

Response To
Licensing Framework for Third Generation Mobile Services
Industry Consultation Paper, 21 March 2000

Hong Kong - 22 May 2000
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1. Introduction

The following paper has been written in response to the OFTA consultation paper on the potential licensing framework for Third Generation Mobile Services. It is SUNDAY's view that a natural thematic grouping occurs among the issues raised within the paper. In drafting our response we have therefore taken a thematic approach to addressing the issues.

Each section commences with an argument for a certain operating environment. This argument then serves as the backdrop for our responses to the related discussion points raised in the OFTA document. The 'macro' background enables us to best elucidate our conclusions on particular issues and the basis for them. The document therefore naturally divides into eight sections as highlighted in the following table:

Section	Focus	OFTA Issues Addressed
1/2. Introduction and Summary		
3. Hong Kong's Objectives	A summary of the current and future planned status of the Hong Kong telecoms market	Provides the context within which all OFTA questions should be answered
4. The Evolution of 2G into 3G	An explanation of the relationship between 2G and 3G	Enables us to address questions regarding use of 2G spectrum, minimum spectrum allocation questions, timing of allocation, spectrum, ranking of incumbents compared to new entrants and what spectrum packages should be awarded
5. The optimum number of competitors	An examination of the competitive environment in Hong Kong and the impact on the industry	Enables us to address questions regarding new entrants
6. The Licensing Process	An examination of the licensing process as a means of spectrum allocation	Enables us to address what licensing procedure should be used in Hong Kong
7. Competition at the Service Level	An examination of the merits of competition at the service level of telecommunications market	Enables us to address issues regarding industry structure and regulatory framework
8. Other Issues	Various	Enables us to address issues regarding roaming, ITU IMT allocation

2. Summary

This paper presents SUNDAY's perspective on the regulation of Hong Kong's mobile industry. It discusses the important issues which determine SUNDAY's approach, and for each of these describes their application to the specific regulatory issues raised in the OFTA paper.

We are at the beginning of a communications revolution in which all major economies are shifting towards a knowledge-driven and service-based society. It is every bit as dramatic as its historical counterpart, the industrial revolution. There is a direct economic link between the digital connectivity of a nation and its positioning in relation to competitiveness, export success and real GDP growth; countries with an innovative and communications-rich infrastructure will attract significant inward investment.

We maintain that Hong Kong's regulator has succeeded in fostering the growth of a business which has brought innovation and technical excellence to the market, and has resulted in low prices that have made mobile services accessible to the majority of the population. This has helped Hong Kong move towards its goal of becoming one of the world's most innovative mobile markets, a regional communications hub, and a centre of excellence for developments in IT and sophisticated mobile applications.

This success has hinged upon the regulator's approach to licensing mobile operators, which has ensured a high number of competitors in the market. A competitive equilibrium is being reached which will allow operators to invest heavily in new services while guaranteeing low prices to consumers.

The 1996 PCS licensing round also extracted from the winners a set of firm commitments on pricing, innovation and investment, in return for the valuable asset represented by the licences, and this has underpinned the generation of benefits for Hong Kong.

However, competition has been particularly intense in Hong Kong and the risk of economic failure is extremely high. Allowing a new entrant 3G operator into the market poses a very real risk of increasing the likelihood of economic distress, which would damage the economics of the industry and tarnish Hong Kong's excellent international reputation as the place to do business in the region.

3G represents a transition (both technically and commercially) from 2G, rather than a step-change: existing operators are already investing substantially in next generation services and the platforms to support them in order to survive. The market has evolved so quickly that their substantial investment only makes sense if these new platforms can be upgraded seamlessly to 3G; in this highly competitive environment, an incumbent will not survive if it does not win a 3G licence.

Such is the importance, to the incumbents, of obtaining 3G licences that, if an auction were to be chosen as the licensing process, the amounts bid by incumbents could exceed the value of the licences themselves. The resulting "tax" on the industry would markedly increase the risks of economic distress in an already low-profit industry.

But competition under correctly regulated conditions can proliferate at the service level, if new operators wish to enter the market. This would ensure diversity of competition, while also maintaining industry value and enabling investment in the technological platforms that will deliver longer-term benefits.

OFTA's approach has already had considerable impact on Hong Kong's economy, and the forthcoming licensing process therefore offers OFTA the chance to consolidate these benefits. It can do this by issuing the 3G licences using a similar approach as that taken in 1996: asking the operators to make commitments to deliver these benefits and forge deeper partnerships with industry and research groups, create more innovative services, and guarantee that the already low prices will continue. Encouraging a new entrant into the market, on the other hand, would seriously threaten the huge potential that Hong Kong's mobile industry could offer to the territory.

3. The Objectives of Hong Kong's Regulatory Framework

This section describes the goals which have driven Hong Kong's current regulatory framework, and the success in meeting these goals to date.

3.1 The government's objectives

The government of Hong Kong has stated that its approach to telecommunications regulation is to:

“enhance Hong Kong as a place for investment in telecommunications, to encourage competition and innovation under an open, fair and predictable regulatory framework, and to maintain Hong Kong's position as the pre-eminent telecommunications centre in Asia”

This aim is driven by a recognition of the fact that: an advanced telecommunications system

- underpins all other business and commercial services
- has the potential to enhance a country's overall competitiveness.
- promotes electronic business and increase the efficiency of the economy
- improves the professional and personal lives of the people of Hong Kong.

In achieving this aim the government has fostered economic growth by ensuring that Hong Kong is the leading *'knowledge economy'* and telecommunications hub of Asia.

The government of Hong Kong has also clearly indicated its desire to promote electronic commerce to maintain Hong Kong's status as a major business centre in the digital world of the information age. The government knows that encouraging the development of e-commerce has the power to make Hong Kong one of the world's leading digital cities.

3.2 What has been achieved

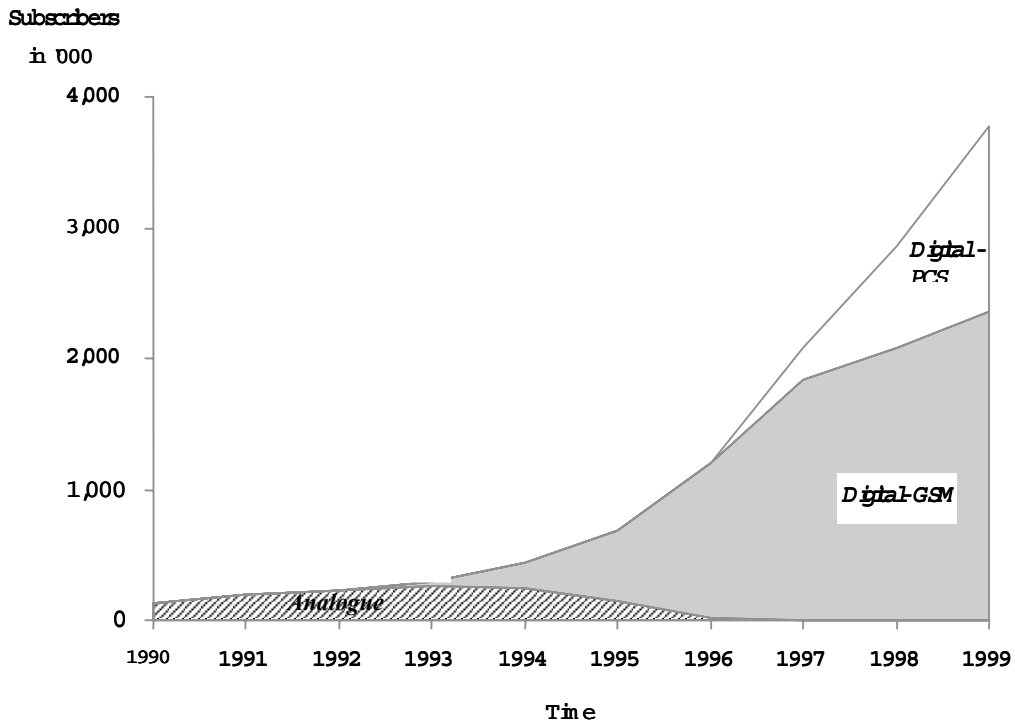
The following points outline the ways in which Hong Kong's regulatory framework has been successful in the last few years:

3.2.1 Growth in mobile market

The mobile market in Hong Kong has grown dramatically since the licensing of the first mobile operators. As can be seen in exhibit below, growth was accelerated by the introduction of PCS operators, which launched in 1997 when the number of subscribers was 2m, and the total market size is now approaching four million.

