

SmarTone's response to OFTA's second  
consultation paper  
on 3G licensing



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## **Table of contents**

0	Executive summary .....	1
0.1	Introduction .....	1
0.2	Operator selection arrangements .....	2
0.2.1	Selection by merits versus auction.....	2
0.2.2	Auction rules.....	2
0.2.3	Open network provision.....	3
0.2.4	MVNOs.....	4
0.3	Spectrum allocation for 3G.....	5
0.4	Other regulatory issues .....	5
0.5	Conclusions.....	5
1	Introduction .....	6
1.1	Overview.....	6
1.2	The regulation of telecommunications in Hong Kong.....	6
1.3	Outcome of OFTA's first consultation round.....	7
1.4	Structure of SmarTone's response.....	8
2	Operator selection arrangements .....	9
2.1	Selection by merits versus the auction process.....	9
2.2	Auction rules.....	10
2.2.1	The pre-qualification process.....	10

2.2.2	Licence payment method.....	11
2.2.3	The use of the financial guarantee in a cash auction .....	12
2.2.4	Additional issues.....	13
2.3	Open network provision .....	14
2.3.1	Mandated provision of capacity to third parties.....	14
2.3.2	Current developments in the 2G market.....	15
2.3.3	Implementation of capacity measurement and accounting processes to support mandated open network provision .....	16
2.3.4	Setting aside capacity for third parties .....	17
2.4	MVNOs .....	18
2.4.1	Defining an MVNO .....	18
2.4.2	Licensing MVNOs.....	18
2.4.3	Relationship between MVNOs and network operators.....	19
3	Spectrum allocations for 3G .....	20
3.1	Awarded spectrum.....	20
3.2	Use of guard bands.....	20
4	Other regulatory issues .....	21
4.1	Technology selection.....	21
4.2	Additional 3G spectrum .....	21
4.3	3G services in 2G spectrum.....	21
4.4	Mandatory 3G number portability .....	22
4.5	3G numbering requirement .....	22
4.6	Roaming from 3G to 2G networks .....	22
4.7	Licensing framework.....	23
5	References.....	24

## **0 Executive summary**

### **0.1 Introduction**

SmarTone Mobile Communications Limited (SmarTone) is pleased to present its response to OFTA's second consultation paper on 3G licensing [1]. SmarTone looks forward to working together with OFTA and the wireless communications industry as a whole to develop a framework which will ensure the contribution of the 3G industry to Hong Kong's future prosperity.

In setting out its response, SmarTone takes full account of the principle policy objectives underlying OFTA's work [2], namely:

- “that the widest range of quality telecommunications services should be available to the community at reasonable cost;
- that telecommunications services should be provided in the most economically efficient manner possible;
- that Hong Kong should serve as the pre-eminent communications hub for the region now and into the next century.”

In addition, SmarTone has also taken note of the principal policy considerations underlying OFTA's proposed framework for 3G [3] namely:

- “to promote the development of the telecommunications and related IT industries;
- to protect consumers' interests;
- to maximize benefits to the economy as a whole.”

SmarTone fully supports these cornerstones of regulatory policy in Hong Kong, and believes its response to this consultation process will help OFTA to facilitate a thriving 3G industry in Hong Kong.

SmarTone will be pleased to have a further opportunity to discuss its submission with OFTA and to provide clarification of any of the issues raised in SmarTone's submission.

## **0.2 Operator selection arrangements**

### *0.2.1 Selection by merits versus auction*

SmarTone continues to believe that a licence award process of 'selection by merits' is most likely to achieve OFTA's objectives. The 'selection by merits' process:

- allows applicants to be compared from a number of different perspectives, thereby enabling OFTA to select those licensees which it believes would meet its objective of bringing "the greatest economic benefit to the community as a whole" [1];
- delivers services at lower cost since operators are not required to service potentially high levels of debt taken on to pay for licence fees. Such a move would align with OFTA's objective of protecting consumer interest and promoting the development of a strong, sustainable industry;
- has successfully been used in Hong Kong to create the most dynamic and competitive mobile environment in the world. As OFTA has noted, the outcome of the European spectrum auctions that have been completed to date has given rise to concerns in both the financial markets and government as to the impact of the auction process on the industry.

The risks of delay and high costs associated with the uncertainty of the auctioning process will work against OFTA's principal policy goals.

### *0.2.2 Auction rules*

Notwithstanding the above, the majority of SmarTone's response to OFTA's consultation paper addresses the proposition that there will be an auction process. Assuming OFTA pursues a hybrid auction process, SmarTone proposes that the pre-qualification stage of this process should judge applicants against very rigorous criteria to determine their suitability to participate in the process. Organisations should be required to meet a set of objective and specific criteria that validate the suitability and credibility of the applicants during the pre-qualification phase. Key criteria in this evaluation should be their technical competence in respect of running a mobile communications business, managerial expertise, and financial standing, which should be sufficient to pay for the licence and develop the business.

