Review of the Regulatory Framework for Universal Service Arrangements

Consultation Paper

28 December 2006

Introduction

The present regulatory framework for universal service obligation (**USO**) was established by the Telecommunications Authority (**TA**) in his statement entitled *"Universal Service Arrangements: the Regulatory Framework"* issued on 14 January 1998 (**the 1998 Statement**), following the liberalization of the domestic fixed telecommunications market in July 1995. The 1998 Statement set out the costing methodology for universal service contribution (**USC**) as well as the funding and settlement mechanisms.

2. On 13 July 2000, the TA issued a statement entitled *"Universal Service Contribution Calculation Methodology"* (**the 2000 Statement**) to conclude a review on the calculation methodology of USC. This review was primarily an updating exercise to cater for the development in the regulatory and operating environment up to 2000, and the extended scope of services which PCCW-HKT Telephone Limited (**PCCW-HKTC**, then called Cable & Wireless HKT Telephone Limited), the universal service provider (**USP**), was entitled to offer under its licence. The relevant revenue and costs for the USC calculation were revised to include revenue generated from external services, replace the delivery fee with local access charge (**LAC**) and modified delivery fee and exclude local loop costs allocated to broadband services.

3. Since the 2000 review, the market has undergone further development – the expiry of the moratorium on the issue of additional licences for the construction of new local fixed wireline-based networks in January 2003, completion of tariff rebalancing of domestic fixed telephone line services, the increasing number of external telecommunications services (**ETS**) licensees, the fast growing broadband market, and the emergence of new technologies and new services, such as Voice over Internet Protocol (**VoIP**).

4. In the consultation paper on *"Regulation of Internet Protocol (IP) Telephony"* issued on 4 October 2004 (**VoIP Consultation Paper**), the TA solicited views on the basis of sharing USC in view of the potential proliferation of IP telephony. A summary of the submissions received in relation to the subject matter of USO and USC is given in **Annex 1**. The respondents in general supported the proposal of reviewing the USO/USC framework. In his statement entitled *"Regulatory Framework for VoIP"* issued on 20 June 2005 (**VoIP Statement**), the TA announced his intention to conduct a review of both the scope and funding mechanisms of the USO/USC framework, including the impact of IP Telephony services on USC. The TA is empowered under section 35B of the Telecommunications Ordinance and fixed carrier licences (or fixed telecommunications network services licences) to review the regulatory framework for universal service.

5. This consultation paper aims to set out the TA's preliminary thinking and consult the industry and other interested parties on the relevant issues. The TA has identified a number of specific concerns in the following areas, but comments are also welcome on other related issues not specifically mentioned in this consultation paper:

- Universal service arrangements;
- Scope of universal service;
- Competitive provision of universal service;
- Exclusion of areas with alternative fixed network coverage from the USO;
- Costing for USO;
- Funding arrangements for USO; and
- Administration matters.

6. Preliminary views expressed by the TA in this consultation paper are for the purpose of discussion and consultation with the public and industry only. Nothing in this consultation paper represents or constitutes a determination, direction or decision made by the TA and the consultation contemplated by this paper is without prejudice to the exercise of his powers under the Telecommunications Ordinance (**the Ordinance**) and telecommunications licences. Nothing herein will prejudice the consultation on Deregulation for Fixed-Mobile Convergence initiated by the TA on 14 July 2006[1].

[1] The 2nd Consultation Paper, *Deregulation for Fixed-Mobile Convergence*, dated 14 July 2006.

Universal Service Arrangements

7. The 1998 Statement set the following policy objectives for the universal service arrangements:

- to ensure access to affordable basic telephone services[2] for all people in Hong Kong on a non-discriminatory basis irrespective of where they reside or carry on business; and

- to ensure that the costs of providing universal basic services are fairly borne by the users of network services.

8. These universal service policy objectives are given effect in section 35B of the Ordinance. The USO is defined in the special conditions of various telecommunications licences[3] as the obligations *"to provide, maintain and operate the [relevant] network……in such manner as to ensure that…… a good, efficient and continuous basic [telecommunications] service is reasonably available, subject to the Ordinance, to all persons in Hong Kong"*, and *"to provide the basic [telecommunications] service"* in the said manner. Section 35B(1) of the Ordinance provides that the TA may require that one or more fixed carrier licensees have a universal service obligation. Section 35B(2) of the Ordinance also provides that *"[a] universal service obligation requires a licensee to ensure that a good, efficient and continuous basic service is, in the Authority's opinion, reasonably available to all persons within the areas of Hong Kong[4] covered by that obligation"*. Since the liberalization of the local fixed telecommunications market in 1995, the responsibility of providing universal service has continued to rest with the incumbent local fixed carrier, PCCW-HKTC, as set out in its fixed carrier licence.

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[2] More details on "Basic Service" will be given in paragraph 14 of this document.

[3] These include Fixed Telecommunications Network Services (FTNS) licence, Fixed Carrier licence, ETS licence, the Services-Based Operators licence and the draft Unified Carrier licence.

[4] A new boundary control point is planned to be established at Shekou, Shenzhen for the Shenzhen Western Corridor, where the Hong Kong Special Administrative Region (**HKSAR**) will implement the co-location of immigration and customs facilities for both the HKSAR and the Mainland. Subject to liaison with the Central People's Government and appropriate legislative process, the new control point at Shekou may be designated as a Hong Kong Port Area (**HKPA**) such that the laws of the HKSAR may apply. Since PCCW-HKTC is not obliged to provide services to the HKPA under its USO, the TA has no intention to extend the obligation of PCCW-HKTC to provide universal service there, unless there is evidence that the HKPA is underserved.

9. The obligation to pay USC to the USP(s) is given effect in section 35B(3) of the Ordinance and is set out in the special conditions of various telecommunications licences. As such, PCCW-HKTC is entitled to receive contribution from other operators[5] to assist it in meeting its USO.

10. In this comprehensive review of the regulatory framework for the universal service arrangements, it is opportune to examine whether the universal service arrangements formulated in 1995 remain necessary and appropriate in the current market environment.

11. At present, and in the foreseeable future, the public switched telephone service, the principal element of the "Basic Service", is a basic utility essential for everyone. It underpins social and business activities for all walks of life. Hence, it is important to ensure that affordable service will continue to be available to all people in all areas (the first objective of the existing universal service policy). Affordability is traditionally ensured by the application of uniform or geographically-averaged prices throughout the entire territory.

12. As a result of the requirement to charge a geographically-averaged price, the USP has to incur loss in high cost areas such as remote rural areas. In the monopoly era, the incumbent could meet the objective by making use of the profit generated from its operation in profitable areas and profitable business (such as international services) to cover the loss incurred in the operation of local service in high cost areas. However, with the introduction of competition, as the incumbent has to face competition from new entrants in the more profitable areas and business, such an approach is no longer viable. Thus it is necessary to ensure that the costs of providing universal service are fairly shared by users of the network services (the second objective of the existing universal service policy). Hence, we are of the preliminary view that the universal service arrangements should continue to be maintained.

13. ***Question:***

(1) Do you agree with our preliminary view that the universal

[5] The current universal service framework provides that all operators of external services are to share the annual cost of universal service in proportion to the volume of external traffic handled by the operators during the year in question.

service arrangements should continue to be maintained?

Scope of Universal Service

14. The scope of universal service is referred to as "Basic Service" in the special conditions of various telecommunications licences and defined in section 2 of the Ordinance:

" 'Basic Service' means, subject to the [Telecommunications] Ordinance, the provision of:

(a) a public switched telephone service including the service connection, continued provision of connectivity, provision of a dedicated telephone number, an appropriate directory listing (except where the customer otherwise directs), a standard telephone handset without switching capacity listing (except where customer elects to provide the handset), standard billing and collection services and relevant ancillary services and facilities necessarily utilized by the licensee;

(b) a reasonable number of public payphones including payphones located within publicly or privately owned facilities to which the public have access, whether on a 24 hour basis or restricted to certain hours or days of the week;

(c) a reasonable number of public payphones, designed for ease of effective use by the hearing impaired;

(d) a reasonable number of public payphones, designed for access by the physically disabled, including but not limited to those persons using wheelchairs;

(e) operator provided directory enquiries, fault reporting, service difficulty and connection services;

(f) a tropical cyclone warning service;

(g) a thunderstorm and heavy rain warning service;

(h) a flood warning service;

(i) access to a number or numbers for emergency services; and

(j) such other services, subject to the Ordinance, as the Authority may include."