This is largely as a result of the intensification of competition, which quickly led to dramatic cuts in usage and handset prices.

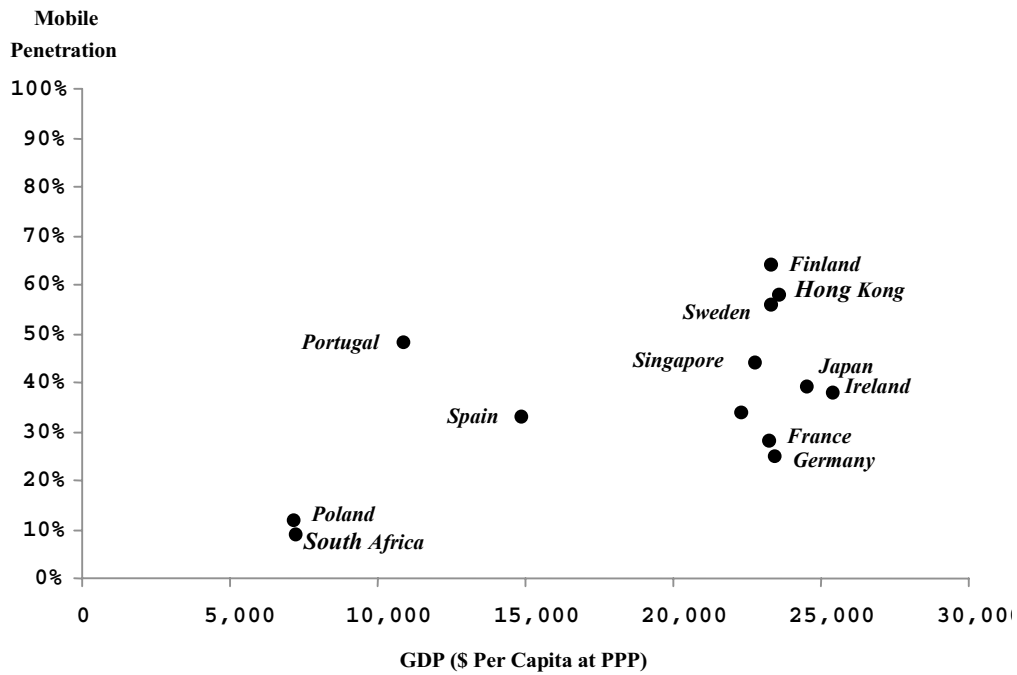
Exhibit 1: Growth of Mobile Subscribers in Hong Kong



Source: OFTA Statistics

Hong Kong has one of the highest mobile penetration rates relative to per capita GDP

Exhibit 2: Penetration Rates Vs GDP per Capita (PPP)



Source: GDP - EIU estimates
Mobile - Penetration forecast EMC wireless

3.2.2 Growth in range and sophistication of services provided

The introduction of new PCN operators in 1996 led to a revolution in the breadth and depth of services delivered in the market, making Hong Kong one of the most innovative mobile markets in the world. Whereas the GSM operators provided only high quality voice services and value-added voice management services such as voicemail, current operators offer a wide range of intelligent location-based information and entertainment and Hong Kong was, in many cases, the first place in the world where these services were offered.

3.2.3 Development of expertise around mobile and related IT

Hong Kong's mobile industry has trained hundreds of specialist staff to administer the delivery and continued creation of sophisticated innovative services. These people have learned skills which put them at the forefront of mobile developments globally, and which enhance Hong Kong's position as a hub of technical excellence to which high-tech enterprises will come to find the skilled expertise necessary to make their ventures a success.

3.2.4 Software Industry Development

Hong Kong's mobile expertise will also create export potential. The mobile operators have invested in software development skills which have become a unique point of differentiation for the industry in Hong Kong. The products developed are easily adaptable to other markets and therefore represent a significant opportunity for exports.

3.2.5 Creation of significant economic benefits

The economic benefits of the growth of Hong Kong's mobile industry are made manifest in the following areas:

- *“Creation of high-value employment”*

The licensing of eight separate operators by 1996 acted as a catalyst for a significant increase in employment within the mobile industry in Hong Kong. Approximately 3,000 direct new jobs have been created, since the licensing round in 1996. Direct and indirect employment is likely to rise due to the increasing need to deliver sophisticated services, and excellent network quality and customer service.

- *“Fostering the development of a new software creation industry with export potential”*

As discussed above, a new software and content-creation industry has begun to be developed in Hong Kong, which has significant export potential.

- *“Consumer benefits”*

The growth in mobile use in Hong Kong has benefited the consumer through productivity gains generated primarily by their use of the ultra-convenient communications device that mobile represents, plus the many value-added services included. Consumers have also benefited from a gain in consumer surplus through reduced handset and usage pricing.

- *“Investment*

The industry has invested an estimated HK\$10 billion in its infrastructure, which has had an immediate effect on the economic growth of both the telecommunications industry and Hong Kong’s economy.

3.2.6 *The Future*

The current level of competition has delivered on its promise - the status of Hong Kong as a telecommunications and business hub has been enhanced as a result of the success of its mobile industry. In the future, its mobile industry offers the potential to build upon this success and serve as a catalyst for the development of a content creation and mobile software development hub in the region, in a synergistic collaboration between different industry groups and research and development institutions, placing Hong Kong at the heart of IT developments globally.

However, despite all this success the mobile telecommunications industry in Hong Kong is significantly more volatile than had been expected. Indeed, the risk of economic failure is ever-present, subscriber churn levels are amongst the highest in the world and profit margins are perilously low. Indeed, recent entrants have not yet started to show a profit on their heavy investments in the new networks and intelligent platforms required to make their services competitive in this crowded market. Current estimates would suggest that payback for these operators is of the order of 15 years.

Intensification of competition poses a very real risk of increasing the likelihood of economic distress, which would damage the economics of the industry and tarnish Hong Kong’s excellent international reputation as the place to do business in the region.

Issuing third generation mobile telecommunications licences potentially marks a key milestone in the achievement of this strategy. The challenge is to manage the licensing process in such a way as to ensure that the Hong Kong telecommunications industry is given the best chance to thrive, in a way that will best benefit both the economy and people of Hong Kong. Licensees that take part in the process can be asked to contribute to Hong Kong’s future by making guarantees of the industrial and economic development that they will help foster, in return for the valuable asset which the licences represent. This is an opportunity for OFTA to enlist the mobile industry explicitly, as it did in 1996, in building Hong Kong’s economic strength and its power as an international centre of IT and mobile excellence.

4. The Evolution of 2G into 3G

The commoditisation of voice services and the particular competitive intensity in Hong Kong's mobile market have driven operators to focus increasingly on the provision of next generation data and multimedia services. 2G platforms enable them to move some way towards the achievement of that goal, but 3G technology now marks an additional milestone for Hong Kong. In order to continue to compete effectively a 3G license is now fundamental to the future success of existing 2G operators and hence the telecommunications industry of Hong Kong as a whole.

