

Comments

to the

**Office of the Telecommunications Authority
Consultation Paper**

titled

**Licensing Framework for
Third Generation Mobile Services**

submitted

by

Cable & Wireless HKT CSL Limited

22 May 2000

Cable & Wireless HKT CSL Limited (“CWHKTCSL”) would like to thank the Telecommunications Authority (“TA”) for releasing his consultation paper “Licensing Framework for Third Generation Mobile Services” on 21 March 2000 (the “Consultation Paper”) and for inviting the industry to participate in the formulation of a licensing framework for Third Generation (“3G”) mobile technology which best promotes the interests of Hong Kong.

CWHKTCSL is pleased to present below its comments to the questions raised in the TA’s Consultation Paper.

Summary of CWHKTCSL’s Position

1. CWHKTCSL firmly agrees with the TA’s view that any technology adopted for 3G mobile services in Hong Kong should follow the International Telecommunication Union (ITU) IMT-2000 technical standards and conform with the IMT-2000 spectrum plan. CWHKTCSL recommends that the TA adopt these two basic tenets as the foundation for 3G infrastructure in Hong Kong. CWHKTCSL firmly believes that any alternative to the adoption of an ITU IMT-2000 compliant band plan will be to the ultimate disadvantage of the Hong Kong economy and all users of 3G technology, through discontinuity for customers, less efficient use of technology, and wastage of scarce spectrum resources.
2. While CWHKTCSL is supportive of the TA’s general principle of technology neutrality, CWHKTCSL firmly believes that significant benefits will be realised, from both an overall economic as well as individual consumer perspective, if Hong Kong follows the Third Generation Partnership Project (3GPP) standards or, as referred to in Europe, the Universal Mobile Telecommunications System (UMTS) standard. The adoption of such unified standards, which will allow access to timely and cost effective infrastructure and terminals on a global scale, will enable efficient exercise of consumer choice to the benefit of all parties - operators and customers alike.
3. CWHKTCSL is of the view that the TA should clearly elect to commit all essential IMT-2000 spectrum to the successful new 3G licensees, enabling all applicable spectrum, including the unpaired bands, to be fully taken into account by licence applicants in their licence submissions. The TA should seek to clear and fully allocate a majority of the currently defined IMT-2000 spectrum, i.e., 60 MHz (1920-1980 and 2110-2170 MHz) paired and 30 MHz (1905-1920 and 2010-2025 MHz) unpaired spectrum, to support the allocation of a maximum number of 3G licences.
4. Furthermore, while the TA should allocate spectrum according to the IMT-2000 and UMTS standards, it should refrain from specifically determining whether that spectrum be used for FDD, TDD or potentially another future IMT-2000 compliant technology, provided that such technologies do not interfere with one another.
5. CWHKTCSL agrees with the TA’s proposal of supporting existing 2G operators’ efforts, in future, to evolve and develop 3G-like services in their existing licensed 2G spectrum, at a time when technical standards and commercial availability of infrastructure and terminals permit, and importantly at the ultimate discretion of each 2G licensee in

response to market demand. 3G has been designed and is accepted to be, in both technology and service capability, an evolutionary step from 2G. However, CWHKTCSL believes that the TA's view on 2G operators utilising their existing 2G spectrum and systems to provide a macro layer for 3G requires significant technical and commercial qualification, and that any requirement to use existing 2G / 2G+ technology and service capabilities in an attempt to compete against 3G technology and service capabilities does not represent a viable option.

6. CWHKTCSL firmly believes that 3G services can be introduced on a commercially and technically viable basis both by "new entrants" as well as existing 2G operators who are awarded a 3G licence, with the allocation of an initial 2 x 10 MHz paired and 5 MHz unpaired spectrum.
7. CWHKTCSL would like to stress its agreement with the TA's view "that the scope of services that will be provided by 3G platforms will be substantially more extensive than that of the 2G platform [and] the operation and the scope of 3G services are significantly different". However, CWHKTCSL must express its strong disagreement with any view that implies that, because they operate "legacy network elements", existing 2G mobile operators are less capable of being "flexible" or "providing new input to the benefit of the industry and consumers". Such a view would also appear to be at odds with the comments of the TA, Government, and wider industry observers over recent years.
8. CWHKTCSL is of the view that, as a minimum, all 3G licence bidders, both existing 2G operators and "new entrants", should be treated on a fair, non-discriminatory and equal basis. Correspondingly, all parties should be treated equally within the licence application process, in the evaluation process, in the allocation of spectrum, and in the terms and conditions of the awarded 3G licences.
9. However, while of the view that all 3G licence applicants can be considered as prospective "new" 3G entrants, CWHKTCSL believes that a strong case exists for the significant socio-economic value brought to Hong Kong by the existing 2G mobile operators to be recognised and awarded appropriate merit, within the TA's 3G licence application and evaluation process, i.e., giving due regard to characteristics such as the local 2G market's globally competitive engineering, service coverage, service quality, service innovation, and pricing. Furthermore, given that the TA and Government established the local competitive framework and have, in a sense, nurtured the development of what are fundamentally six home-grown 2G mobile operators, and given their international benchmark reputation and stated commitments to evolve to 3G, a further case could be built for additional investment in the sector being promoted not through "new entrant" 3G licensees but through continued investment in existing licensees.
10. CWHKTCSL has no objection to "new entrants" applying for 3G licences, participating in the evaluation process, or ultimately being awarded a licence on merit. However, CWHKTCSL expects that it will be difficult for the TA to develop and put into practice, during the initial licensing process and over the life of a licence, a clear definition of a "new entrant".
11. CWHKTCSL strongly believes that the local market can support no more than six mobile operators and that future 2G / 3G consolidation is inevitable if the TA elects to allow

“new entrants” to enter the market through the award of new 3G licences. Therefore, CWHKTCSL firmly recommends that the TA adopt a variation suggested by Option 2 as the preferred licensing option, and that the TA elect to make available the maximum number of six new 3G licences given the available spectrum, i.e. six licences being of 2 x 10 MHz paired and 5 MHz unpaired spectrum. This option allows the TA initially to maximise the number of 3G licensees and, as a result, maximise the number of future mobile technology operators in Hong Kong. This will ultimately provide the best competitive outcome for the local economy and consumers as well as offering maximum opportunity both to all existing 2G operators and potential “new entrants” to win a new 3G licence.

12. CWHKTCSL believes that mobile infrastructure competition in Hong Kong is already intense, as noted by the TA in the Consultation Paper, and accordingly the market does not need further intercession by the Government in order to create or foster competition in this area. The previous PCS licensing process focused, successfully in CWHKTCSL’s opinion, on increasing the level of competition in mobile infrastructure. However, CWHKTCSL submits that competition should now be encouraged in the development and provision of higher layer services, applications and content. CWHKTCSL is of the view that the TA should be seeking to put in place a robust, cost effective, globally-competitive 3G technology infrastructure that can provide the platform for nurturing such higher layer services, applications and content.
13. CWHKTCSL firmly believes that maximum benefit to all stakeholders – i.e., including the local economy; Hong Kong consumers; services, applications and content providers; and mobile operators – will be attained though 3G licence applicants being evaluated solely on the comparative merits of their applications, which would include such key criteria as the economic flow-on of the proposition, past experience and contributions to Hong Kong, and local operational and service capabilities, leading towards the objective of greatest long-term benefit to Hong Kong, rather than through an auction process focussed on short term financial gain.
14. Furthermore, CWHKTCSL believes first that the likely huge cost of an auction process to successful bidders will be passed on to the local economy and consumers, which will be reflected in more expensive 3G mobile operations, and will result in the comparatively slower take up of 3G technology and services in Hong Kong. Second, targeting potential 3G licensees through an auction appears to be extremely unfair to a single sector of the telecommunications industry, and at odds with local precedents set with PMRS and PCS licensing, and more recently with Wireless FTNS spectrum licensing.
15. CWHKTCSL believes that there is no need at this time to remove the regulatory distinction between fixed and mobile services, and would recommend that the TA deal with this question in a separate industry consultation.
16. CWHKTCSL supports the principle of a regulatory framework which allows domestic roaming but firmly believes that such roaming arrangements should be based solely on commercial agreements reached between the licensed network operators themselves.
17. CWHKTCSL holds strongly to the view that network operations should not be separated from service provision.

