Deregulation for Fixed-Mobile Convergence

Second Consultation Paper
14 July 2006

EXECUTIVE SUMMARY

S1. With dynamic and continuous market and technological developments, the distinctions between fixed and mobile networks and services are becoming increasingly blurred. This phenomenon, which is commonly referred to as "Fixed-Mobile Convergence" ("FMC"), is expected to bring substantial innovation and consumer benefits.

S2. The government has adopted market-driven policy for the telecommunications industry. It is therefore not for the Telecommunications Authority ("TA") to decide whether there should be FMC, or the extent or pace of it in Hong Kong. The future development of FMC should be decided by the market. The role of the TA is to ensure that the regulatory environment remains conducive to the emergence of FMC so that, if and when there is a market demand for FMC, consumers can enjoy the innovation and benefits of FMC without delay.

S3. Necessary elements of a conducive regulatory environment include minimum barriers to the market and technological developments, minimum distortion to competitive processes, as well as a clear and predictable regulatory framework to facilitate informed investment decisions. It was with these elements in mind that the TA initiated the first consultation on regulatory review for FMC in September 2005 and commissioned a consultancy study in the first half of 2006.

S4. Important issues identified in the consultancy study include the interconnection settlement arrangement between fixed and mobile networks, the local network access charge arrangement, licensing regime, telephone number portability and the telephone numbering plan.

S5. It is an essential principle in a market-driven approach to regulation that regulatory interventions should only be maintained, in the case of existing interventions, or introduced, in the case of new ones, in the clear circumstances

that market forces have failed, or are likely to fail. In relation to the interconnection settlement arrangement between fixed and mobile networks, the central question in this consultation is therefore whether there will be a market failure, if the historic regulatory guidance in favour of the mobile network operators paying the fixed network operators, for calls between fixed and mobile networks in both directions (under the "Mobile Party's Network Pays" or "MPNP" mechanism), is withdrawn.

S6. Up to this point, the TA has found no credible evidence to demonstrate that a market failure would occur if the current regulatory guidance in favour of MPNP is eventually removed. Moreover the current guidance, introduced by the TA more than ten years ago, may now in fact be distorting competitive processes today thereby constituting barriers to the eventual development of FMC. Accordingly, the TA is proposing to set a transitional period of two years for the current regulatory guidance concerning MPNP to be phased out.

S7. During the transitional period, the *status quo* continues to apply. Network operators will be free to negotiate the terms and conditions of interconnection to apply after the transitional period (and, if they so wish, during the transitional period), using the settlement option which is mutually acceptable to the parties concerned. However, in recognition of the importance of communications services with "any-to-any connectivity" to daily life and business in Hong Kong, the TA will resort to the powers under section 36A of the Telecommunications Ordinance to determine terms and conditions of interconnection between particular networks after the transitional period if commercial negotiations fail and when a market failure is established.

S8. Where a market failure is established, and the TA undertakes a determination, the TA's determination will be based on the most appropriate settlement option having regard to the case-specific circumstances and any relevant regulatory guidance in place. Of course, the TA will also be bound to follow due process in terms of consultation with all affected parties concerning the settlement options to be adopted.

S9. While providing no guidelines to the TA as to how he should exercise his powers under section 36A would arguably impose the least interference with the commercial negotiations among the network operators, this approach

might create great regulatory uncertainties and could be contrary to the objective of providing a clear and predictable regulatory framework to facilitate informed investment decisions. Therefore the TA seeks the industry's views on whether the TA should re-issue the guidance on how the TA should exercise his powers under section 36A should he be called upon to make a determination on the terms and conditions for interconnection between fixed and mobile networks.

S10. In the event of a conclusion that the re-issue of such a guidance is warranted, the guidance should avoid the distortion to the competitive processes in an FMC environment. In relation to the settlement options identified in the consultancy study, and others which affected parties may wish to put forward, the TA seeks evidence on the merits and demerits of the different options in terms of their current or likely future impact on competition between and amongst mobile and fixed network operators, and the significance of any identified distortion to competition and to the evolution of telecommunication markets, including FMC.

S11. With respect to the local network access charge arrangements, the consultancy study identified the asymmetry imposed by existing regulatory guidance between the fixed and mobile networks and recommended that the asymmetry be removed. The TA's preliminary view is that no market failure is likely in the absence of the existing regulatory guidance, and that regulatory guidance is distorting competitive processes in an FMC environment. The TA proposes that the asymmetry be removed by deregulating the LAC arrangement for fixed networks to bring it into line with the current deregulated arrangement for mobile networks. This means that the TA will not proactively determine the level of LAC for all networks, but will make a determination under section 36A if commercial negotiations fail and in the event of an established market failure.

S12. As regards telephone number portability and numbering plan, the consultancy study has identified no urgent need for change but has recommended that further study be conducted to identify the need. The TA will proceed to conduct further market studies on these topics in due course.

INTRODUCTION

1. The government has adopted market-driven policy for the telecommunications industry. Ever since the 1990's, the telecommunications industry has been progressively liberalized. All along, the Telecommunications Authority ("TA") has facilitated the introduction of new technologies, products and services by means of removing regulatory entry barriers and restrictions on the competition processes. In recent years, information and communications services are converging across multiple dimensions, driven by modern technologies and service innovation. The part of this convergence that relates to fixed and mobile networks and services is commonly known as "Fixed-Mobile Convergence" ("FMC"). FMC is expected to bring substantial innovation and consumer benefits.

2. It is not for the TA to decide whether there should be FMC, or the extent or pace of it in Hong Kong. Nor is it the intention of the TA to use regulation to drive the development of FMC. The future development of FMC should be decided by the market. The role of the TA is to ensure that the regulatory environment remains conducive to the emergence of FMC so that, if and when there is a market demand for FMC, consumers can enjoy the innovation and benefits of FMC without delay.

3. Necessary elements of a conducive regulatory environment include minimum barriers to the market and technological developments, minimum distortion to competitive processes, as well as a clear and predictable regulatory framework to facilitate informed investment decisions. It was with these elements in mind that the TA initiated a review on the regulatory framework for fixed and mobile networks in 2005.

4. The focus of this review should be on *deregulation*. If certain elements of the existing regulation are identified to distort the competitive processes, consideration should be given to whether the regulatory intervention should be terminated, having regard to whether market failure will occur, or is likely to occur, in the absence of the regulatory intervention.

THE FIRST CONSULTATION PAPER

5. On 21 September 2005, the TA issued a consultation paper on FMC[1] ("First Consultation Paper") proposing the Unified Carrier Licence ("UCL") for carriers operating fixed, mobile and converged services. The consultation period ended on 21 November 2005. A total of 9 submissions ("the Submissions") were received. They were published on the web site of the Office of the Telecommunications Authority ("OFTA") at **http://www.ofta.gov.hk**. The Submissions were received from the following parties:

- AT&T Global Network Services Hong Kong Limited;
- China Mobile Peoples Telephone Company Limited ("Peoples");
- CM TEL (HK) Limited;
- Hong Kong Broadband Network Limited ("HKBN");
- Hong Kong Police;
- New World Telecommunications Limited;
- Television Broadcasts Limited;
- Towngas Telecommunications Fixed Network Limited; and
- The submission jointly from APT Satellite Company Limited, Asia Satellite Telecommunications Company Limited, China Mobile Peoples Telephone Company Limited, Hong Kong Cable Television Limited, Hong Kong CSL Limited, Hutchison Global Communications Limited, Hutchison Telephone (Hong Kong) Limited, New World PCS Limited, PCCW-HKT Telephone Limited ("PCCW"), Reach Networks Hong Kong Limited, SmarTone Mobile Communications Limited, Mandarin Communications Limited and Wharf T&T Limited.

6. While some comments regarding the detailed arrangements for the proposed UCL were given in the Submissions, many network operators

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[1] Consultation Paper, *Revision of Regulatory Regimes for Fixed-Mobile Convergence,* issued by the TA on 21 September 2005.

suggested the TA to review all substantive issues pertinent to FMC in a holistic manner. As identified in the First Consultation Paper, there are other aspects of the existing regulatory regime which need to be reviewed with the emergence of FMC. They include but are not necessarily limited to:

(i) Interconnection settlement arrangement;
(ii) Local access charge;
(iii) Number portability; and
(iv) Numbering plan.

THIS (SECOND) CONSULTATION

7. The TA indicated in the First Consultation Paper that he would commission a consultancy study on FMC, for the identification of regulatory barriers, the cost-benefit analysis on the possible changes to the regulatory framework and the proposal of regulatory changes with the associated implementation arrangements. OFTA had commissioned the consultancy study on FMC in December 2005 which was completed in May 2006. The consultancy report is published in the web site of OFTA at **http://www.ofta.gov.hk**. The TA, taking into consideration the recommendations of the consultant ("the Consultant") and the feedback received from stakeholders, has developed the proposals in this consultation paper for the purpose of soliciting views and comments from the industry and other interested parties.

8. It should be noted that the views expressed in the consultancy report do not represent the views of the TA or OFTA. Any views expressed and proposals made in this consultation paper are preliminary ones for the purpose of discussion and consultation only. Nothing in this consultation paper represents or constitutes a determination, direction or decision made by the TA. Nothing in this paper should be construed as indicating that the TA has finalised any opinion or decision on these issues.

9. This consultation paper seeks views on a number of regulatory issues relating to FMC. Depending on the urgency of individual issues, and whether sufficient views have been obtained from the submissions received in response to this paper, the TA may take forward different components of the proposed arrangements in different timeframes.

MARKET DEVELOPMENT OF FMC IN HONG KONG

10. FMC is a global market trend. Telecommunications service industries in various countries are moving towards this direction, but at different paces. Subsequent to the first commercial launch of converged services in the United Kingdom last year, trials on the latest convergent technologies are actively engaged in other countries. Heading for the ultimate provision of converged services on an integrated network platform, many network operators in the world have been geared up for deploying Next Generation Network ("NGN") in the coming few years. Comparatively, Hong Kong is at the early stage of FMC development. There were recently merger and acquisition activities involving fixed and mobile carriers. While fixed-mobile substitution is taking place with the leverage of low price of mobile services, integrated network operators have started to offer bundling of fixed and mobile services.

