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LEGISLATIVE COUNCIL BRIEF

LICENSING FRAMEWORK FOR THIRD GENERATION MOBILE SERVICES

INTRODUCTION

At the meeting of the Executive Council on 13 February 2001, the Council ADVISED **and the Chief Executive** ORDERED **that third generation mobile services (3G)** licences should be allocated according to :

(a) a hybrid method of pre-qualification and spectrum auctioning (paragraph 6); and

(b) spectrum auctioning based on bidding of royalty percentages by bidders. For a specific royalty percentage, bidders will need to make a corresponding guaranteed, minimum royalty payment to be supported by a rolling guarantee (paragraphs 11-14).

2. Members of the Legislative Council are also invited to note the views taken on a number of regulatory issues on the regulatory framework set by the Telecommunications Authority (TA).

BACKGROUND AND ARGUMENT

General Background

3. 3G services is the next generation of wireless communications services. With a mobile penetration rate of 76% (as at November 2000) and a competitive market with six operators operating 11 networks on practically all standards, Hong Kong is seen as a leader in

mobile communications in the region. To enable Hong Kong to continue its leading position, and to become a telecommunications, internet and broadcasting hub in the region, we must ensure that the 3G services licences are awarded in a manner which meets our policy objectives.

4. Our policy objectives in the 3G licensing exercise are to promote the development of the telecommunications industry in Hong Kong, to protect the interests of the consumers and to maximize benefits to the economy as a whole. Under these objectives, the TA conducted two rounds of consultations in March and October 2000 respectively, and an industry workshop on the open network requirement in January 2001. Responses are generally supportive of the overall policy for the licensing framework proposed.

Current Market Conditions

5. It is vital that the current global market conditions, as well as characteristics of Hong Kong's own mobile services market, are fully taken into account in devising any proposed licensing framework for 3G services. The high prices in the initial European 3G services licence auctions have caused credit downgrades for successful telecommunications companies. The recent downturn in technology-based businesses in general and telecommunications in particular have seriously reduced the appetite for debt and equity for 3G investment. The market has also recently become more sceptical about the business opportunities that will be brought about by 3G services. The 3G licensing exercise in Hong Kong will therefore take place in an adverse market environment. The situation in Hong Kong is compounded by our extremely competitive mobile market conditions with six incumbent operators, which is not common in other advanced economies. Because of intense price competition in recent years, some operators may face serious constraints in raising capital. If our policy objectives in paragraph 4 are to be met, we need to give due consideration to a licensing framework that encourages entry to the 3G services market by keeping the financial burden of 3G licensees at a manageable level.

PROPOSALS

<u>Hybrid Selection Method To Issue Four Licences</u>

6. We propose that a hybrid method of pre-qualification and spectrum auctioning be adopted to select successful applicants for 3G services licences. Because of limited spectrum, we propose that four

licences should be issued. This will provide sufficient spectrum for each operator to provide a full range of 3G services and, at the same time, ensure competition in the market. The pre-qualification process is intended to be relatively light, but will involve setting certain minimum criteria on investment, network rollout, financial capability, etc. This will enable us to ensure the quality of the 3G services networks as all qualified applicants should be able to finance, construct and operate a 3G services network. The spectrum auctioning process is a fair and efficient method to allocate spectrum to the applicants with the best business case. We consider that the proposed hybrid method will best meet our policy objectives.

Payment Method

7. The method by which bidders pay for the 3G services licences has a direct bearing on the level of interest in the 3G services auction, and potentially on consumer pricing. It must be "pro-entry", as we have mentioned in paragraph 5 above, and must not undermine the interest of consumers in using 3G services.

8. Under the overall policy objectives and the said considerations, we have assessed a number of options for the payment method. **Up-front cash payment**, as used in the United Kingdom and Germany auctions, has the obvious advantages that it is simple, quick and easy to administer, and that proceeds from the auction, in economic theory, act as sunk costs which are not passed on to consumers. Nevertheless, they place a heavy upfront financial burden on licensees and may stifle network roll-out and deter entry. We therefore do not recommend this option.