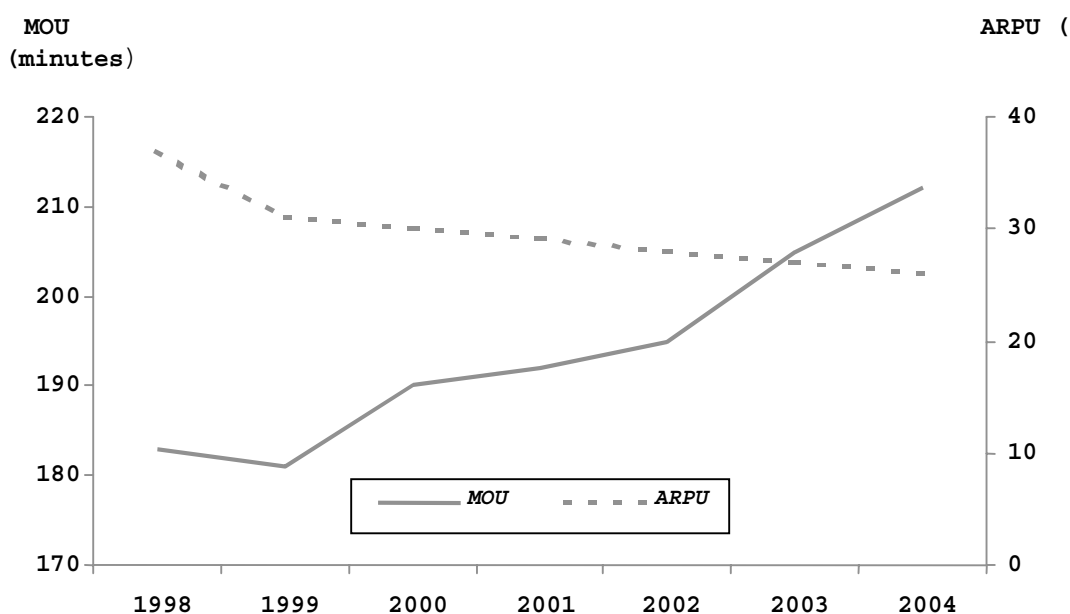
The following points examine the key trends that impact this argument:

4.1 The importance of moving beyond voice

In the traditional 2G business model (GSM and PCS), revenues came primarily from high handset prices and high usage tariffs. Very quickly, in many of the most competitive markets, handset subsidies were introduced, which removed this potential revenue stream, and mobile phones have now become mass market commodities.

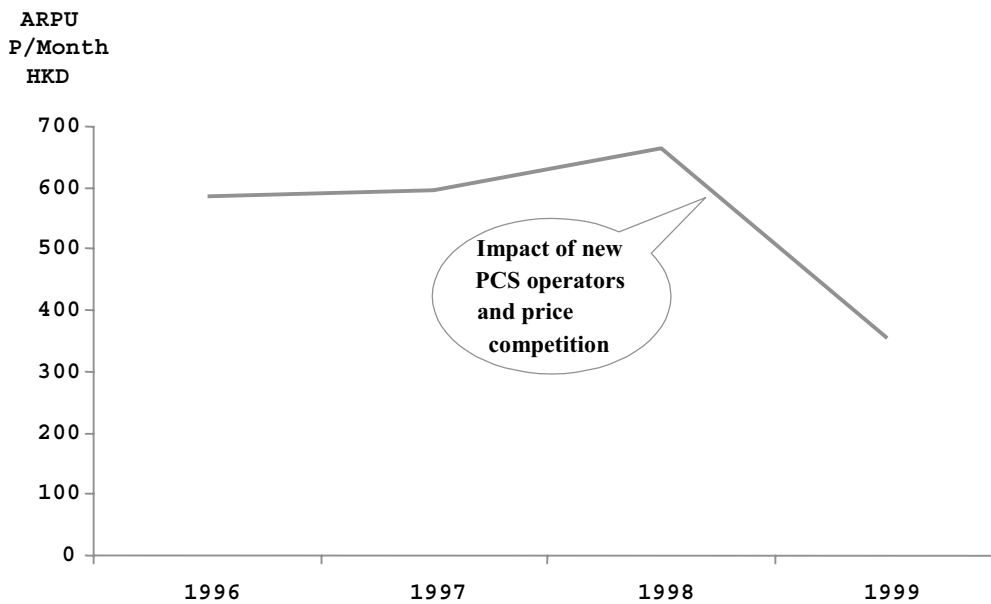
This has been particularly true in Hong Kong. Since the launch of PCS operators, tariffs have dropped dramatically and as a result, marginal revenues have declined steadily. In addition, marginal costs have not been as low as had been hoped – high churn, handset subsidies, marketing costs and the need to invest in new services, have meant that costs have remained high. As illustrated in the exhibits below this trend is expected to continue in Asia and has already impacted on SmarTone revenues.

Exhibit 3: Asia: MOU and ARPU Growth for Selected Countries, 1998-2004



Source: Pyramid Research

Exhibit 4: SmarTone ARPU, 1996-1999



Source: Company Annual

The business model for Hong Kong's operators now depends upon generating revenues from data and multimedia services. This has always been recognised by Hong Kong's PCS operators, who have, from launch, promoted innovative information and value-added services.

While there remains uncertainty about the eventual revenue model for non-voice services on the next generation of platforms, however, these revenues are essential to justify the considerable investment required to offer these services. This applies to all operators, not just those that are given 3G licences. The business model for Hong Kong's operators has already, therefore, moved towards the third generation.

4.2 The development of the Wireless Web in Hong Kong

In Hong Kong, operators like SUNDAY have always recognised that in order to differentiate themselves and compete effectively, they would need to go beyond the provision of voice services. These operators have therefore invested heavily in the development of sophisticated services that generate value-added voice, or increasingly data, traffic.

- Non-voice revenue:
- Mobile Data and Fax
 - Mobile Banking
 - Mobile Trader
 - Web Organizer
 - Mobile Jukebox
 - Mobile Racehorse
 - Mobile Concierge
 - Mobile Cupid

Source: SUNDAY

In other advanced competitive markets around the world, operators are now actively promoting mobile Internet and other data services which have opened up a whole new competitive dynamic in the market.

Exhibit 5: International Advanced (Non-voice) Services

Operator	Services
Vodafone	<ul style="list-style-type: none"> • Vodafone Roadwatch: Updated traffic information • AA Weatherwatch: Updated weather information • Infoline: BA flight information etc. • Scoot Link: Directory service • Banking: Online banking • Information: ... full range of info services
Eircell	<ul style="list-style-type: none"> • Information services: weather, sport travel, business and finance, jobs and education
Omnitel	<ul style="list-style-type: none"> • Omnitaxi:: Direct taxi services in all Italian cities • Omniarte: : Tours of historic Italian piazzas via mobile phone • Info Centre: Up to date news and information
BouyeguesTelecom	<ul style="list-style-type: none"> • 888 S'Informer: News on weather, finance, sports results, TV listings, train timetable etc.