The Consultant's View

11. The Consultant reckons that there will be notable development of FMC through the deployment of converged networks in the next 5 years, which will lead to an estimated efficiency gain of around HK$3 billion per annum by 2011 in Hong Kong. By removing the identified regulatory barriers to the development of FMC, the Consultant estimates that it will enable an earlier realization of the efficiency gain amounting to the net present value of HK$4.5 billion[2].

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[2] It is based on the assumptions of the Consultant that the present regulatory barriers will delay the development of FMC by 2 years. With a discount rate of 5% per annum, the net present value of such delay is HK$4.5 billion ($\$3b \times 0.95^5 + \$3b \times 0.95^6$).

The TA's Considerations

12. Although the exact extent and pace of FMC development, as well as the impact of FMC on consumer benefits, are at this stage not certain, it is incumbent upon the TA to ensure that the regulatory environment is conducive to competition, infrastructure investment, service innovation and consumer interest. As the industry will demand a clear and predictable regulatory framework for informed investment decisions, the commencement of the regulatory review should not be delayed. Deferring the review and decisions would prolong the uncertainties about the future regulatory environment and would harm investment incentives.

Question (1): Do you agree that the extent and pace of development of FMC should be decided by the market and the TA's role to ensure that the regulatory environment is conducive to the development of FMC?

Question (2): Do you agree that the review on the regulatory environment for FMC should be commenced now in order to facilitate informed investment decisions?

INTERCONNECTION SETTLEMENT ARRANGEMENT

13. Fixed-mobile interconnection charge ("FMIC") is an interconnection charge currently payable by a mobile network operator to a fixed network operator for circuit-switched traffic[3] to and from a fixed network. Fixed-fixed interconnection charge ("FFIC") is an interconnection charge for circuit-switched traffic exchanged between two fixed networks operators. Mobile-mobile interconnection charge ("MMIC") is an interconnection charge for circuit-switched traffic exchanged between two mobile networks operators.

The Existing Arrangement

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[3] "Circuit-switched traffic" means voice and non-voice traffic over the conventional circuit-switched networks. This is distinct from "packet-switched traffic" over the Internet Protocol (IP) networks.

14. Fixed networks operators are free to set their own FFIC commercially, although they may request a determination by the TA pursuant to section 36A of the Telecommunications Ordinance (the "Ordinance"). The TA has given regulatory guidance to the industry on the payment structure based on a symmetric and reciprocal "Calling Party's Network Pays" ("CPNP") mechanism specified in TA Statement No. 7[4]. The last TA determination was made for two fixed networks in 2003[5], at around 2.7 cents per minute[6], based on the CPNP mechanism. This determination applied to a historical period[7], and the TA has not made any new determination on any fixed network since 2003, so strictly speaking, no determination currently applies. However, there have been little changes to the payment structure and level of FFIC to date among the fixed networks. The present arrangement for FFIC is depicted in Figure 1 below.

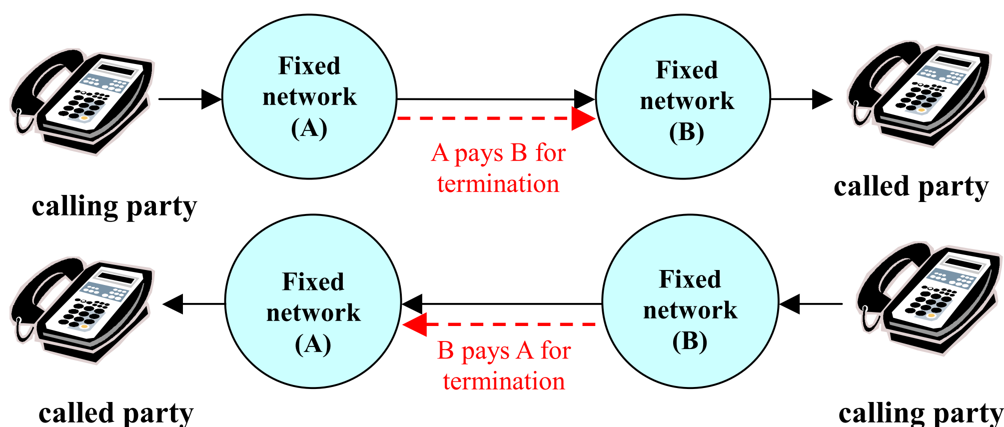

Figure 1 - The FFIC arrangement based on CPNP

15. The TA has never intervened on MMIC up to present. The mobile network operators have made commercial arrangements for interconnection ever since mobile services emerged. Such arrangements have been based on "Bill and Keep" ("BAK"), whereby no interconnection charge needs to be settled between the mobile network operators, as depicted in Figure 2. The

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4 TA Statement, *Interconnection and Related Competition Issues Statement No. 7 (Second Revision) "Carrier-to-Carrier Charging Principles"*, 18 March 2002.

5 Telecommunications Ordinance (Cap.106), *Determination under Section 36A of the Telecommunications Ordinance of the Terms and Conditions of Interconnection between PCCW-HKT Telephone Limited and Wharf T&T Limited*, 27 February 2003.

6 Using the average holding time of 2 minutes for a local call, the effective FFIC per minute = (1.4 ¢(per minute) x 2 + 2.5 ¢ (per call attempt)) / 2 = 2.7 ¢.

7 1 July 1999 to 30 June 2003

BAK arrangement can also be considered as symmetric and reciprocal.

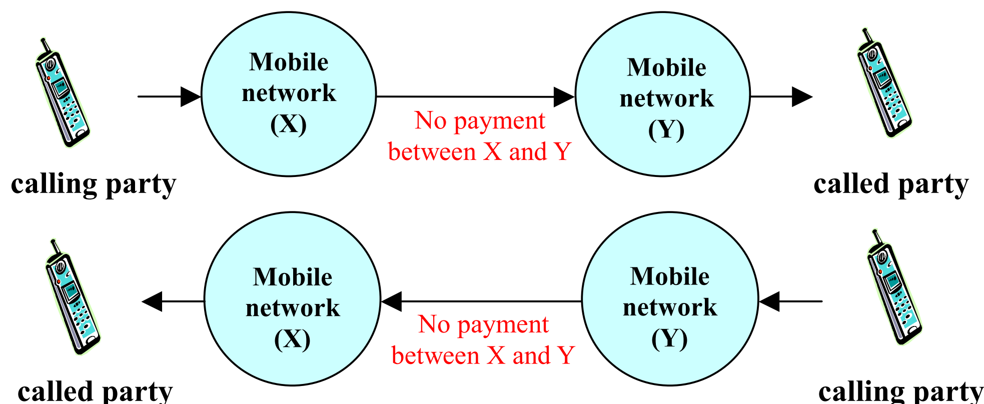

Figure 2 - The MMIC arrangement based on BAK

16. On FMIC, regulatory guidance is given to the industry on the payment structure based on a "Mobile Party's Network Pays" ("MPNP") mechanism as specified in TA Statement No. 7. The level of the FMIC levied by PCCW is stipulated under a tariff which is approved by the TA. After the most recent review in November 2004[8], PCCW's current FMIC tariff is at 4.36 cents per minute. This charge is paid by a mobile network operator to the interconnecting fixed network operator for telephony traffic both from a fixed line to a mobile phone and from a mobile phone to a fixed line. This arrangement is illustrated in Figure 3. MPNP is neither symmetric nor reciprocal.

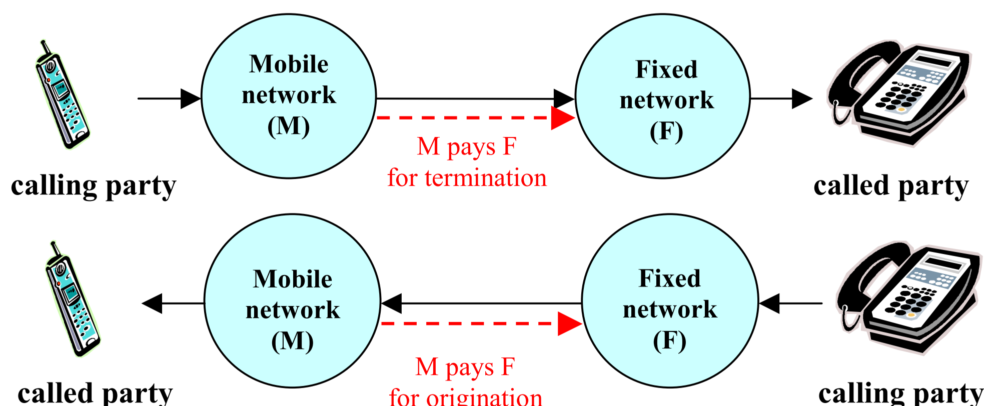

Figure 3 - The existing FMIC arrangement based on MPNP

8 TA Statement, *Charge for Interconnection between Public Mobile Radiotelephone Services (PMRS), Personal Communications Services (PCS) and Value Added Services (VAS) and the Public Switched Telephone Network (PSTN) Operated by PCCW-HKT Telephone Limited*, 12 November 2004.

17. Apart from PCCW, the TA did not intervene on the FMIC levied by other fixed network operators in the past, but PCCW's tariff has largely been followed by them in setting their own FMIC. More recently, the TA has accepted a mutual request for determination by HKBN and Peoples on a historical dispute over FMIC. While this determination is still in progress, the TA will adhere to the existing MPNP principle, given the historical nature of the dispute.

The Consultant's View

18. The Consultant considers the current asymmetric and discriminatory MPNP arrangement for FMIC to be out of line with international best practices. The underlying assumption that mobile operators are value-added service ("VAS") providers seeking access to fixed networks, instead of being networks exchanging traffic, is obsolete. Therefore, MPNP no longer follows the "cost-causality" principle for allocating network cost. Besides, MPNP induces voice spam for fixed-to-mobile calls. It also causes significant transaction costs in negotiating and determining interconnection prices, as well as in billing and metering. Moreover, MPNP does not provide a graceful migration path towards the FMC and NGN era. For these reasons, the Consultant reckons that a change to the existing regulatory regime is necessary and imminent.