Comments to the Consultation Paper

Furthermore, CWHKTCSL trusts that the following comments, offered on a point by point basis and setting out in more detail CWHKTCSL's views, will be useful to the TA and would welcome an opportunity to discuss this submission, or any particular part of it, with the TA and his staff.

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Comments to Specific Questions in the Consultation Paper

Paragraph 2.9: *The TA intends to open to the prospective operators to use any IMT-2000 standards within their assigned 3G frequency bands for 3G mobile services, subject to the TA being satisfied that the various technical standards are compatible with each other from the users' point of view. The main consideration is to ensure that customers can easily switch from one network to another to obtain similar services and to maximise convenience in using roaming services without having to change the mobile terminals. The TA invites views from the industry on his proposal.*

First, CWHKTCSL firmly agrees with the TA's view that any technology adopted for 3G mobile services in Hong Kong should follow ITU IMT-2000 technical standards and conform with the IMT-2000 spectrum plan. CWHKTCSL recommends that the TA adopt these two basic tenets as the foundation for 3G infrastructure in Hong Kong.

Second, while CWHKTCSL is supportive of the TA's general principle of technology neutrality, CWHKTCSL firmly believes that significant benefits will be realised, from both an overall economic as well as individual consumer perspective, if Hong Kong follows the UMTS standard. The adoption of unified standards, which provide access to timely and cost effective infrastructure and terminals on a global scale, will enable efficient exercise of consumer choice to the benefit of all parties - operators and customers alike.

Additionally:

- ◆ CWHKTCSL is of the view that if another technology, such as CDMA2000, is allowed to be implemented along with the UMTS standard in Hong Kong, additional guard bands will be required between conflicting 3G spectral allocations, with each guard band unnecessarily consuming significant areas of the already scarce amount of spectrum initially available for 3G mobile services and, to the detriment of a potentially more competitive market, likely limiting the maximum number of 3G licences that will be available for award by the TA. However, no such guard bands are expected between the spectral allocations of networks operating the same technology, which for Hong Kong in most instances is expected to be the UMTS standard;
- ◆ the preferred adoption of common UMTS standards in Hong Kong would lead to other beneficial implications, such as minimised complexity and lower cost of 3G network infrastructure, handsets / terminals and operational support systems, which can only hasten the implementation and adoption of 3G technology and services. If multiple 3G technology standards are allowed, while "ensur[ing] that customers can easily switch from one network to another" and "maximise convenience of roaming" is required by the TA, then it is likely that Hong Kong consumers will have to wait longer and pay more for 3G handsets / terminals, and that local operators will be put at an inherent cost disadvantage. A relatively simple case in point being that the complexity and cost of a 3G handset / terminal will increase if that device must support, say, not only a basic UMTS service offering with 2G backward compatibility and be Wireless Application Protocol (WAP) enabled, but also a second 3G standard with a cross-standards interworking capability. As a further example, particularly from a global and regional standpoint, as GSM/CDMAOne handsets are unavailable today, it is difficult to expect 3G handsets/terminals supporting UMTS and CDMA2000 to be available in the near

future;

- ◆ “ensur[ing] that customers can easily switch from one network to another to obtain similar services”, will be most easily implemented and supported without discontinuity through a common 3G technology platform and which CWHKTCSL, as introduced above, firmly believes should be UMTS. Alternatively, considering the same complexity, cost and time-to-market arguments as set out above, CWHKTCSL is firmly of the view that if the TA is to retain a position of technology neutrality, then the goal of “ensur[ing] that customers can easily switch from one network to another to obtain similar services” cannot be made mandatory in the proposed 3G technology licence / implementation requirements;
- ◆ UMTS is being commonly adopted throughout Europe, with the following countries to date having selected or committed to it as their platform for 3G mobile technology development and the roll-out of 3G services: Austria, Belgium, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Greece, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Macedonia, Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey, and the United Kingdom. Such a common choice of 3G technology platform can only help to continue to enhance Europe’s recognised leadership in the development and adoption of mobile technology and services. Similarly, UMTS standards will be adopted by other countries, particularly the large proportion of countries where GSM technology is in place, such as in Asia, while significant markets such as China, Japan, Korea and the USA are also participating in the development of UMTS standards; and,
- ◆ adoption of a common global standard, the original IMT-2000 objective of the ITU, maximises the potential for seamless international roaming, to the benefit of all 3G users. Unfortunately, a few markets are not expected to adhere to the IMT-2000 band plan. Thus, while some disparate spectrum allocations may occur around the globe, the TA should seek to minimise Hong Kong’s contribution to this less beneficial outcome. Of particular interest is the Asia-Pacific region, where regional competitiveness would be boosted by the TA promoting commonality of standards, similar to the position adopted in Europe. Adoption of a single standard locally, such as the UMTS standard, will also help to send the right signal for consistency regionally and work to maximise the extent to which Hong Kong consumers can enjoy access to 3G services while abroad; a position that would help ensure that Hong Kong remains at the forefront of telecommunications in Asia and maintains its leading regional role.

Paragraph 3.4: *Taking into consideration that the spectrum in the 1885-1906.1 MHz band is currently in use for private cordless telephones and that a guard band is necessary between TDD and FDD systems of the 3G services, there will be 2 x 60 MHz paired spectrum and some 25 MHz to 29 MHz unpaired spectrum available for terrestrial 3G mobile services in Hong Kong at this stage, as shown in Fig.2.*

CWHKTCSL firmly believes that if one of the TA’s observed goals of economic and consumer benefit through maximised levels of competition is to be best served, the TA should seek to clear and fully allocate a majority of the currently defined ITU IMT-2000 spectrum, i.e. 60 MHz (1920-1980 and 2110-2170 MHz) paired and 30 MHz (1905-1920 and 2010-2025) unpaired spectrum, to support the allocation of a maximum number of 3G licences.

Additionally:

- ◆ CWHKTCSL is of the firm view that a clear timetable of availability for full 3G spectral allocations, i.e. both paired and unpaired spectrum should be set out by the TA as part of the licensing process to help ensure i) that optimal business cases are being developed by 3G licence applicants, and that ii) technology testing, applications development, and the rollout of new services can commence as early as possible. CWHKTCSL expects that TDD technology should be well suited to unbalanced traffic situations and high speed indoor applications, with earliest availability ultimately to the benefit of both the Hong Kong economy and local consumers; and,
- ◆ CWHKTCSL recommends that the TA should look to reappportioning that area of the spectrum currently allowed for use by PHS in Hong Kong as quickly as possible, and thereby fully enabling a maximum of six bandwidth allocations of 5 MHz in the unpaired band. CWHKTCSL is of the view that the PHS service locally is under-utilising its allocated spectrum and a strong case exists for reviewing that component of the band plan on the basis of attaining optimal utilisation of the scarce spectral resource and industry need. Moreover, services similar and more enhanced than PHS can be offered with 3G technology. In particular, the TA should look to clearing the upper 1.1 MHz of the currently allocated 6.1 MHz of the PHS band, which will then allow for the required 30 MHz of unpaired IMT-2000 spectrum;
- ◆ however, as TDD standards are as yet incomplete, are not immediately required for the initial rollout of 3G services, and in order not to delay the licensing process, CWHKTCSL supports initial reservation of the unpaired spectrum for the successful 3G applicants on the premise of continuing to work with the TA to resolve these spectral issues, towards enabling the assignment of a total 30 MHz of unpaired spectrum.