At the same time, in view of the considerable potential variation in demand for new (and, as yet, unimagined) 3G applications and services and the cost of the licence, SmarTone believes that a review of an applicant's financial and operational business plan, or the mandating of specific investments, is inappropriate. In addition, each operator's business plan should remain confidential to the bidder.

SmarTone has a number of comments on the type of auction to be used, and requests that OFTA takes these into account whilst designing the detailed auction process.

For cash auctions, SmarTone believes that:

- the high one-off payment required may act as a disincentive to innovative organisations seeking to participate in the 3G licensing process;
- there is a risk that, without financial guarantees, bidders will default on payments, as costs will not be matched to revenues;
- high upfront payments risk diverting money from network investment and slowing roll-out.

For 'royalty' auctions, SmarTone suggests that:

- the administration procedures associated with the collection of the licence fee would be a significant burden on both operators and OFTA. This is against the spirit of OFTA's mission [4] "to provide a regulatory environment conducive to business" and "to be a model [Civil Service] department that performs effectively and efficiently";
- the licence fees will have a direct bearing on consumer prices for 3G services since the royalty fee is a variable cost to network operators;
- a 'tax' on 3G network revenues may disincentivise operators from migrating users on to 3G networks, thus slowing down the development of 3G services. This could hinder the development of Hong Kong's 3G market.

SmarTone suggests that OFTA should consider requesting applicants to provide a guarantee against the upper limit on the amount they are allowed to bid in a cash auction process. The advantages of adopting this are:

- the Government ensures that it receives full payment of all fees due, avoiding the situation that arose in the US C-Block PCS licence auctions in 1996, where bidders defaulted on payments to the Government;
- it acts as a further check on the financial credibility of the bidders, since they will already need to have arranged financing to support their bids.

SmarTone requests that OFTA should hold a further round of consultations with the industry and other interested parties once it has developed a proposed approach.

### *0.2.3 Open network provision*

SmarTone supports the principle of 'open network provision', as it agrees with OFTA that such arrangements will:

- “encourage the development of our telecommunications and information technology industry”;
- benefit “small innovative content and service providers”.

In general, SmarTone does not believe that OFTA should intervene in the commercial arrangements that will exist between 3G network operators and other parties. Market forces will drive the development of relationships between network operators and third parties. Evidence of this can be seen in the partnerships that have already been formed in the 2G environment, including operator/wholesaler/reseller relationships.

OFTA has requested comments on the issue of what percentage of network capacity should be open to non-affiliated service providers. SmarTone recommends that no specific figure or range should be mandated by OFTA because:

- this is in line with SmarTone's views that such arrangements should be driven by the market;
- the overhead imposed on both operators and OFTA to manage the issues of mandated capacity will be considerable. This includes: technical difficulties associated with the definition, measurement and monitoring of the capacity used by third parties, and the effort involved in assessing and policing wholesale transfer pricing, including the significant overhead that accounting separation will impose on operators and OFTA.

SmarTone believes this market-led approach is in line with OFTA's own objectives and will deliver “telecommunications services ... in an economically efficient manner” as it has done in Hong Kong for the last ten years.

#### *0.2.4 MVNOs*

SmarTone suggests that organisations which are unsuccessful in securing a 3G network operator's licence could well seek to become MVNOs. SmarTone would welcome such a move by unsuccessful bidders.

SmarTone proposes that OFTA build upon its initial description of an MVNO to create a formal definition. An MVNO can be defined as an organisation which builds all elements of a 3G network other than the base stations providing the radio access service (as the radio spectrum is the one network element which has a limited supply).

SmarTone suggests that candidate MVNOs should be required to go through a qualification process before they can be treated as MVNOs. The qualification process should be similar to the pre-qualification stage in the 3G licence allocation process. SmarTone proposes that only such an MVNO would have a right to appeal to OFTA to arbitrate if commercial negotiations break down.



### **0.3 Spectrum allocation for 3G**

SmarTone supports OFTA's decision to award licences with 15MHz of paired spectrum and 5MHz of unpaired spectrum. This spectrum is the minimum necessary to deploy a hierarchical cell structure with effective indoor coverage across Hong Kong. In addition, this proposal supports the use of highly asymmetric data services, thus facilitating the efficient use of spectrum.

### **0.4 Other regulatory issues**

Securing frequencies for 3G in addition to the 2.5GHz range may be required for the development of the 3G market in the medium term. SmarTone would support moves by OFTA to begin further industry consultation on the 2.5GHz band after 3G services have first been launched, and sufficient evidence has been gathered to make a judgement on the market demand for services offered over 3G spectrum.

SmarTone does not believe that OFTA should mandate incumbent 2G operators with 3G licences to allow subscribers of new-entrant 3G networks to roam on to their networks. Commercial roaming arrangements should prevail, since the market for provision of 2G roaming will be highly competitive. A 3G new entrant will have up to six organisations to approach to secure a commercial arrangement for 2G roaming.

