務收費，對消費者有利。但香港的情況較為特殊，由於國際電訊市場仍受到國際電訊專利權的限制，電訊市場尚未能夠全面開放。為消費者來說，取銷補貼去平衡收費機制，本地電話費可能有需要調高，國際長途電話費則會調低。但目前固定網絡市場剛開放，還需要時間去調節步伐，要達致全面競爭，使消費者因此得益，尚需一段長時間。

30. 因此，在保障消費者的大前提下，本會認為，有關取銷補貼的問題，由於

缺乏清晰和確實的資料，未知消費者將如何得益。平衡收費的建議，應予從詳計議，並作為長遠的目的，直至市場有全面的競爭為止。

本地收費結構之重新安排

31. 本會深知電訊服務的收費計算方式影響消費者的利益，由於本會沒有足夠的數據以協助分析這問題，本會待取得政府的諮詢文件後，發表意見。

「全面服務」責任

32. 根據目前的安排，香港電話公司有責任為客戶接駁及提供話音傳送服務。電話公司為這些客戶安裝電話及提供線路，無論地區遠近，即使需要虧蝕，均劃一收費。這安排稱為「全面服務責任」(universal service obligation)。新固網經營商毋須承擔這項責任，但每打出長途電話一分鐘，需要付電話公司35.8仙作為補貼³。這項補貼稱為「本地電話虧蝕補貼」。
33. 這項補貼機制，不但包括了全面服務的實際成本，也包括由香港國際電訊撥給香港電話公司，作為維持本地電話費於低水平的虧蝕補貼。雖然電訊局承諾，當本地電話虧蝕補貼安排在一九九六年七月卅一日期滿後，由「全面服務收費」取代，但仍有需要把「全面服務責任」的成本和相互補貼賬目分開和公開。
34. 本會建議設立獨立的「全面服務責任」專款，由電訊局負責管理，規定各固網經營商均須公平地分擔同等數目的款項。電訊局亦須探討其他安排，讓各經營者分擔「全面服務責任」，以鼓勵新經營商有機會為消費者提供一些基本的服務，例如：電訊局可邀請所有固網經營商參與競投一些「不化算地區」的服務，費用從「全面服務責任專款」補貼。
35. 本會又建議，電訊局應規定，把「全面服務」的成本及香港國際電訊補貼香港電話公司的補貼賬項分立。電訊局應研究，計算「全面服務」成本的其他方式，例如可參照在澳洲和英國應用的「長期平均增量成本」或其他

³ 本地電話虧蝕補貼自九五年十月一日起由原先的 45 仙調低為 35.8 仙。不過，為補貼全面服務責任而撥回的專款，受國際長途電話使用量影響更多於每段檢討收費期間提供全面服務的真正成本。電訊局在最近一次檢討本地電話虧蝕補貼時把每分鐘收取 45 仙之數減為 35.8 仙。這項收費 45 仙的公式經已實行了三年

演算公式。計算時亦應分列接駁和使用網絡兩項服務所需的成本。

36. 關於「全面服務」責任分擔的問題，為公平起見，應由所有使用固定網絡的人士分擔。現時，「全面服務」責任的專款主要來自國際長途電話收入。資訊和增值服務亦使用固定網絡，本會建議制訂一項新而公平的專款安排。電訊局應考慮把承擔「全面服務」責任專款的範圍擴大，以包括日漸多人使用的增值服務在內。