9. **Deferred cash payment** is effectively pre-determined cash payments spread over the 15-year life of the 3G licences, either on a straight line or increasing basis. Like the up-front payment, it is simple to administer and, in economic theory, such cost should not be passed on to consumers. The financial burden on licensees is lessened, but may still be significant given the current market conditions. Moreover, the government will carry credit risk on bidders unless the payments are guaranteed by a third party. Long term guarantees are however unlikely to be available to many potential bidders, so a rolling guarantee, say of 5

years, might be used as a compromise.

10. Another option is to collect **royalties**. Royalties will best promote entry as they need not be paid until 3G services revenues are actually achieved. It will also allow the government to share in the upside of the future 3G services market, the potential of which is still unknown. Nevertheless, royalties may be passed, in whole or in part, on to consumers. Bidders may also make irrationally high bids for a royalty on the assumption that its cost can be passed on to consumers, thus further undermining the interests of future 3G services users.

11. Since deferred cash payment and royalties have their own disadvantages and advantages, we propose to combine their advantages in an arrangement, whereby the **royalty payment will be subject to a guaranteed, minimum payment**. Bidders would be asked to bid for a level of annual royalty by way of a percentage of turnover from their 3G services network operations. Successful bidders who win the 3G licences at a certain royalty percentage bid would do the following :

(a) for the first five years of the licence: They will pay a guaranteed, minimum royalty payment fixed by the Government as explained in paragraph 14(a) below. They will pay the same fixed amounts for this period regardless of their actual turnover. This is because it will be difficult in these initial years of the 3G licences to distinguish between second generation mobile services (2G) and 3G network revenues, if the 3G licensee is also an existing 2G operator;

(b) from year six to the end of the licence period: They will pay royalties to the Government according to the royalty percentage determined by the auction. The same royalty percentage will apply to all licensees as explained in paragraph 13 below. The actual royalty payment will differ from licensee to licensee as their 3G revenue turnover will be different. However, the royalty paid by each licensee should not be less than the guaranteed, minimum royalty payment fixed by the Government as explained in paragraph 14(a) below. In other words, the Government collects the royalty based on actual turnover, or the guaranteed, minimum royalty payment, whichever is the higher; and

(c) throughout the whole licence period: They will need to provide a 5-year rolling guarantee for each of their guaranteed, minimum royalty payment.

12. The proposed method will capture the advantages of deferred cash payment and royalty and best meet our policy objectives. It is "pro-entry" by lowering the financial burden of successful 3G licensees, and allows the Government to share the upside of the future 3G services market. It is also an efficient method of allocating licences to those bidders with the best business case, although the payment will be in the form of royalty and therefore will depend on the actual performance of each licensee. The guaranteed, minimum royalty payment requirement will minimise credit risks for the Government, and reduce the costs that may be passed on to consumers.

13. To further mitigate any distortive effects that royalties may create in the 3G market, we need to ensure that **all successful bidders are subject to the same royalty percentage**, which will, depending on the detailed auction design, be at or near the highest price willing to be paid by the weakest successful licensee. An auction design to achieve this effect as well as to fit in with existing circumstances in the Hong Kong market is being worked out with our 3G consultant.

14. In formulating the details of the auction, we will take into account the following points :

(a) the auction must be designed to deter stronger bidders from overbidding in the hope that it can pass royalties on to consumers. At the same time, weak players should be deterred to make over-aggressive bids on royalty percentages. To achieve this, we will fix different guaranteed, minimum payments for different royalty percentages. For a given royalty percentage, the guaranteed, minimum royalty payment is flat for the first five years, and is rising from year six onwards. We may set the level of the guaranteed minimum payment at a level which increases at a higher rate than the royalty percentage increase. For example,

royalty percentage	the guaranteed, minimum royalty payment for year 1[Note]
R_1%	$1x
R_2%	$2x
R_3%	$3x
.	.
.	.
.	.
R_{10}%	$12x
R_{11}%	$16x
R_{12}%	$20x