### **0.5 Conclusions**

SmarTone believes strongly in the potential of 3G services to deliver significant benefits to individuals as well as the Hong Kong economy as a whole. SmarTone continues its aggressive preparations for launching 3G services through the introduction of innovative 2G and 2.5G services to the market.

SmarTone shares OFTA's goal of maximising the benefits to Hong Kong of this exciting new generation of mobile communications services. The proposals SmarTone outlines in this response will in its view help to achieve this objective. SmarTone looks forward to working with OFTA and the whole of the cellular industry to further refine the 3G licensing framework for the overall benefit of the Special Administrative Region of Hong Kong.

## **1 Introduction**

### **1.1 Overview**

SmarTone Mobile Communications Limited (SmarTone) is pleased to submit its response to OFTA's second consultation paper on third generation (3G) entitled *Licensing Framework for Third Generation Mobile Services: Analysis of Comments Received, Preliminary Conclusions and Further Industry Consultation* [1].

SmarTone again welcomes OFTA's decision to further consult the industry on this subject. 3G mobile services have a significant role to play in the future of Hong Kong's economy and it is, therefore, important that the regulatory framework dealing with such services is appropriately structured to encourage the efficient development of the market.

SmarTone will be pleased to participate in further discussions with OFTA to review its response to the consultation paper (as contained in this document) together with any other issues related to the development of the 3G market. SmarTone will be pleased to provide further clarification of any issue raised in this response.

SmarTone is an avid proponent of 3G, having undertaken field trials in conjunction with Ericsson from July 1999. It looks forward to the introduction of 3G services and to working closely with OFTA, commercial partners, other cellular operators and interested parties over the coming months to bring innovative services to business and personal users of mobile products in Hong Kong.

### **1.2 The regulation of telecommunications in Hong Kong**

SmarTone believes that it is important for OFTA to consider the issue of 3G licensing within the overall context of the development and regulation of telecommunications services in Hong Kong. OFTA has stated [2] that "its work is guided mainly by the following policy objectives:

- that the widest range of quality telecommunications services should be available to the community at reasonable cost;

- that telecommunications services should be provided in the most economically efficient manner possible;
- that Hong Kong should serve as the pre-eminent communications hub for the region now and into the next century.”

The ITBB has also indicated that the principal policy considerations underlying OFTA's proposed framework for 3G are [3]:

- “to promote the development of the telecommunications and related IT industry;
- to protect consumers' interests;
- to maximize benefits to the economy as a whole.”

SmarTone wishes to express its full support for OFTA in relation to seeking to develop a framework for 3G which meets all of the above objectives. Within this response, SmarTone will make reference to these objectives when suggesting different means by which OFTA could achieve the above goals.

### **1.3 Outcome of OFTA's first consultation round**

SmarTone is pleased to note that OFTA has incorporated into its latest consultation paper a number of suggestions made in the various responses to its first consultation paper on 3G licensing [5]. In particular, SmarTone notes the inclusion of many of its own suggestions [6], such as, for example:

- the decision to award four 3G licences, with each operator allocated a bandwidth of 2 x 15MHz of paired and 5MHz of unpaired spectrum. This will advance OFTA's objective of enabling 3G services to be provided economically and efficiently;
- OFTA's technology-neutral standpoint, which will advance the principle of the widest range of telecommunications services being made available to the public;
- the introduction of mobile number portability (MNP) for 3G, which will help to protect the needs and economic interests of consumers.

However, SmarTone also noted that some of the suggestions made in many of the responses to the first consultation paper have not been incorporated into the latest consultation paper. These include:

- the preference for 'selection by merits' to be used as the licence-award process. SmarTone believes this would help OFTA to achieve its goal of ensuring services are provided to customers at “reasonable cost”;

- the belief that there is no need to provide for mandatory separation of service provision from network operation. Mandatory separation will place a significant financial and administrative burden on both operators and OFTA. This burden will reduce the economic efficiency of service delivery in the Special Administrative Region.

The degree of investment and innovation that has occurred within Hong Kong's 2G market has been considerable, enabling Hong Kong to claim a number of regional 'firsts', including the first GSM network in Asia, the first operator in the world to employ Enhanced Full Rate (EFR) encoding and the first trials of GPRS in Asia. SmarTone is of the view that the regulatory framework that will be enacted for 3G should be specifically geared towards OFTA's principal objectives, as this would ensure that the same degree of innovation occurs in the 3G market. SmarTone hopes that OFTA will continue to keep an open mind in relation to the issue of 3G licensing, and will take full account of the views expressed by both organisations and individuals during this second round of consultation.

#### **1.4 Structure of SmarTone's response**

The structure of SmarTone's response to OFTA's consultation paper follows the same structure of the consultation paper itself.

- Section 2 discusses SmarTone's views on the arrangements proposed by OFTA for the selection of 3G licensees.
- Section 3 outlines SmarTone's opinions on the spectrum allocations for 3G.
- Section 4 contains SmarTone's response in relation to other regulatory issues.