Public Switched Telephone Service – Item (a) of Basic Service

15. The current scope of the universal service ensures that basic telecommunications services should be made available to everyone in Hong Kong in an appropriate manner. In particular, it ensures that people in remote areas will not miss out the right to enjoy basic telephony service. While the USO requires the provision of basic telecommunications services for the purpose of voice telephony only, the development of modern technology has allowed the users of the services to access the Internet over the basic telephone line at reasonable speed (up to 56 kbps).

16. The scope of "public switched telephone service" set out in the preceding paragraph has already provided the users with the minimum, but reliable, voice and non-voice communications capabilities to fulfil their essential needs. At issue is whether the scope of universal service should be extended to include broadband services. Users have increasingly relied on broadband communications for information, education and entertainment since its debut in Hong Kong in 1997. In a short span of 9 years, broadband penetration reaches more than 67% of households and the number of broadband service customers is still increasing at a rate of 7,000 per month in the first three quarters of 2006. Competition is keen and prices have become as affordable as narrowband services. All these have been achieved without imposing any requirement under the USO. Any regulatory intervention would inevitably distort the market process and impose cost burden on users that have to share the universal service cost. Therefore any proposal to extend the scope of universal service beyond the existing "public switched telephone service" would need to be carefully considered. The TA is of the preliminary view that the "public switched telephone service" as set out in paragraph 14(a)

should remain as part of the Basic Service. However, he would monitor the market and community expectations closely and initiate separate consultations on the adjustment of the scope of universal service whenever necessary.

17. From time to time there are suggestions that we should follow the examples of some other jurisdictions expanding the scope of universal service to include broadband data access to schools and libraries. Government schools and aided schools in Hong Kong are funded by the Composite Information Technology Grant on Internet access services. The government is also offering excellent Internet access services to public library users in Hong Kong. As separate funding schemes have been put in place for schools and libraries to enjoy Internet connections, it is not necessary for the government to expand the scope of USO to cover broadband service to these institutions. The TA is mindful that a more streamlined service scope will have the benefit of lowering the USC and reducing the burden on the industry, which in turn would be expected to pass on the benefits to the end-users in a highly competitive environment.

18. Based on the considerations in the preceding two paragraphs, we take the preliminary view that the current scope of public switched telephone service as part of the Basic Service should be maintained.

19. ***Question:***

> ***(2) Do you agree with our preliminary view on the scope of public switched telephone service as part of Basic Service? If not, please state your views with supporting reasons.***

<u>Payphone Services – Items (b), (c) and (d) of Basic Service</u>

20. The objective of mandating universal payphone services (item (b) of the scope of universal service) is to satisfy the needs of the public when they could not have access to private telephone services. As universal service has been achieved at homes and in offices, payphone services basically serve people on the move for the access to telecommunications services. **Annex 2**

gives a detailed list of those payphones[6] that are eligible for funding under the current universal service arrangements, should such provision be "uneconomic".

21. There are arguments that the importance of payphones has diminished in recent years with the increasing penetration and affordability of mobile phones. However, payphones play an important role in offering call service to the under-privileged, visitors and tourists who need to make affordable international and domestic calls using coins or calling cards. In recent years, there is also community demand for the provision of helplines in Country Park trails for making emergency calls free of charge, particularly in areas without mobile phone coverage. Such helplines have been classified as a type of "payphones" and are by their very nature "uneconomic" because of the zero charge. Though there are comments that the payphones provided under the universal service scheme have been underutilized, over the years the net cost for the provision of the 3,900 or so uneconomic payphones has come down from $ 84 million in 1999 to $ 47 million in 2004. As the data in Table 1 indicates, the net cost per uneconomic payphone has also been on the decline since 1999 and became stable since 2002. Another indicator of the efficiency of operating the payphones under the scheme is "payphones' share of total USC". This indicator has no doubt increased over the years but this is due to the improved economics of basic public switched telephone service as a result of tariff rebalancing, rather than due to an increase in cost of maintaining the payphones under the USO.

Table 1

	Jan 99 – Dec 99	Jan 00 – Dec 00	Jan 01 – Dec 01	Jan 02 – Dec 02	Jan 03 – Dec 03	Jan 04 – Dec 04
Total number of payphones (nearest hundred)	4,300	4,400	4,400	4,200	4,300	4,200
% payphones that are uneconomic	84%	82%	81%	81%	86%	94%
Net cost per uneconomic payphone (HK$) per month	1,916	1,563	1,251	1,053	999	1,011
Payphone as % of total USC	26%	39%	42%	39%	42%	46%
Total net cost of uneconomic payphones (HK$M)	83.7	67.3	53.2	43.1	44.0	47.2

22. Paragraph 22 of the 1998 Statement states that *"[i]n determining the*

[6] In accordance with the TA Statement of 25 April 1997 on the regulation of payphone services, "payphones can be classified into "public payphones" which are located on unleased land and public streets, and "private payphones" which are located on leased land.

USC required for the provision of payphone services, relevant revenue would include …… revenue, if any, generated by leasing of advertising space at the payphone kiosks." Recently the USP has been found to place advertisements on its public payphone kiosks[7]. Upon enquiries by OFTA, the USP explained that the activity did not generate any advertising revenue. Some quarters of the industry hold the view that any revenues generated, or an amount deemed to reflect the fair market value of any non-cash benefits derived, from advertisements placed on the USP's public payphone kiosks should be fully reflected in the calculation of the USC.

23. The existing universal service arrangements for payphones have achieved the objective of universal service and have been working satisfactorily. The TA will continue to monitor the situation closely. The TA is of the preliminary view that current installed base of payphones eligible for compensation under the USC as listed in **Annex 2** should continue to be eligible. Any change in the provision of payphones including the addition of new payphones, or the withdrawal or replacement of existing payphones, will be closely monitored by the TA having regards to the community needs.

24. At present, the addition of new payphones or relocation of existing payphones eligible for compensation under the USC are decided by the USP. Owing to the cost implications to the contributors, and the fact that community needs for public payphones or helplines are often reflected to the TA as the regulator, a mechanism may have to be introduced whereby the TA may direct additions to, or removal from, the list of payphones eligible for USC after consultation with the USP and the community.

25. The existing scope of universal service includes two items (i.e. items (c) and (d)) on the provision of payphone services designed for ease of use by people with physical disabilities. The TA sees no strong justification to exclude items (c) and (d) from the scope of universal service.

26. ***Questions:***

(3) Do you agree with our preliminary view on maintaining the

[7] Placing advertisements on payphone kiosks installed on unleased government land is subject to permission from the relevant government departments, including the Lands Department.

existing universal service arrangements for payphone services (Items (b), (c) and (d) of Basic Service)? If not, please state your views with supporting reasons.

(4) Do you agree with the view that any revenue generated, or an amount deemed to reflect the fair market value of non-cash benefits derived, from advertisements placed on the USP's public payphone kiosks should be included as relevant revenue in calculating USC?

(5) If the answer to (4) is yes, how should we assess the market value of the advertising space?

(6) Do you agree that a mechanism should be introduced for the TA to direct additions to, or removal from, the list of payphones eligible for USC after consultation with the USP and the community?

<u>Directory Enquiries – Part of Item (e) of Basic Service</u>

27. Under the existing regulatory framework for fixed network operators (**FNOs**), directory enquiry (**DQ**) service is considered to be an essential attribute of conventional telephone service. FNOs, including PCCW-HKTC, are required under their licences to provide DQ services to their customers *free of charge*. Directory information is now readily accessible on the Internet. Therefore there is argument that DQ service may not necessarily be included in the scope of basic service. The removal of DQ service requires legislative amendment to the definition of "basic service" under section 2 of the Ordinance.

28. ***Question:***

(7) Do you think DQ services should be removed from the scope of basic service?

Weather Warning Services – Items (f), (g) and (h) of the Basic Service

29. At present, the scope of USO also includes the services for receiving announcement of weather warnings on tropical cyclone, thunderstorm, heavy rain, and flooding over the phone. However, the Hong Kong Observatory (**Observatory**) has provided similar services which allow the subscribers to receive weather forecasts and warnings through fax, telex, Internet and direct communication links (e.g. through leased lines). These services are provided at cost and the charges depend on the information coverage and the subscription period. Other than disseminating weather warnings and forecasts of hazardous weather to the general public via radio, television and the Internet, the Observatory also operates two free telephone enquiry services – the Dial-a-Weather service and the Information Enquiry System – to provide the public with the access to the latest weather information. The wide-ranging weather forecast and warning services provided by the Observatory are much more sophisticated and comprehensive than those currently offered by PCCW-HKTC. As at December 2006, the number of subscribers using the PCCW-HKTC's weather warning services totaled a mere 1,351[8].