The result would be that, at low royalty bids, the guaranteed, minimum royalty payment is likely to be significantly less than the royalty that may be collected based on the licensees' turnover. This would enhance entry to the auction. But for higher royalty bids the minimum payment might even exceed royalties that may be collected based on the licensees' turnover. The whole guaranteed, minimum royalty payment, in theory, will act as a sunk cost that should not be passed on to consumers. We are now working out a bidding schedule with our 3G consultant. The bidding schedule will set out the linkage between the royalty and the minimum payment, based on projections of industry revenues from 3G; and

(b) since the four successful 3G licence applicants may have different preferences (due to technical reasons such as inter-band interference) for the four frequency bands to be allocated, we will design an efficient method to allocate the frequency bands, such as by a final auction stage requiring a lump-sum cash bid. This will not affect the result of the auction of royalty percentages which will have identified the winners. The final round of auction for allocating

[Note] The table is for illustration purpose only. There will be defined minimum royalty payments for subsequent years for the licence period.

frequency bands is however not expected to generate material additional proceeds.

15. Two diagrams to illustrate the royalty payment proposal is attached at the Annex.

Regulatory Framework

16. The TA has consulted, in the two rounds of consultation, followed by an industry workshop on open network requirement in January 2001, on a number of regulatory issues. Members are invited to note the following regulatory issues that are in line with our existing telecommunications policy, but have been further developed for inclusion in the detailed framework for the 3G mobile services.

Open Network Requirement

17. We propose to adopt an open network requirement. 3G network operators will be required to make available a defined percentage of network capacity for interconnection to, or access by, non-affiliated Mobile Virtual Network Operators (MVNOs) and/or content providers by commercial negotiations, failing which the TA may determine under section 36A of the Telecommunications Ordinance (Cap.106) the terms and conditions of such an interconnection. This will not only create a competitive and vibrant content and e-commerce market over the 3G platform, but also cater for Hong Kong's situation that there are six incumbent 2G operators but four 3G licences. 2G operators who fail to obtain a 3G services licence may become a MVNO i.e., an operator who does not have his own network but has purchased capacity from the four 3G network operators to provide 3G services. This arrangement protects the viability of their mobile phone business and also maintains effective competition in the mobile market. While the principle of an open network is largely accepted, some existing 2G operators have expressed their concerns that the regulatory regime should not be overly burdensome and complex, and that it should not be slanted to favour MVNOs.

18. The key to the success of the open network requirement lies in striking the right balance between promoting competition and preserving sufficient investment incentives for 3G licensees to build and roll out their networks. Taking into account views from the industry and the general public, we intend to adopt the following framework for the implementation of the open network requirement:

(a) Successful 3G services bidders must open up at least 30% of their 3G network capacity for use by non-affiliated companies to operate as MVNOs and/or content providers. More capacity could be opened up if they wish to do so by commercial arrangement. However, to preserve the commercial incentive of 3G network operators to develop their networks, the TA would not intervene for a MVNO or content provider if that operator/provider already has access to capacity equivalent to 30% capacity of a network operator.

(b) The wholesale prices for MVNOs' access should be negotiated commercially with the 3G licensees. However, if commercial negotiation fails, the TA has the reserve power to make a determination based on fair interconnection principles. A sufficient return on cost of capital will be allowed, reflecting the higher risk of 3G services investment, when TA makes the determination to ensure that the investment incentives are preserved.

(c) Content providers will buy capacity at tariffs set by the 3G licensee, reflecting all relevant costs and the above mentioned cost of capital. The TA would only intervene on unfair, discriminatory treatment or anti-competitive grounds.

(d) Measurement by the TA of the capacity sold to non-affiliated companies will not be necessary unless the 3G licensees refuse to supply the requested capacity. The licensee should then provide evidence to the satisfaction of the TA that 30% of their capacity has already been opened up. The TA is prepared to accept alternative methods of measurement proposed by operators including the simplest documentary proof of the total capacity sold, e.g. in the contracts or agreements with non-affiliated companies.