聯網接駁安排

客戶接網

37. 固網經營商必須能夠為客戶作接網安排，才可讓消費者自由選擇經營者的服務。有些消費者由於種種原因，不能直駁新經營者的服務，這包括：(a) 新經營者全面開展服務需時，甚至以年計，(b) 消費者所在的商業大廈或住宅樓宇，並無空間裝置額外電纜，故不能直接使用新經營商的服務。在此情形下，經營商便需要繼續倚賴香港電話公司已有的電纜，或“地區性環路”，安排聯網接駁。因此，接駁和使用“地區性環路”(稱之為「第二類聯網接駁」)的條件，在可見將來，對消費者能否接駁新網絡和確保公平競爭，具關鍵性作用。隨新科技的發展，如無線接駁的技術，將會減少第二類聯網接駁的需要。
38. 本會認為香港電話公司應容許新經營商連接其「地區性環路」，但由於接駁費的安排對經營商的競爭有重大影響，涉及消費者的利益，電訊管理局應有權力確保接駁費的水平必須合理，符合消費者利益，不致妨礙新經營商的競爭能力，但可鼓勵他們在網絡基本建設上作出投資。(第二類聯網接駁)。本會認為應給予電訊局的指引⁴法定效力，政府可以修訂建築物條例或電訊條例，規定地產商預留管道和適當空間，讓各網絡經營商均可接駁電訊設施。電訊管理局宜與建築物管理執行署、有關政府部門、建造業專業人士、電訊專家及地產發展商會研究須預留的空間大小及其他細則，並考慮把佔用的面積不計算在地積比率內(plot ratio)⁵。
39. 本會又建議，電訊管理局宜擴大宣傳該指引的內容，及該局的權力，如有

⁴ Guidelines for Property Owners, Developers and Managers for the Provision of Facilities within Property Developments for Access to Public Telecommunications and Broadcasting Services 在九五年五月由電訊局發出

⁵ 目前有某類樓宇，多數是商業大廈，預留予公用服務的空間，已不計算在地積比率內。

業主立案法團、管理公司拒絕經營者接駁網絡，或企業集團特別優惠旗下的電訊公司，電訊局將行使權力，處理有關投訴。

聯網接駁

40. 聯網接駁費是新進的固網經營商和其他資訊及增值服務供應商要負擔的主要營運成本。因此這些費用的高低，足以影響他們能否通過競爭，在市場上爭一席位。這費用最終由消費者支付，牽涉公眾利益。
41. 政府的政策是讓經營商自行議定接駁費的多少。當雙方不能達成協議，或電訊局長認為經營者洽議的經營條件妨礙競爭和消費者利益時，電訊局長可行使權力，規定經營商合作的條件。
42. 現時，所有電訊服務供應商，包括固網經營商，流動電話服務和國際電腦網絡經營商⁶，需要向香港電話公司付出每分鐘9仙的接駁費。這種收費安排是由電訊局厘定，看來是以適用於流動電話經營者的多點對多點話音傳送接駁，作為計算基礎，本會認為電訊局宜在適當時候重新考慮。國際電腦網絡經營商和香港電話公司之間較為簡單的一點對多點電子數據聯網，應否收取同等接駁費。
43. 本會認為經營商之間的聯網接駁費，需要增加透明度，原因是，經由電訊局長審議決定的收費，例如上述的9仙收費，或固網商傳遞外來長途電話的傳送費，均屬公開資料，電訊局長亦會解釋收費基準。另一方面，電訊經營商之間達成的收費協議，當中或會牽涉公眾利益，但市民無從知道。本會希望電訊局長能儘量公開固網商之間、和他們與國際電訊之間達成的聯網協議，涉及商業敏感資料除外。

⁶ 正確名稱應為公共非專利電訊服務持牌人

國際電訊服務

44. 香港的情況特殊，電訊市場的開放並不包括國際電訊。香港國際電訊擁有的國際電訊專利權於2006年才終止。但香港國際電訊需倚靠固網商及手提流動電話網絡，為消費者傳送及發出長途電話。
45. 現時，電訊業零售服務通過回撥服務，開展了新的競爭途徑。雖然經由香港電話公司接駁入香港的長途電話的市場的比率高，但該公司由本地接駁海外的電話，市場佔有率下降至88%，其他固網商和公共流動電話服務 (Public Mobile Radiotelephone services) 佔7%，回撥服務經營商佔5%。消費者在這方面有多些選擇，而長途電話費亦相應降低。
46. 新固網商傳遞長途電話服務可收到傳送費，這傳送費是和香港國際電訊分賬的。新固網商能否減價競爭，關鍵在傳送費的收入多寡和他們要付本地電話的虧蝕補貼 (Access Deficit Cost)。從本港發出長途傳送費的分配方法是：固網商從國際電訊收取傳送國際電話的費用，以每分鐘為單位計算。餘數歸香港國際電訊，以承擔國際電訊的營運成本、支付海外經營者傳送長途電話的費用、及盈利額。付給海外經營者的費用，視乎香港國際電訊與對方洽議，達成的結算率 Accounting Rates (會計率) 而定。
47. 在未來十年，香港國際電訊擁有專利權期間內，政府須致力保障消費者利益。本會歡迎電訊局研究國際電訊的專利權範圍及考慮國際的專線租戶向第三者分銷專線的服務 (International Simple Resales) 服務會否抵觸該專利權。
48. 本會又認為，政府與香港國際電訊應有較緊密的聯繫，以確保香港國際電訊與海外經營者雙邊洽議會計率的安排能顧及公眾利益。電訊局若發現所洽議的會計率不符合公眾利益時，應要求香港國際電訊解釋。