The development of these services requires considerable investment, in both infrastructure and operations:

4.2.1 Infrastructure

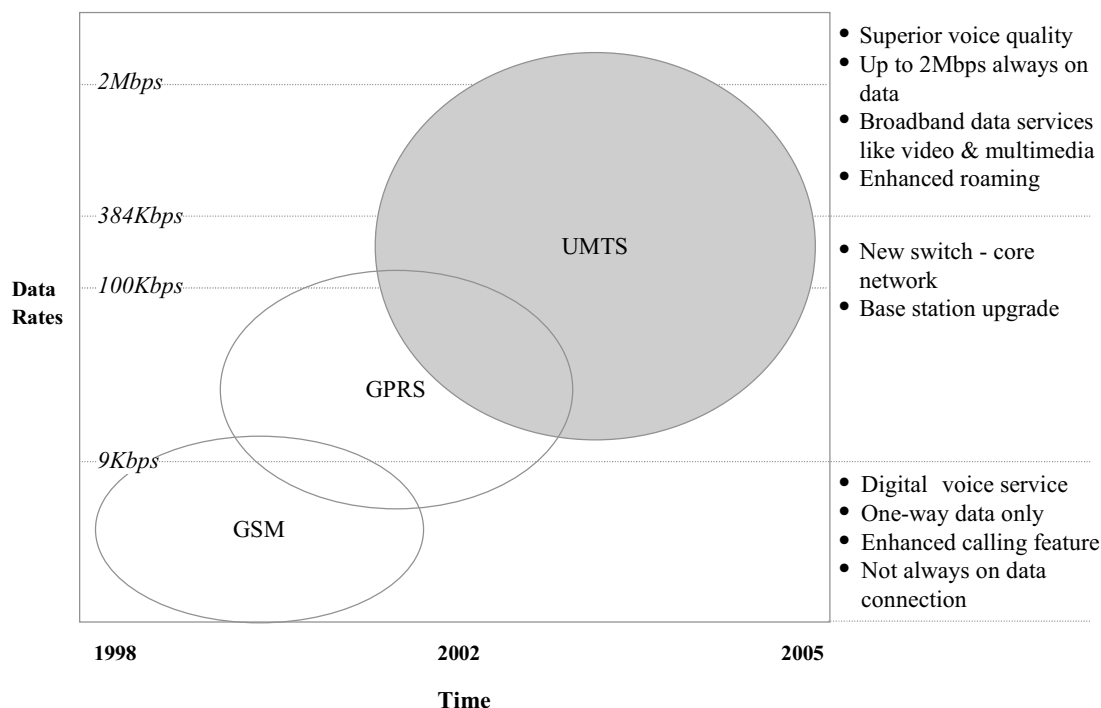
In order to deliver services on current Wireless Internet platforms, Wireless Application Protocol (WAP) has been adopted by second generation operators the world over. This has enabled the delivery of data services over circuit-switched networks.

However, to offer more efficient, higher quality, richer and faster data services, existing 2G platforms need to be upgraded using GPRS or another equivalent packet-switched layer. This represents a further significant investment that is already being undertaken by Hong Kong's operators.

Packet switching, such as is enabled by GPRS, represents a great improvement in existing and WAP platforms since it enables the mobile device to be "always on": always connected to the network, providing instant access to information and other services, at rates of up to 115 Kbps (existing platforms require a user to dial up to the server and pay per minute while information is received, at slow rates of 9.6 Kbps).

3G platforms support significantly faster rates still, enabling video and other more advanced services to be delivered to mobile devices. Thus, 3G operators will have an unassailable advantage over 2G or 2½G operators.

Exhibit 6: Services Supported by Different Data Rates



4.2.2 Operations

Operators like SUNDAY provide a range of high quality information-rich services and these require considerable operational support. The investment in these support services is sizeable and adds a further dimension to the commitment of operators who are seeking to differentiate their brand through product innovation.

As can be seen from this discussion, 2G operators must invest to survive – but without 3G licenses, they will find it extremely hard to compete and make sufficient returns on their investment.

4.3 2½ G operators with no 3G licence will face decline

A 2G or 2½G operator who does not obtain 3G spectrum has therefore two options:

- Continue to operate existing business

If the operator takes this path, it would not be able to compete against the high-end multimedia mobile services offered by 3G operators, and the business would therefore focus on low-end segments, eventually leading to decline.
- Move into 3G as an MVNO-type operator

Under this scenario, the operator would compete with the most advanced operators in the market by using their networks, subject to contractual arrangements, but would be hindered by several factors:

 - Existing network infrastructure would not be entirely compatible with the host 3G operator's new 3G network

- The 2G/2½G operator would become a market “follower”, unable to innovate on platform capability, since it would be dependent on the investment plans of the host 3G operator
- The host network operator is likely to limit the freedom of the 2G/2½G operator to innovate, and is likely to restrict the 2G/2½G operator’s access to capacity on its network.
- Quality and functionality of 3G services could not, therefore, be guaranteed by the 2G/2½G operator

In effect, an operator would not be able to build a leadership position in the market and it would not be able to earn a fair return on its network investment. PCS operators have yet to make profits from their original investments, and the investment demands continue to escalate as the market becomes increasingly sophisticated.

As discussed in section 7, we advocate the introduction of competition at the service level, but it is important to note that for *an existing network operator*, a transition to a service provider model in the 3G environment would not enable them, for the reasons outlined above, to earn a fair return on their investment. New operators will face a different cost base, with no legacy systems to leverage, and may therefore be attracted to the provision of services on a service-provider, or MVNO-type basis, possibly focusing on niche services or market segments.

Investment to date only makes sense if existing operators are able ultimately to leverage their current network investment into the 3G environment (yet this investment is already underway).

4.4 Summary and responses to points raised in the OFTA consultation paper

In the current market, six high-quality operators deliver high value, innovative yet low-cost services to a large proportion of consumers. This is no small achievement in a market as competitive as Hong Kong’s. In this respect, the market structure has successfully delivered on its ambitions. However, the market is also in a precarious state – the threat of economic distress is ever-present, and recent entrants have not yet begun to earn a return on their investment to date.

This is partly driven by the commoditisation of basic and value-added voice services, which implies that the traditional 2G model will not provide sufficient returns to justify current levels of investment, and operators are already investing heavily in the next generation platforms to deliver ever more innovative services. 3G represents a *necessary* evolution of their business models. The implication of this is that 2G or 2½G operators will not survive if they do not succeed in winning (and deserving) 3G licences.

This argument impacts on the following points raised in the OFTA consultation document:

Should OFTA allow existing operators to use their 2G spectrum for 3G services? (OFTA point 3.8)

Response - It is our view that operators should be free to use their 2G spectrum for 3G services as they see fit.

- 2G operators have already begun investing to make this vision a reality and to deny them this potential would be to needlessly reduce the overall profitability of the industry.
- The commoditisation of basic voice services implies that 2G network operators which aim to survive in advanced markets will have already begun in earnest the investment in 3G services which hold the key to their competitiveness in the future.
- Allowing 2G operators to use their spectrum for 3G services would allow operators to evaluate 2G and 3G spectrum on a comparable basis
- However, 2G operators have commitments to existing 2G subscribers and to international in-roamers which will persist for the medium, and will therefore have only limited freedom to re-use their spectrum for 3G-only services. This freedom, while important, does not therefore imply that the incumbents will have an excess of spectrum on which to build their 3G platforms.

What should the minimum allocation of spectrum be to new entrants and incumbents? (OFTA point 3.19)

Response - It is our view that all operators should receive equal spectrum packages.

- Since the business case for incumbent operators would be dramatically worsened, if not destroyed, by the failure to secure 3G spectrum, we believe that enough licences should be created to *enable* each of the incumbents to be awarded a licence, should they win the selection criteria. The only alternative would be to effectively “force” further industry consolidation.
- In addition, there should be a level playing field between all operators in the market in terms of spectrum allocated.
- This implies that 2X10MHz paired and 5MHz unpaired should be awarded to each of the incumbents (if they apply), and that no “favourable” spectrum packages should be created for any operators (new or incumbent).

Should unpaired spectrum be allocated soon, or later on? (OFTA point 3.21)

Response - We support the early release and allocation of unpaired spectrum

- The unpaired spectrum will be valuable to 3G operators because it will support the provision of asymmetrical services
- As discussed above, the operators require access to this spectrum to further the “upgrading” of their networks and operations for the delivery of advanced services
- In addition, the early release of this spectrum gives the industry greater certainty regarding the conditions they will face in the new environment. This will translate into greater willingness to invest in the industry.

Should incumbents be allowed to bid for 3G licences, and should they have priority? (OFTA point 4.4)

Response - Incumbents should be allowed to bid for 3G licences and they should be given priority over new entrants.