Paragraph 3.5: *The TA will consult the industry again on the allocation of the IMT-2000 expansion bands for 3G services in Hong Kong when there is further development in the ITU.*

CWHKTCSL looks forward to working with the TA in optimally managing the availability and utilisation of any additional spectrum for 3G services, such as the proposed release of a further 160 MHz of spectrum. However, as well as working closely with local mobile operators and other interested parties on this matter, CWHKTCSL believes the TA should follow the recommendations of the ITU for IMT-2000, and adopt a position that ensures compatibility with the technology standard being selected in this current round of 3G licensing.

Paragraph 3.8: *To allow existing 2G mobile operators to evolve their networks to 3G and to be in line with the adoption of the technology neutrality policy discussed in paragraphs 2.5-2.9, the TA intends to open to the existing 2G operators, whether they are successful or not in obtaining 3G spectrum, to use any IMT-2000 standards within their assigned 2G frequency bands for 3G mobile services when equipment is commercially available in the market, subject to the TA being satisfied that the various technical standards are compatible with each other from the users' point of view and that the interest of existing 2G consumers is adequately safeguarded.*

CWHKTCSL agrees with the TA's proposal of supporting existing 2G operators' efforts, in future, to evolve and develop 3G-like services in their existing licensed 2G spectrum at a time when technical standards and commercial availability of infrastructure and terminals permit, and importantly at the ultimate discretion of each 2G licensee in response to market demand. 3G has been designed and is accepted to be, in both technology and service capability, an evolutionary step from 2G. In conjunction, CWHKTCSL would like to stress its agreement with the TA's view, as set out in Paragraph 5.7, "that the scope of services that will be provided by 3G platforms will be substantially more extensive than that of the 2G platform [and] the operation and the scope of 3G services are significantly different".

Additionally:

- ◆ CWHKTCSL believes that 3G-like services within 2G spectrum cannot be viewed as effective competition to 3G services offered on IMT-2000 defined 3G technology platforms in the 2GHz spectrum, and, looking forward, CWHKTCSL believes that existing operators' 2G spectrum will likely have insufficient capacity for offering competitive 3G-like services;
- ◆ 3G-like technology in 2G spectrum should be encouraged by the TA, once commercial equipment designs have progressed, and according to international standards;
- ◆ however, CWHKTCSL recognises that guard bands may be required between existing 2G networks operating adjacent to networks employing yet to be determined 3G-like technology in 2G spectrum, decreasing the overall spectrum available to operators. Care will also be required to ensure that the implementation of any new standards within 2G spectrum does not otherwise adversely impact the systems and services of other 2G operators in those same bands;
- ◆ management and implementation of 3G-like technology and frequency allocations for reformed 2G spectrum are expected to only occur at the local / national level and international band planning standards are not expected to be available, with consequences being a general lack of support for international roaming, and presumably lesser variety and availability of handsets. In appreciation of this point, the GSM Association recently identified in its "Draft Policy Statement on Frequency Allocation Issues Concerning the Introduction of 3G Technology in 2G Spectrum (Reforming)" that GSM 900 and GSM 1800 bands should not be considered as globally harmonized IMT-2000 frequency bands; and,
- ◆ CWHKTCSL firmly believes that ultimately any reformatting of spectrum should not be made mandatory by the TA, but be at the discretion of each 2G licensee, thereby allowing such technology decisions to be made based on each individual licensee's business requirements, and associated perceptions as to the markets needs, as well as availability of the appropriate technology.

Paragraph 3.12: *Taking into consideration paragraphs 3.9-3.11, the TA is one of the view that Hong Kong should adopt a 3G band plan that is in compliance with the ITU IMT-2000 allocation. Any comment on this issue is welcome.*

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As set out in response to Paragraph 2.9, CWHKTCSL strongly supports the adoption of a ITU IMT-2000 compliant band plan for Hong Kong, and firmly believes that any alternative will be to the ultimate disadvantage of the Hong Kong economy and all users of 3G technology, through discontinuity for customers, less efficient use of technology, and wastage of scarce spectrum resources.

Additionally:

- ◆ CWHKTCSL is of the view that the UMTS standard, which is aligned with the ITU IMT-2000 technology and band plan, provides a 3G migration path for GSM operators, and as all Hong Kong mobile operators commonly implement GSM technology, maximum benefit to consumers can be expected to be attained from the TA following UMTS standards;
- ◆ adoption of a policy of spectral planning which attempts to incorporate incompatible band plans would not only be contrary to IMT-2000 standards and objectives, but would only serve to further fragment and complicate spectrum allocation and utilisation. For example, as stated by the TA in Paragraph 3.11, a band plan which attempts to accommodate the US PCS band allocation will require guard bands between UMTS FDD and US PCS compatible systems. Likely inefficient band plan spectral overlap could be further compounded by inverse transmit / receive configurations, serving to only further reduce the spectrum available for 3G technology infrastructure and likely impact the ultimate breadth of 3G services offered;
- ◆ CWHKTCSL is of the view that the TA should focus on determining the IMT-2000 technology standard and band plan for Hong Kong, but not mandate as to whether or not TDD, FDD or another future IMT-2000 technology development should be employed in a particular band. For example, operators should be allowed the opportunity to employ TDD in the FDD band to meet a perceived market requirement, as long as there is no resultant degradation of other operators' services, such as set out by the European Radiocommunications Committee (ERC)¹. CWHKTCSL would recommend that the TA's objective should be enabling optimal use of the available 3G spectrum for serving the broadest set of end-user requirements, without interference between licensees; and,
- ◆ CWHKTCSL's detailed response to Paragraph 2.9 should also be read in response to Paragraph 3.12. In particular, the observation that attempting to adopt a band plan that combines IMT-2000 spectrum with US PCS spectrum, will result in less total available 3G spectrum for operators, and as a result support fewer new 3G licences.

Paragraph 3.19: *Based on the considerations in paragraphs 3.13-3.18, the TA is of the view that a new 3G operator will need 2×15 MHz paired spectrum in order to allow the implementation of three-layer hierarchical cell structure and the provision of full range of 3G services including the high speed multimedia services at 2 Mbps in an indoor environment. For incumbent 2G operators, the TA considers that less spectrum would be required because they can upgrade their 2G systems and use them to provide the macro layer. In this case, the minimum spectrum per existing operator is 2×10 MHz. If the foregoing spectrum allocation*

¹ ERC Decision of 29 November 1999 on the harmonized utilisation of spectrum for UMTS, "the frequency band 1920 – 1980 may also be used for TDD operations".

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is adopted, between four to six licences can be issued for 3G services, depending on the licensing model adopted (see paragraph 4.5 below). The TA invites comments from the industry on the proposed minimum 3G spectrum allocation to new and existing operators.

First, CWHKTCSL firmly believes that 3G services can be introduced on a commercially and technically viable basis both by “new entrants” as well as existing 2G operators who are awarded a 3G licence, with the allocation of an initial 2 x 10 MHz paired and 5 MHz unpaired spectrum.

Second, CWHKTCSL believes that the TA’s view on 2G operators utilising their existing 2G spectrum and systems to provide a macro layer for 3G requires significant technical and commercial qualification, and that any requirement to use existing 2G / 2G+ technology and service capabilities in an attempt to compete against 3G technology and service capabilities does not represent a viable option.