We believe the above proposed arrangements should meet the interests of the operators while achieving our policy objective.

Availability of additional 3G services spectrum

19. More 3G spectrum has been recently allocated by the International Telecommunication Union in the May 2000 World Radiocommunications Conference. These are (i) the 800/900 MHz and the 1800/1900 MHz bands, and (ii) the 2.5 GHz band.

20. The 800/900 MHz and 1800/1900 MHz are currently being used by existing 2G operators. Under our technology-neutral regime, the existing operators are free to use any technology, regardless of whether it is 2G or 3G, in the spectrum under their licences. In line with this regime, existing 2G operators will be allowed to re-farm the spectrum for 3G services, if they so wish, under the current terms and conditions of their existing licences for the remaining period of validity. The TA will conduct an industry consultation on future arrangements for renewal of 2G licences before deciding on a way forward.

21. The 2.5 GHz band is currently allocated to a number of users in Hong Kong for other telecommunications use. The TA is undertaking re-allocation of the spectrum and we expect that such spectrum will only be available for 3G services in 2005, at the earliest. Separate consultation on the terms and conditions for use of the spectrum for 3G services may be conducted in due course.

Roaming between 2G and 3G networks

22. To ensure a level playing field for both new entrants and incumbent operators in the 3G services market, we propose to require successful bidders who are incumbent 2G operators to allow customers of the new successful 3G bidders without a 2G network to roam onto their 2G networks at locations which have not yet been covered by the latters' 3G networks during the initial years. This mandatory requirement is necessary because it takes time for new entrants to roll out a network with

coverage comparable with that of a mature 2G network developed over many years. These new entrants are expected to have rolled out their own network and the mandatory requirement with time and this requirement will end on a "sunset" date, intended to be five years after issue of licences.

Way Forward

23. We will finalise the details of the 3G licensing framework. The auction method will need to be submitted to the Legislative Council in the form of regulation to be made by Secretary for Information Technology and Broadcasting in establishing the method of determining the level of spectrum utilization fee for 3G. This is in accordance with the Telecommunications Ordinance. To ensure that consumers in Hong Kong can enjoy 3G services in a timetable similar to that of other advanced economies, we will invite applications immediately after the enactment of the Telecommunications (Amendment) Bill 2001 which gives the Government the legislative backing to issue the 3G licences through a hybrid selection method involving spectrum auctioning. Our plan is to issue the licences in mid-2001.

BASIC LAW IMPLICATIONS

24. The Department of Justice advises that the proposals do not conflict with those provisions of the Basic Law carrying no human rights implications.

HUMAN RIGHTS IMPLICATIONS

25. The Department of Justice advises that the proposals are consistent with the human rights provisions of the Basic Law.

FINANCIAL AND STAFFING IMPLICATIONS

26. The spectrum utilization fees in the form of royalty payment as proposed above to be generated in the 3G spectrum auction will be set by the market. In view of the changing market sentiment on investment in 3G services, it is difficult to estimate the amount of spectrum utilization fees arising from the spectrum auction. The Finance

Committee has already approved the creation of a commitment of $55 million for engaging consultancy services for design and implementation of the forthcoming 3G licensing exercise. The Office of the Telecommunications Authority will undertake this exercise within its existing staffing resources.

ECONOMIC IMPLICATIONS

27. The timely issue of 3G licences will allow Hong Kong to enjoy 3G services at the same time as other advanced economies. The open network requirement will in particular benefit content and service providers and stimulate growth in such activities. Consumers and business users will also stand to benefit from quality and competitive 3G services.

PUBLIC CONSULTATION

28. The TA has conducted two rounds of consultation in March and October 2000 on the licensing and regulatory framework of 3G. It has also conducted an industry workshop on the open network requirement in January 2001.

PUBLICITY

29. A press conference will be held in the afternoon of 13 February to announce the policy decision on the licensing and regulatory framework. A press release will be issued to tie-in with the overall publicity plan. A spokesman will be made available to answer media enquiry.