## **2 Operator selection arrangements**

SmarTone continues to believe that OFTA's declared position in its first consultation paper [5] to "continue with the well-established approach to select 3G operators by evaluation based on merit" is most likely to achieve OFTA's policy objectives. It is therefore disappointed to note that the second consultation paper indicates that OFTA's preference is now for a 'hybrid auction approach' [1].

In this section, SmarTone argues in favour of the use of the 'beauty contest' process. However, in recognition that the auction process has support within Hong Kong, the remainder of SmarTone's response puts forwards a number of proposals that it believes will strengthen an allocation process based on an auction.

### **2.1 Selection by merits versus the auction process**

Proponents of the auction process argue that it will provide a more open and transparent process under which licences are allocated. Auctions have certainly generated significant sums of money for some governments in Europe, but they have failed to fully realise the anticipated level of transparency and positive market response once hoped for. In Europe, four out of the five auction processes completed so far (the Netherlands, Germany, Austria, and Italy) are subject to enquiries which may result in legal action. At the same time, the UK process, perceived to be a great success, has generated significant negative market sentiment. The auction processes that have followed have realised ever decreasing amounts of money for the sponsoring government. Moreover, the financial markets have reacted to these processes by downgrading the credit ratings of successful operators, and diverting cash from investment in services to servicing debt.

SmarTone believes that 'selection by merit' remains the most appropriate method of awarding 3G licences in Hong Kong. This approach:

- allows licensees to be selected on the basis of an extensive set of criteria. This ensures that OFTA can select those proposals which best meet all of its underlying goals for Hong Kong's telecommunications market;
- removes the risk of potentially excessive licence costs increasing the debt burden carried by industry and hence the costs of delivering 3G services. Any increase in the industry's cost base works against OFTA's objective of making

the widest range of services available to the community at reasonable cost, and of protecting consumers' interests;

- removes the risk of high licence fees diverting money from network investment and slowing network roll-out. Delays in network deployment would obstruct OFTA's desire to promote the rapid development of the telecommunications and IT industries and damage the positioning of Hong Kong as the pre-eminent regional hub.

SmarTone believes that 'selection by merits' is the best means by which OFTA will achieve its underlying policy objectives in the area of 3G. SmarTone therefore requests that OFTA re-consider its decision in the light of any new information which has become available since the publication of its paper, the responses to OFTA's second consultation paper and the previous submissions it has received from the industry and other interested parties.

## **2.2 Auction rules**

The remainder of this paper addresses the proposition that an auction process will be used for the award of 3G licences. SmarTone requests that a further consultation round be held to review the details of the auction rules proposed by OFTA following this consultation process, so that all parties are able to contribute to the detailed issues underlying its final design.

### *2.2.1 The pre-qualification process*

SmarTone believes that the primary objective of the pre-qualification round should be to ensure that bidders entering the auction stage are organisations that can credibly install and operate a mobile communications network. This will meet OFTA's desire to ensure that the advent of 'spectrum traders' in an auction process does not unduly delay the roll-out of 3G services [5]. SmarTone proposes that the pre-qualification should consist of specific criteria to which licence applicants are required to demonstrate their compliance. SmarTone believes these criteria should demonstrate that the bidder:

- possesses the necessary technical skills and commercial expertise to roll-out and operate a mobile communications network, and develop the business on that network;
- has sufficient financial backing to pay for the licence and complete the initial roll-out of the network.

SmarTone's opinion is that OFTA should not seek to mandate bidders to commit to a specific business plan within the pre-qualification process for a number of reasons. The financial and operational business plan will be influenced to a large degree by the

eventual cost of the licence. It is not appropriate to ask operators to make binding commitments to a business case before that cost is known. Moreover, it is inappropriate for OFTA to acquire information on the expectations of what an operator may be prepared to bid for a licence at auction before that auction commences. The actual take-up of different 3G services may change the nature of the investments that are most appropriate to ensure the on-going development of the 3G market. Mandating network operators to make a *specific* investment by a given date (e.g. the roll-out of the network in a given area) may be at the cost of investment in the actual innovations that are needed to drive the 3G market forward. This is counter to OFTA's desire to ensure that "the widest range of quality services are available to the community".

### *2.2.2 Licence payment method*

SmarTone has highlighted above international experience that points to drawbacks associated with the use of an auction process to allocate 3G licences. Should OFTA decide to proceed with an auction, SmarTone recommends that a robust and rigorous process be put into place. A major element that will characterise this process is the licence payment method that the bidders will bid against. SmarTone wishes to draw OFTA's attention to a number of issues associated with the two key methods that are being considered in OFTA's paper:

#### Cash auctions

- High up-front payments for a licence may act as a disincentive to participate in the 3G licensing process.
- There is a risk that, without the provision of financial guarantees, bidders will default on payments, as costs will not be matched to revenues.
- High upfront payments risk diverting money from network investment and slowing network roll-out.