30. Given that the public can generally and reliably obtain weather warning information through other channels, we propose removing the weather warning services from the scope of USO in future when the Telecommunications Ordinance is amended.

31. ***Question:***

> ***(8) Do you agree with our proposal that weather warning services be removed from the scope of universal service in future when the Telecommunications Ordinance is amended?***

Other Items –Item (e) other than DQ, Items (i) and (j) of Basic Service

32. The retention of the other items such as Item (e) other than DQ, Items (i) and (j) as part of the scope of USO do not appear to be controversial. We propose the retention of these items.

[8] Of these 1,351 subscribers, 587 subscribed to tropical cyclone warning service. The corresponding figures for those using thunderstorm and heavy rain weather services were 421 and 343.

Competitive Provision of Universal Service

33. Under the existing legislation, the obligation to provide universal service can only be imposed on the FNO. Under existing licence conditions, the obligation is imposed only on the incumbent local FNO, PCCW-HKTC. The existing legislation and licence conditions therefore have incorporated a historical bias in favour of using technologies for fixed services to fulfil the USO.

34. In principle, the universal service should be provided by the most efficient operator (irrespective of whether they are mobile or fixed operators) using the most efficient technologies - irrespective of whether the technologies are wireline or wireless, circuit-switching or packet-switching (e.g. Internet Protocol (IP)), narrowband or broadband. The universal service may well be provided by different operators, using different technologies, for different areas.

35. Therefore the right to provide universal service (and the right to receive USC for the cost of meeting the USO) should in principle be open to competition, through a bidding process, possibly consisting of separate bidding for different areas, and the operator that proposes to provide universal service in a particular area at the lowest cost should be designated as the USP for that particular area. The other operators that are not designated as the USP should be required to share the cost of providing the universal service. This is sometimes called the "'play' or 'pay'" approach. This approach would ensure that the universal service is provided at the lowest cost and therefore the lowest level of compensation from the contributing operators. The implementation of this approach will however require a revision to the existing legislation.

36. In practice, the existing network of the incumbent local fixed carrier licensee has already been extended to the remote areas of the territory providing both public switched telephone service and public payphone service, while those of the competing local fixed carriers have not. The coverage of the mobile networks has also not been extended to the remotest parts of the rural areas for the time being. Therefore if open bidding for the right to provide universal service were conducted, most probably competing fixed and

mobile network operators would have the capability and interest to bid only in areas covered by their existing networks, and those areas to which they have plans to extend their coverage over the period covered by the bidding.

37. For the areas where there is no overlapping network coverage in the foreseeable future, until the advent of new and cost-efficient wireless technologies such as Broadband Wireless Access, it is doubtful as to whether operators other than the incumbent local fixed carrier licensee would be interested in bidding for the right to provide universal service, or be able to do so at costs lower than the incumbent local fixed carrier licensee.

38. Even if it is considered necessary to introduce the open bidding arrangement to identify the most efficient USPs using the most efficient technologies, prior to the necessary legislative changes, it would be necessary to examine the existing arrangement of providing universal service by the incumbent fixed carrier licensee to ensure that it is still relevant and efficient in the light of market and technological developments. The rest of this consultation paper has been written with this in mind.

39. ***Questions:***

> ***(9) Do you consider that competitive provision should be introduced to the universal service arrangements such that the universal service should be provided by the operator that can provide the service in the most efficient manner?***

Exclusion from USO of Areas with Alternative Fixed Network Coverage

40. PCCW-HKTC, as the USP, is compensated by USC for the net costs it incurred in the provision of basic telephone services to uneconomic customers. The net costs are shared among the contributing parties based on the amount of international traffic minutes carried by them.

41. The emphasis of the existing USC framework is that the USP would be compensated only for serving those uneconomic customers *whom in fact would not otherwise be served on a pure commercial basis*. If the USP alone were to

bear the cost of meeting the USO, it would have to cover such costs by the profits which it makes from the provision of services to the economic customers. The competitors to the USP would not be required to bear such costs in the supply of services to these economic customers and would therefore be able to take advantage of their lower cost base and undercut the prices of the USP. Such a concern would be especially true at the initial stage of competition when the USP was left with all subscribers to serve in remote and non-profitable areas whilst its competitors cherry-picked the economic customers. Therefore, the current USC mechanism was established to allow the cost of meeting the USO to be fairly borne by the industry.

42. However, as competition develops, particularly in areas or buildings where new operators are more than willing to invest in the network infrastructure and to provide service on commercial terms whilst the USP is fighting back to compete for business, the very reason for designating a USP – providing service where there is no operator willing to provide because it is not commercially viable to do so – simply does not exist anymore. If the incumbent operator still receives subsidy or compensation for providing service to the "uneconomic customers" whilst new entrants are eager to provide the same service to these so-called "uneconomic customers", this cannot be a fair or reasonable arrangement. To continue subsidising the USP in areas where other network operators are willing to compete will distort the competitive landscape.

43. Special Condition 1.1 of PCCW-HKTC's fixed carrier licence provides that *"where [PCCW-HKTC] is able to demonstrate, to the reasonable satisfaction of the [TA] that the basic service in a specified area, or areas, is, or is capable of being met by any other fixed carrier or fixed telecommunications network service licensee and that in the circumstances it would be unreasonable or unnecessary for [PCCW-HKTC] to be required to also provide the basic service, the [TA] may, subject to such conditions as it thinks fit, including but not limited to conditions as to duration, exempt [PCCW-HKTC] from all, or part of, the universal service obligation with respect to that area, or those areas"*. The initiative to exclude specific areas from the USO seems to rest with PCCW-HKTC, but not with the regulator or other industry players. However, Special Condition 1.5 further provides that the universal service contribution is to be *"calculated in accordance with a formula adopted annually by the Authority to ensure that [PCCW-HKTC],*

where it has universal service obligation …… receives a fair contribution from other fixed carriers, fixed telecommunications network services licensees or other types of licensees as specified by the Authority, towards the costs …… of serving customers with basic service whom would otherwise not be served because it is not economically viable to do so but who are required to be served under the universal service obligation". Thus in determining the formula for the calculation of the USC, the TA is required to include *only the cost of customers whom would otherwise not be served because it is not economically viable to do so but who are required to be served under the universal service obligation*.

44. Ten years after the fixed network services were deregulated, 76% of the residential customers have a choice of alternative suppliers of service and network. As competition develops further, the TA has proportionately replaced the *ex ante* regime with a more relaxed *ex post* regime in regulating tariffs[9]. We have now come to the juncture when we have to review whether the USP should continue to receive USC for providing universal service in areas or buildings where there is presence of alternative supplier(s) of service and network. The TA is of the preliminary view that for these areas or buildings should be excluded from the USO of the USP.

45. Under the Type II interconnection policy announced by the Government on 6 July 2004, the mandatory Type II interconnection arrangements are to be withdrawn progressively from buildings which are served by at least two customer access networks. A reasonable starting point for the current proposal is therefore to exclude buildings on the building list from the USO.

46. The TA is of the preliminary view that areas or buildings with alternative fixed network coverage should be excluded from the universal service obligation. In the first place, these areas or buildings do not appear to contain "*customers whom would otherwise not be served because it is not economically viable to do so but who are required to be served under the universal service obligation*" (Special Condition 1.5 of PCCW-HKTC's fixed carrier licence.) The very purpose of rolling out a customer access network to an area or building is to acquire customers in the area or building. As the

[9] TA Statement, Implementation of ex post Regulation of the Tariffs of PCCW-HKT Telephone Limited under a New Fixed Carrier Licence, dated 13 January 2005.

marginal cost of serving an additional customer in the area or building connected is low, the TA does not believe that the carrier which has rolled out its network to an area or building would refuse to serve a customer there simply because the customer is “uneconomical”. Consumers in these areas or buildings have a choice of carriers. If one carrier should refuse to provide service to a consumer, that consumer can turn to another carrier ready to provide service. In any case, the TA would vigilantly enforce General Condition 10(3) of the fixed telecommunications network services licence (or the equivalent provisions in the fixed carrier licence) to make sure that the licensee shall comply with a customer request for the service as tariffed by the licensee where the service can reasonably be provided by the licensee to the consumer at the location at which the service is requested utilizing the licensee's network in place at the time of request. Hence, consumers would not be affected by the exclusion of the areas or buildings from the USO.