19. The Consultant's proposal for implementing changes to the existing MPNP arrangement largely follows the established procedure for considering a determination request under section 36A of the Ordinance. The TA should first withdraw the existing MPNP "rule" specified in Statement No.7 and let the parties negotiate interconnection agreements commercially. The TA should only make determination on interconnection matters if commercial negotiations result in a market failure in delivering public benefits. In the meantime, the TA should maintain the mandatory "any-to-any connectivity" requirement to protect the interest of the public, and should issue guidelines on a "last-resort" interconnection arrangement[9], in order to minimize regulatory uncertainty and

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[9] For the avoidance of doubt, a "last-resort" arrangement means the charging mechanism that the

reduce transaction costs in commercial negotiations.

20. The Consultant recommends BAK as the "last-resort" regime for FFIC, FMIC and MMIC for the following reasons: BAK is symmetric and it best follows cost-causality in allowing cost-sharing between calling and called parties; it reduces transaction cost for both the regulator and the industry, and costs virtually nothing to implement; it focuses operators on retail competition instead of wholesale regulatory gaming, and provides stronger incentives for improving cost efficiency; it avoids the problem of terminating network monopolies; and it is future proof for FMC and NGN migrations. BAK is neither the best nor the worst option in terms of deterring voice spam and minimizing redistribution effects. Overall speaking, the Consultant finds BAK to be the best among various alternatives.

The TA's Considerations: Part A - Phasing Out Existing Regulatory Intervention

No Evidence of Market Failure in the Absence of Regulatory Intervention

21. It is an essential principle in a market-driven approach to regulation that regulatory interventions should only be maintained, in the case of existing interventions, or introduced, in the case of new ones, in the clear circumstances that market forces have failed, or are likely to fail. In relation to the interconnection settlement arrangement between fixed and mobile networks, the central question in this consultation is therefore whether there will be a market failure, if the historic regulatory guidance in favour of the mobile network operators paying the fixed network operators, for calls between fixed and mobile networks in both directions (the "MPNP" mechanism), is withdrawn.

22. Today, there are five mobile network operators providing service to

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TA intends to adopt in the event of an interconnection determination under section 36A, if the case merits of a particular determination. In practice, the "last-resort" regime also applies to the interim terms, in the event that the TA directs a licensee to interconnect during the process of a determination according to the "any-to-any connectivity" requirement specified under the relevant licence conditions.

over 8 million mobile users, and five major fixed network operators providing service to over 4 million fixed-line users in Hong Kong. All these fixed and mobile network operators have been in place for at least over five years, and none of them is assumed to have significant market power for regulatory purposes. Several fixed and mobile network operators have common or connected shareholders. Infrastructure-based competition is keen for both fixed and mobile services, and retail prices are low by international comparison. Contributions of fixed and mobile network operators to industry revenues and investments are also comparable. Market concentration is one of the lowest in the world.

23. In such a competitive environment, the fixed and mobile network operators have mutual needs of interconnection because for every individual network operator, the majority of telecommunications users in Hong Kong belong to its competitors. None of them could afford to lose connectivity with one another, or else customers would churn and their business reputation would be severely damaged. Therefore, when the network operators negotiate the terms and conditions of interconnection, their bargaining positions are comparable and the countervailing powers are evenly balanced.

24. In the light of keen competition in fixed and mobile services and comparable bargaining power, the TA considers that the operators should have the freedom to settle the terms and conditions of interconnection by commercial negotiation, and the risks of failing to reach mutual agreements are low. Up to this point, the TA has found no credible evidence to demonstrate that a market failure would occur if the current regulatory guidance in favour of MPNP is eventually removed. In particular, "any-to-any connectivity" is likely to be maintained by market forces.

The Effects of Existing MPNP Arrangement on Competition

25. The existing FMIC arrangement has been in place since the early 1980's when mobile services were introduced to the telecommunications market as a VAS. At that time, the tariff for local fixed telephony service was

capped by regulation at a flat-rate, which was below operating cost and was cross-subsidized by External Telecommunications Service ("ETS") revenues. On the other hand, prices of mobile services were not regulated, and mobile telephony was widely regarded as a premium product. Against this background, the MPNP arrangement was established to recover the fixed network's cost of providing access to mobile services.

26. Nowadays, mobile service has become a day-to-day necessity. The level of prices for mobile services has fallen substantially over the years. Although the volume-based mobile service charges still exist theoretically, the majority of customers in practice pay flat-charges for call packages which more than fulfil their communications needs. The penetration rate of mobile services has exceeded 100% of Hong Kong's population and surpassed that of the fixed services from November 1999. On the other hand, local fixed telephony is no longer operated under regulatory price caps or an ETS-subsidized structure. The prices of local fixed telephony services have been allowed to be re-balanced to recover costs fully since 2001. Those factors underpinning the MPNP arrangement in the early 1980's have substantially changed today. Therefore, the assumption that mobile network operators are VAS providers is increasingly dubious.

27. As the size of customers connected to both fixed and mobile networks are substantial, the need for interconnection between fixed and mobile networks is mutual and both classes of operators derive benefit from the interconnection. Therefore argument that the mobile networks alone benefit from the interconnection and cause costs to be incurred by fixed networks which need to be "compensated" by the mobile networks in both directions of calls is in question.

28. The annual payment by mobile network operators to fixed network operators under the MPNP regime amounts to some HK$600 million. Contrary to the "technology neutrality" principle, this payment from one group of operators to another group based on technological differences may distort investment incentives and cross-platform competition between fixed and

mobile services today, thereby constituting a barrier to the eventual development of FMC.

Intervention in Commercial Relationships

29. In principle, in a free market, business operators should have the freedom to decide whether they should enter into commercial agreements with each other, and the terms under those agreements if entered into. In the telecommunications industry, for public interest considerations, network operators are required by licence conditions to interconnect with each other because users connected to one network expect to be able to communicate with users connected to other networks.

30. Given the balanced bargaining power and the mutual need for interconnection between the network operators, the need for the TA to intervene in exercise of regulatory powers is questionable. This is evidenced by the absence of the need for regulatory intervention for MMIC all along and the absence of a request for intervention for FFIC since 2003.

31. As regards FMIC, the present MPNP arrangement is *the outcome of regulation* rather than a market outcome as a result of commercial agreement between the fixed and mobile network operators. Given the mutual needs for interconnection and balanced bargaining powers between fixed and mobile network operators, it is doubtful whether a regulatory guidance over a particular settlement arrangement is warranted vis-à-vis full liberty of commercial negotiation. Moreover, the current guidance in the form of a TA Statement, introduced by the TA more than ten years ago, may now in fact be distorting competition between fixed and mobile operators and constitute a barrier to eventual development of FMC.

Maintaining *Status Quo* is a Continuing Regulatory Intervention

32. Some industry players may support the *status quo* and argue that "*if the market is not broken, why fix it?*" This view implicitly suggests that a

withdrawal of the existing intervention would lead to market failure, or “chaos”. This *presumption* of market failure without a factual basis is contradictory to the government’s market-driven policy. This proposition might have also overlooked the fact that the existing MPNP arrangement is a regulated outcome, and maintaining it is a continuing form of regulatory intervention. In other words, it is inaccurate to describe the *status quo* as a market outcome in the first place. The existing regulation has been identified by the Consultant as a barrier to competition between fixed and mobile operators and development of FMC. Given the TA’s role in protecting the public interest, the existing regulatory regime must be duly put under review.

Sustainability in FMC Environment

33. Moreover, the current MPNP arrangement may no longer be sustainable under the FMC environment. For instance, a user subscribing to the converged service may be connected to the fixed network via wireless local area network (“WLAN”) access point at “home zone” and be connected to the mobile network elsewhere, and perhaps even switching network mid-call. It will be very difficult, if not impossible, to settle FMIC based on MPNP. In particular, numbering identification will no longer be effective in distinguishing fixed and mobile traffic. Artificially drawing such distinctions would not maximize consumer benefits as well.

Proposal to Phase Out Existing Intervention

34. Based on the considerations set out in the above paragraphs, the TA proposes to phase out the existing regulatory guidance in favour of the MPNP arrangement over an appropriate transitional period (please see paragraph 36). During the transitional period, the *status quo* continues to apply.

35. As far as possible, market solutions are preferred to regulatory intervention as a public interest safeguard. While the *status quo* may continue during the transitional period, network operators will be free to negotiate the terms and conditions of interconnection, to apply after the transitional period

(and if they so wish, during the transitional period), using the charging option which is mutually acceptable to the parties concerned. After the transitional period, no party is under *per se regulatory obligation* to pay interconnection charge to another party, unless and until the TA decides to intervene and concludes a determination under section 36A. So long as a commercial agreement is reached, the TA would not normally look into the basis of the arrangement.

Question (3): What is the effect of the existing regulatory guidance in favour of the MPNP arrangement on competition, including competition between fixed and mobile network operators?

Question (4): Should the current intervention on FMIC, based on a regulatory guidance in favour of the MPNP arrangement, be phased out in view of Hong Kong's market conditions, fair competition principles and the prospect of FMC? Please elaborate.

Question (5): Would the absence of regulatory intervention lead to market failure, to the detriment of competition and consumer interest? If yes, please substantiate your claim with credible evidence.

Transitional Period

36. Noting that any change to the interconnection settlement arrangement will have implications to the cash flow, service deployment plan and market strategy of the relevant operators, the Consultant identifies the need of having a transitional period for phasing in the proposed changes. The network operators are also at liberty to negotiate in good faith for commercial agreements with one another during such a period. For the purpose of this consultation and if there is indeed any change from the existing arrangement at all, the proposed transition is a period of two years, from the conclusion of the relevant part of this review.

Question (6): Without prejudice to any position held by respondents in

preceding questions, if the TA decides to implement the proposed deregulation, should a transitional period be provided? If yes, for how long?

Impact on Fixed and Mobile Network Operators

37. If the existing regulatory guidance in favour of the MPNP on FMIC were terminated, the potential effect on the fixed network operators and mobile network operators would depend on the replacement settlement arrangement. If the replacement arrangement is a symmetric one, before the fixed network operators adjust their business plans to cater for this change, they may suffer a loss of income which may amount to a few percentage of their total revenue, and they may have the pressure to recoup the income from their subscribers through retail pricing. However, any price rise, reduction of discounts or resort to usage-based pricing will likely be constrained by competition among fixed network operators, fixed-mobile substitution, Voice over Internet Protocol ("VoIP") services and triple/quadruple play packages. On the other hand, the mobile network operators may realize a saving. Given the level of competition in the market, it is likely that they will pass on the saving to the consumers.