Additionally:

- ◆ CWHKTCSL firmly believes that any 3G licensee can support all of its short to medium term 3G service requirements with a spectrum allocation of 2 x 10 MHz paired plus 5 MHz unpaired. This view has been supported in discussions with 3G technology manufacturers, as well as CWHKTCSL’s own analysis of the Hong Kong market’s requirements. Furthermore, such spectral allocations have, or are likely being, defined in other regulatory regimes such as the United Kingdom, Germany, Netherlands, Italy, Sweden and Austria. As well, like Hong Kong, Singapore has proposed utilising 2 x 10 MHz IMT-2000 paired spectral allocations;
- ◆ in the longer term, CWHKTCSL sees a number of options that will enable network capacity and capabilities to be increased to meet future demand, including the optimal use of the allocated spectrum as well as the expected availability of further IMT-2000 spectrum. The more valid prospect for increasing the bandwidth available to 3G licensees is not to place further demands on existing 2G spectrum, but for the TA to work with operators to enable the earliest availability of additional 3G spectrum in Hong Kong, such as the 160 MHz identified by the TA in Paragraph 3.5;
- ◆ mandating that existing 2G operators who gain 3G licences should employ some spectrum, i.e. 2G, outside of the current IMT-2000 recommended frequency band to provide the 3G macro layer poses significant problems. As previously mentioned under Paragraph 3.8, until such time as the technical specifications have been established for 3G-like technology within the relevant 2G bands, there will be no availability of standardised infrastructure and terminals, and such a proposition is not a viable option for consideration. The GSM Association has taken the position that it is unlikely that spectrum used for GSM will be generally available internationally for 3G until the very long term, and that the identification of 2G frequency bands for IMT-2000 should be left to an ITU conference post WRC-2000 and after the majority of national 3G licensing processes in key markets have been concluded;
- ◆ an existing 2G operator’s spectral allocation is a resource that was acquired with the intention of creating long-term sustainable stand-alone value, and for example, at the time of bidding, 2G licence applicants could not have been expected in future to accommodate the requirements of the 3G macro layer in their 2G spectral allocations. Optimal utilisation of existing 2G spectrum, based on business requirements, forms an

integral part of existing operators' business plans and financial projections, and any decision on whether to use that resource for 2G services or to provide support to a broader 3G platform, should be at the discretion of each operator, on the basis of those same strategic requirements. For its part, CWHKTCSL is currently investing for optimal utilisation of its currently scarce 2G spectrum so as to offer certain application specific, 2G / 2G+ voice and data services. Moreover, in high density areas, spectrum utilisation for CWHKTCSL is already approaching 80% and new 2G / 2G+ service plans are expected to push 2G spectral utilisation closer to saturation, i.e. potentially leaving no 2G spectral capacity to support 3G. Existing 2G operators should not be required to degrade the value of their 2G franchises to support 3G operations, while "new entrants" would have no such obligations; and,

- ◆ Hong Kong's mobile market has shown that it cannot support more than six mobile licensees and CWHKTCSL firmly believes that consolidation is inevitable between 3G "new entrants" and existing 2G operators who do not achieve a 3G licence. Hence, any perceived requirement for greater spectral bandwidth for a "new entrant" will be negated. However, if the TA elects that a "new entrant" who wins a 3G licence be awarded 15 MHz, then it follows that such "new entrant" must return 5 MHz to the TA upon any commercial relationship, strategic alliance, or merger or acquisition, with a 2G player.

Paragraph 3.21: *The TA therefore considers that there may be no immediate need to make a decision on the allocation of the TDD spectrum. However the TA will reserve the TDD spectrum in the 3G band for use by the licensed 3G operators and will further consult these operators when it is timely to allocate this spectrum. The TA invites views from the industry on the proposed allocation of TDD spectrum.*

First, as also discussed in response to Paragraph 3.4, CWHKTCSL is of the view that the TA should clearly elect to commit all essential IMT-2000 spectrum to the successful new 3G licensees, enabling all applicable spectrum, including the unpaired bands, to be fully taken into account by licence applicants in their licence submissions.

Second, CWHKTCSL is of the view that the TA should allocate spectrum according to the IMT-2000 and UMTS standards, however, the TA should refrain from specifically determining whether that spectrum be utilised by TDD, FDD or potentially another future IMT-2000 compliant technology, provided that such technologies do not interfere with one another.

Additionally:

- ◆ CWHKTCSL recognises that the 5 MHz unpaired TDD spectrum is an integral part of the value proposition of the upcoming 3G licence opportunity and should clearly and unconditionally be reserved as part of the spectrum allocation for each new 3G licence. CWHKTCSL accepts that part of the awarded spectrum may be made fully available at a later date, as defined within the licence, however, CWHKTCSL is also of the view that earliest availability will promote earliest technology testing, applications development and the roll-out of new and innovative 3G services; and,
- ◆ CWHKTCSL is of the view that the TA should primarily focus on issues such as monitoring and managing non-interference of one licensee's operations with another licensees' operations, alignment with IMT-2000 standards, support of international

roaming, and measurement of consumer benefits. The TA need not focus on specific technology issues, such as whether spectrum should be reserved solely for TDD or FDD usage, but leave this for operators themselves to determine..

Paragraph 4.3: In view that 3G new technologies may provide the scope for innovative service developments and, as a new entrant would not be constrained by any legacy network elements, it would have more flexibility in developing its network for new service applications and providing new input to the benefit of the industry and consumers. The TA therefore considers that the introduction of new entrants to the 3G market will be beneficial to market development and to consumers.

First, CWHKTCSL must express its strong disagreement with any view that implies that, because they operate “legacy network elements”, existing 2G mobile operators are less capable of being “flexible” or “providing new input to the benefit of the industry and consumers”. Such a view would appear at odds with the comments of the TA, Government, and wider industry observers over recent years.

Second, CWHKTCSL has no objection to “new entrants” applying for 3G licences, participating in the evaluation process, or ultimately being awarded a licence on merit.

Third, CWHKTCSL expects that it will be difficult for the TA to develop and put into practice, during the initial licensing process and over the life of a licence, a clear definition of a “new entrant”.

Fourth, CWHKTCSL believes that mobile infrastructure competition in Hong Kong is already intense, as noted by the TA in the Consultation Paper, and accordingly the market does not need further intercession by the Government in order to create or foster competition in this area. The previous PCS licensing process focused, successfully in CWHKTCSL’s opinion, on increasing the level of competition in mobile infrastructure. However, CWHKTCSL submits that competition should now be encouraged in the development and provision of higher layer services, applications and content. CWHKTCSL is of the view that the TA should be seeking to put in place a robust, cost effective, globally-competitive 3G technology infrastructure that can provide the platform for nurturing such higher layer services, applications and content.

Additionally:

- ◆ CWHKTCSL is firmly of the view that Hong Kong’s business and private mobile subscribers have been well served by the existing 2G mobile operators’ networks and levels of service provision. Mobile operators continually seek to out do each other in the adoption of new technology developments and in the introduction of innovative services; competition that often pushes Hong Kong to the forefront internationally. A few examples include firsts in short message notification of voicemail, digital mobile service coverage within underground railways, short message information services, and innovative pricing models, as well as leading globally in the testing and rolling-out of High Speed Circuit Switched Data (HSCSD), Wireless Access Protocol (WAP) and General Packet Radio Services (GPRS). Many local and international observers have commented on how well Hong Kong consumers are served by the existing 2G mobile operators, a view represented in statements from the Secretary of Information

Technology and Broadcasting, Mr. K.C. Kwong² (see Exhibit 1) and Mr. Thomas Wheeler, President and Chief Executive of the US-based Cellular Telecommunication Industry Association³ (see Exhibit 2);

Exhibit 1: (from a speech by the Secretary for Information Technology and Broadcasting, Mr. K.C. Kwong) “Since cellular mobile phone services were introduced into Hong Kong in the early 80’s, the mobile telecommunications market has always operated on a competitive basis. ... The coverage of our mobile phone services is comprehensive. Customers can use mobile phone services in road tunnels and in the Mass Transit Railway tunnels. New and attractive offers appear on the market all the time and prices for the services are affordable to most people.”