#### Royalty payments

- A system of royalty payments based on the revenues accruing from the network will be extremely difficult and costly to administer for both operators and OFTA. Such a scheme will require accounting separation of the service provision and network operation elements of the 3G business. Complex procedures for allocation of costs and revenues will need to be put in place and extensive negotiations over this allocation process will be required. These procedures will be complicated further by the fact that the 3G businesses will themselves need to be separated from the 2G business. Allocating costs that are common to all three businesses will present a challenge to both the industry



and the regulator. OFTA itself has acknowledged the scope of this burden [1]. Accounting separation would appear to be a departure from OFTA's successful 'light touch' approach to regulation of the cellular industry, and run against the spirit of OFTA's mission to "provide a regulatory environment conducive to business investment" [4].

- A royalty payment on revenues will undoubtedly affect consumer pricing since it is a variable cost to the business. The public could view royalties as a form of additional government taxation on their service plan charges. This would potentially be politically unpopular and could result in OFTA being perceived to act against its own publicly declared objective of making services "available to the community at reasonable cost" [2].
- A 'tax' on 3G network revenues may disincentivise operators from migrating users on to 3G networks, thus slowing down the development of 3G services. This discriminatory measure acts against OFTA's objective of ensuring "the widest range of quality telecommunications services" [2] and is likely to obstruct OFTA's desire to "maintain Hong Kong as a pre-eminent telecommunications centre" [4].
- A royalty auction will result in risks being shared by industry and government.

### *2.2.3 The use of the financial guarantee in a cash auction*

OFTA has announced that its proposal will include a requirement for a licence applicant to submit a financial guarantee as part of its pre-qualification. Should OFTA opt for a cash auction, it should consider requesting applicants to provide a guarantee against the upper limit on the amount they are allowed to bid in the auction process. The applicants would be free to choose the amount of the guarantee. In order to protect the security of the auction process, the guarantee would be submitted to OFTA in a sealed package, which would not be opened until completion of the auction process. SmarTone proposes that applicants should be free to submit a fresh guarantee to OFTA during the course of a normal 'recess period' in the auction process should the bidder consider that changed circumstances warrant a new upper limit.

The advantages of adopting such a process are:

- the Government ensures that it receives the agreed payment for fees due, avoiding the situation that arose in the US C-Block PCS licence auctions in 1996, where bidders defaulted on payments to the Government;
- it acts as a further check on the financial credibility of the bidders, since they will already need to have arranged financing to support their bids;
- the guarantee helps to ensure that all bids have an economically rational basis, since major shareholders and financiers will need to be convinced by a business plan before agreeing to provide the guarantee. This reduces the risk identified



by OFTA of the “speculative nature of some investors in Hong Kong pushing prices to a high level” [5].

Two forms of bidding mechanism in a cash auction may be considered: a bid for a single payment for the licence, or a bid for a series of annual payments over the period of the licence. Under the annual payment scheme, the financial guarantee would be established to cover these payments for a fixed five-year period.

SmarTone proposes that the guarantees submitted by all bidders (not just those of the winners) should be opened at the end of the auction in order to ensure that there is no collusion to maximise bid levels. Should an organisation be found to have exceeded its guaranteed limit during the auction, SmarTone suggests that this be treated in the same manner as any other breach of the licence process conditions, with the forfeit of the pre-qualification deposit as outlined in OFTA's consultation paper [1]. SmarTone will provide further details of its financial guarantee proposals at a later stage.

#### *2.2.4 Additional issues*

The auction should be designed to achieve OFTA's objective of ensuring that licences are awarded “in a fair, transparent and objective manner”. SmarTone is therefore keen to encourage the inclusion of rules such as the need for fully visible bidding and round-sum bidding (to prevent any form of signalling).

The “multi-round ascending auction mechanism” proposed by OFTA has historically been recognised as the most suitable and practical auction design demonstrated to date [7]. SmarTone supports the use of this technique in principle, subject to a review of the detailed auction rules.

In relation to whether payment of the licence fee in a lump-sum cash auction is undertaken by means of a single up-front payment or a series of payments, SmarTone suggests that OFTA should present a deferred payment schedule and allow operators to individually make a decision on whether to pay upfront or on a deferred basis. This model has been used in a number of spectrum auctions, including the UK.

SmarTone requests that OFTA consider modifying the terms of the payment, so that instead of full payment being required immediately on completion of the licensing process, it will fall due on commencement of 3G service offerings to the public. This will match the payment to the point at which revenues start to be derived from the use of the radio spectrum, and thus can be viewed as being ‘fairer’ and in line with OFTA's mission statement [4]. The use of a financial guarantee for the payment will ensure that the Government is not required to take any additional credit risk in relation to this proposal.

SmarTone requests that once OFTA has formed a preliminary view on the details of the auction design, it should hold a further round of consultation to discuss these aspects with all interested parties. Such consultation on the detailed mechanisms has

been undertaken in most countries which have held auction processes for the award of licences, and has proven to be a useful means of assessing the practicalities of different approaches. In the UK, for example, such discussions led to the dropping of the complex Anglo-Dutch hybrid auction with a sealed bid component.

SmarTone believes that payment for spectrum received by OFTA under any of the above mechanisms should replace entirely the current annual operator licence fee.