38. The reduction of revenue from fixed-mobile interconnection charges can be viewed part of the on-going evolution of the business of all operators as the market and technologies develop, with existing sources of revenue diminishing and new sources of revenue emerging. The revenues of fixed network operators have evolved since market liberalization from reliance on cross-subsidization from international telephone services to new sources of revenue from broadband and video and multimedia services. If a suitable transitional period is given, the fixed network operators would be able to adjust their business plans to cope with the reduction of revenue from fixed-mobile interconnection charges.

Impact on Consumers

39. With the high penetration of both fixed and mobile services in Hong Kong, almost all end-users are using fixed and mobile services to meet their

communications needs. Any possible change on the retail prices of fixed and mobile services arising from a revision to the FMIC arrangement would likely offset each other and an average consumer should not be materially affected as there are a great variety of competitive offers available in the market. In the longer term, net consumer benefits will be generated when network operators have deployed converged networks and offer customers with "total solution" packages powered by the convergent technologies. Consumers will enjoy cost saving and innovative services for communication at anytime and anywhere with one terminal and one number through subscription to these "total solution" packages. In other words, the potential changes would not be a "zero-sum game".

40. One concern is that any change to the *status quo* may upset the current retail pricing structure of telecommunications services, potentially hurting consumer interest. In particular, there may be concern that fixed network operators may be under pressure to adopt usage-based charges. On the one hand, retail prices are not regulated. The TA is not in a position to influence the retail pricing structure. On the other hand, the retail market is competitive. The operators must bear the consequences for any pricing decision that consumers may potentially dislike. Empirical evidence also suggests that interconnection and retail pricing structures may not be directly linked. For example, the CPNP arrangement for FFIC is usage-based, but retail fixed-line prices are flat. The MPNP arrangement for FMIC is even more usage-based, but mobile prices are becoming flat in recent years.

Question (7): What are your views on the impact of the proposed deregulation on the fixed network operators, the mobile network operators and the consumers?

The TA's Considerations: Part B - The Need for Regulatory Guidance on the "Last-resort" Arrangement[10]

<u>The Public Interest of Maintaining "Any-to-Any Connectivity"</u>

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[10] See Footnote 9.

41. Under the conditions of carrier licences regulating the operation of fixed and mobile networks, the licensees are obliged to interconnect with other networks and services licensed by the TA. According to the "*Code of Practice Relating to the Use of Numbers and Codes in the Hong Kong Numbering Plan*", one of the assignment principles says that all numbers and codes in the Hong Kong Numbering Plan should allow any-to-any communications, that is, a calling party can reach a called party by dialling the number or code of the called party irrespective of the networks used by the calling party and the called party.

42. In considering the requirement of "any-to-any connectivity", the TA recognizes the importance of communications services with full interconnection to daily life and business in Hong Kong. While public interest and consumer protection are overriding factors, it does not automatically mean that *ex ante* imposition of "any-to-any connectivity" obligations is necessary. One may argue that even without a mandatory obligation, no network operator can afford to lose connectivity with any other network anyway, given the level of retail market competition today. Having said that, the TA must have a prompt and effective mechanism to enforce "any-to-any connectivity" on an *ex post* basis. If licensees do not observe the "any-to-any connectivity" principle, the TA may direct the licensees to interconnect under section 36B. The TA may also resort to the powers under section 36A to determine terms and conditions of interconnection between particular networks if commercial negotiations fail and when a market failure is established.

Question (8): Should the regulatory requirement of "any-to-any connectivity" be retained?

<u>Whether Regulatory Guidance on the "Last-Resort" Arrangement is Necessary and Appropriate</u>

43. Given the potential for the TA to intervene as a "last-resort" to safeguard "any-to-any connectivity" in the event of market failure, the TA

needs to consider whether or not regulatory guidance should be re-issued, after the existing regulatory guidance is phased out, to specify the manner in which the TA is likely to exercise his discretion under section 36A. Some industry players may expect to understand in detail the interpretation of "fair and reasonable" terms and conditions under section 36A(3) and "relevant reasonable cost attributable to interconnection" under section 36A(3B), in the event of a determination made after the parties had failed to reach an agreement.

44. Under section 6D of the Ordinance, the TA may after consultation issue guidelines for practical guidance in respect of any provisions of the Ordinance including the principles for determination under section 36A. At present, the TA Statement No.7 issued in 1995, subsequently revised in 1997 and 2002, serves as guidelines on the existing FFIC and FMIC regimes. No guidelines on MMIC have been published by the TA.

45. Issuing guidelines on the options for the "last-resort" regime may improve regulatory transparency and predictability, thereby reducing investment risks. Knowing the consequences of seeking regulatory intervention would arguably improve the chance of reaching commercial agreements between the parties, shorten the time spent and reduce transaction costs associated with the negotiation process, and ultimately reduce the chance of regulatory intervention. For these reasons, it may be in the interest of the public for the TA to issue such guidelines.

46. The argument against issuing guidelines is that the TA would contaminate private negotiations. With the prospect or expectation of intervention by the TA, it may be questioned whether the parties can still negotiate on a truly commercial basis. Even if the parties were to negotiate, they might be discouraged from pursuing any outcome but the "last-resort" arrangement specified by the regulator. The parties may even seek regulatory intervention prematurely, instead of negotiating in good faith, thus reducing the chance of reaching commercial agreements and increasing transaction cost associated with regulation.

47. The primary objective of issuing such guidelines is to elaborate on how the TA would likely approach an intervention if necessary. In other words, the guidelines purport to discipline the TA's discretion, not to guide the parties over their commercial negotiations. In practice, the TA cannot prevent the parties from engaging in regulatory gaming behaviour. However, parties should be reminded that there is no legitimate expectation that the TA will accept a request for intervention. Therefore, having a "last-resort" regime does not mean the TA is ready to intervene *per se*. The requesting party must satisfy the TA that negotiation has indeed failed after reasonable endeavours, and that it is in the public interest for the TA to intervene, in accordance with a market failure test.

48. Unless and until the TA decides to intervene with reasons and concludes a determination after compliance with the due process, guidelines on the "last-resort" regime are not legally binding. The parties do not need to adhere to the guiding principles, so long as a commercial agreement could be reached. For example, the Consultant recommends that the guidelines should apply to all carrier-to-carrier interconnection charges, FFIC, FMIC and MMIC alike. Currently, FFIC is based on CPNP, FMIC is based on MPNP and MMIC is based on BAK. If two parties, fixed or mobile, mutually agree to maintain the *status quo*, the TA will not be in a position to intervene, regardless of whether the *status quo* is consistent with the guidelines. When a new commercial agreement has been entered into, the TA will not normally look into whether the arrangement under the agreement is conforming to the guidelines.

49. In sum, while providing no guidelines to the TA as to how he should exercise his powers under section 36A would arguably impose the least interference with the commercial negotiations among the network operators, this approach might create great regulatory uncertainties and could be contrary to the objective of providing a clear and predictable regulatory framework to facilitate informed investment decisions. Therefore the TA seeks the industry's views on whether the TA should re-issue the guidance on how the TA

should exercise his powers under section 36A should he be called upon to make a determination on the terms and conditions for interconnection between fixed and mobile networks. The TA at present maintains an open mind as to whether such a regulatory guidance should be re-issued.

Question (9): Without prejudice to any position held by respondents in preceding questions, if the TA decides to eventually withdraw the regulatory guidance in favour of MPNP and let the parties negotiate, should the TA issue guidelines on for the "last-resort" charging arrangement that may be adopted in the event of a determination under section 36A?

Question (10): Without prejudice to any position held by respondents in preceding questions, if the TA decides to issue guidelines on the "last-resort" regime, should the guidelines apply to FFIC, FMIC and/or MMIC?

The TA's Considerations: Part C - Options for the "Last-Resort" Arrangement

50. In the event of a conclusion that the re-issue of such a regulatory guidance is warranted, the guidance should avoid the distortion to the competitive processes in an FMC environment. The option adopted must be consistent with the provisions under section 36A of the Ordinance. It must represent "fair and reasonable" terms and conditions under section 36A(3) and any charge in the determination must represent "reasonable relevant cost attributable to interconnection", pursuant to section 36A(3B).

51. Notwithstanding the existence of a regulatory guidance, where a market failure is established, and the TA undertakes a determination, the TA would have regard to the case-specific circumstances as well as the regulatory guidance. The TA must consider all factors under section 36A(10), with regard to policy objectives, consumer interest, investment incentives, competition and other factors before deciding whether or not to proceed with a determination. Of course, the TA is also bound to follow due process in terms of consultation with all affected parties concerning the settlement option to be

adopted.

52. The Consultant has studied various settlement options including CPNP (US, Europe and FFIC in Hong Kong), MPNP (Hong Kong and Singapore[11]), BAK (MMIC in Hong Kong and the internet), and briefly on "Receiving Party's Network Pays" ("RPNP") which is adopted nowhere. BAK was recommended as the best option for the "last-resort" regime for the reasons set out in the consultancy report, which are also summarized in this paper.

53. Central to the Consultant's recommendation is the "cost-causality principle", which states that the party who makes the decision to consume economic resources is causing the cost incurred, and it is allocatively efficient for this party to pay for the cost. The TA agrees that, if a charging mechanism follows the cost-causality principle, then it should naturally be a reasonable attribution of end-to-end connectivity cost, and it should be an option for the "last resort".

54. In particular, the Consultant opines that the costs of a phone call are caused by both the calling and the called party, because they both derive benefits from the call. They both make economic decisions to engage in the conversation. Otherwise, the caller may choose not to dial the call or hang up ("caller sovereignty"), while the receiver may also refuse to answer, with the help of caller line identification, or hang up ("receiver sovereignty"). The call will last as long as both the calling and called parties agree to continue the conversation. On this basis, the cost-causality principle requires that both parties share the costs incurred in a phone call.