Exhibit 2: Hong Kong is leading the world in mobile-phone market development according the Thomas Wheeler, president and chief executive of the US-based Cellular Telecommunications Industry Association (CTIA). “The highly competitive Hong Kong market was a model for the US” and “What has happened in Hong Kong ended up being a model for the world. For instance there has been competition in Hong Kong before the US, and consumers have been the beneficiaries.”

- ◆ as identified by the TA in Paragraph 5.7, “it is expected that the scope of services that will be provided by 3G platforms will be substantially more extensive than that of the 2G platform [and] the operation and the scope of 3G services are significantly different” from 2G services. Accordingly, the 3G business model will be sufficiently different such that all potential licensees could be viewed as “new” and should be treated equally. A 3G business model will be substantially different from that of a current 2G mobile business, in areas such as: i) a significant proportion of business value is expected to be derived from new higher layer services, applications and content, not traditional mobile network access and transport; ii) significant new levels of reliance on strategic partners and other business relationships will be required; and, iii) competitors will in future come from all other manner of broadband platforms and higher layer services providers, not just other mobile phone companies. Furthermore, there will be new underlying technology platforms – CDMA air interface and cell-switched/IP core network platforms need to be effectively implemented and managed - and a significant increase in the number of new operating sites is expected, with minimal leveraging of a 2G operator’s existing physical locations;
- ◆ to some extent all 3G licence applicants can be viewed as “new” entrants. While existing 2G operators will, importantly, have certain local market, mobile infrastructure, services and related operational support capabilities, mobile operators are expected to need to develop expertise in altogether new areas. Certain other “new entrant” candidates could have greater experience, in areas becoming equally important to a 3G business model, such as Internet portal operations, higher layer services and applications, and in content creation, provisioning, packaging, and promotion, for which 2G operators will have little or no advantage”;
- ◆ “new entrants” should not be customarily perceived, without substantiation, as bringing benefits to the industry and consumers, prior to their 3G licence application and bid proposition being evaluated equally and fairly against other existing 2G operators

² Luncheon meeting of the Mobile Service Provider Group of the Telecommunications Association of Hong Kong, January 27, 1999.

³ South China Morning Post, April 20, 1999.

applying for the same 3G licences, and, similarly, “new entrants” should not be reserved spectrum in advance of the application and licence awarding process;

- ◆ furthermore, CWHKTCSL is of the view that the procedure for determining “new entrants” is itself a significantly challenging task and, for example, any attempt to ensure that “new entrants” remain independent throughout the life of their licence would likely be open to challenge and an arduous ongoing task for the TA to manage. Concerns associated with verifying a “new entrant” include assessing the level to which a “new entrant” is owned by a current or former local 2G operator, investor or management team, or even defining the degree of strategic alignment allowed between a 2G operator and a “new entrant”, which must be adhered to throughout the “new entrant’s” licence period, or for as long as a “new entrant’s” advantageous spectral allocation existed. For example, a review of the recent UK auctions shows that a significant investor in the “new entrant” licence winner was quite familiar with that market, has had interests in at least two of that market’s 2G mobile operators, and could be recognised as a leading global investor in mobile operators. Thus, strict definition and verification of any “new entrant” applicants will be required, particularly in areas such as ownership, management, and strategic relationships with unsuccessful 2G operators, again, throughout the life of the awarded 3G licence;
- ◆ while continuing to invest heavily in 2G+ infrastructure, existing operators who are awarded 3G licences will have to secure funding and resources to simultaneously roll-out their 3G infrastructure. “New entrants” on the other hand, will be able to focus solely on their 3G roll-out and, importantly, could establish commercial agreement to roam onto 2G operators’ infrastructure thereby negating any need to invest in 2G “legacy” systems in the shorter term until 3G technologies are more complete, further benefiting their 3G position compared to an existing operator; and,
- ◆ CWHKTCSL’s detailed response to Paragraph 3.12 should also be read in response to Paragraph 4.3. In particular, CWHKTCSL’s view that the local market cannot support more than six mobile operators, and that further consolidation will likely occur as a result of the number of licences issued and due to the awarding of new 3G licences to “new entrants”, as opposed to existing 2G operators. CWHKTCSL does not believe that such consolidation around “new entrants” is optimal or fair to existing operators who have invested significantly in providing Hong Kong with one of the highest quality and innovative mobile environments in the world, and who, all along, have clearly planned to evolve their mobile services into next generation technologies as they become available, demonstrated by their participation in early next generation technology trials.

Paragraph 4.4: *The TA is therefore of the preliminary view that there are benefits in allowing incumbent operators to bid for the 3G services, but they should not be given any priority over new entrants in the bidding process. Views and comments are sought on this issue.*

First, CWHKTCSL is of the view that, as a minimum, all 3G licence bidders, both existing 2G operators and “new entrants”, should be treated on a fair, non-discriminatory and equal basis. Correspondingly, all parties should be treated equally within the licence application process, in the evaluation process, in the allocation of spectrum, and in the terms and conditions of the awarded 3G licences.

Second, CWHKTCSL is of the view that all 3G licence applicants can be considered as prospective “new” 3G entrants, CWHKTCSL believes that a strong case exists for the significant socio-economic value brought to Hong Kong by the existing 2G mobile operators to be recognised and awarded appropriate merit, within the TA’s 3G licence application and evaluation process, i.e., giving due regard to characteristics such as the local 2G market’s globally competitive engineering, service coverage, service quality, service innovation, and pricing.

Third, given that the TA and Government established the local competitive framework and have, in a sense, nurtured the development of what are fundamentally six home-grown 2G mobile operators, and given their international benchmark reputation and stated commitments to evolve to 3G, a further case could be built for additional investment in the sector being promoted not through “new entrant” 3G licensees but through continued investment in existing licensees.

Additionally:

- ◆ as set out in response to Paragraph 4.3, CWHKTCSL is firmly of the view that consumers have and are being well served by a highly competitive mobile market environment in Hong Kong, and that new technology adoption and innovative service introduction are often at world-class levels. As also exemplified in Paragraph 4.3, this view would seem consistent with that of many local and international industry participants and analysts;
- ◆ in the recent past promoting infrastructure was key. Today, while mobile infrastructure competition is still important, given the sufficient market forces which are present in Hong Kong’s mobile sector, more critical will be robust, reliable and cost effective mobile infrastructure and viable underlying business operations for enabling the fullest level of investment and competition in the provision of higher layer services, applications and content. As introduced in Paragraph 4.3, existing 2G mobile operators are best positioned to efficiently and effectively roll-out lowest cost 3G technology, in conjunction with the optimised roll-out of 2G+ technology and the optimised utilisation of the scarce spectral resource, in the shortest time-frames. Furthermore, evidence of the sufficient market forces present in the mobile sector today is easily seen in the globally highly competitive retail prices on offer – today as low as HK\$29 for 300 minutes, compared with a HK\$100 for 100 minutes best rate upon commencement of the new PCS licences three years ago, which again at that time was an international benchmark.
- ◆ 3G is an evolutionary step in mobile telecommunications and significant benefits will be delivered to the Hong Kong economy and local consumers in particular, by allowing 2G operators to evolve with new 3G licences to IMT-2000 technology in 3G spectrum. For consumers an effective 2G to 3G migration path, balanced 2G, 2G+ and 3G infrastructure investment, and a choice of proven local mobile operators provides significant value. From an economic perspective, it is relatively easily appreciated that Hong Kong’s existing 2G operators - particularly the PCS licence holders, at three years into their licence periods - are marginally profitable at best, and to deny them the opportunity to improve with evolving mobile technology and standards, will significantly undermine the future commercial viability of their businesses. A case in point is the recent United Kingdom auction process, which saw existing operators unrepentant in

their quest to win 3G licences at any cost. At least one UK mobile operator, prior to the commencement of the auction process, indicated that a losing bid was not an option, due to the impact on customer and investor perceptions as to the attractiveness of current ongoing 2G business and its share price, before even considering the opportunities afforded by a new 3G licence; and,

- ◆ furthermore, certain practical impediments exist that optimally favour existing 2G operators being awarded 3G licences. These include leveraging the physical presence of existing 2G operators, being aware of the fact that certain “hot spot” locations will likely not physically support “new entrants”, as well as being attentive to the aesthetic and environmental impact of the presence of further mobile transmission sites around Hong Kong.