47. Similarly, where there are choices at certain places for public payphones, these payphones should be excluded from the USO. For example, if there is already payphone service provided by other service providers in the vicinity of a PCCW-HKTC public payphone (say within a distance of 100 metres), the PCCW-HKTC public payphone(s) concerned should be taken out from the USO scheme. Similarly, where there are several uneconomic PCCW-HKTC public payphones installed close to one another, all the payphones except one should be taken out from the USO scheme, unless it can be demonstrated that the multiple payphones are required to meet the demand (which appears to be unlikely in uneconomic areas).

48. ***Questions:***

(10) Do you agree with our preliminary view that areas with alternative fixed network coverage should be excluded from the USO scheme?

(11) Do you agree with our preliminary view that an uneconomic payphone in the vicinity where competitive or alternative service is offered should be excluded from the USO scheme?

Costing for USO

49. The costing principles of the USC framework were initially set out in the 1998 Statement and subsequently reviewed in the 2000 Statement. Essentially, the total net cost of meeting the USO for basic telecommunications access is calculated by summing up the net cost of serving individual "uneconomic" customers. A customer is regarded as "uneconomic" if the total "relevant cost" (or avoidable cost) exceeds the total "relevant revenue" (or foregone revenue).

50. "Relevant revenues" include all revenues - line rental, premium services revenue, IDD call charges, interconnection charges, LAC, etc. - attributed to the provision of basic service and all other services associated with the provision of standard lines to the basic service customers. "Relevant costs" for determining the net USO costs are measured on the basis of "avoidability". These are the costs that would not be incurred if the Basic Service and the associated services were not provided to the "uneconomic" customers. Where the line is used for the provision of both narrowband and broadband services, the "relevant costs" include only the costs apportioned to the narrowband services.

51. As mentioned above, the USO serves as a safety net for people living or working in high cost areas. While the USO arrangement is not meant to be a territory-wide subsidization of basic telecommunications services priced at below average cost, due to the historical below-cost tariffs of the local telephone services, the arrangement established in 1998 has to embody such a cost structure .

52. The signing of the Framework Agreement on 20 January 1998 (the **Framework Agreement**) set the stage for tariff rebalancing between local and external telecommunications services. Tariff re-balancing began in 1999 and was completed in 2001. The standard tariff of PCCW-HKTC for residential line service increased from $68.90 in 1998 to $110 in 2001. Similarly, the standard tariff for business line rental increased from $108.8 in 1998 to $118.8-$128.8 in 2001. This tariff rebalancing has greatly reduced the level of USC from over $300 million in 1998 to around $103 million in 2004.

53. However, the reduction to USC brought about by local fixed tariff increase has been partially offset by declines in other relevant USO revenues amid an increasingly competitive telecommunications market since 1999. In particular, revenue received from external calls originated from, and terminated at, a telephone line[10] has been on the decline. The revenues from external traffic, including revenue from end-users' payment for retail IDD services or revenue from service providers' payment of LACs, are taken into account in deciding whether a customer is "economic" or "uneconomic". Further, PCCW-HKTC's fixed line customer base is also on the decline. In future, the markets of international and local services will become even more competitive with the proliferation of IP Telephony and the impact of this development on the level of USC has yet to be observed.

Relevant Revenue and Cost under Competition

54. From January 2002 onwards, the price cap on the residential line rental has been removed. Both the standard business and residential line rentals of PCCW-HKTC have remained unchanged since then. The standard tariffs, having taking into account tariff rebalancing, represent open offers to the general public that PCCW-HKTC cannot refuse to supply.

55. PCCW-HKTC has made numerous promotional offers as competition intensifies. PCCW-HKTC's effective or average telephone line prices have fallen as discounts are introduced. An immediate question is how to calculate the relevant revenue of a PCCW-HKTC customer who received a promotion discount under a competitive environment. If actual revenue is used and if the customer turns out to be uneconomic under such a situation, then it implies the discount offer made by PCCW-HKTC would in effect been subsidized by the USC scheme, a significant part of which is funded by PCCW-HKTC's competitors.

56. The 1998 and 2000 TA Statements could not foresee the situation of massive promotion campaigns launched by PCCW-HKTC. However, the very reason for PCCW-HKTC to offer discount to some of its customers is to

[10] For outgoing external traffic, PCCW-HKTC receives revenues from providing the retail international services to end-user customers and LAC from the delivery of external calls originated from the ETS providers. For incoming external traffic, PCCW-HKT receives LAC, LAC_T, delivery fee or interconnection charge in accordance with the November 1998 TA Statement.

fend off competition from other network operators. It is the commercial decision of PCCW-HKTC to offer its telephone services at prices below its standard tariffs. If PCCW-HKTC were compensated by USC for serving these customers, this would be unfair to its competitors. Hence, in agreeing to PCCW-HKTC's launching the promotional programs, OFTA had reached agreement with the USP that in the calculation of USC, the relevant revenues should be based on standard tariffs, viz $110 for residential lines and $118.8-$128.8 for business lines. Any discounts including, but not limited to, rebates, waivers, allowances and freebies associated with the promotional programs, were excluded from the USC calculation. After these adjustments, those telephone lines under promotions by PCCW-HKTC that are still "uneconomical" but could have been switched[11] to other competitors had those promotions not existed would be totally excluded from the USC calculation.

57. As competition gathers further momentum, discount offers have become more frequent and significant and the issue highlighted above has become more acute. The TA would like to take this opportunity to seek the view of the industry and the public as to whether or not the treatment of telephone lines under promotions as stated above should be formalized and continually to be applied.

58. ***Questions:***

(12) How should we adjust the 'relevant revenues' and 'relevant costs' for USC in the cases that PCCW-HKTC offers promotion discounts to customers?

(13) Should we continually apply the treatment of discounts in paragraph 56 for USC calculation?

Existing Costing Principles

59. The existing costing principles are based on long run avoidable cost

[11] The percentage of lines that could have been switched to other competitors had the promotions not existed is estimated by a breakeven analysis taking into account the average discount offered by the USP, the revenue (before discount) earned per telephone line, and the percentage of households covered by at least two self-built customer access networks.

concept utilising historical cost. There were two reasons for not using the current cost approach. First, the historical cost approach would prevent inflation from expanding the size of the USC through higher level of capitalised labour costs associated with customer access networks. Second, the current cost information is not readily available in the accounting records of PCCW-HKTC. The existing approach is also based on the number of lines in service. These costing principles have certain drawbacks as illustrated below.

60. Due to competition and technological advancement in the telecommunications sector, certain PCCW-HKTC's assets have become obsolete or their carrying value impaired. The carrying value of such assets has been written down to estimated recoverable value and fully reflected in the statutory accounts of PCCW-HKTC. Due to the use of historical cost basis, such assets written downs were added back to the USC calculation as if there were no such provisions. In this way, the asset value before the write down continues to be applied in the depreciation calculation for the purpose of determining the relevant costs for a particular year. Section 35B(2) of the Ordinance requires the USP to provide "a good, efficient and continuous basic service". It is doubtful whether PCCW-HKTC should be allowed to recover such impairment losses.

61. Due to keen competition in the local fixed telephone services, PCCW-HKTC's market share is now below 70%. As a result, the unit cost of telephone lines in services has increased as the cost of the excess capacity of fixed telephone network is apportioned to the actual lines in service. In the view of the TA, it may be unfair if the cost due to excess capacity or capacity that does not contribute to the generation of relevant revenue is also counted as relevant cost. Again, it is doubtful whether PCCW-HKTC should be allowed to recover the cost of the excess capacity, which arises in the first place because of the existence of effective competition.

62. ***Questions:***

(14) Should "asset written downs" be excluded from the USC calculation?

(15) Should the cost due to excess capacity or capacity that does not contribute to the generation of relevant revenue be counted as

relevant cost?

Alternative Costing Principles

63. Many countries that introduced universal services initially adopted historical cost approach. Most of these countries have subsequently calculated the universal service cost based on forward-looking cost. For example, Canada and the US adopt a forward-looking long-run incremental cost (plus a mark-up) model to calculate the cost of USO. This is aimed at encouraging the USP to adopt efficient processes and technologies or else it has to incur the cost associated with less efficient alternatives without receiving compensation to cover the inefficiencies. This results in a more efficient overall size for the USC and the allocation of costs.