Question (11): Without prejudice to any position held by respondents in preceding questions, if the TA issue guidelines on the "last-resort" charging arrangement in the event of a determination under section 36A, should the option reflect caller sovereignty, receiver sovereignty, or both, in allocating end-to-end connectivity cost?

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[11] A partial MPNP for Singapore where there is no interconnection charge payable between fixed and mobile operators for fixed to mobile calls.

55. Of the alternative charging mechanisms studied by the Consultant, BAK reflects both caller and receiver sovereignty via cost-sharing between them in a phone conversation, and therefore the Consultant reckons that it complies best with cost-causality. Under a BAK arrangement, any relevant reasonable cost incurred by the interconnecting network operators should be attributed not to the interconnection level, but rather to the end-customer level, and each network operator should signal the cost to their own customers through retail pricing.

56. The other alternative charging arrangements are all based on the assumption that the cost incurred by one network operator for provision of an interconnection service to another network operator which obtains a benefit from the service should be attributable to the interconnection service and borne by the latter network operator. For CPNP, the originating network operator bears the cost, thus reflecting caller sovereignty only. For RPNP, the terminating network operator bears the cost, thus reflecting receiver sovereignty only. For MPNP, the mobile network operator bears the cost for both originating and terminating calls, thus assuming "mobile sovereignty" only[12]. In the Consultant's view, the underlying assumption that one network operator solely benefits from the interconnection and causes cost to be incurred by the other network operator is increasingly coming under question by economists.

57. The TA notes that none of charging mechanism studied by the Consultant is perfect. The Consultant merely recommends BAK as the better option relative to others. In relation to the options for charging arrangements identified by the Consultant and others which affected parties may wish to put forward, the TA seeks evidence on the merits and demerits of the different options in terms of their current or likely future impact on competition between and amongst mobile and fixed network operators, and the significance of any identified distortion to competition and to the evolution of the

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[12] Or equivalently, reflecting caller sovereignty only for mobile-to-fixed calls, and receiver sovereignty only for fixed-to-mobile calls.

telecommunications markets, including FMC.

Question (12): Apart from the charging options identified by the Consultant, can you identify any additional option?

Question (13): What are the merits and demerits of the options identified by the Consultant, and other options identified by you?

Question (14): Which option is in your opinion in the best interest of the consumers and the users, and the industry as a whole?

INTERCONNECTION LINKS BETWEEN FIXED AND MOBILE NETWORKS

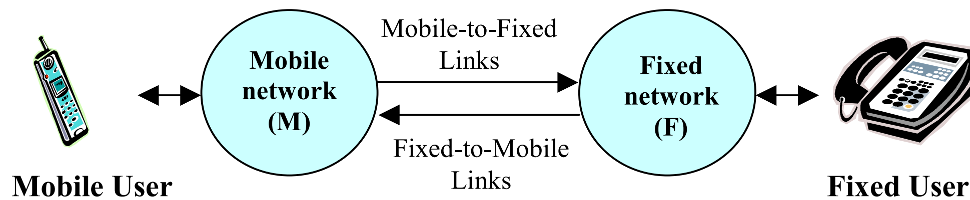
The Existing Arrangement

58. Interconnection links are used to connect two networks for conveyance of inter-network traffic. For interconnection between a fixed network and a mobile network, the mobile network operator is required to bear the cost of all interconnecting links connecting with the fixed counterpart.

The Consultant's View

59. The Consultant observes that such a practice is not consistent with the interconnection between fixed networks that the cost associated with establishing and maintaining interconnection facilities is shared equally by the interconnecting parties. With the emergence of FMC, the Consultant recommends to obliterate such a regulatory asymmetry. It suggests that each network operator, be it fixed, mobile or integrated, should pay for the interconnection links which deliver traffic to the terminating networks (see Figure 4). The proposed change should be effected along with any change to the interconnection charging arrangement. Mobile network operators are expected to be benefited from the proposed change with a cost saving of some

HK$40 million per annum.



The existing arrangement: All the cost of mobile-to-fixed links and fixed-to-mobile links is borne by the mobile network.
The proposed arrangement: Each network operator shall bear the cost of links delivering traffic to the counterpart network.

Figure 4 - Paying for Interconnection Links

The TA's Considerations

60. The existing arrangement for the mobile network operators to bear fully the costs of the interconnection links between the mobile networks and the fixed networks is a direct consequence of the existing regulatory guidance, in the form of TA Statement No. 7 and PCCW's tariff for FMIC, which stipulates that the mobile network operators bear full costs (from calling party to called party) for the delivery of fixed-to-mobile calls and mobile-to-fixed calls. If the existing regulatory guidance for FMIC is terminated, any obligation arising from regulation for mobile network operators to pay for the costs of interconnection links for traffic in both directions would necessarily cease to be effective.

61. Similar to the FMIC arrangements, removing asymmetries does not necessarily mean replacing them with new intervention. The TA does not intend to proactively impose the changes proposed by the Consultant by means of intervention. The TA proposes that the fixed and mobile network operators negotiate the arrangement for bearing the costs of the interconnection links at liberty. Determination under section 36A would be made only as a last resort. Like the FMIC arrangement, the parties are free to negotiate and agree on any arrangement. The TA is open-minded whether there would be a need for the TA to issue guidelines under section 6D to provide guidance on how he would likely exercise his powers under section 36A as a "last resort". However, he has

found no better options available for the purpose of regulatory intervention than the Consultant's recommendation of that a symmetric arrangement for bearing the costs of the interconnection links carrying traffic between end-users.

62. As a mobile network operator under its mobile carrier licence has no authorization to open up roads to lay cables for the interconnection link, even if a symmetric arrangement is agreed between a fixed and mobile network operator, a mobile network operator is expected to lease the portion of interconnection links that it shall provide under a symmetric interconnection agreement from fixed network operators.

Question (15): Should the existing regulatory asymmetry in relation to interconnection links between fixed and mobile operators be removed? Should the TA issue guidelines for facilitating commercial negotiation?

Question (16): Without prejudice to any position held by respondents in preceding questions, if the TA decides to remove such an asymmetry, should the TA set a last-resort regime that each interconnecting party, irrespective of fixed, mobile or integrated network operators, should bear the cost of interconnection links for delivery of traffic to the terminating networks? If not, please detail your alternative proposal.

LOCAL ACCESS CHARGE

63. Local Access Charge ("LAC") is the charge payable by providers of external telecommunications service ("ETS") (including ETS provided by facilities-based network operators and services-based service providers) to local network operators for conveying external telecommunications traffic to or from end-users through local networks.

The Existing Arrangement

64. The existing arrangement for LAC is based on the TA statement dated 25 November 1998[13] (the "1998 LAC Statement"), and implemented via a TA determination dated 30 December 1998[14] on the LAC of PCCW (the "1998 LAC Determination"). This determination specified that the level of LAC would be reviewed periodically. The current level of LAC levied by PCCW is that specified in 2001[15], being in the range of 10.1 to 12.6 cents per minute. The LAC levied by other fixed network operators and mobile network operators are not currently regulated. As observed from the marketplace, the fixed network operators are levying similar levels of LAC to that of PCCW's, while the mobile network operators are not able to levy any LAC. Currently, the net LAC received by local fixed network operators amounts to some HK$191 million per annum.

65. When the 1998 LAC Statement was formulated, the ETS market was newly liberalized. At that time, the historical cross-subsidization between local and external service tariffs had not yet been rebalanced. Even when the level of LAC was revised in 2001, the price cap on residential fixed telephony service had not yet been lifted. The revenue stream from ETS was widely regarded as an important source of funding for local network investments. Against this background, the TA found it necessary to strike a balance between the policy objectives of facilitating fair competition in the ETS market and encouraging local infrastructure investment. Accordingly, the 1998 LAC Statement specified that LAC should be calculated on a LRAIC basis, with local loop cost included amongst others as a relevant cost component. This arrangement is different from other access services that consume similar network resources. For example, the PNETS charges for value-added service providers and the FMIC under PCCW's tariff are calculated based on FDC, and does not include the local loop cost.

66. On 20 May 2005, the TA issued a consultation paper[16] to consult

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[13] TA Statement, *Local Access Charge and Modified Delivery Fee Arrangements*, 25 November 1998.

[14] Telecommunications Ordinance (Cap. 106), *Determination under Section 36A*, 30 December 1998.

[15] TA Statement, *Review of Local Access Charge*, 28 June 2001.

[16] Consultation Paper, *Regulation of Local Access Charge ("LAC")*, 20 May 2005.

affected parties, amongst other things, whether regulation of LAC is needed. Three options were raised, namely:

(i) to initiate steps to make an LAC determination for all local fixed operators;

(ii) to make a fresh LAC determination for PCCW, or any other local fixed operator, on an individual basis if there are legitimate grounds to justify such an action; or

(iii) to make no intervention and let the parties to the interconnection negotiate and agree on the applicable LAC.

67. Industry comments received in response to the consultation paper were divided. ETS operators generally preferred the TA to make a unified LAC determination for all local fixed network operators. On the other hand, the majority of local fixed network operators opined that LAC should be set by market.

The Consultant's View

68. In reviewing the LAC regime, the Consultant holds the view that it exhibits another regulatory asymmetry between local fixed and mobile networks. In addition, the existing level of LAC is found to be much higher than that of local interconnection charges. In view of the development of FMC, the Consultant recommends that the TA should "abolish" the current asymmetrical arrangement of LAC. The Consultant did not give a definite recommendation on the implementation details for "abolishing" LAC, but did recommend that the "abolition" should preferably be in a manner that reduces the level of regulatory intervention.

The TA's Considerations

Regulatory Asymmetry

69. With respect to the LAC arrangements, the TA's consideration is also that existing regulation, though appropriate in the circumstances of the early years of ETS liberalisation, may distort competition between fixed and mobile networks. The LAC arrangement applicable to fixed networks is imposed through regulation, in the form of the LAC Statement and the determination of LAC between PCCW and ETS providers. On the other hand, the TA has never intervened on the level of LAC applicable to mobile networks. Mobile network operators are free to set LAC at whatever level, subject to competitive forces, for outgoing external calls from mobile customers directly delivered to ETS providers, and incoming external calls terminating directly on the mobile networks.