ENQUIRIES

30. For any enquiries relating to this Brief, please contact –

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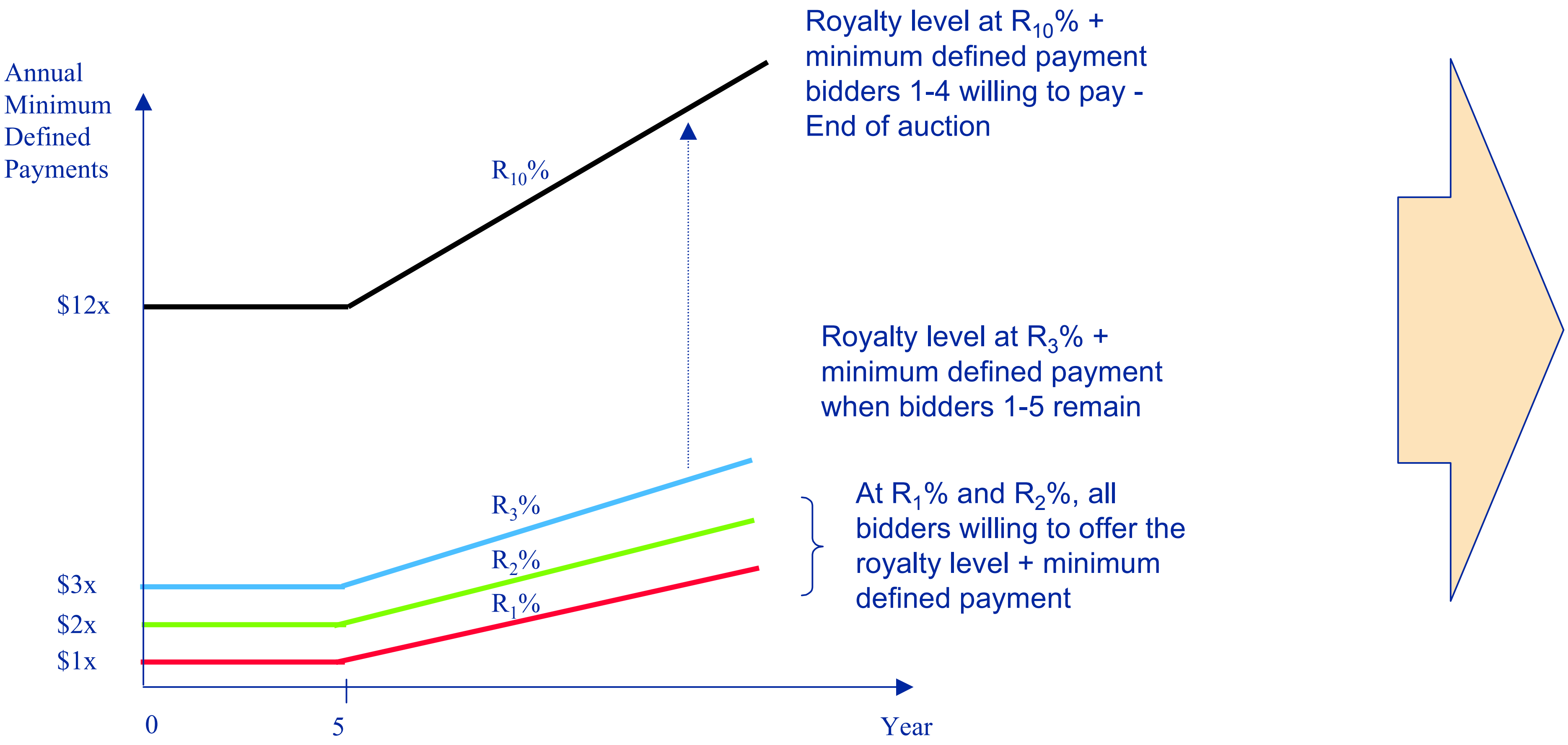
Information Technology and Broadcasting Bureau
13 February, 2001

Diagrams to illustrate the royalty payment proposal

Minimum defined payments spread over time



Diagrams to illustrate the royalty payment proposal

Actual payments over time