- Licensing policy established by OFTA to date has fostered innovation, technical excellence and low prices from 2G operators.
- As discussed above, the 2G business model is already evolving into a 3G business model – 3G represents a natural evolution from the existing businesses.
- Without the ability to follow the evolutionary path from 2G to 3G, 2G operators in Hong Kong will not be able to survive.
- In order to reap sufficient returns from their ongoing investments, incumbent operators should be given at the least an equal choice, and preferably a “first choice option”, of new 3G licences.
- This approach to licensing will best ensure continued benefits to consumers, the community and the IT and telecommunications industries of Hong Kong.

What spectrum packages should be awarded? (OFTA point 4.5)

Response - A fifth spectrum package option should be introduced, which creates six equal packages of 2x 10MHz paired and 5MHz unpaired spectrum, and there should be no reservation for new entrants

- The options outlined in the OFTA paper imply that between four and five licences should be issued. This would imply that one of the incumbents (at the least) does not win a 3G licence.
- As said in the OFTA paper, point 4.4, “To deny incumbents access to new technologies could prove punitive in the sense that they could be constrained to operate an obsolete technology well before the expiry of their licences.” All the options outlined imply that this would happen to at least one incumbent, forcing further industry consolidation.
- Given the arguments described above, and depending on applying for and winning a licence in a fair selection process, equal spectrum packages should be available to each incumbent, of 2X10Mhz paired, and 5MHz unpaired spectrum.
- There should be no differential between licensees, since there are no compelling grounds on which such a differential can be justified.

Should 3G services be regulated in the same way as existing mobile services? (OFTA point 5.7)

Response - We believe that 3G services should be regulated within the same framework as 2G services.

- 3G services are a natural extension or upgrade of the 2G business model, and therefore should not be treated differently from a regulatory point of view.

5. The Optimum Number of Competitors

Achieving the optimum number of competitors in the mobile market requires drawing a fine balance between ensuring that operators are rewarded for their investment in infrastructure and operations, and that consumers benefit from cost-effective and innovative services.

Hong Kong's current success in fostering innovation and efficiency in its world-class mobile market is testament to the commitment of its operators to creating successful businesses in a highly competitive market. Consolidation and market dynamics have operated to reduce the number of operators to six, and, as discussed above, further consolidation is possible, which would reduce the number of operators further.

There is a variety of events and factors that support this view that there are already a sufficient number of players in the Hong Kong market to guarantee a healthy level of competition:

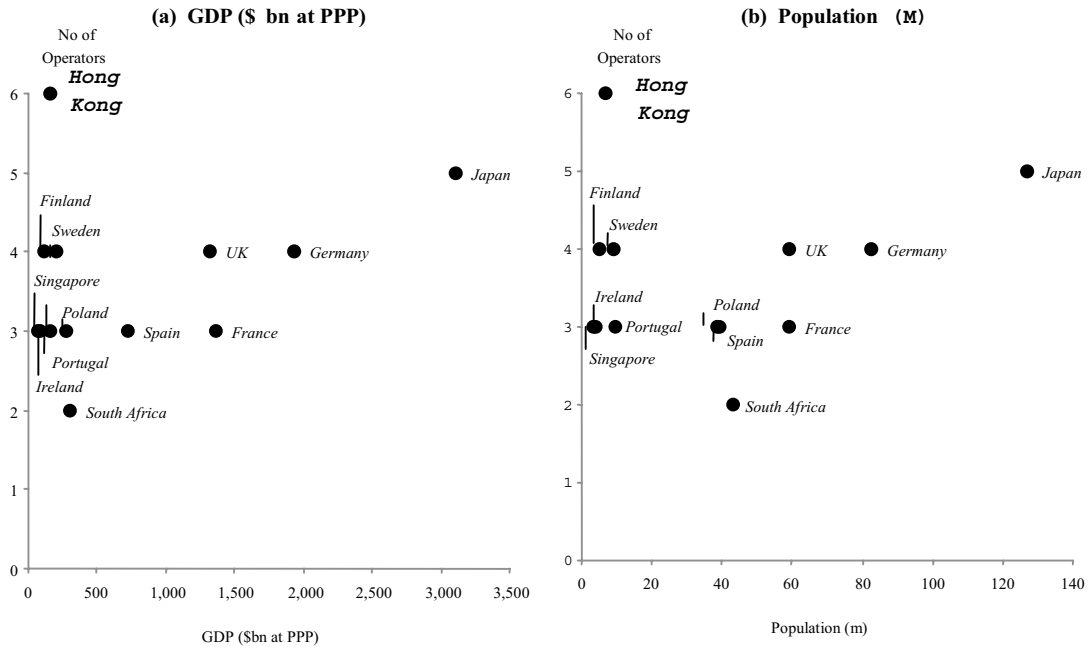
- Hong Kong has a very high number of players relative to the size and wealth of the market
- Prices have fallen in the past to unsustainable levels and there have been instances of predatory pricing
- There is a risk of economic distress within the industry if competition were to increase

5.1 Hong Kong has a very high number of players relative to the size and wealth of the market

The Hong Kong mobile industry is one of the most competitive in the world. There are more mobile operators per pop, and relative to wealth, than in any other market in the world.

This remains true even taking account of the recent industry consolidation that has led to a reduction to six in the number of mobile operators still in business.

Exhibit 7: Number of Operators Compared to (a) GDP and (b) Population



Other larger and wealthier markets have approached the introduction of new players with extreme caution, and most have decided that five is the highest number of national licences that can be supported.

Exhibit 8: No of 3G Licences to be Issued by Country

Country	No of 2G Licences Issued	No of 3G Licences Issued* / to be Issued	Total Operators
Finland	4	4*	5
Spain	3	4*	4
UK	4	5*	5
Austria	3	4-6	4-6
Denmark	4	4	4
France	3	4	4
Italy	3	5	5
Netherlands	5	5	5
Switzerland	3	4	4
New Zealand	2	4	4

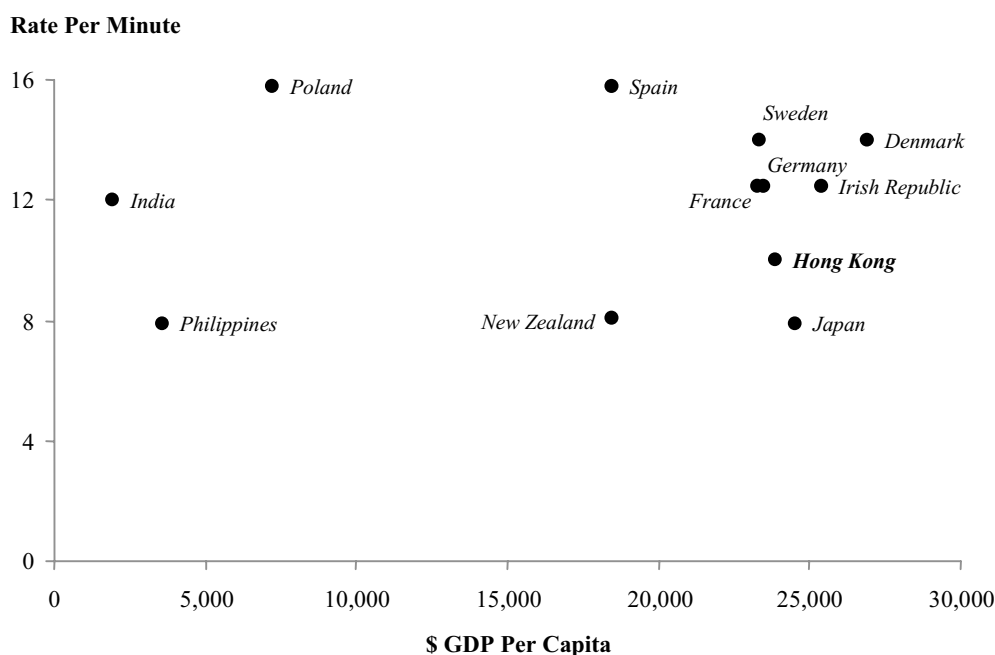
Source: UMTS forum and Lehman Brothers Reports

5.2 The movement of comparable prices in the market

Following the marked intensification of competition in Hong Kong, after the PCN licence awards in 1996, mobile prices fell precipitously. One of the features of mobile markets is the importance of building subscriber numbers, as the basis upon which to build a secure revenue flow in the medium and long terms, and this is a goal which has been pursued by some operators in Hong Kong at almost any cost. This led to dramatic price competition, which last year drove prices down to levels considered unsustainable by market players.