70. In the 1998 Determination, the TA specified that the regulated LAC is payable to the "originating network" or "terminating network", as the case may be, regardless of any transit arrangement. This is also reflected in Special Condition 22 of ETS licences. Mobile networks were not regarded as the "originating network" or "terminating network" under the 1998 LAC Statement to receive LAC[17] for external calls originating from or terminated on mobile numbers via transit fixed networks. Instead, the mobile network operators have had to pay the fixed network operators a FMIC under the existing MPNP regime for the transit service. Under such an arrangement, which is a form of regulatory intervention, the fixed network operators have commercial incentive to provide transit network for external calls to and from a mobile number, and offer low access charges for such traffic, financed by the FMIC received from the mobile network operators. This renders it financially unattractive for ETS providers to arrange direct access to mobile networks.

[17] Annex 3 to the *Implementation of TA's Statement of 25 November 1998 on Local Access Charge and Modified Delivery Fee Arrangements*, slides 29-38.

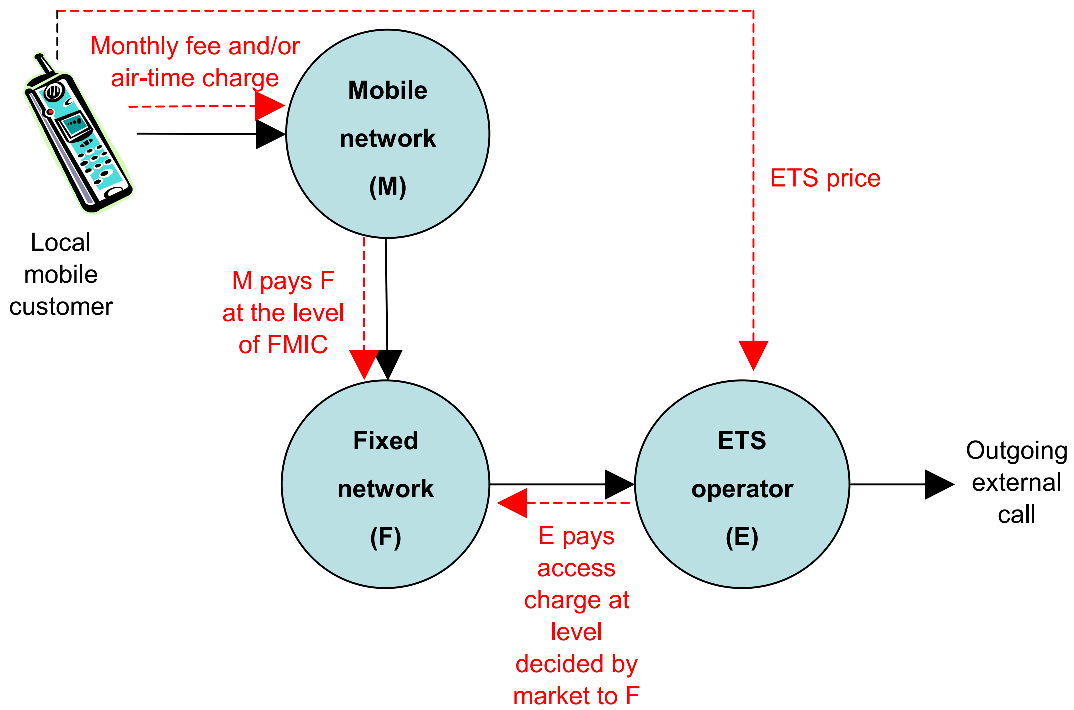

Figure 5 – Existing LAC arrangements for outgoing external calls originating from a mobile customer via a transit fixed network

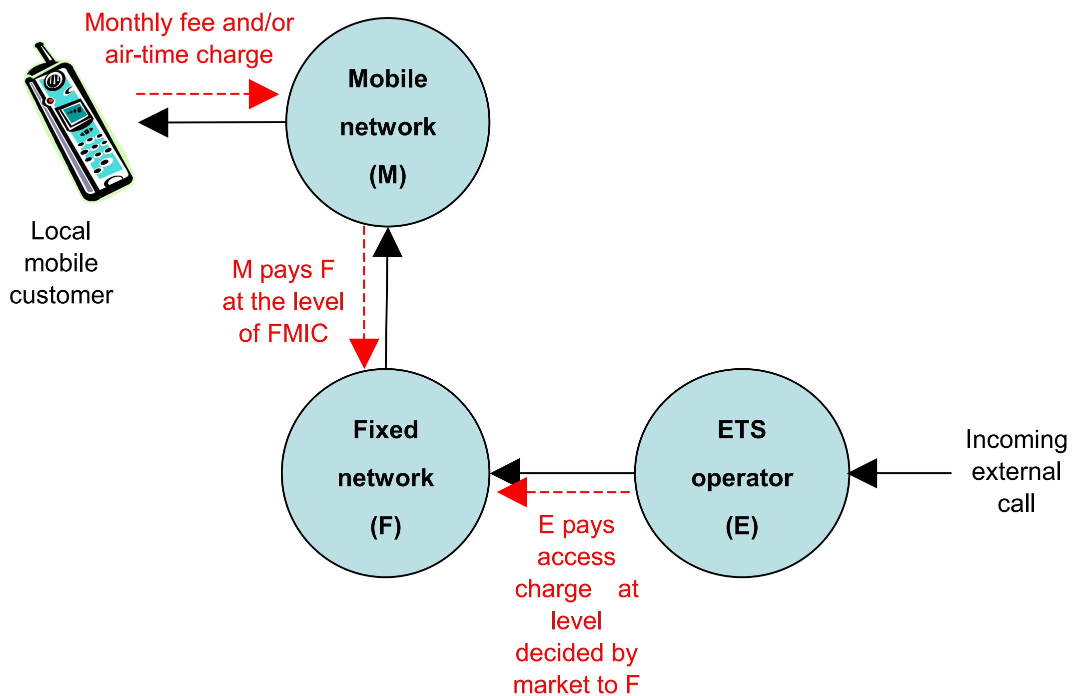

Figure 6 – Existing LAC arrangements for incoming external calls terminating on a mobile customer via a transit fixed network

Eliminating the Asymmetry

71. As for the FMIC, the above regulatory asymmetry based on the classification of a network being fixed network or mobile network distort the competitive processes and would not be sustainable in an FMC environment. Regarding the asymmetry associated with the LAC arrangement, there are two approaches to remove the asymmetry – bringing the LAC for mobile networks under regulation as for fixed networks, or removing the regulation on LAC for fixed networks. In line with the principle for economic regulation, regulation should be applied only to address market failures. Up to this point, the TA has found no credible evidence of market failure in the provision of local access services by mobile networks. The LAC for mobile networks has in fact been effectively constrained by the market. There is accordingly no reason at all to adopt the first approach. The TA will therefore consider further the latter approach, i.e. deregulating LAC for fixed networks.

72. The regulated asymmetry manifested in the charging arrangement between the fixed network operator (F) and the mobile network operator (M) as depicted in figures 5 and 6 should also be removed. The arrangement for payment of LAC to mobile network operators should be same as that for fixed network operators. The TA is of the preliminary view that the ETS operator (E) should negotiate commercially with the fixed network operator (F) for the transit charge that it has to pay for delivering the transit traffic via fixed network operator (F) to/from mobile network operator (M). The ETS operator (E) also has to negotiate commercially with the mobile network operator (M) the access charge that it has to pay for the external calls originating from or terminating on M via F. Charges between the mobile network operator (M) and the fixed network operator (F), if any, would be left to the market force.

Competitive Restraints on LAC for Fixed Networks

73. The rationale for regulating LAC is that the fixed network operator with the end-user connected command a certain degree of market power in that

all external calls from or to the end-users must pass through the local fixed networks to which the end-users are directly connected. (The TA specified that the regulated LAC is payable to the "originating network" or "terminating network", regardless of any transit arrangement.) The LAC determination ensures that the ETS provider has access to the end-users at a reasonable access charge which compensates the fixed network operators for the network resources consumed.

VoIP substitution

74. Since the formulation of the LAC Statement in 1998, the market has moved on. The most significant development is the emergence of VoIP services. External services based on the VoIP technology can be accessed over broadband connections without going through the conventional circuit-switched networks. For example, communications between two VoIP users can be conveyed over IP networks and the Internet without going through any circuit-switched network at all. Another example is that a VoIP user can access services based outside Hong Kong to call any overseas users connected to circuit-switched networks without going through the local circuit-switched networks, so the LAC applicable to local circuit-switched network becomes irrelevant. Yet another example is that an overseas VoIP user with a Hong Kong telephone number can communicate with any users connected to the local circuit-switched networks as if the overseas user were an end-user of a local circuit-switched network. These are products and applications currently available in the market that renders the existing LAC irrelevant[18]. Accordingly, LAC may no longer be a "bottleneck" for accessing end-users for the provision of telecommunications services to and from overseas.

Mobile substitution

75. The mobile penetration of Hong Kong has reached 123%. Calling from or to a mobile phone is another way of communications with parties overseas. Despite the regulatory asymmetry, the zero LAC set by the mobile

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[18] See paragraphs 10 & 11 of the SBO Statement.

network operators has resulted in cheaper incoming retail IDD rates to Hong Kong for calling mobile numbers from many countries. Consequently, the mobile networks have gained market share in IDD traffic in recent years. Therefore, the ability to access end-users through the mobile networks has, to some degree, exerted competitive pressure on the fixed networks in the market.

76. However, the TA considers that the fixed-mobile asymmetry on LAC may have prevented the competitive pressure of mobile LAC from effectively restraining LAC pricing among fixed networks in the wholesale market. Were these distortion removed, market forces would be allowed to function more effectively as a price restraint on LAC of the fixed networks.

Relevance of LAC

77. The TA has held the view that the relevance for LAC warrants a review, given the significant market changes since 1998: cross-subsidy between local and external telephony services has been fully rebalanced; the price cap in residential and business telephony services has been removed; the ETS market is now fully competitive; and NGN investment is now mainly driven by broadband access and content services.