保障消費者利益

49. 消費者未必能自動享有市場競爭帶來的所有利益。因此需要有適當的法定措施，保障所有消費者獲得「全面服務」和一定的服務質素。

使消費者以合理費用得享電話服務

50. 本會支持政府公布的「全面服務」政策。消費者無論在本港任何地區，可以在合理時間內，獲得基本及緊急的電話服務。在電訊科技發展一日千里的時代，本會認為，電訊局宜檢討並擴大基本服務的定義，例如特別照顧那些有特別需要的人士，如弱聽、弱視等。本會欣聞政府將撥款五千萬為接受綜合公援的家庭安裝電話，使他們可以使用電話 - 這現代通訊必須的設備。

為消費者提供有質素的服務

51. 固定電訊網絡的開放，雖然加強了消費者的選擇，但要促進基本服務的質素，仍需制訂監管措施。本會很高興知道固網牌照條款經有規定，經營商須厘訂消費者約章。本會建議，經營商應定期公佈服務承諾的進展，又建議電訊局宜督促經營商厘訂的服務目標，以消費者立場為出發點，並統一各經營者的報告格式，鼓勵他們在可行範圍內，推行自動賠償計劃。

制訂監管規例、保障自由競爭

52. 固網牌照有明確的保障競爭條款，為公平交易厘訂清晰的基本法則，本會極為欣賞。但國際電訊和其他電訊服務經營商，並不受類似條款規管。

53. 牌照內的競爭條款相當廣泛，並賦予電訊管理局長審定權，類似英國電訊管理局的權力。再者，電訊局長需同時肩負監管者及仲裁者的職責。由於香港尚沒有獨立的公平競爭法例，在某些情況下，電訊局長可能面對相互矛盾的期望，既要確保公平競爭又須兼顧行業的利益問題。
54. 條款對違反競爭行為的罰則有待改善，現時最高罰款：初犯為二萬元，再犯五萬元，以後再犯為十萬元。雖然最終可以吊銷牌照去制裁，但這是不輕易會實施的，因此這並非實際可行的做法。
55. 本會建議，在擬議的全面性電訊條例內，同時規定國際長途電話服務及其他電訊服務經營商亦須遵守競爭條款，並建議；違法行為的懲罰具足夠阻嚇作用，同時在適當的情況下，讓第三者有權依法索償。
56. 本會經深入分析這行業的市場競爭情況，發現設立競爭政策執行機構，與就個別行業厘定競爭條款的方式，相輔相承，對電訊管理局、經營電訊業人士和其他人均有益處。本會的競爭政策整體報告將深入探討設立全港性競爭政策機構的需要。