Paragraph 4.6: The TA has not yet formed a view on the preference for any one of the above licensing options and would like to seek comments from the industry prior to making a final decision.

As raised in response to earlier Paragraphs, CWHKTCSL strongly believes that the local market can support no more than six mobile operators and that future 2G / 3G consolidation is inevitable if the TA elects to allow “new entrants” to enter the market through the award of new 3G licences. Therefore, CWHKTCSL firmly recommends that the TA adopt a variation suggested by Option 2 as the preferred licensing option, and that the TA elect to make available the maximum number of six new 3G licences given the available spectrum, i.e. six licences being of 2 x 10 MHz paired and 5 MHz unpaired spectrum. This option allows the TA to initially maximise the number of 3G licensees and, as a result, maximise the number of future mobile technology operators in Hong Kong, ultimately providing the best competitive outcome for the local economy and consumers, as well as offering maximum opportunity both to all existing 2G operators and potential “new entrants” to win a new 3G licence.

Additionally:

- ◆ CWHKTCSL firmly believes that the full 60 MHz paired and 30 MHz unpaired spectrum should be made available in the context of seeking to allow, as a potential outcome, the existing level of competition in mobile technology infrastructure in Hong Kong. CWHKTCSL firmly believes that the TA provisioning for a maximum number of new 3G licences will provide for an optimum level of competition, which aligns with the level of mobile competition today, and also supports 2G operators who are unsuccessful in gaining a new 3G licence with an opportunity to team up with successful “new entrant” 3G licensees;
- ◆ as set out in response to Paragraphs 3.19, 4.3 and 4.4, CWHKTCSL is firmly of the belief that maximum long-term benefits will be attained if all bids are initially viewed and evaluated on an equal basis and, further, if all successful applicants are rewarded with six equal spectrum allocations and corresponding licences;
- ◆ the current level of mobile market competition could be degraded through less than six licences being offered by the TA, or similarly through the TA allowing certain “new entrant” applicants the opportunity to be awarded 2 x 15 MHz paired and 5 MHz unpaired spectrum, while others can only be awarded for 2 x 10 MHz paired and 5 MHz unpaired spectrum. As earlier introduced in response to Paragraph 4.4, CWHKTCSL

expects that existing 2G operators without access to 3G spectrum will have a significantly less viable business future than they have in today's already extremely competitive local 2G mobile market, and inevitably will require very close commercial relationship or strategic alignment, or likely merge with or be acquired by one of the successful new 3G licensees. CWHKTCSL firmly believes that the local mobile market cannot sustain more than six mobile operators, as witnessed by Hong Kong's original eight mobile players consolidating to the current six. Nonetheless, CWHKTCSL is of the view that the TA's upcoming 3G licensing process should seek to allow the current level of competition;

- ◆ in future, the successful 3G entrants should be reserved further spectrum, such as that mentioned by the TA in Paragraph 3.5, to expand the breadth and capacity of their network coverage and to extend the range of 3G services supported;
- ◆ as discussed in response to Paragraphs 3.19 and 4.3, the inevitable consolidation of unsuccessful 2G operators with new 3G licensees further negates any presumption that valid "new entrants" require a greater spectral allocation with a 3G licence, than an existing 2G applicant requires for a 3G licence. A process that will undoubtedly commence with "new entrants" is the seeking to utilise the legacy spectrum and services of existing 2G operators to initially offer voice services to consumers. As at the time of the commercial launch of 3G, for example, it is expected that voice over IP (VoIP) technology will not be sufficiently robust and thus either construction of, or access to, legacy circuit-switched technology will be required initially by "new entrant" 3G licensees if they are to offer a complete service suite;
- ◆ as earlier introduced in response to Paragraphs 3.19 and 4.3, CWHKTCSL believes: i) that it will be very difficult in practice for the TA to identify a true "new entrant" and manage that special distinction throughout the life of a 3G licence; ii) that it would be a significant misconception to assume that a "new entrant" can or will bring a fundamentally better value proposition to Hong Kong and local consumers than existing 2G operators; and, iii) that there is no valid basis for reserving "new entrants" spectrum advantageously over existing 2G operators;
- ◆ while CWHKTCSL firmly believes that the TA should award six new 3G licences of equal spectral allocation of 2 x 10 MHz paired and 5 MHz unpaired spectrum, if the TA should elect on allocating a valid "new entrant" an additional 5 MHz of paired spectrum, CWHKTCSL would still favour the TA's Option 2. CWHKTCSL, however, would like to emphasise i) the decreased number of total new 3G licences that is then available and hence the ultimate decreased level of local mobile competition, and ii) that the "new entrant" should hand back to the TA the additional 5 MHz awarded on evidence of commercial relationship, strategic alignment, or merger / acquisition with an existing 2G operator; and,
- ◆ CWHKTCSL believes that ultimately the market could dictate that further consolidation may be required and is of the view that, at that time, the TA should review with the industry an appropriate mechanism for any reallocation of spectrum.

Paragraph 4.14: *The TA invites comments from industry on his intention to select 3G licensees by evaluation based on merit.*

CWHKTCSL firmly believes that maximum benefit to all stakeholders – i.e., including the local economy; Hong Kong consumers; services, applications and content providers; and mobile operators – will be attained through 3G licence applicants being evaluated solely on the comparative merits of their applications, which would include such key criteria as the economic flow-on of the proposition, past experience and contributions to Hong Kong, and local operational and service capabilities, leading towards the objective of greatest long-term benefit to Hong Kong, rather than through an auction process focussed on short term financial gain.

Furthermore, CWHKTCSL believes first that the likely huge cost of an auction process to successful bidders will be passed on to the local economy and consumers, which will be reflected in more expensive 3G mobile operations, and will result in the comparatively slower take up of 3G technology and services in Hong Kong. Second, targeting potential 3G licensees through an auction appears to be extremely unfair to a single sector of the telecommunications industry, and at odds with local precedents set with PMRS and PCS licensing, and more recently with Wireless FTNS spectrum licensing.