Deregulating the LAC for Fixed networks

78. The market for external telecommunications services is working effectively at the retail level. Consumers are enjoying the benefits arising from the effective competition. It is always the TA's policy to use market forces to protect and enhance the interest of users. Regulation is applied only when the market forces cannot work effectively to deliver community welfare.

79. Based on considerations in preceding sections and based on the feedbacks to the May 2005 consultation, the TA is of the preliminary view that no market failure is likely in the absence of regulation, and that the existing regulatory distortion between fixed and mobile network operators in relation to LAC should be removed by deregulating the LAC for fixed networks.

80. This means that the TA will not proactively determine the level of the LAC for any network operator, but will allow the market to set the level. However, similar to the FMIC arrangement, regulatory powers under section 36A will be reserved as a "last-resort", to protect public and consumer interests. Before deciding whether to make a determination on the level of LAC under section 36A, the TA will have regard to the factors set out in section 36A(10) and is duty bound to follow the due process.

81. Unlike the case for network-to-network interconnection, LAC involves a large number of interconnecting parties, facilities-based and services-based. Licensees may incur significant transaction costs in conducting multilateral negotiations. Some of the services-based operators have relatively less resources in commercial negotiations compared with facilities-based operators. One way of reducing transaction costs in commercial negotiations is for the network operators offering the access services to publish tariffs for interconnection[19]. The published (standard) tariff represents an open offer to any party seeking to interconnect, on the basis of which interconnection agreements can be entered into readily without delay. However, if the party seeking interconnection so desires, specific discounts can be further negotiated[20]. An interconnection tariff serves as a starting point for negotiation, which may improve the chance of reaching commercial agreements. The preliminary view of the TA is that whether published tariffs are available, at what levels, and their impact on the effective working of the ETS market and consumer welfare are relevant factors to be taken into consideration if the TA is requested to exercise his powers under section 36A in making a determination on the LAC on a particular network operator.

82. The regulatory policy stated in the 1998 LAC Statement would essentially be replaced by a market-driven one, whereby the level of LAC would be set commercially, subject to competitive forces. The TA would not intervene unless factual evidences suggest a failure of the market in delivering

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19 At present, fixed network operators have already published tariffs for PNETS charge and FMIC.

20 Discounts with objective (cost) justification, such as bulk purchase or long-term contract, would not normally constitute undue discrimination that contravenes s.7N of the Ordinance.

public benefits. If and when the TA finds a genuine need to intervene, the determination will be based on the facts and circumstances, having regard to the factors set out in section 36A(10) and in compliance with the due process.

83. Similar to the fixed-mobile interconnection arrangement, the TA at this stage remains to have an open mind as to whether guidelines should be laid down on the principles and methodology which are likely to be adopted in the event of an s.36A determination.

Transitional Period

84. The TA does not propose to set a specific transitional period for the deregulation of the LAC for fixed networks. However, it is important that any change should take place in an orderly manner and without upsetting the current "any-to-any connectivity" already achieved. The 1998 Determination for LAC (including all its subsequent revisions[21]) will remain in force until it is modified or withdrawn by the TA in accordance with the law and the "*Procedures for Making Determination on Terms and Conditions of Interconnection Agreements*" revised by the Authority on 27 September 2001. This means that the TA must follow the due process and invite representations from the parties affected by the 1998 Determination before deciding to modify or withdraw it. The TA will consider all relevant factors, for example, the competitive restraints on LAC from VoIP and mobile substitution, and whether tariffs have been published LAC and their impact on the effective working of the ETS market and consumer welfare, before any decision on the withdrawal of the 1998 Determination (including all its subsequent revisions).

Question (17): Should the existing regulatory asymmetry between fixed and mobile network operators in relation to LAC be removed?

Question (18): Should any regulatory changes increase or reduce the intervention on LAC?

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[21] See footnote 15.

Question (19): Should the TA determination for PCCW in 1998 and all its subsequent revisions be withdrawn in accordance with established procedures[22] to facilitate the migration to a market-driven environment in the setting of LAC?

Question (20): What are your views on the importance of published tariffs by network operators before the TA consider withdrawal of the current determination for PCCW in 1998 and all its subsequent revisions?

Question (21): Would the market for ETS access to end-customers be competitive without the TA's intervention?

UNIFIED CARRIER LICENCE

85. In the First Consultation Paper, the TA proposed to create the UCL in view of FMC, and proposed to cease the issue or renewal of any fixed/mobile carrier licence when UCL is in place. Fixed and mobile network operators may opt for the UCL before the expiry of their existing carrier licences. A series of questions regarding the proposed UCL have been raised in the First Consultation Paper to seek views and comments from the industry and other interested parties. The Submissions are summarized in the Annex.

The Consultant's View

86. In the review of the licensing regime, the Consultant supported the TA's proposal of creating UCL in the era of FMC as UCL treats fixed and mobile networks equally in terms of licence fees and most of the rights and obligations. In regard to licensing approach, the Consultant suggested that a form of general authorization subject to some specific constraints may be adopted.

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22 *Procedures for Making Determination on Terms and Conditions of Interconnection Agreements*, 27 September 2001.

The TA's Considerations

87. The TA notes the Consultant's support for the UCL approach. The TA invites further comments on the proposals to create a UCL as detailed in the First Consultation Paper.

88. Currently, general authorization is not provided for under the Ordinance. While class licence created under section 7B of the Ordinance is akin to the concept of general authorization, section 7B(4) of the Ordinance circumscribes that the TA shall not create a class licence for a telecommunications network, system, installation or service subject to the requirement for a carrier licence.

Question (22): Do you have any further views and comments on the creation of UCL, the arrangements for transition to a unified licensing framework as well as the conversion of existing fixed/mobile carrier licences to UCL, as proposed in the First Consultation Paper? Furthermore, in response to the proposed fee of UCL, do you have any further views and comments?

Question (23): Do you have any further views and comments regarding the rights and obligations proposed for UCL, as well as the general conditions and special conditions of the UCL as proposed in the First Consultation Paper?

OTHER RECOMMENDATIONS OF CONSULTANT

89. The Consultant also made recommendations on other regulatory issues in the FMC era which are summarised below:

(i) In the long term all fixed and mobile network operators should be required to facilitate both operator number portability ("ONP") and mobile number portability ("MNP"), with the corresponding rights to receive information on all ported numbers free of charge.

(ii) The TA should grant the road opening right to mobile network

operators as well so that they are entitled to lay their own backhaul and interconnection links.

(iii) Both existing mobile and fixed network operators should be given the right to request for the TA authorization under section 14(1) for gaining access at no cost to "common parts" of a building to install telecommunications line, when the purpose of the concerned installation is to serve the residents and occupants of that building.

(iv) There is no imperative need of proceeding with fixed mobile number portability ("FMNP") at the present moment and recommends the TA to postpone any decision for FMNP for 2 years before reviewing again.

(v) That the current numbering plan with the use of the level of numbering for identification of services should be maintained until any necessary change for FMC, which is to be tied in with the decision pertinent to FMNP.

(vi) The TA should explore with network operators about migrating the existing number portability databases to centralised ones for cost saving and system expandability in the long run. Such an initiative of a centralised database solution for ONP and MNP can be arranged for deliberation with the relevant network operators in the respective number portability working groups.

The TA's Considerations

90. The TA has considered these recommendations and set out below his preliminary views:

(i) Mobile network operators may now have access to ONP database through a fixed network operator as maintenance agent. This addresses the issue of inefficient call routing of mobile network operators raised by the Consultant, without the need for the mobile

network operators to build their own ONP databases. The technical feasibility for mobile network operators to have access to the necessary number porting information to build their own ONP databases should best be handled outside this consultation through technical working groups convened by OFTA.

(ii) To minimise the frequency of road opening activities and to ensure that social benefits of the public have been maximized through the sharing of space beneath public roads, the TA considers there is a need to maintain the existing policy that road opening works should be reserved to those that are authorized under their licence to provide public wireline-based services.

(iii) The respective building access rights of fixed and mobile network operators are governed by the legislation which shall prevail unless and until legislative amendment is made to section 14(1). The TA considers that there is no urgent need to pursue the legislative amendment as he does not envisage any requirement in the near future for mobile network operators to access common parts of a building for the purpose of serving only the residents and occupants of that building. The access into interior of building complex for serving customers within the complex is beyond the scope of this purpose because the customers are members of the public rather than residents or occupants of the buildings concerned.

(iv) The TA shares the Consultant's view that a market research can be conducted for assessing the consumers' demand of FMNP prior to the next regulatory review.

(v) The TA is inclined to take the view of the Consultant that there is no imminent need of altering the numbering plan. The TA is minded to study the prospective development of the numbering plan which will be the subjects of consultation in the Telecommunications Number Advisory Committee in due course.

(vi) The TA considers that the benefits to be brought by the initiative of centralized databases will be subject to when the FMNP is to be introduced. The TA is minded to have meetings with the relevant network operators, under the existing ONP/MNP working groups or a new workgroup embracing FMNP, to canvass the number portability issues in view of the development of FMC.

Question (24): Do you have any comment on the preliminary views of the TA on the above issues?

INVITATION FOR COMMENTS

91. The TA would like to solicit views from the industry and other interested parties on all the regulatory issues relevant to FMC as raised in this consultation paper. Views and comments should reach the TA, preferably by email to **fmc@ofta.gov.hk**, on or before 13 October 2006. Submissions may also be sent to:

Office of the Telecommunications Authority
[Attention: Mr. Chaucer Leung, FMC Project Coordinator]
Address: 29/F Wu Chung House
213 Queen's Road East
Wan Chai
Hong Kong
Fax: 2180 8588

92. Any person who submits views and comments should also give the supporting information and detailed justifications, and should note that the TA may publish all or part of the submission received and disclose the identity of the source in such manner as the TA sees fit. Any part of the submission, which is considered commercially confidential, should be clearly marked together with the reasons for such claim. The TA will take such markings into account in

making his decision as to whether to disclose such information or not.