64. As discussed in the earlier paragraphs, the current cost information is not fully captured by PCCW-HKTC. The costs of collecting and validating such data and revising the existing USC model should be taken into consideration. It may also take a long time to revise the existing model.

65. For PCCW-HKTC, being a commercial entity, its interest is better served by employing the most efficient technology in order to be competitive in this highly liberalised telecommunications market. PCCW-HKTC has plans to replace its traditional telephone exchanges with Next Generation Network based on IP technology. The cost of this IP-based network will be reflected in its books. Since both the traditional network and the IP-based network are capable of providing the Basic Service, there is a need to prevent double-counting of costs in the calculation of USC.

66. ***Questions:***

(16) Should "forward-looking current cost" approach be used?

(17) In the situation where the Basic Service is served by both traditional and new networks, do you agree that duplication in USO costing should be disallowed?

The Aggregation Basis

67. The current approach to measure net cost for USO is on a customer-by-customer basis to identify each individual uneconomic customer. All lines subscribed by a customer at the same location (i.e. same distribution point) are aggregated. This is an extremely detailed approach because it essentially determines for every Basic Service customer the difference between the relevant cost and relevant revenue that he has incurred. This approach has the merit of yielding exact estimation of the total net universal service cost and thus the USC required.

68. There have been arguments against using this methodology. Operators typically make their investment decisions on a cluster or area basis, rather than on a per-customer basis, because of the inefficiencies in rolling the network out on a per-customer basis and because the network provider cannot determine *ex ante* the business case for individual customer. If a cluster or an area as a whole is determined to be profitable, the operators would proceed to invest. As such, it would be inequitable for other operators to subsidize the USP in serving individual "uneconomic" customers within that cluster/area, because once the investment is made to serve the economic customers, the incremental cost involved in serving the remaining "uneconomic" customers located within the same cluster/area would be marginal. The TA considers that investment decision associated with network and service rollout would not normally be made on a customer-by-customer basis.

69. The approach taken internationally in universal service schemes is to measure on the basis of geographical areas, which are considered to be the appropriate basis for making network investment decisions. In Australia, for example, only potential net loss areas are considered in the USO calculation. If an area is overall profitable, then it is excluded from the costing of USO, regardless of whether or not it is financially unviable to serve individual customers within the area.

70. Based on the information available to the TA, the network penetration of other operators has reached 76% of the households and that such penetration covers most of the regions. Economic and uneconomic customers in those regions are served on commercial basis by the fixed-line competitors of PCCW-HKTC. The TA is of the preliminary view that it may not be fair if the

USP continues to be compensated on a customer-by-customer basis.

71. Aggregation can be set on various bases including:

a) geographical regions;
b) districts;
c) existing exchange areas; and
d) distribution points.

72. Under the existing USC model, the whole territory is divided into five geographical regions, namely Hong Kong Islands, Kowloon, New Territories (developed), New Territories (rural) and Outlying Islands. On the other hand, the government has divided the whole territory into eighteen districts, including Eastern District, Yau Tsim Mong District, Tai Po District etc. Existing exchange areas represent the results of network developments of PCCW-HKTC over the years. There are currently over 100 exchange areas. The scope and size of each exchange area are determined by a number of factors, including natural boundaries such as major roads, hills and railways, transmission limit of the copper loop and the forecast demand of an area. The aggregation on a per distribution point basis is basically the same as that on building basis. There are currently more than 80,000 distribution points in PCCW-HKTC's network.

73. For purpose of calculating USC, the practical choice is either on an exchange area basis or on a distribution point basis as the existing PCCW-HKTC's accounting systems can readily capture the relevant data. It is arguable that aggregating net cost on an exchange area basis is too broad because even if a network operator decides to build its network to a particular exchange area, it is not necessary the case that the network operator would extend its network to every building in the exchange area. While aggregation at the distribution point level seems to be more reasonable, one may also argue that once the network is rolled out in an exchange area, the network operator is generally more willing to serve other buildings within the exchange area since the associated incremental cost would be less significant and the network operator would enjoy economy of scale with more extensive network coverage and larger customer base.

74. ***Questions:***

(18) Should we change the aggregation basis from "customer-to-customer" to "area" for USC calculation purpose?

(19) If your answer to Question (18) is yes, should the "Area" basis be defined in terms of exchange areas or distribution points?

<u>Intrinsic Benefits of being a Universal Service Provider</u>

75. There have been arguments concerning the intrinsic (or intangible) benefits gained by PCCW-HKTC in undertaking the USO. These benefits have so far not been reflected into the calculation of USC due to the difficulty in quantifying them.

76. Factors that are identified in the literature to be contributory to USP intrinsic benefits include brand awareness/loyalty, public payphone advertising/visibility, ubiquity of service, and life cycle effects (i.e. unprofitable now but profitable over time).

77. Office of Telecommunications (**Oftel**) in the United Kingdom (whose duties have now been inherited by the Office of Communications (**Ofcom**) as the telecommunications regulator since December 2003) was one of the few regulators that had estimated the intrinsic benefits of the USPs. It determined that USPs intrinsic benefits were enormous and that the cost of undertaking USO in comparison did not represent a significant burden to them. A few other jurisdictions such as Italy, New Zealand and Switzerland recognised intrinsic benefits in the costing of USO. However, New Zealand and Switzerland did not put a value to the USP intrinsic benefits.

78. ***Questions:***

(20) Should USC incorporate the intrinsic benefits from undertaking USO?

(21) If yes, how should such benefits be quantified?

Trend Analysis

79. The existing cost model takes a long time to compile for each cycle because it aggregates the net cost on a per customer basis. This model cannot produce timely results and the USC has to be paid on a provisional basis subject to adjustment upon the completion of the actual USC calculation, which happens well after the end of the relevant cycle.

80. Since the starting point of the existing model is based on individual customers, any change in the aggregation basis as discussed in paragraphs 67 to 73 will not speed up the calculation process.

81. The TA is aware that the Australian Government has used trend analysis to estimate changes in key variables affecting the USO's net costs and determines the USO costs three years in advance. The figures derived were based on analysing the various key components of avoidable costs and revenues.

82. There are two main approaches that could be taken in conducting trend analysis, namely indexation and econometric estimation. An indexation approach would involve establishing a baseline figure, then indexing the amount each year for expected changes (e.g. using CPI index for inflation). Econometric estimation involves developing a cost function to model the expected revenue foregone and avoidable costs.

83. Although the end results based on trend analysis may not be as accurate as the modelling approach, the TA recognises that it would greatly simplify the calculation process and yield timely results. The TA also recognises that the level of USC in Hong Kong has stabilised in recent years (e.g. $111 million in 2002, $104 million in 2003 and $103 million in 2004) and this would facilitate the development of the trend analysis approach. However, the TA recognises that past trend may not be usable to project future universal service costs if fundamental changes are made to the costing methodology, such as exclusion of areas with alternative customer access networks and change from costing from a per-customer basis to a per-area basis.

84. ***Questions:***

(22) ***Should we adopt trend analysis to estimate USC?***

(23) ***If yes, should we determine the USC in advance for the following 3 years or other appropriate period?***

Implications of Deregulation for Fixed-Mobile Interconnection Charges on Universal Service Costs

85. Interconnection receipt and payment are relevant revenue and cost in the calculation of USC. The TA is currently reviewing the charging arrangement for fixed-mobile interconnection charges (FMIC) under the context of the Deregulation for Fixed-Mobile Convergence (please refer to footnote 1). Any change in the FMIC arrangement would likely affect the net cost of serving uneconomic customers and hence the level of USC. The effect on USC would depend ultimately on the outcome of commercial negotiations between the USP and the mobile operators and where necessary, regulatory interventions that the TA may make. The TA notes that strictly speaking, this is not a matter for the current consultation. However, the industry should take note of the situation.

Implications of LAC Adjustment on Universal Service Costs

86. In recognition of the over-compensation of the incumbent in using the forward-looking cost standard and an industry average cost of capital to set the LAC after the commencement of the full liberalisation of the ETS, the TA has indicated in his Statement dated 25 November 1998 on "Local Access Charge and Modified Delivery Fee Arrangements" that the additional revenue received by PCCW-HKTC would be used to reduce the USC to be borne by traffic over Category A routes[12] for which LAC is paid. For instance, the level of USC for 2004 was calculated at $103.3 million, $80.1 million of which was offset by the over-compensation in LAC to PCCW-HKTC. Therefore, the net amount of USC payable ("USC Payable") was $23.2 million only.