## **2.3 Open network provision**

### *2.3.1 Mandated provision of capacity to third parties*

SmarTone supports the principle of 'open network provision', as such arrangements encourage the development of the telecommunications and information technology industries and promote the development of large and small players alike. However SmarTone does not believe that OFTA should *mandate* 3G operators to sell a specific proportion of their network capacity to non-affiliated third parties, for the following reasons:

- The current 2G market operates effectively without the need for regulatory recourse. There are numerous resellers and commercial partnerships between content providers and network operators already in place. These partnerships are bringing substantial benefits to both parties, and will be a major element in any strategy to exploit 3G services. This experience supports the view that any regulatory action should be limited to the process of arbitration.<sup>1</sup>
- The measurement and monitoring of the proportion of the capacity that is being used by third parties and the accounting processes that would need to be implemented would themselves represent a significant burden to both the operators and OFTA. This is against the spirit of OFTA providing "a regulatory environment conducive to business investment" and OFTA's mission to "be a model [Civil Service] department that performs effectively and efficiently" [4].
- One of the inherent characteristics of a 3G broadband data network is the cost efficiencies that are achievable through sharing a large data communications pipe. This could be jeopardised by mandating a 'reserved' network capacity for third parties. These inefficiencies will have an impact on the whole 3G market and are against the spirit of OFTA's objective of "making a wide range of services available to the community at reasonable cost" [2].

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<sup>1</sup> Arbitration is defined by the Oxford English Dictionary as 'the settling of a dispute by a person or people chosen to do this by both sides in the dispute'.

These issues are discussed in more detail below.

### *2.3.2 Current developments in the 2G market*

A number of recent developments in the 2G market demonstrate that competition at the content and service application level is occurring as a consequence of market forces. Mandating the sale of a percentage of capacity on 3G mobile operators' networks in order to promote such market behaviour is believed by SmarTone to be unnecessary.

#### Reseller/wholesale relationships

SmarTone already holds an existing relationship with a value-added reseller which involves the sale of capacity on a wholesale basis. The relationship with this organisation was developed through commercial negotiation. SmarTone cannot foresee any reason why such arrangements would not continue in the 3G environment and, indeed, the complex nature of service offerings will undoubtedly lead to numerous relationships of this nature being formed.

The key to the success of such an arrangement is to create a 'win-win' relationship between both parties. The most successful and most widely known resale relationship is that of Virgin and One 2 One in the UK. This has been successful because each party has needs that complement the other's. Again, this relationship was formed purely through commercial considerations; no requirement was placed on One 2 One to enter into such an agreement.

#### Application/service/content provider relationships

Furthermore, 2G mobile operators in Hong Kong have developed commercial relationships with a wide range of content providers in order to provide value-added services to customers over existing 2G platforms. There are now hundreds of content and service providers working with mobile operators to provide a variety of services to customers. These partner organisations represent a range of sectors, including banking, securities, media, entertainment, leisure and public utility sectors. Partners include both large commercial organisations and the smaller innovative players that OFTA is keen to encourage.

SmarTone notes the advent of these relationships and the fact that they have occurred without the need for any form of regulatory intervention. Network operators have already been pro-actively working with service and content providers to launch innovative offerings to consumers.

Furthermore, SmarTone notes that 3G infrastructure will be based on an IP platform which is inherently open in its nature. This will reduce both the development time and

the resources required to integrate new applications, services and content on the 3G network.

In summary, SmarTone believes that the combination of market forces and an open standards platform will drive the concept of open network provision.

### *2.3.3 Implementation of capacity measurement and accounting processes to support mandated open network provision*

As indicated above, SmarTone is concerned about the practical issues associated with the implementation of capacity measurement and monitoring and accounting separation processes. These are discussed below.

#### Measurement and monitoring of capacity used by third parties

There are a number of difficulties associated with developing a suitable measure of capacity to determine what proportion of a network has been 'opened up'. Such difficulties include:

- the definition of the unit of traffic capacity to utilise as a metric, given a traffic profile with a dynamic mix of voice and data bearers being carried at different rates;
- the definition of the number of cells which are defined as being 'busiest', given the dynamics of geographic distribution of traffic, exacerbated by MVNOs and other third-party customers coming on to and moving off the network;
- the ability to ascertain which cells are busiest at any given moment in time or across any given time period;
- the identification of the busiest time of day;
- the duration of the actual measurement period;
- the complexity of the systems that would be required to facilitate the measurement process, given varying market situations and promotional campaigns undertaken independently by different third parties.

In summary, it is not clear how simple metrics can be defined to act as an effective measure of capacity usage which at the same time do not impose unreasonable demands on the operator and the third party.

### Accounting processes

There are a number of issues associated with the implementation of the 'accounting separation' that would be required between the service provision and the network operation parts of the business. These include:

- defining what parts of the business operation are in each business;
- defining which costs are attributable to which parts of the business (e.g. the proportion of the company's interest payments resulting from network operations and serving end customers, and the allocation of the costs of common network elements and human resources);
- attributing shared resources (e.g. senior management) to the different businesses;
- the considerable cost of modifying management accounting and financial reporting IT systems to cope with this level of complexity.