政策發展

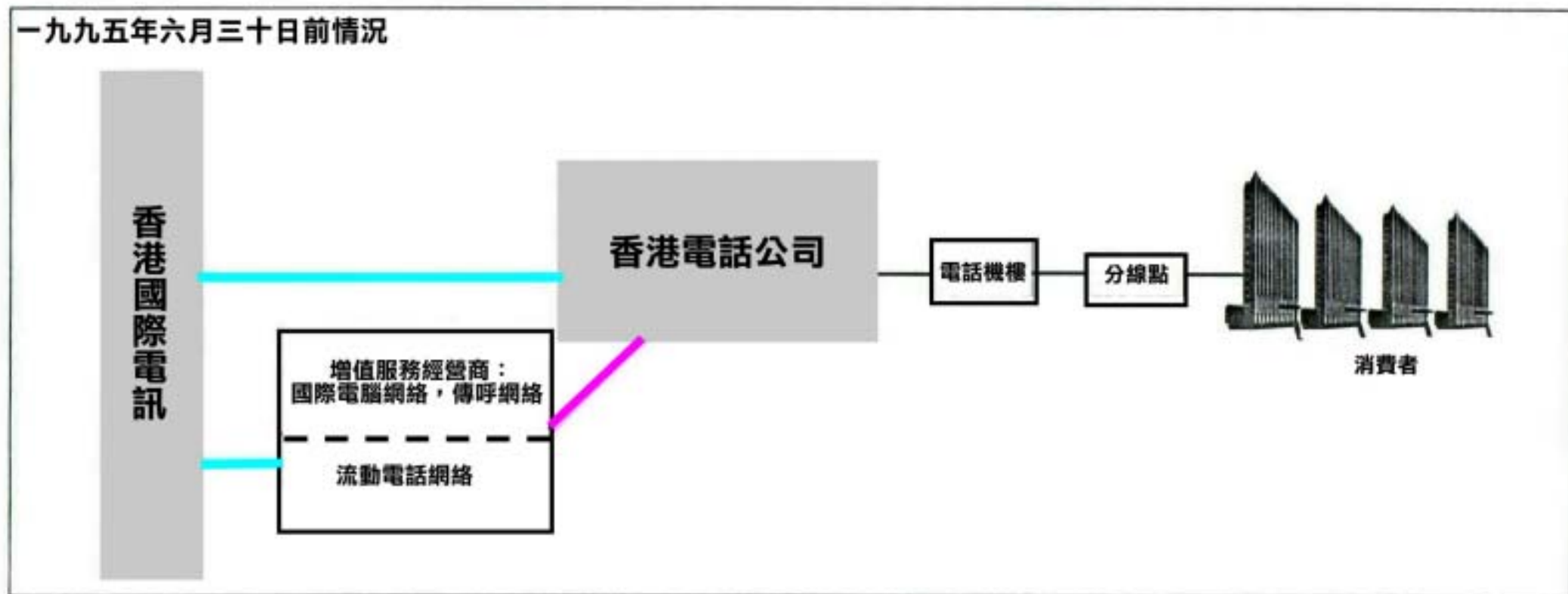
57. 為配合廣播、電訊和資訊科技日漸融合的趨勢，本會重申早前提出的建議，政府須設立新的政策科司級官員職位，以統籌這三方面的政策發展。
58. 本會的建議將不會改變電訊局的角色。經行政局訂定的政策和規條 (regulation)，電訊管理局肩負執行和監管經營者的職責。這職責對促進有效的競爭十分重要，例如在市場開放初期，厘訂聯網收費等安排。
59. 鑑於電訊科技的急劇發展和市場的轉變，本會建議政府盡早提交全面性的電訊條例，為市場提供清晰的指引。本會建議政府在全面性的電訊條例，清楚界定電訊局長的權責。確保其有足夠權力去執行任務。電訊局長通常會向公眾及業內人士徵詢意見，作為決策的參考。本會認為有需要把這過程列為法定程序，並要求電訊局公開交代其決定的理據。
60. 目前電訊管理局設有諮詢小組，就特定的課題收集意見。本會建議政府考

應設立諮詢委員會，就重要問題，為電訊局長提供獨立的意見。這安排配合政府一貫行之有效的行政和立法監察機制，及平衡電訊局長的職權。

消委會認為，政府首要責任在於制訂貫徹和長遠的政策，締造公平、開放、及不斷邁進的市場環境，確保立法和監管架構的有效運作，以鼓勵投資、促進競爭和發展電訊業；這是消費者最佳的利益保證。