Prices in Hong Kong are now amongst the lowest in the developed world, relative to wealth, and, predatory pricing is still prevalent. There is a real risk that increases in competition would put further downward pressure on prices, which could again fall below cost, increasing the risk of economic distress.

Exhibit 9: International Mobile Pricing Relative to Wealth Comparison

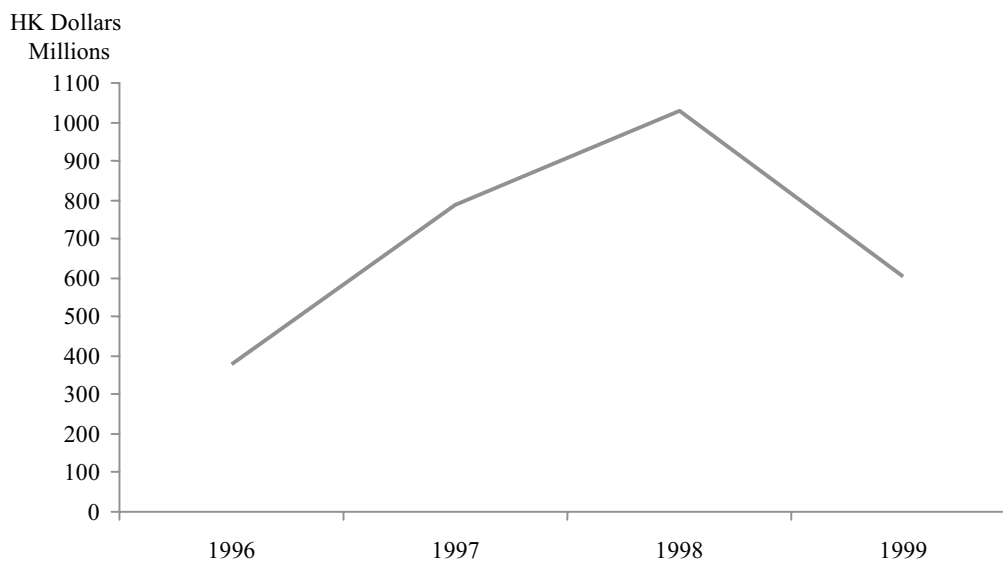


5.3 There is a high level of economic distress and consolidation within the industry

As average revenues per user have declined in Hong Kong, operator margins have suffered accordingly, despite large increases in the size of the subscriber base. This is particularly true for the more recent entrants.

In Hong Kong's highly fragmented market, the newer operators have invested heavily in the quality and range of their services, they have offered competitive and innovative pricing packages, but the intensity of the competition has meant that margins for the newer players have remained low. The PCN operators have suffered heavy losses, and have not yet begun to make adequate return on their investment in network and operations to date.

Exhibit 10: Net Profit of SmarTone, 1996-1999



Source: Company Annual Reports

The market consolidation that took place in 1998 was beneficial for the vendor companies, which made a good profit on their investments to date, but it also indicated their recognition that exiting the market at that early stage was sensible, given the competitive intensity that they were experiencing. The reduction to six of the number of operators left in the market offered the prospect of healthier competition in the market, leading to more investment in service innovation and quality. However, this and the further industry consolidation that is expected, imply wasted investment in the industry, the costs of which will eventually be passed on to consumers.

OFTA has the opportunity with this round of licensing, to create an industry which works in symbiosis within Hong Kong to:

- develop high-tech industries on the back of their high investment in new services and applications
- sustain a high level of world-class innovation
- maintain the low prices which will keep Hong Kong's mobile penetration rate amongst the highest in the world.

However, the introduction of new competition into the market poses some very real risks which could lead to a destruction of these benefits before their impact has been fully felt.

5.4 Responses to points raised in the OFTA consultation document

The argument described in this section responds directly to the question raised in the OFTA document under point 4.3:

Is there a need for new entrants in the Hong Kong market? (OFTA point 4.3)

Response - It is our firm view that a new entrant network operator would be detrimental to the aim of fostering a competitive and creative mobile industry in Hong Kong.

- Hong Kong has the highest number of operators relative to market size and wealth in the world.
- Recent entrants have incurred heavy losses and have not begun to reap the rewards of their investment – margins remain extremely low.
- A new entrant would threaten to destroy the benefits which been felt already in the extremely fragile competitive environment that now exists in Hong Kong.
- However, we believe that competition at the service level would not have the same risks associated with it, since the network operators would be able to gain a fair rent for their infrastructure in return for their investment in building the network.

6. The Licensing Process

The third generation mobile networks represent the platform upon which the future development of the mobile industry in particular and the convergent industries of telecommunications, media and the Internet in general will be built. The licensing of the 3G operators therefore provides OFTA with the opportunity to realise a wide range of benefits for Hong Kong. The process and the terms of the licence determine how these benefits will be distributed amongst the range of key stakeholders.

There is a wide range of possible scenarios for the distribution of value amongst the key stakeholders that depend on the process that is adopted. In summary the three main scenarios are detailed in the table below:

Beauty Contest: this has as its goal the selection of the best applicant, according to pre-defined selection criteria. This method enables the pursuit of telecommunications policy goals and implies a thorough and systematic comparison of candidates. The risk is that it is a complex, time consuming and potentially subjective process.

Hybrid: this involves allocating licences on the basis of merit and on the specific commitments to delivering benefits to Hong Kong in such areas as: planned investment, pricing, and innovation as decided by the regulators.

Auction: the candidate that makes the highest bid wins the license. The price of the spectrum is determined by market expectations, the logic being that those who will make the most efficient use of the Spectrum will bid the highest price. One of the preconditions for auctions to function properly is that all the players are fully informed. However, full information in the context of UMTS is not yet available and the risk is that bidding therefore becomes irrational.

This licensing process offers OFTA the opportunity to pursue the third ‘hybrid’ approach, similar to that used in Hong Kong for the PCS licensing round in 1996: to extract from the mobile industry the firm commitment, backed up by performance bonds if necessary, to cement the creation of benefits to the economy and the people of Hong Kong:

- Low prices
- Fast roll out
- High investment
- Service innovation
- Research and development.

These benefits are unlikely to be felt if an auction process is used. The following points expand on key reasons why using auction process could be damaging to Hong Kong.

6.1 Auction will increase the operating costs of the operators

Clearly an auction will transfer funds directly from the operators to the government. This constitutes a major additional tax burden on the industry. The additional tax not only implies that the overall cost of launching 3G networks will increase significantly, but also that the operators may have less funds available to develop the more innovative (but higher risk) products and services if expected returns remain the same.

The recent auction in the UK demonstrates that in a bidding frenzy operators could be pushed to pay well in excess of the fundamental value of the licences in order to protect their existing business. This would occur because there is an absolute necessity for an incumbent to win a 3G licence – placing an extremely high upper limit on the price the operator would be willing to pay.

This could place a crippling burden on the winner because the operators need to borrow heavily to pay for the huge licence fees, which in turn affects their future cash flows and ability to service their debts and invest at the same time. This would be likely to cause their credit rating to be downgraded, and could result in their being unable to pay for the licence.