In addition, there is a large variety of possible configurations for organisations wishing to connect with 3G networks, and, consequently, there may not be any one single defined interface for this process (unlike the fixed network case). Moreover, the design of 3G mobile networks is also evolving rapidly in view of their combined voice, data and multimedia capability. SmarTone therefore believes that it would be very difficult to define a justifiable and fair wholesale pricing scheme for 3G.

Should it ever become necessary to determine a wholesale price for service provision, SmarTone believes that it is critical for the price to take full account of 3G licence acquisition fees.

#### *2.3.4 Setting aside capacity for third parties*

SmarTone does not believe it is appropriate to set aside specific amounts of capacity for third parties. SmarTone fully expects to continue to expand and develop its existing commercial relationships into the 3G environment, broadening considerably the scope of those relationships.

SmarTone does believe, however, that any limit that may be set for specific parties should be measured on the capacity taken by all third parties utilising the operator's network. Given the implications, in terms of traffic throughput, of sharing capacity with organisations over whose customers one has no influence, it is appropriate that all such organisations count towards this target.

## **2.4 MVNOs**

### *2.4.1 Defining an MVNO*

SmarTone recognises that organisations which are unsuccessful in securing a 3G network operator's licence should have a means of playing an alternative role in the 3G industry. SmarTone proposes that the MVNO concept can be used to recognise the role of organisations that wish to operate a 3G network but that have failed to secure a 3G network operator's licence.

OFTA has suggested that an MVNO is "expected to own and operate part of the mobile network, e.g. switches, Home Location Registers etc., and have access to the base stations of the physical network operators". SmarTone proposes to enhance OFTA's definition to read:

*An MVNO is an organisation that uses the radio network of a conventional network operator (i.e. the scarce resource) but provides itself the fixed portion of a cellular network including switches, elements of network intelligence, the Home Location Register, transmission between switch sites, customer billing systems and interconnection with other fixed and mobile networks.*

SmarTone notes that this definition of MVNO differs from that conventionally applied by the industry press. For example, SmarTone believes that Virgin's operations in the UK would not be classed as an MVNO, since it is simply acting as a reseller of capacity on One 2 One's network (and One 2 One is contracted by Virgin to provide the core fixed network as well as customer billing systems). SmarTone believes there is no reason why Virgin or any other potential MVNO could not develop the fixed network infrastructure if it so wished, and simply purchase capacity from 3G network operators.

### *2.4.2 Licensing MVNOs*

To become an MVNO, SmarTone proposes that organisations should be required to undertake a qualification and licensing process similar to that for the 3G network operators. The organisation should be required to demonstrate that it:

- has the appropriate financial backing to install and operate the 'non-radio' components of a 3G network;
- is capable of operating a telecommunications network.

An MVNO may make considerable demands on the resources of a 3G network operator, including:

- setting up capacity forecasts, technical support channels and negotiating commercial terms, as well as the network provisioning actions that are required as defined by the marketing plan of the MVNO;
- trunking for the interface between the network operator and the MVNO.

A licensing process will ensure that Hong Kong is not faced with a situation where numerous organisations set themselves up as MVNOs without the necessary commercial, financial and managerial expertise, and subsequently leave the market (e.g. through lack of competence or lack of funding). SmarTone believes it is in OFTA's interests to ensure that such a situation does not arise in view of its mission to "protect consumers' interests" [3] and "fulfil the community's expectations and improve their quality of life." [4]

#### *2.4.3 Relationship between MVNOs and network operators*

SmarTone maintains its belief that the arrangements between organisations operating in the 3G environment should be left to commercial negotiation. However, SmarTone proposes that 3G network operators should be required to enter into discussions with an MVNO (defined under the process outlined above). Should the parties fail to come to an agreement, the MVNO will have recourse to OFTA to arbitrate the commercial arrangements that shall exist between the two parties.

### **3 Spectrum allocations for 3G**

#### **3.1 Awarded spectrum**

SmarTone supports OFTA's decision to offer 3G licences containing 2 x 15MHz of paired spectrum and 1 x 5MHz of unpaired spectrum. This will enable each network operator to implement the hierarchical cells-structure topology across Hong Kong, in addition to supporting the use of highly asymmetric services. SmarTone believes this will enable 3G services to be provided in an efficient manner in line with OFTA's objectives for the provision of telecommunications services [4].

SmarTone believes that if the demand for new 3G services meets expectations, this allocation may be insufficient to support the whole 3G market in the medium term. SmarTone notes, and is encouraged by, OFTA's intention to consult over the availability of the 2500–2690MHz band (as discussed in Section 4.2).

SmarTone supports OFTA's decision to adopt a frequency plan which is fully compliant with the ITU IMT-2000 allocation, since this will provide consumers with a wide range of terminals at a cost which takes advantage of global economies of scale.