附錄（一）

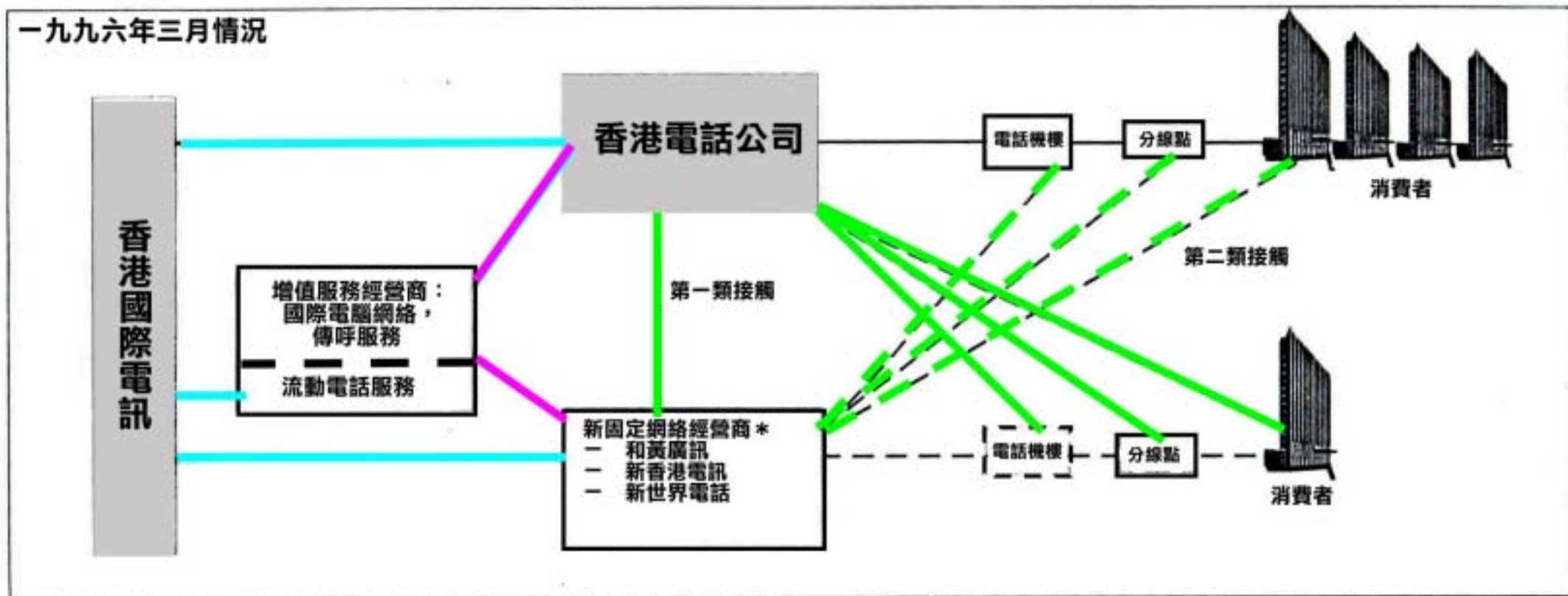
一九九五年六月三十日前情況



- 國際聯網
- 香港電話公司與增值服務供應商聯網
- 消費者接網

附錄 (二)

一九九六年三月情況



國際聯網

- 香港國際電訊、固定網絡經營商及流動電話網絡經營商之間聯網
- 傳送費：香港國際電訊、固定網絡經營商及流動電話網絡經營商分帳
(世界其餘地區：2.23元；中國短程通訊：0.63元；中國長途通訊：1.60元)
- 接網費：固定網絡經營商及流動電話網絡經營商付給香港國際電訊
(國際零售價減去傳送費)

固定網絡經營商、增值服務經營商及流動電話網絡經營商之間聯網

- 香港電話公司及增值服務經營商
- 新進固定網絡經營商及增值服務經營商 (將來)
- 接網費：增值服務經營商付給固定網絡經營商 (每分鐘 9仙)
- 固定網絡經營商付給增值服務經營商 (免費)

本地接網 (固網商之間)

- 第一類接網 (話音傳送服務 9 仙)
- 第二類接網 (將來)

客戶接網

- 香港電話公司地區性環路
(由本地交接點至消費者樓宇)
- 新進固定網絡經營商之地區性環路 (將來)

增值服務包括公共非專利電訊服務

* 新固定網絡經營商亦有第一類及第二類接網安排

March 1996
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