The immediate impact of this potential downward spiral has already been demonstrated by the downgrading of Vodafone's and Hutchison's credit worthiness from A to A- and "stable" to "negative" respectively, following their success at winning UMTS licences in the recent UK auction. This will add up to another 20 basis points to the cost of borrowing for the operators, which translates into millions of dollars which could otherwise be invested into their operations.

The distinct possibility of some of the winning bidders being unable to pay for their licences has been demonstrated by the experiences of the US and India. In the US, NextWave went into bankruptcy because it overbid for its spectrum in the PCS auction and the spectrum had to be returned for re-auction. In India, the Government had to abandon collection of the auction fee in exchange for a revenue sharing arrangement because most of the licence holders were not able to pay for them.

These examples provide a harsh reminder of the risks of using an auction – in each case the government faced extreme embarrassment as it had to review or re-run the licensing process and the result has been a markedly more conservative approach to investment, which has placed these markets behind the rest of the world in terms of the development of its mobile industry. In the case of India, the industry was put back by at least two years as operators attempted to launch services in a price-sensitive market which had to be priced highly due to the size of the licence fees.

6.2 The costs of an auction are likely ultimately to be borne by the customers and the Hong Kong Economy

As operators need to recover the additional costs of the licence fee and its associated financing costs they may have to charge higher prices for future 3G services even if they are prepared to accept a lower rate of return for their shareholders. Needless to say, higher prices will constrain take up of the 3G services. Operators will also have a lower propensity to take risks in the development of more innovative (but potentially more speculative) products and services.

These factors may lead to slower development of not just the mobile market (as in India) but also other segments in the telecommunications and affiliated convergent industries such as the media, IT and Internet. The net impact would be that the overall Hong Kong economy and its aspiration to be the hub for the knowledge economy in Asia may suffer considerably. As Anthony S.K. Wong recognised, ‘the price for the (UK) license alone is already two times the cost of building the network. Future customers will need to pay an extra £15 (US\$23.12) a month on average to offset the license costs’ (8/5/00 Asian Wall Street Journal).

The US experience provides a case study of the negative impact of auctions. While there are many contributory factors to the development of the mobile industry in the US it is likely that the results of the auctions played a significant part. For example Merrill Lynch’s view is:

“The auctions removed significant potential direct investment funds from the industry and the US industry is now characterised by; (i) relatively poor levels of coverage and quality of services, (ii) a noticeable lack of innovation, (iii) arguably a lack of effective, constructive competition, (iv) the NextWave bankruptcy (following the 1997 auctions), and (v) a less developed wireless marketplace than Europe, much of Asia Pacific and than would be expected given other technological take-up/appetite in the US.”

The above arguments are widely accepted by the industry and the financial community. The table below highlights some key industry comments on the impact of auctions:

Exhibit 11: Industry comments on auctions

NiQ Lai, Credit Suisse First Boston	"We ... consider the auction proceeds to be an industry 'tax burden' that deters long-term growth, as it has to be recouped eventually from customers, usually in the form of higher prices. As such, we consider auction proceeds to be, in fact, a tax that governments cannot afford to impose if they want to stimulate a vibrant wireless environment."
Philip Tulk, Lehman Brothers Asia	'It is our view right now that the businesses are not worth this quantity of money' (Reuters 03.05.00)
Merrill Lynch	'The auction process must rob the mobile communications industry of direct investment funds... Customers are likely to foot the bill ultimately... Taking investment funds from the industry cannot be good for its development...High license fees paid to the government must produce weaker companies and therefore...less competition...we believe that the Finnish approach (and, indeed, Spanish) is much better' ('UK 3G Auction', 30.03.00)
Jerry van Kaathoven, Rabobank International, Amsterdam	'It's the subscriber that's going to pay for the huge licensing fees... Simultaneous multiple-round bidding lead to higher prices, which are not in the interest of the consumer... I'm not so sure there is a business case' (Communications Week International, 17.04.00)
Andrei Gorodilov, CSFB analyst	'The UK licence auction suddenly exposed the grim prospect of having the entire fate of future mobile industry at the mercy of state administrators - worries about the capability of the industry to withstand anticipated credit pressures over the next few months are taking root.' (FT, 02.05.00)
Federation of Electronics Industry Director Simon Wilson	'Auction will lower profit margins for suppliers to the industry and higher prices for users - it will affect the rate of take up'
Telecoms Managers Association DG David Harrington	'It is putting a millstone around those operators' necks...they are proposing to slap an indirect tax on technology...ultimately, consumers are going to have to pay for the high cost of 3G licenses'
UMTS Forum	'...other administrations should look closely at the high cost incurred by bidders when participating in an auction-style contest, and should consider carefully when finalising their own licensing processes the likely impact on the end-user cost of UMTS...services. It is our strongly-held view...that a 'beauty contest' approach - as already successfully proven in Finland, Spain, Thailand and other countries - represents a preferable licensing methodology that best serves end user needs such as early roll out and reasonable prices for services' (from Website)

Source: Various as indicated above

6.3 Auction favours the bigger and better financed international operators

While competition in the market should ensure that the best operators survive, the results of an auction would likely result in some of the existing operators being outbid by bigger and better financed international operators or speculators. This will clearly have a negative impact on the future of the mobile industry in Hong Kong as it is the smaller operators like SUNDAY who have been the engines of innovation in the market. An auction would ensure neither the right mix of companies, the best network nor the cheapest service for consumers.

6.4 An auction would be most likely to introduce new players into an already extremely competitive market, causing economic distress to the industry

Since new players, who tend to be bigger and better-financed international operators or speculators, are likely to win 3G licences in an auction, Hong Kong may end up with more than six mobile operators.

New entrants are likely to bid extremely highly for the Hong Kong licences since they view them as strategically valuable in their attempts to expand into the much larger Chinese market.

6.5 Responses to points raised in the OFTA consultation document

The argument described in this section responds directly to the question raised in the OFTA document under point 4.13:

What licensing procedure should be used – auction or beauty parade? (OFTA point 4.13)

Response - An auction should not be used – instead a beauty contest with competitive performance criteria should be used to extract the maximum value from the operators

- An auction would increase the operating costs of the operators, which are likely ultimately to be borne by the customers and the Hong Kong economy
- An auction would favour the bigger and better-financed international operators willing to pay a premium to enter the strategically important Hong Kong market
- The auction would most likely lead to the introduction of new players into an already extremely competitive market, causing economic distress to the industry
- Other forms of beauty contest, with competitive elements, offer OFTA the opportunity to extract commitments which are more likely to ensure the creation and delivery of substantial benefits to the Hong Kong economy
- Such a process, which was used for the 1996 PCS licensing round, would enable OFTA to ensure that maximum benefits were delivered to the people and economy of Hong Kong.

7. Competition at the Service Level

Considering that there could be up to six 3G network operators, competition will undoubtedly be intense at the infrastructure level. If additional competition is desirable SUNDAY believes that it should be allowed at the service provision level.