#### **3.2 Use of guard bands**

SmarTone wishes to ensure that ITU and ETSI recommendations on the nature of guard bands between carrier transmissions, and specifications relating to tolerable out of band interference, are included as part of the 3G licensing conditions. This is particularly necessary in the case of alternative IMT-2000 radio technologies being deployed on adjacent frequencies (as discussed in Section 4.1).

In addition, there is a risk of interference from DECT and PHS handsets, which may affect the operation of 3G mobile systems at frequencies around 1906.1MHz. SmarTone suggests that it may be necessary for OFTA to take action to protect the 3G licensees if interference levels prove to be severe.



## **4 Other regulatory issues**

### **4.1 Technology selection**

SmarTone supports OFTA's technology-neutral policy in relation to 3G licensing, provided the technology (technologies) used by an individual operator does not affect any other operator's spectrum allocation. In particular, if an additional guard band is needed as a consequence of higher out-of-band emissions, SmarTone requests that OFTA should take steps to ensure that the majority of operators are not adversely affected. OFTA also needs to carefully consider that multiple technologies may potentially restrict the movement of customers between 3G networks within the region of Hong Kong.

### **4.2 Additional 3G spectrum**

SmarTone, in principle, supports the allocation of the 2500–2690MHz band for 3G services, as it believes that current spectrum assigned for 3G will be insufficient to meet demand for high-bandwidth applications and services in the medium term.

SmarTone believes that OFTA should not seek to make decisions about this band at this early stage. Instead, it suggests that it would be most appropriate for OFTA to begin further industry consultation in relation to this band after 3G services have been launched and sufficient evidence has been gathered to make a judgement on the demand for 3G spectrum.

### **4.3 3G services in 2G spectrum**

SmarTone supports OFTA's proposal to undertake further consultation on the issue of the expiry of existing 2G licences. SmarTone suggests that the issue of whether to allow incumbent operators to deploy different IMT-2000 technologies in 2G frequency bands should be examined as part of this process.

#### **4.4 3G mobile number portability**

SmarTone supports the principle of mobile number portability (MNP), both between 3G networks and also between 2G and 3G, in order to continue to reduce barriers for consumers wishing to switch between different network providers. SmarTone believes that 3G MNP should be available as soon as commercial 3G services are launched, in order to remove this factor from consideration by users deciding whether to move to 3G.

The principles underlying the allocation of the costs associated with this facility (between the operators in question) should be developed by an industry body with the support of OFTA, in addition to the consideration of technical issues associated with the early implementation of MNP.

#### **4.5 3G numbering requirement**

SmarTone supports the use of the digit '6' for 3G services as a means of providing additional numbering blocks for mobile services. However, it supports OFTA's view that the distinction between '6' and '9' services will in any case disappear over time in view of the availability of number portability.

#### **4.6 Roaming from 3G to 2G networks**

SmarTone believes that domestic roaming between 3G and 2G networks should be left to the commercial arrangements of network operators. It does not believe that incumbent 2G operators which have been awarded a 3G licence should be mandated to provide domestic roaming to a new-entrant 3G network operator, because:

- mandatory roaming may encourage the new-entrant 3G operator to delay its network roll-out, which acts against OFTA's desire to ensure the fast roll-out of networks [1];
- if a new 3G entrant is successful in securing a licence, it will have a good choice of operators with which it can come to a commercial arrangement;
- the principle of mandating roaming on a 2G network retroactively re-writes the rules pertaining to the roll-out of those networks, which acts against OFTA's mission to provide a fair regulatory environment conducive to business investment [4].

#### **4.7 Licensing framework**

SmarTone welcomes OFTA's indication that there will be further opportunities for industry consultation on the issue of fixed/mobile convergence before final decisions are made on the licensing framework, and looks forward to participating in such discussions.

In addition, SmarTone believes OFTA's involvement is crucial to resolving technical issues which may hinder the development of the wireless broadband multimedia service. An example of such an issue is the risk of there being an insufficient number of IP addresses to support the development of this industry. SmarTone is keen to encourage OFTA to provide assistance (e.g. through its discussions with other bodies, such as the ITU) with the resolution of such issues in order to ensure that Hong Kong continues to play a leading role in such developments. SmarTone believes that such involvement is in line with OFTA's desire to maintain Hong Kong's position as a pre-eminent technological centre [4].

## **5 References**

1. *Licensing Framework for Third Generation Mobile Services: Analysis of Comments Received, Preliminary Conclusions and Further Industry Consultation*, OFTA, 3 October 2000.
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3. *Second Consultation Paper of Licensing of Third Generation Mobile Services – A Hybrid Method with Open Network Requirement*, Information Technology and Broadcasting Bureau Press Release, 3 October 2000.
4. *Vision, Mission and Values*, OFTA Internet site, reference: [http://www.ofta.gov.hk/index\\_aboutus\\_eng.html](http://www.ofta.gov.hk/index_aboutus_eng.html)
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7. *Study into the Use of Spectrum Pricing*, UK Radiocommunications Agency, June 1996.