[12] All routes have been classified as Category A routes since 25 August 2003.

87. The LAC regulatory arrangement is under review, also under the context of FMC Review. In the event that a new scheme is developed such that there is no "over-compensation in LAC", the over-compensation in LAC would disappear and the USC would revert to the gross level. When the concept of over-compensation was introduced with the liberalization of the ETS market in 1998, it was a reasonable arrangement because at that time PCCW-HKTC had nearly the whole local market. However, eight years hence and PCCW-HKTC's market shares in the local fixed line and the IDD markets fall to less than 70% and 30% respectively. The use of over-compensation in LAC to subsidize the USC becomes an increasingly distortional arrangement[13]. The logical arrangement is therefore to bring both charges to a level that accurately reflects the underlying costs. The TA notes that strictly speaking, this is not a matter for the current consultation. However, the industry should be aware of the situation.

Funding Arrangements for USO

Source of Funds

88. The existing legislation requires funding of the USO within the telecommunications industry. In principle, the USO is to meet a social objective and therefore it could be funded by the public coffers. However, since our telecommunications industry is well developed and the customer revenue base is large in comparison to the cost of USO, the industry which itself benefits from the universality of network services is able to bear the cost of USO. Hence, it is not worthwhile to make any change to the law in this respect.

[13] The over-compensation (approximately $80 million in 2004) to the incumbent (in using the forward-looking cost standard and an industry average cost of capital to set LAC) is used to reduce the level of USC, which is shared by all IDD traffic handled in Hong Kong. Theoretically, this over-compensation amount should be used to reduce the USC level for the IDD traffic that is delivered via PCCW-HKTC's local network only. In early 1999 when the IDD market was liberalized and the universal service arrangements were just put in place, PCCW-HKTC had more than 97%of the fixed line market. In other words, most of the IDD traffic minutes were originated from or terminated to PCCW-HKTC's fixed network. Hence, it is reasonable that in calculating the reduced level of USC, the over-compensation amount was shared by all IDD traffic irrespective of whether the traffic was delivered via PCCW-HKTC's network. However, PCCW-HKTC's market share of the fixed line market is now less than 70%. A significant portion of IDD traffic is not handled by PCCW-HKTC yet it benefits from the USC level reduction due to the over-compensation in LAC received by PCCW-HKTC. That is where the distortion comes from.

Existing Sharing Arrangements

89. Currently, only network operators and service providers providing ETS (essentially IDD services) are required to pay USC on the basis of external traffic minutes handled by them. The historical reasons for using IDD traffic minutes as the USC sharing basis were twofold.

90. The first was the cross-subsidy between local and IDD services. IDD services used to be a high-margin segment before and during the initial stage of market liberalization, while local telephone services used to be priced below cost prior to tariff rebalancing. Thus IDD services have been required to solely bear the burden of USC. After all, the IDD operators do rely on the local telephone network for the delivery of their services to customers. They are beneficiaries of the ubiquitous network coverage and should therefore contribute to USC.

91. Secondly, the TA is mindful that IDD operators are not the only beneficiaries of universal service. Other types of licensees, including mobile network operators (**MNOs**) and other local FTNS operators without the USO responsibility, also benefit from ubiquitous local fixed network coverage and should as well be considered as contributing parties. In practice, however, all the local FNOs and MNOs in Hong Kong also provide IDD services, either under the same licence or under another ETS licence of a company within the same group. Therefore, IDD traffic has been a handy way of sharing the USC across different types of licensees.

Alternative Sharing Arrangements

92. The ETS market has become competitive since the liberalization of ETS in 1999. ETS providers are paying LAC in addition to their sharing of USC. Because of the continual reduction in IDD prices and the recovery of local economy, total external traffic has been rising in the past years. Nevertheless, the external traffic delivered over the Public Switched Telephone Network (**PSTN**) may be increasingly diverted to IP Telephony in future.

93. Meanwhile, local fixed-line tariffs have been rebalanced towards cost level between 1999 and 2001. Profit margin for local voice service has

improved but competition has intensified thereafter among local FNOs.

94. As recognized in the 1998 Statement, the external traffic (IDD) minutes based USC sharing framework should be regarded as an interim arrangement before tariffs are rebalanced. With the legacy of cross-subsidy being rectified and that the profit margins generated by external services are on the decline, there is a need to review the USC sharing mechanism. Furthermore, with the advent of IP Telephony provided over broadband connections and external IP Telephony traffic increasingly bypassing the circuit-switched network, a USC mechanism based on IDD minutes delivered through the circuit-switched network becomes increasingly unsustainable and inequitable.

95. The next question is the sharing basis that should be used if we are going to give up the current basis. The sharing basis should be a fair and reasonable one, which could be based on eligible revenue generated, telephone numbers allocated, or even the existing basis if it is still considered equitable and sustainable.

Eligible Revenue

96. In Australia, the basis of USC sharing has changed from timed minutes of voice traffic to 'eligible revenue'. Eligible revenue is considered more reflective of the consequences of the competitive landscape in a telecommunications environment that is moving towards more diverse services.

97. Eligible revenue is essentially telecommunications revenue less specified deductions, including inter-operator payments, revenues from overseas activities, content services etc. For the collection of revenue data, the contributing parties are required to submit audited revenue reports.

98. However, the disadvantage of sharing of USC on revenue basis is that there is no direct linkage of network usage and the revenue received. One minute of traffic could produce radically different revenue levels, depending on the requirements for intermediate inputs, efficiency of the operators concerned, and the market conditions.

99. An important consideration is whether all licensees (including FNOs,

MNOs, SBO licensees and PNETS licensees) are to be included in the sharing of the USC based on the "Eligible Revenue". If the answer is affirmative, then the administrative cost in terms of the requirement to submit audited revenue reports from hundreds of licensees may be significant. If the answer is negative, then we need to decide who should be the contributing parties to the USC, and the rationale for including certain categories of licensee but excluding the others.

100. Another concern is the effort of putting in place a clear definition of "Eligible Revenue" and a detailed procedure for reporting "Eligible Revenue" that would effectively prevent avoidance. The effort may be substantial. This approach, though attractive in theory, is rather unwieldy in implementation if the number of operators involved is large.

Telephone Numbers Allocated

101. Alternatively, a simpler and more pragmatic sharing scheme is based on the quantity of telephone numbers allocated to licensees, after numbers porting is taken into account. Telephone numbers are generally used for the provision of telephony services for any-to-any connectivity. It would also cover IP telephony services because if Internet telephony customers wanted to connect to telephone networks, particularly the circuit-switched networks, they would still need a telephone number. The use of allocated numbers as the sharing basis is consistent with the principle that the cost of USO should be borne by the parties benefiting from the universality of service as each user with a telephone number would benefit from the ability to call more customers. In addition, this sharing basis would encourage the efficient use of number resources. Furthermore, given that a bigger operator with more customers and traffic will require more numbers than a smaller operator, the numbers allocated can generally represent the utilization of the ubiquitous network in deciding the fair and reasonable contribution towards the USO.

102. Number fee is one of the licence fee components in the Service-Based Operator (**SBO**) licence[14] and the draft unified carrier licence[15]. In this regard, the USC sharing based on number allocated would have the benefit of

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[14] TA Statement, *Service-Based Operator Licence*, dated 6 January 2006
[15] TA Consultation Paper, Revision of Regulatory Regime for Fixed-Mobile Convergence, dated 21 September 2005.

not requiring a separate measurement and reporting system. USC contributing parties are not expected to incur extra cost for USC collection purpose in terms of data collection and auditing.

103. The proposed scheme should therefore be more cost-effective and administratively simple than the current one. The current scheme, which is based on external traffic and require the 200 plus contributors to file with OFTA monthly traffic reports and annual audited reports, is cumbersome and imposes substantial burden on both the regulator and the industry.

104. One issue that we need to address is whether or not all telephone numbers allocated to fixed (including both Class 1 and Class 2 services under SBO licence) and mobile telephone services should be used as the sharing basis. Since MNOs also benefit from ubiquitous network coverage of the USP, subject to the outcome of the consultation on Deregulation on Fixed-Mobile Convergence, mobile networks should be treated as another type of networks providing services to users, similar in status to the fixed networks.