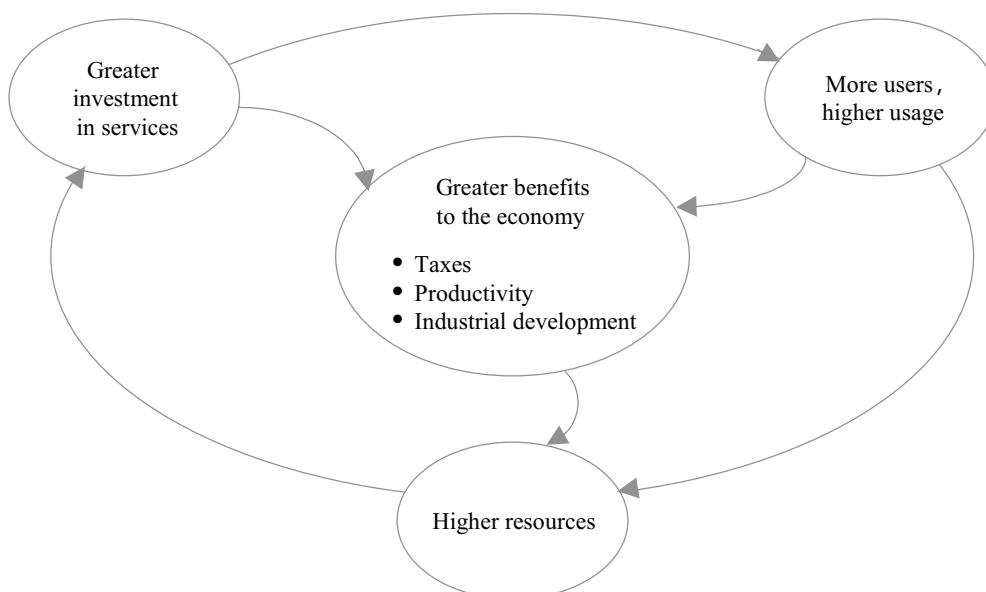
As demonstrated earlier, the Hong Kong mobile market is already the most competitive in the world. After the previous round of consolidation it is now at the delicate stage where some of the operators have yet to make profits after several years of massive investment. The renewed investment requirements for the 3G networks may deepen their losses. If this is exacerbated by the entry of a new operator, it is most likely that one or two of the smaller players will not survive the increased competitive pressure. Hence, a new entrant may actually trigger off another round of consolidation which could result in Hong Kong having less than the six operators it has now.

Allowing more players at the service provision, and not the infrastructure, level has the following advantages:

- It could introduce more players into the market without the risk of excessive investment in infrastructure. Indeed, we are likely to see a proliferation of MVNOs and service providers as demonstrated by the experience in the UK.
- It may encourage more innovation by network operators and at a quicker rate, as the network operators will need to upgrade their platforms to provide more competitive services, and to support the services demanded by MVNOs and service providers.
- The 3G infrastructure and investments by the existing network operators will be put to better economic use.

The net result is a virtuous circle of sustainable investment, increased usage and innovation in the 3G market in Hong Kong.

Exhibit 12: Virtuous Circle



The introduction of MVNO-type competition will only be effective and non-destructive if these service providers are prevented from adopting a predatory pricing strategy. MVNO regulation should therefore mandate that consumer pricing must not be set at levels below the costs of using the 3G network.

There are several approaches to regulation aimed at avoiding predatory pricing; For example, all countries belonging to the European Union are subject to Article 90 of the European Treaty, which prohibits predatory pricing where it can be demonstrated to be an abuse of a dominant market position. This has been effective in preventing predatory pricing in European telecommunications markets.

Other examples of instances where governments have sought to prevent predatory pricing are outlined below:

Exhibit 13: Examples of predatory pricing legislation

Malaysia	Two new guidelines have been unveiled that prohibit conducted related to (among others) predatory pricing. Those acting in contravention of the guidelines can be fined or imprisoned for a term not exceeding five years. Upon receipt of a complaint the CMC will conduct an investigation in accordance with a set of criteria to determine whether the licensee is in fact in a dominant position and if it is guilty of 'substantially lessening competition.'
China	Internet service provider HKNet has called for tougher anti-competition regulations in anticipation of a drop in prices for high-speed service access because of increased competition. MD Charles Mok has said that regulations should be tightened to prevent predatory pricing practices. He said that 'the government should understand that it can't only focus on driving down prices. If prices are pushed to extremely low levels it could endanger the long-term survival of other service providers, and the end users will ultimately suffer.
UK	Scoot.com the information services group won a victory over BT when watchdog Oftel warned the former monopoly for predatory pricing.
Singapore	The telecommunications authority of Singapore is easing its regulation of service pricing. However, it will continue to impose minimum service standards as minimum safeguards to protect consumers and maintain an oversight role over market developments to ensure a sustainable competitive environment. Communications Minister Mah Bow Tan said that the TAS has the duty to ensure competition is sustainable as it tries to liberalise the telecommunications market. It has to ensure that incumbents do not adopt anti-competitive measures such as predatory pricing, to keep out competitors.

7.1 Responses to points raised in the OFTA consultation document

The argument described in this section responds directly to the questions raised in the OFTA document as follows:

Should a service provider or MVNO industry structure be mandated? (OFTA point 5.18)

Response - SUNDAY agrees with the TA view that service provision could be separated from network operation, but that this should be done on the basis of commercial negotiations between operators

- Introducing competition at the service level is an effective means of encouraging further competition in the market while guarding against the threat of uneconomical investment.
- It would be important, however, to put in place competition measures which ensured that MVNO operators were not able to price their services below the cost at which they rented the 3G infrastructure.
- However, apart from this measure, regulatory intervention in the use of an operator's infrastructure by a third party should be kept to a minimum.
- Experience from other markets demonstrates that an arbitration body for the resolution of disputes would be an important component of the new competitive framework.

Should measures be introduced to safeguard competition in the 3G environment? (OFTA point 5.7)

Response - The best means of protecting competition is to introduce the concept of the regulation of dominant players

- In a complex market with a complex set of products and services, and various pricing packages, it is difficult to implement micro-legislation to guarantee the operation of fair competition
- Instead, umbrella competition law can successfully deter anti-competitive actions such as predatory pricing, based on the identification of "dominant" players due to their share of market (e.g. if control over 30% of market share)

8. Other issues

8.1 Roaming by 3G operators on incumbents 2G networks

Mandated national roaming has been deployed in a number of countries, notably Italy and the UK to encourage infrastructure competition in large geographic territories for which it is costly and time-consuming to provide coverage.

The features of these markets which make mandated national roaming appropriate do not apply to Hong Kong, which is a small territory and one of the most densely populated areas in the world.

We maintain that there should be no new entrants into the market, therefore this measure should be unnecessary.

Should new entrants be allowed / mandated to roam onto 2G networks? (OFTA point 5.13)

Response - There should not be mandated national roaming by new entrants onto 2G networks

- We argue that there should be no new entrants into this market, and the measure would be nevertheless unnecessary in a small territory like Hong Kong.

8.2 Roaming by unsuccessful bidders on 3G networks

To encourage competition at the service provision level SUNDAY and the other operators would open their network to MVNOs and content providers at commercially negotiated terms.

These MVNOs and content providers can then use the purchased capacity and functionality to configure services for sale to the customers.

Each new network will be configured differently, creating a large number of technical and operational issues which would determine the nature of the services that would be supported by a host network operator.

This will have a clear impact on the terms of roaming agreements – since each arrangement would involve a different level of co-operation and support between network and service operator, these arrangements should be arrived at as a result of commercial negotiations between consenting parties.

Should unsuccessful applicants (incumbents) be allowed to roam onto 3G networks? (OFTA point 5.14)

Response - All national roaming arrangements should be made between consenting operators on commercial terms negotiated between the operators. There is no indication that mandating such measures would be required in Hong Kong.

- Services supported will vary according to the host network configuration
- Therefore arrangements should be made on a case-by-case basis. Mandating terms and conditions for roaming would frustrate the ability to create flexible arrangements between players.

8.4 Should Hong Kong's spectrum allocation conform to ITU's IMT 2000 allocation? (OFTA point 3.12)

Response - We agree with OFTA that the spectrum allocation in Hong Kong should conform to the ITU's IMT 2000 allocation.

- The evolutionary approach to the transition from 2G to 3G can be best effected if the number of radio interfaces and network options should be minimised.
- The ITU work on developing the IMT2000 allocation is designed to ensure this, and so represents the most sensible approach.

8.5 Should mobile be regulated separately from fixed, or on the same basis? (OFTA point 5.12)

- Mobile services and fixed services should be regulated by the same authority but should remain separate licences.