Office of the Telecommunications Authority
14 July 2006

Annex

Summary of the Submissions Received on the First Consultation Paper on Revision of Regulatory Regimes for Fixed-Mobile Convergence

Submissions Received

The 9 submissions are submitted by the following parties:

a. AT&T Global Network Services Hong Kong Limited ("AT&T");
b. China Mobile Peoples Telephone Company Limited ("People");
c. CM TEL (HK) Limited ("CM Tel");
d. Hong Kong Broadband Network Limited ("HKBN");
e. Hong Kong Police ("HKP");
f. New World Telecommunications Limited ("NWT");
g. Television Broadcasts Limited ("TVB");
h. Towngas Telecommunications Fixed Network Limited ("Towngas"); and
i. The submission jointly from APT Satellite Company Limited, Asia Satellite Telecommunications Company Limited, China Mobile Peoples Telephone Company Limited, Hong Kong Cable Television Limited, Hong Kong CSL Limited, Hutchison Global Communications Limited, Hutchison Telephone (Hong Kong) Limited, New World PCS Limited, PCCW-HKT Telephone Limited, Reach Networks Hong Kong Limited, SmarTone Mobile Communications Limited, Mandarin Communications Limited and Wharf T&T Limited ("the Joint Operators").

General Comments

2. The Joint Operators submit that the TA should proceed with UCL only when the reviews on FMC and the spectrum policy are completed. They

express their difficulty of responding to the UCL consultation until the more critical FMC issues have been decided under a separate FMC consultation. CM Tel, HKBN and NWT share the similar views. They see UCL as an implementation issue of FMC and ask for resolution of the substantive policy issues in relation to FMC first. CM Tel comments that it would be unnecessary to bundle the UCL with the proposed deployment of Broadband Wireless Access ("BWA").

Question (1): Is there any need for a unified licensing framework? Should we commence the detailed formulation of the unified licensing framework now? If not, when should it be commenced?

3. TVB, Peoples and CM Tel generally agree that there is a need for the creation of UCL. On the contrary, Towngas opines that the existing Fixed Carrier Licences ("FCL") and Mobile Carrier Licences ("MCL") already set out the rights and obligations of carrier licensees. UCL would not be needed until the new technologies are mature enough to enable fully converged services.

Question (2): Do you agree that once the unified licensing framework is implemented, the TA should issue UCL in lieu of the FCL or MCL?

4. Towngas, Peoples and TVB agree with the proposed arrangement. However, NWT objects to any forced phasing out of FCL and MCL which will be disruptive to the industry. It suggests that the TA should adopt a market-oriented approach which is to make available all options of licences (i.e. FCL, MCL and UCL) and allow the applicant to choose the kind of carrier licence which best suits its operational needs.

Question (3): After the unified licensing framework is implemented, should the conversion of the existing FCL or MCL to UCL be implemented on a voluntary basis?

5. CM Tel, NWT, Towngas, Peoples and TVB indicate their support to

the voluntary conversion scheme proposed. NWT supplements that the existing carrier licensees should be entitled to continue the service provision under the terms and conditions of their existing licences until the expiry of such licences.

Question (4): If an existing fixed (or mobile) carrier applies for a UCL under which the scope of service is to be expanded (i.e. Scenario (2)), should Option (a), Option (b) or both options be made available for determining the expiry date of the UCL?

6. CM Tel and Peoples hold the views that both options should be allowed. While TVB supports both options, it submits that under Option (b) in Scenario 2, the period for which any spectrum has been assigned under the existing licence should be extended to cover the whole period of the new licence. For Towngas, it only supports Option (a).

Question (5): Should unified carriers be required to make any performance commitments?

7. CM Tel, Peoples and TVB submit that no performance bond should be required from the UCL holders. CM Tel supplements that network rollout plan should be incorporated as licence conditions. Towngas makes the remarks that UCL should only be granted to applicants with genuine plans to invest in telecommunications infrastructure and that the TA should closely monitor whether licensees have fulfilled their performance commitments.

Question (6): Do you agree that the existing policy, namely the right of access into a building under section 14(1) of the Ordinance should be granted to a unified carrier only if the installation of telecommunications lines or equipment inside that building is prerequisite for the provision of services by the unified carrier to the residents and occupants of that building, should continue and be maintained?

8. CM Tel, Peoples and TVB welcome the extension of the current policy regarding the access right into buildings to UCL holders. Peoples

suggests that the TA should monitor the usage by UCL holders to avoid any abuse. On the other hand, Towngas opines that the right should only be granted to UCL holders which have submitted the fixed network business and investment plans to the satisfaction of the TA, and OFTA should be diligent in monitoring the performance commitments of licensees.

Question (7): Do you agree that all unified carriers should be subject to the TA's approval on the road opening works on a case-by-case basis and the coordination mechanism set out in the Road Opening Guidelines?

9. CM Tel and Peoples submit that the case-by-case approval by the TA on road opening works should be applied to UCL holders. Towngas, similar to its view on access right into buildings, opines that the road opening right should only be granted to UCL holders which have submitted the fixed network business and investment plans to the satisfaction of the TA, and OFTA should be diligent in monitoring the performance commitments of licensees.

Question (8): Do you agree that unified carriers should comply with the requirement of "any-to-any connectivity"?

10. CM Tel, NWT, Towngas and Peoples support that the requirement of "any-to-any connectivity" should be imposed on the UCL holders.

Question (9): Do you agree that unified carriers should be directed to facilitate both ONP and MNP, and should have access to ONP and MNP databases?

11. Towngas submits that the UCL holders should offer both ONP and MNP, and have access to ONP and MNP databases. Peoples agrees that the UCL holders should offer both ONP and MNP but suggests that access to ONP and MNP databases should be driven by the market. CM Tel opines that under the FMC environment, ONP and MNP will no longer be sustainable and therefore it will be more meaningful for the TA to work out the implementation details of FMNP and direct UCL holders to facilitate FMNP instead.

Question (10): Do you agree that the status quo on the obligation to provide directory enquiry ("DQ") services should be maintained in the new unified regime in which a unified carrier will not be obliged to provide directory enquiry services to customers of 2G and 3G mobile services and the directory information of these customers should not be included in any directory databases?

12. Peoples submits that there would be no need of providing DQ for mobile services. However, CM Tel and Towngas have reservation to maintain the differentiation between fixed and mobile services under the FMC environment. CM Tel suggests the TA to review the obligation of DQ services and include it in the UCL regime. Towngas counter-proposes to lift the obligation of DQ services from the UCL and allow the UCL holders to decide on whether to offer DQ services and whether to incorporate directory information into the unified database in view of the market situations.

Question (11): Do you agree that converged services with limited mobility should be treated like "fixed" services in the requirements for the provision of directory services?

13. Little comments are received for this question. While Peoples agrees to the proposal, CM Tel submits that converged services with limited mobility should be licensed under FCL rather than the proposed UCL.

Question (12): Do you consider it appropriate to continue to require fixed carriers to provide White Pages?

14. CM Tel and Peoples submit that it is appropriate to continue to require fixed operators to provide White Pages. Towngas counter-proposes that the decision of whether fixed operators provide White Pages should be left to the market. NWT opines that the obligation of providing White Pages should be retained only if there is substantial customer demand. In the meantime, fixed operators should be encouraged to provide and improve online White Pages

resources by ensuring completeness and accuracy of database entries as well as ease of use.

Question (13): Do you agree that the UCL to be issued should adopt the *ex post* regulatory regime?

15. CM Tel, NWT, Towngas, Peoples and TVB submit that UCL should be issued under *ex post* regulatory regime. CM Tel supplements that the TA should reserve his power to impose *ex ante* regulatory regime should there be market dominance.

Question (14): Do you agree that the aforementioned requirements (1)-(5) for tariff publication should be imposed on unified carriers and that the TA may by direction waive some of the requirements if he considers appropriate?

16. CM Tel and TVB support the TA's proposal. TVB takes its stance that such requirements should be limited to standard tariffs only. NWT put forth a number of suggestions including (i) to waive the gazette requirement; (ii) to permit the publication on website only; (iii) to unify the publication requirements imposed on carriers and service providers; and (iv) to maintain by OFTA a unified database of tariffs of all carriers and service providers in a user-friendly and searchable format. Similarly, Peoples suggests the TA to waive the gazette requirement.

Emergency Call Service

17. HKP submits that the emergency service requirements are needed to be mandatory and covered in the general conditions. HKP has also made a number of suggestions to facilitate the operation of emergency service that (i) a common database to hold all subscriber numbers and addresses should be provided to HKP and Fire Services Department and be updated daily free of charge; and (ii) the implementation details including identification code, call routing, dedicated trunkings, and etc. are figured out.

Comments on Other Special Conditions ("SC")

18. NWT objects to SC 1.2(c) on compliance with any code of practice in respect of the protection and promotion of interests of telecommunications users. NWT opines that this SC is an attempt by the TA to expand its power and jurisdiction beyond the Ordinance into unspecified consumer issues. It suggests that the wording should be narrowed appropriately to fit within the existing section 7M of the Ordinance if the TA intends to regulate the marketing activities of telecommunications services. NWT also holds the view that the TA's power to determine under SC 11.7 is too narrow and suggests that SC 11.7 should be amended to the effect that the TA can determine all terms and conditions in relation to the provision of DQ raw data. NWT also objects to SC 24 regarding insurance on the ground that it should be treated as a commercial issue. NWT also points out that under the current FTNS licence, the licensee is not obliged to ensure that it has an insurance policy.

19. AT&T submits that the international fixed and mobile termination rates should continue to be determined primarily by market forces, backed by the TA's intervention when there are evidences that UCL holders attempt to use the combined licensing arrangement as a basis for the non-cost-based increase in these charges.

Fee Schedule of UCL

20. CM Tel indicates no objection to the proposed fee schedule. Peoples also agrees in principle with a suggestion of regular reviews. HKBN considers that the number fee of $3 will be detrimental to consumers as it will be borne by them ultimately. NWT also disagrees with the number fee as it fails to see any correlation between the quantity of allocated numbers and administrative costs of the regulator or public resources. NWT further submits that if the TA intends to impose the number fee, it would be necessary to revise the number allocation process by introducing allocation with a scaleable size of number

blocks, mechanism for surrendering of allocated numbers, and trading of allocated numbers so that carriers will be able to minimise the sunk cost arising out of the allocated number blocks.

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