Options for Sharing Arrangements

105. The TA has identified four options of USC sharing basis for consultation below but he is open to other suggestions:-

Option 1 – *Status quo* i.e. sharing on the basis of IDD traffic minutes through circuit-switched networks;

Option 2 – Sharing on the basis of eligible revenue;

Option 3 – Sharing on the basis of numbers allocated to fixed services with prefixes 2, 3, 8, 57 and 58; and

Option 4 – Sharing on the basis of numbers allocated for fixed and mobile services with prefixes 2, 3, 6, 8, 9, 57 and 58 when MNOs are accorded the same treatment as FNOs in relation to regulation of the fixed mobile interconnection charge, subject to the outcome of consultation of the Deregulation for Fixed-Mobile Convergence[1]. Prior to that, Option 3 is adopted.

106. ***Questions:***

*(24) **Which option do you prefer? Please give reasons for your preference.***

*(25) **Do you have any other suggestion on the USC sharing mechanism that is fair and easy to implement in light of the recent developments in telecommunications markets?***

Administration Matters

107. Prior to January 1999, the USC was collected by PCCW-HKT International Limited (**PCCW-HKTI**) (now renamed Reach Networks Hong Kong Limited) from the relevant contributing parties. The divulgence of commercially sensitive ETS information to PCCW-HKTI was not a concern at that time because as the only external telecommunications service provider PCCW-HKTI could in any case get hold of the information.

108. However, with the liberalisation of ETS in January 1999, this collection mechanism has become inappropriate, as PCCW-HKTI no longer possesses complete information on external traffic. The need to preserve commercially sensitive information, coupled with the absence of an express statutory provision at that time for the TA to handle payments so collected from the contributing parties, warranted a need to appoint an intermediary for the collection of USC. Against this background, the TA issued the Statement entitled "Universal Service Contribution Collection Mechanism" on 28 May 1999 setting out the criteria for selecting the intermediary.

109. Based on the selection criteria highlighted in the TA statement of 28 May 1999 and the result of an open selection exercise, the TA appointed in January 2000 Citibank as the intermediary for the collection of USC for the period of January 1999 to March 2000. The contract with Citibank for USC collections has been extended up to now.

110. The Telecommunication (Amendment) Ordinance 2000 empowers the TA to establish and manage a fund for the purpose of holding the contributions from the relevant contributing parties prior to the delivery of the payment to the

USP(s). On this basis, the TA may assume the role of an intermediary for the USC collection, if necessary, and recover the administrative effort at cost. However, unless there is significant benefit to the industry, the TA does not consider that he should assume such a role.

111. Since the external market liberalisation in 1999, the number of contributing parties for USC has expanded significantly. This has inevitably led to higher administrative cost in the collection process, and such administrative costs might have grown disproportionately with the diminishing amount of USC collected, thus consuming more resources from the industry. Based on the 2004 confirmed level of USC, administrative cost and bad debt accounted for 0.6% of total USC. This amount did not include the effort consumed and absorbed by the Office of the Telecommunications Authority (**OFTA**).

112. ***Question:***

> ***(26) Do you think the USC collection mechanism through an intermediary should be maintained?***

<u>Unclaimed USC Rebate</u>

113. Under the current regime, PCCW-HKTC takes a long time to compile the actual USC. It is therefore necessary to set an interim level. When the actual level is known, the difference between the two will be settled in the form of rebate to either the contributors or the USP, as the case may be.

114. Over the years, some ETS operators who were entitled to a rebate from the USP had exited the market and cannot be reached despite repeated effort of the TA to contact them. Up to now the accumulated unclaimed rebate to universal service contributors is approximately $5 million. The TA considers that this amount may be gainfully used to reduce the level of the USC.

115. ***Question:***

> ***(27) Do you agree with the TA's proposal in handling the unclaimed rebate?***

Implementation of the New Regime in Phases

116. A number of issues are raised in this paper for consultation. A comprehensive review of the USO addressing all the issues so identified may take a long time to complete. However, some concerns need to be and can be addressed fairly quickly. We therefore propose to divide the implementation into two phases.

117. The topics to be covered in Phase 1 may be:

(a) "Relevant Revenue and Cost under Competition" (paragraphs 54 – 57)

PCCW-HKTC has launched massive promotion campaigns by offering discounts on line rentals. We have to ensure the relevant revenue compiled for USC calculation is fair and reasonable.

(b) "Exclusion from USO of Areas with Alternative Fixed Network Coverage" (paragraphs 40 – 47)

The customer access network penetration of PCCW-HKTC's competitors has reached 76% of the households and PCCW-HKTC's competitors continue to invest and roll out their networks. Areas or buildings where there is presence of alternative supplier(s) of service and network should be excluded from the USO.

(c) "The Aggregation Basis" (paragraphs 67 – 73)

The USP should not be compensated on a customer-by-customer basis.

(d) "Funding arrangements for USO" (paragraphs 89 – 105)

With the continued decline of IDD profit margins and the increasing deployment of VoIP technology, it is necessary to review the existing funding arrangements and establish quickly an equitable and sustainable funding basis that suits the latest market development.

(e) Other issues that the TA considers, in consultation with the industry and other stakeholders, should be dealt with at this stage.

118. It is expected that a new regime in relation to the above topics can be implemented fairly quickly after the TA has made a decision on the way-forward.

119. In Phase 2, the rest of the issues raised in this consultation paper will be concluded. The industry is welcomed to provide their views on these issues in parallel with those in Phase 1 but the TA's conclusions on these issues will be drawn only in Phase 2 and implemented in stages in accordance with the outcome of the review.

Invitation for comments

120. The TA invites views and comments from the industry on the issues and questions raised in this consultation paper. All views and comments should be made in writing and should reach OFTA on or before **28 February 2007**. The TA reserves the right to publish all views and comments as well as the identity of the source. Accordingly, any part of a submission that is considered commercially confidential should be clearly marked. Submission should be addressed to:

Office of the Telecommunications Authority
29/F Wu Chung House
213 Queen's Road East
Wanchai
Hong Kong
Attention: Senior Regulatory Affairs Manager (R14)
Fax: 2116-3334
E-mail: universalservice@ofta.gov.hk

An electronic copy of the submission should be provided by e-mail to the address indicated above.

Office of the Telecommunications Authority
28 December 2006

Annex 1

VoIP Consultation Issues Related to USO and USC

In the consultation paper on the regulation of IP Telephony issued on 4 October 2004, the TA asked the industry questions in paragraph 85 regarding the basis of sharing USC. The questions are:

- Do you consider that the USO and USC sharing mechanisms should be overhauled because of the development of IP Telephony services?
- Do you consider that all providers of IP Telephony services should be obliged to share the contribution to USO, even though their traffic may not traverse the PSTN at all and some of them may be local IP Telephony service providers?
- If the IP Telephony service providers should be obliged to share the contribution to USO, and if there are practical difficulties in metering the volume of "external" traffic for USC purposes, what should be the basis for the sharing – number of telephone numbers assigned to customers, revenue, etc.?

2. The TA received 38 submissions in response to the consultation, among which 18 were made on some of the above three questions.

3. The views of the respondents are briefly summed up as follows:

- Most respondents (10 out of 13) to the first question agree that the USC sharing mechanism should be reviewed in light of the IP Telephony development;

- The views on the second question are rather divided. Out of the 14 respondents to the question, half (7) opine that IP telephony traffic should share USC whilst 6 parties disagree.

- As for the third question - if IP telephony providers are required to share USC, what should be the basis of sharing – the views expressed are diverse. One suggests using all telephone numbers allocated and some suggest all traffic transmitting across all telecommunications networks in Hong Kong

It can be concluded that the industry generally supports a review of the current USC arrangement.

<u>Details of Submissions on USC Sharing</u>

4. Eighteen submissions were made on some of the three questions on the USC sharing mechanism. They are from:

China Resources Peoples Telephone Company Limited (**Peoples**)
CM Tel (HK) Ltd. (**CM Tel**)
EasyLink Networks & Belgravia Group (Asia) Limited (**ELN**)
Hong Kong Broadband Network Limited (**HKBN**)
Hong Kong CSL Limited (**CSL**)
Hutchison Global Communications Limited (**HGC**)
Interactive Broadband Services Ltd. (**iBBS**)
New World Telecommunications Limited (**NWT**)
Pacific Supernet Limited (**Pacific Supernet**)
PCCW-HKT Telephone Limited (**PCCW-HKTC**)
SmarTone Mobile Communications Limited (**SmarTone**)
Zone Limited (**Zone**)
The Computing Technology Industry Association (**CompTIA**)
Hong Kong Internet Service Providers Association (**HKISPA**)
Hong Kong Wireless Technology Industry Association (**WTIA**)
The Society of Hong Kong External Telecommunications Service Providers (**ETS Society**)
Ms. Chan

Do you consider that the USO and USC sharing mechanisms should be overhauled because of the development of IP Telephony services?