Additionally:

- ◆ CWHKTCSL strongly believes that a high priced telecommunications infrastructure licence auction undoubtedly leads to significant additional up-front costs for the winning bidders, which must be recouped through future operations, and which is expected to detrimentally impact Hong Kong consumers, independent developers and suppliers of mobile related services, applications and content, as well as the Hong Kong economy overall – not to mention the business viability of new 3G operators themselves. As examples, CWHKTCSL expects that the following would likely result from the choice of an auction process: comparatively higher costs for Hong Kong consumers and a resultant slower rate of technology adoption and service utilisation; increased investor uncertainty in funding local mobile infrastructure, barriers to services and applications development and a higher cost of capital for the industry; technology choices driven by the need to ultimately recover the expected substantial up front costs, instead of long term technology and services planning and development; and, where possible, minimised and delayed network infrastructure investment and roll-out, and only selective investment in further mobile technology advances and innovation;
- ◆ auctions do not favour those with the deepest pockets. Existing 2G operators are bidding for the survival of their existing 2G business, as well as their future, evolutionary 3G opportunity. Even those bidders with the deepest pockets will leave the bidding when the return on investment is not commensurate with the level of risk and, after all, even new bidders with deep pockets do not need to take into account the impact of losing a 3G licence on the viability of their existing 2G mobile business operations, as was the case for the UK's four existing 2G operators;
- ◆ an auction process does not result in the most economically efficient communications infrastructure nor lead to innovative services, but simply serves to increase the already significant financial burden placed on 2G mobile operators in evolving to 3G mobile operators. In the UK case, bids went extremely high and 3G licences were ultimately won (or more accurately, bought) by all four existing 2G operators. Their substantial investments were clearly undertaken to protect the viability of their existing 2G businesses and nearer-term shareholder value. So, in a sense, existing UK 2G mobile

operators were without an option to remain in the bidding until they all had gained 3G licences. The ultimate UK bid price was driven by the point of exit of the penultimate “new entrant” in the bidding process, thus then ensuring all existing 2G operators gained their required 3G licences. Note that the UK “new entrant” paid “only” GBP4.3 billion for 2 x 15 MHz paired and 5 MHz unpaired spectrum, compared with the highest bidding existing 2G operator who paid GBP5.9 billion for the same amount of spectrum. The recent comments of Jean-Michael Hubert, France’s telecoms regulator, supports this view (Exhibit 3)⁴. Of further support to this view as to the significant risk, without option, placed upon existing 2G operators, is the downgrading of “winning” bidders in the 3G auction by ratings agencies, while one financial analyst reportedly has said “we believe that next generation services are very much an integral part of existing and future mobile franchises and that trying to put an exact figure on the stand-alone value is difficult and may be dangerous”⁵;

Exhibit 3: France's ART Chairman Jean-Michel Hubert, the telecoms regulator, was recently quoted as saying: “our analysis of the conditions and consequences of the British auctions does not lead us to modify the original reasons which led us to recommend a comparative selection process to the government in the first place.” Hubert added he thought the cost of auctions could prove fatal to GSM operators obliged to participate in order to ensure their survival. “The third generation market is a natural progression from the second generation (GSM) market” and “Everyone saw that in Britain, the four GSM operators were under a lot of pressure to win the auctions. That shows that we must give today's GSM players a real chance to compete in the selection process” he said. Huber noted that France’s three mobile operators, had invested enormous amounts in GSM technology and would only break even a couple of years from now.

- ◆ as an example, the UMTS Forum analysis⁶ found a marked deterioration in profitability and a lengthening of the payback period for a 3G operator as licence fees approach USD \$50 per capita, yet the recent UK auctions are estimated to have resulted in per capita bid costs of over an order of magnitude greater. Thus, an auction process, with a view to economic survival of the fittest, might in fact lead to a comparatively poorer grade of service in Hong Kong, before likely industry consolidation leads to a more viable equilibrium in operators to service debts;
- ◆ the TA elected not to use auctions for PMRS and PCS licences, nor as recently as the last year’s Wireless FTNS licensing. The TA electing comparative merit in these past competitive licensing processes could not reasonably be viewed as having taken a poor option, given that to date communications in Hong Kong has undoubtedly been well served by its mobile technology infrastructure, particularly when considered from a global perspective. The TA should carefully consider the broader communications industry and economic ramifications of, for example, the potential for any retrospective challenge to the recent LMDS licensing, or in potentially setting precedence for the auction of other licences in other spectral bands, e.g. digital television and radio broadcasting spectrum;
- ◆ the TA should be mindful that selection of an auction process could significantly

⁴ Reuters, May 11, 2000.

⁵ Financial Times, April 14, 2000.

⁶ UMTS Forum, “Impact of Licence Cost Levels on the UMTS Business case”, August 10, 1998.

dampen the capabilities of local Hong Kong-based mobile operators to expand regionally, a prime future consideration as globalisation of the telecoms sector continues apace, as well as potentially limiting flow-on economic benefits to Hong Kong. To date, within this region, Japan, Thailand, and likely Korea, Singapore and Malaysia, will not adopt auctions as the primary means of awarding new 3G licences. Thus, mobile operators from those countries will be in a financially more attractive situation for regional expansion and partnership than a Hong Kong operator burdened with a local auction debt; and,

- ◆ CWHKTCSL firmly believes the key argument against an auction is the overall middle-longer term cost to Hong Kong developing as an information based society and economy, where mobile and wireless technology have a significant infrastructure role to play. In order for Hong Kong to develop not only as a competitive telecommunications hub, but also be a leading centre in the competitive development and provision of services, applications and content, it is imperative that a cost-effective, robust and reliable next generation mobile infrastructure be the TA's prime objective through the introduction of 3G licences. An auction process may lead to windfall revenues to the Government, but it will not serve to focus on this objective nor promote the longer-term, required, globally and regionally competitive infrastructure. Furthermore, as the costs of any successful auction bid will be passed on to all users, both consumers as well as the expected growing number of local large and small services, application, and content providers, the TA must fully consider the longer-term socio-economic benefits to the future of Hong Kong, against the shorter-term impact of an auction to Government revenues. From CWHKTCSL's perspective, for Hong Kong, an Internet and wireless vision and global position more closely aligned with that of Finland and its businesses and population, would seem more attractive and sustainable than that route chosen by the UK towards achieving a third generation mobile enabled info-society; and,
- ◆ further recent industry comments stating various concerns regarding the less preferred option of an auction process over that of selection based on comparative merit, are provided in Exhibits 4⁷, 5⁸, 6⁹ and 7¹⁰.

Exhibit 4: (the French telecoms and construction group Bouygues was quoted as saying that allocation by auction of 3G licences would be disastrously expensive for operators) "Not entering the bidding would mean sudden demise. Taking part would mean a slow death" Bouygues' Chairman Martin Bouygues said. He reportedly was of the view that operators had no choice but to switch to UMTS technology, which meant operators would not have time to recoup GSM investments, and if into the bargain they were forced to pay exorbitant prices for a licence, certain operators would go under. "My responsibility as a company boss is first to customers and Bouygues staff, who are largely shareholders. What am I to say to them? That we choose between demise or slow death?"

Exhibit 5: (regarding upcoming UK fixed wireless licences) The planned auction has been denounced by the Director General of the UK's Telecommunications Managers Association (TMA), David Harrington, as "crazy". "It is putting a millstone around those operators' necks", he said. "They are proposing to slap an indirect tax on technology. "Ultimately, consumers are going to have to pay for the high cost of 3G

⁷ Reuters, May 9, 2000.

⁸ Total Telecom, April 28, 2000.

⁹ Reuters, May 10, 2000.

¹⁰ Reuters, May 5, 2000.

licences”, said Harrington., and he predicts the same outcome if fixed wireless licences are auctioned. (other industry views were expressed in the same article) “A beauty contest ensures “that people are more focussed on having a good business plan going forward” and “an auction highlights the financial element for the government more than quality of service or the impact on consumers”.

Exhibit 6: *(in a letter to the Netherlands Government) That country’s five mobile operators indicated that they were concerned the auction for third generation mobile phone licences would boost prices so much that they would have to pass them on to their customers. They wrote “The operators fear that because of the auction system prices will be exorbitant. Eventually the costs of the use of the mobile Internet will be very high for the consumer”.*

Exhibit 7: *Belgium’s three mobile operators reportedly said that they should pay less than newcomers for 3G licences, that they prefer an application process that would reward them with lower prices than any newcomer because they have already heavily invested in their networks, and that a new entrant would have an unfair advantage because it would not be burdened by the cost of a previous licence and network.*

Paragraph 5.7: *The 3G mobile systems have the capability of providing broadband multimedia services. It is expected that the scope of services that will be provided by 3G platforms will be substantially more extensive than that of the 2G platform. As the operation and the scope of the 3G services are significantly different, the TA would like to seek the views of the industry on whether the 3G services should be regulated under a similar regulatory framework as that for the mobile telephone services at present. In particular, the TA invites views on whether any safeguarding measures should be introduced or strengthened to preserve effective competition in the 3G market.*

First, CWHKTCSL is of the firm belief that there is no requirement to create a new regulatory framework for 3G technology, and that simple extension of the current PMRS / PCS regime to serve 3G licensees can continue to fully satisfy the TA’s objectives, and provide world-class mobile communications to Hong Kong.