5. Thirteen respondents have submitted views on this question. 10 of them agree with the proposal, one disagrees and the others two do not provide a clear-cut answer but offer some other views instead.

6. CM Tel, HGC, Peoples, SmarTone, CSL, iBBS, Pacific Supernet, WTIA, HKISPA and a citizen Ms. Chan are the 10 respondents who support the

proposal that the USO and USC sharing mechanisms should be overhauled or reviewed because of the development of IP Telephony services.

7. ELN is the unique respondent not agreeing with the proposal. It opines that there is no such a need to overhaul the mechanisms but definitions of USO and USC may need to be modified to better accommodate VoIP service providers.

8. PCCW-HKTC and ETS Society do not provide definite answer to the question but offer some relevant comments. PCCW-HKTC submits that, whether the application of the USC to Internet minutes requires an overhaul of the system is not directly relevant, what is relevant is the continuation of this important subsidy scheme and the support of this scheme by all providers of international traffic on a fair basis. PCCW-HKTC further opines that, with the increasing use of IP technology to deliver voice calls (which have traditionally been delivered using circuit-switched networks), there are good reasons to take into account international Internet voice traffic when determining the share of USC between the operators, and to subject such traffic minutes to the USC regime. The ETS Society firmly believes that USO is irrelevant to IP Telephony services and is becoming increasingly irrelevant to the society in Hong Kong and proposes to release the fixed line operators from the USO for the following reasons (a) Hong Kong residents have alternatives to basic fixed-wire services, mobile and Wi-Fi being examples; (b) the geographic reach of mobile services provides substantive coverage of Hong Kong; and (c) mobile substitutes are easily used and cost effective. For those people so disadvantaged (presumably being a very small number), a direct social security subsidy should be more cost efficient and target-oriented than a total-system subsidy such as USC. Accordingly, the ETS Society proposes that the USC charge be cancelled in full.

Do you consider that all providers of IP Telephony services should be obliged to share the contribution to USO, even though their traffic may not traverse the PSTN at all and some of them may be local IP Telephony service providers?

9. Among the 14 respondents who have submitted views on this question, 7 of them including PCCW-HKTC, HKBN, NWT, CSL, WTIA, ELN and a

citizen Ms. Chan support that all providers of IP Telephony services should be obliged to share the contribution to USO, even though their traffic may not traverse the PSTN at all and some of them may be local IP Telephony service providers. 6 respondents including CM Tel, CompTIA, Zone, Pacific Supernet, HKISPA and ETS Society disagree. Peoples does not provide a definite answer but offers some relevant views.

10. In view that the USC sharing exercise is based on international traffic minutes, PCCW-HKTC submits that all operators who provide international services should be required to contribute to the USC and it may now be appropriate to broaden the source of USO contributors to include other service providers, since all these service providers have ultimately benefited from the implementation of the USP's ubiquitous network. HKBN opines that any telephony service providers in Hong Kong providing telephony services should be obliged to comply with the existing USO and USC sharing mechanisms, no matter whether their services are provided through conventional circuit switching technology or the IP technology. WITA considers that, other than the call minutes generated by ETS operators, the following should also be required to share the contribution to USO:

(i) Basic phone call minutes to and from all basic fixed telephone line operators or Fixed Carrier Licensees,
(ii) Basic phone call minutes to and from all mobile and MVNO operators,
(iii) Basic phone call minutes to and from IP Telephony services providers that need ordinary telephone number on the termination or origination of the call,
(iv) Dialup access minutes from dialup access services of all ISPs,
(v) Data volume in and out of a Broadband ISPs. For conversion of circuit-switched telephone call minutes to measurable data volume, we can use a formula for example, "1 sec of telephone calls equal to 12 K of Internet Protocol (IP) data bases on H.323 protocol G.729 Codec"

11. Regarding the views of the opposing respondents, CompTIA strongly supports the goal of Universal Service as a matter of public interest as well as a matter of technology adoption. However, CompTIA recognizes that the regulatory programs to achieve that goal needs to be reformed first and believes any attempt simply to include VoIP services in the current mechanism is not

only harmful to emerging VoIP providers, but consumers reliant on the Universal Service for affordable service. Zone submits that USO is irrelevant to IP Telephony services because it is not intended to be a substitute for the conventional public telephone service. Pacific Supernet submits that only IP Telephony service that is intended to be substitute of conventional public telephony is obliged to USO and USC contribution.

12. Peoples agrees that the USO for fixed line to provide basic telephone service remains no matter what technical developments are introduced but a complete review of the USO and USC needs to be undertaken.

If the IP Telephony service providers should be obliged to share the contribution to USO, and if there are practical difficulties in metering the volume of "external" traffic for USC purposes, what should be the basis for the sharing – number of telephone numbers assigned to customers, revenue, etc.?

13. Only 7 respondents have submitted views on this question. 5 of them offer proposals on the basis for the sharing of USC and they are summarized as follows:

1) Request all IP Telephony service providers to report the actual call minutes, and these figures should be subject to external audit. (Peoples)
2) Based on the number of telephone numbers assigned to customers (PCCW-HKTC)
3) All external traffic should be accessed through the designated access code with leading digits 00XX or 15XX/16XX. Telephony services operators could use the traffic recorded to meter the volume of "external" traffic for USC purposes. (HKBN)
4) Basis should be gross call volume biased between number of calls and number of call minutes. (ELN)
5) Use methods which have to be agreed among the both IP-based and conventional telephony service providers, e.g. the number of subscriber. (Ms. Chan)

14. ETS Society concurs that there is no obvious or fair way to make an apportionment between local and international traffic and believes that the USC weighting should be regarded as zero, based on the assumption that the

majority of IP Telephony calls will not terminate outside of Hong Kong. Alternatively, ETS Society proposes that the USC charge be replaced with a charging mechanism that may utilize minutes, subscribers or access events with its underlying aim to ensure that all services equally bear this cost burden. ETS society suggest the mechanism should include (a) Calls to and from fixed lines, whether FSTN, IP Telephony or ETS; (b) Calls to and from mobile phones; (c) Dial-up calls from ISPS; and (d) Broadband usage.

15. CM Tel does not think that it should jump into conclusion on which party should be obliged to share the contribution to USO now. It would be unfair and dangerous to make any assumption before they are allowed sufficient time to fully study and analyze on this topic.

Annex 2

Payphones Eligible for Compensation under the Universal Service Contribution

1. Public payphones (as defined by the TA's statement of 25 April 1997 on regulation of payphone services) under the registers kept by the Office of the Telecommunications Authority (**OFTA**);

2. Private payphones (as defined by the TA's statement of 25 April 1997 on regulation of payphone services) located within facilities maintained by the Urban Council and Regional Council (now the Leisure and Cultural Services Department). These include -

    - Outdoor recreation centres
    - Indoor games halls
    - Playground, sport ground and stadium
    - Swimming pools and beaches
    - Parks and Gardens
    - City and town halls
    - Community halls
    - Urban Council (now Food and Environmental Hygiene Department) markets and complexes
    - Museums, cultural centres and Coliseum

3. Public payphones located within Government offices. These include –

    - Courts and magistracies
    - District Offices
    - Immigration Department
    - Inland Revenue Department
    - Police Stations
    - Post Offices
    - Prisons, Correction Centres and Refugee Centres[16]
    - Trade Department
    - Transport Department

[16] Refugee centres no longer exist in Hong Kong with the closure of the last one in July 2000.

- Other Government offices with public access, e.g. District Offices, Marriage Registries

4. Payphones (public or private payphones, as the case may be) located within other public facilities. These include -

    - Hospitals (including both public and private hospitals)
    - Public clinics
    - Centres of the Family Planning Association
    - Universities and technical institutes
    - Public housing estates with the sanction of the Housing Authority
    - Other public facilities determined from time to time by the TA.

These four categories of USC eligible payphones are not mutually exclusive. In addition, the list may be amended from time to time by the TA if need be.