Second, CWHKTCSL, as it moves forward with a committed intention to achieve a 3G licence and invest significantly in the roll-out of 3G infrastructure in Hong Kong, would expect no change in the existing regime, where regulatory symmetry applies between equally licensed infrastructure providers, such as between PMRS / PCS operators, while, at the same time, interaction with resellers and higher layer service, application and content providers, will continue to occur on a commercial basis. CWHKTCSL believes that the existing competitive environment has sufficient market forces in-built and that this healthy market situation will be best served through the TA making available a maximum number of 3G licences and CWHKTCSL’s ongoing belief in a lack of dominance being achieved in this market by any one 3G licensee.

Additionally:

- ◆ the existing PMRS / PCS regulatory framework can be shown to have been sufficient for regulating the significantly competitive existing 2G environment and can serve equally well for a 3G environment. As the intention should be to promote higher layer services, applications and content competition, 3G licensees should be allowed to move forward with their plan for rolling out what is ostensibly a high risk venture and making that 3G platform available to potential users, without any greater levels of regulation than exist in

Hong Kong's oft lauded mobile sector today;

- ◆ there is no need for any additional regulation for the development of services and applications, particularly due to the significantly large estimates of the potential players who will be competing to provide services, applications and content at these higher layers. The Internet has prospered in an environment of freedom of innovation and minimal regulatory intervention – a similar approach should be adopted for the wireless Internet, so as to foster rapid higher layer service, applications and content development and innovation. This view is in line with that of William E. Kennard, Chairman of the Federal Communications Commission (FCC) in the US¹¹ (see Exhibit 8).

Exhibit 8: (From “Consumer Choice Through Competition”, given by William E. Kennard, Chairman FCC) “we should resist the urge to regulate because I think that it is likely that the market will sort this out. You need regulation when market-based incentives are not aligned with the needs of consumers. But I believe that there are market incentives that will drive openness in the broadband world. One is the prospect of alternate pipes ... the second is the culture of the Internet that has grown up in this country. Consumers love the openness of the network ... And broadband providers will have to learn to accommodate it and deliver it. Otherwise they are not going to be competitive in a broadband world, particularly one where there are multiple broadband pipes.”

Paragraph 5.12: *The TA would like to seek views and comments from the industry on the necessity to maintain a regulatory distinction between the fixed services and the mobile services and whether there is a need to maintain separate forms of licences for the FTNS and mobile telephone services.*

CWHKTCSL believes that there is no need at this time to remove the regulatory distinction between fixed and mobile services, and would recommend that the TA deal with this question in a separate industry consultation.

Paragraph 5.13: *The TA invites views from the industry before deciding on whether such an obligation should be imposed on the 2G network operators if they are successful in obtaining 3G licences, and if so, whether such an obligation should be a short-term one and the applicable charging principles.*

CWHKTCSL supports the principle of a regulatory framework which allows domestic roaming but firmly believes that any such roaming arrangements should be based solely on commercial agreements reached between the licensed network operators themselves.

Additionally:

- ◆ operators should be free to negotiate roaming agreements according to their own business, technological and market requirements and circumstances;
- ◆ there is expected to continue to be, as licensees move to implement and make available 3G technology and services, a significant level of competition and no dominant operator within the local mobile industry, there will remain no market driven requirement for the

¹¹ At the National Association of Telecommunications Officers and Advisors 19th Annual Conference, Atlanta, September 17, 1999.

TA to impose mandatory roaming; and,

- ◆ furthermore, the TA's public consultation on 2G roaming conducted after the commencement of services by new PCS operators, identified practical considerations which, with the full support of the then-new PCS operators, led to a conclusion that domestic roaming was neither a requirement nor viable solution.

Paragraph 5.14: *The TA invites views from the industry on whether such a roaming arrangement from 2G networks to 3G networks should be implemented. The TA would also like to seek views on the technical and commercial implications of such a roaming arrangement and whether there are technical and operational difficulties in roaming from 2G to 3G networks.*

As in response to Paragraph 5.13, CWHKTCSL supports the principle of a regulatory framework which allows domestic roaming but firmly believes that any such roaming arrangements should be based solely on commercial agreements reached between the operators themselves.

Additionally:

- ◆ all comments, set out in CWHKTCSL's response to Paragraph 5.13 should also be read as reflecting CWHKTCSL views with regard to this Paragraph 5.14.

Paragraph 5.18: *The TA invites views and comments from the industry on the concept of separating service provision from network operation and whether it should be implemented in the 3G mobile services.*

CWHKTCSL holds strongly to the view that network operations should not be separated from service provision.

Additionally,

- ◆ CWHKTCSL believes that the TA should carefully take into consideration that 3G technology and its associated services are at a relatively very early stage of their development cycle. As well, the TA should be mindful to balance the interests of the 3G technology investors, as 3G business models, being in part based on the convergence of mobile and Internet technologies, are today fraught with many relatively unproven assumptions and expectations regarding technological developments, future service innovation, and consumer behaviour. Much of the justification for the significant levels of 3G infrastructure investments rests on the ability of operators to generate sufficient revenues more broadly across the value chain, and it is generally accepted that simple mobile access and carriage will not provide a viable business model;
- ◆ furthermore, with 3G technology still relatively immature, key issues such as traffic management, quality of service, interoperability and security are still being defined with regards to method of implementation and scope of operation. Thus, taking into consideration the significant number of unknowns regarding the nature and underlying architecture of 3G mobile technology, there is a significant risk of degraded infrastructure and service development from seeking to regulate 3G licensees to a greater extent than existing 2G licensees, i.e., based on any premature, potentially ill advised

economic and/or consumer benefits;

- ◆ there is no current requirement to conceptualise separating service provision from network operation, given that the likely success or failure of 3G licensees will be driven by their ability to deliver high speed, feature-rich services, applications and content. There is no rational reason as to why 3G licensees would refuse then to use their 3G infrastructure to deliver other services, applications and content providers at competitive prices, especially in the context of the existence of multiple competing 3G licensees, as well as, to differing degrees, numerous other competing broadband technologies such as wireline and wireless FTNS, cable, satellite and to a certain extent 2G+; and,
- ◆ the view of CWHKTCSL is consistent with international regulatory developments, as evidenced by the view of the FCC Chairman (see response to Paragraph 5.7), where there is much consensus to the view that emerging technologies should not be driven by regulation but by market forces and consumer demand, particularly in the early stages of development. The commonly held international view is that technology implementations or business models that restrict consumers or service provision in terms of access in a competitive market, will be significantly at risk in the acquisition and retention of customers. This view also aligns with CWHKTCSL's recommendations to the TA for six new 3G licences, i.e. to maintain an active competitive environment, and a comparative merit basis for selection, i.e. to minimise any additional unnecessary cost overheads towards the timely provision of robust and reliable 3G technology.

Paragraph 5.19: *The TA intends to set out MNP as a mandatory requirement in the licensing conditions of the forthcoming 3G licences.*

CWHKTCSL supports the TA's view in preserving mobile number portability between networks, i.e. 2G-to-2G, 2G-to-3G and 3G-to-3G, for both leading digit "9" and "6" number blocks.

[end of comments]