

screen-based services. Consistent with our policy objective of facilitating freedom of access to information, we are proposing to define 'television programmes' that are subject to broadcasting regulation as essentially the type of programmes that are being broadcast currently by off-air and pay TV broadcasters. The definition will also make it clear that other on-line information services such as those currently available on the Internet are excluded from the proposed regulations.'

This might strike some as hopelessly vague but by adopting this approach the Hong Kong Government is at least in good company. A similar approach is adopted in the US *Communications Act*.

Pay TV Market Review

The Government followed up its February statement with the release of its review of the pay TV market in March 1996. This review arose out of an announcement made in July 1995 by the Secretary for Recreation and Culture to the Legislative Council that a review would be carried out in early 1996 to decide how best to deregulate the pay TV market with minimal impact on both existing and potential broadcasters.

The Government's report states it was based on an analysis conducted by outside consultants who advised VOD services would compete with Wharf and could significantly increase Wharf's current losses. Accordingly, the Government considered that complete deregulation was not in the interests of Hong Kong as 'severe competition' may force some competitors from the market. 'This', the Government stated, 'could damage business confidence in Hong Kong at a sensitive time' - Hong Kong reverts to Chinese rule on 1 July 1997. Severe competition was also considered by the Government to be inconsistent with its policy of providing 'a healthy and fair operating environment for all broadcasting operators, in addition to promoting customer choice and industry competition'.

Accordingly, the paper recommended not one but two VOD service providers be licensed. The paper also recommended an extension of Wharf's monopoly in the provision of subscription television services for a further two years to mid-1998.

The Hong Kong Government, therefore, without any apparent discomfort, was happy to claim on the one hand that Wharf must be insulated from competition, and accordingly, no new pay TV licences will be granted, but on the other hand that VOD - which the

government admits will compete with Wharf - should be allowed. Further, the Government proposed there should be not just one VOD service, as that would allow the selected operator to monopolise what would be, by the Government's own admission a competition market, there should be two operators. However, there shouldn't be more than two because that would be too competitive!

At the end of the day this wholly sorry course of events became somewhat academic for, just as the Government's policy deliberations overtook legal proceedings, commercial events overtook the Government. On 5 March 1995 HKT announced that, notwithstanding the fact that its trials demonstrated VOD was commercially viable, it was delaying the full roll out of its VOD network for a year or more to 'incorporate better technology'.

The Government's reports and HKT's announcement may have doused the flames of the dispute, but the embers are certainly still smouldering.

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'Interconnection from the New Entrant's Perspective'

Mei Poh Lee gives an account of New T&T's regulatory and commercial interconnection battles, as a new carrier in Hong Kong's telecommunications market, and provides comment on strategic issues and the role of the regulator.

Introduction

In October 1995 New T&T launched its first commercial services, with 'Revolution' as its theme. With the Chief Secretary of Hong Kong, Mrs. Anson Chan, and the Telecommunications Authority of Hong Kong ('the Authority'), Mr. Alex Arena, as the witnesses at our launch ceremony, we pledged to rewrite the history of telecommunications in Hong Kong. For indeed a revolution had occurred in the annals of the industry: the people in Hong

Kong were about to be pleasantly surprised with the ability to choose between fixed network operators!

Our initial advertising campaign in October 1995 centred around the Beatles inspirational song 'Revolution', in answer to the incumbent operators advertising theme of 'Imagine', which used, as its signature tune, the song 'Imagine' by John Lennon. As a person who was not conscious during the Beatles' era, this vicarious involvement in Beatlemania was a high point in my life. Those were heady days indeed.

On a more serious note, I would like to state that this paper is aimed at giving you an insight into the practical issues and problems faced by a new operator in the Hong Kong environment, drawn from New T&T's experience thus far. My aim is not to expound theories to you, even if we would have liked some theories to have been applied in practice over the past 30 months or so. Clearly, because of constraints placed by obligations of confidentiality, we cannot disclose particulars of any confidential interconnection discussions here. I am sure that even without those particulars

most of you will recognise the similarities between the interconnection issues we have in Hong Kong and those endemic to every newly competitive telecommunications market.

Who is New T&T?

New T&T Hong Kong Limited (formerly Wharf Telecom) was formed specifically for the purpose of bidding for one of four Fixed Telecommunication Network Services ('FTNS') Licences put on offer by the Hong Kong Government in June 1992 following what is described as a 'comprehensive review' of the Government's telecommunications policy. On 30 November 1993, the Authority announced that he had decided to issue FTNS licences to Hutchison Communications Limited, New T&T and New World Telephone Limited, as well as to Hong Kong Telephone Company Limited ('HKTC'), the incumbent operator, whose monopoly officially ended on midnight 30 June 1995. New T&T's licence was issued to it on 27 June 1995.

New T&T has built its backbone network along the route of the MTR System [Mass Transit Railway - Hong Kong's subway system]. This backbone network is an optical fibre network based on a SONET (Synchronous Optical Networks) 'ring-on-ring' topology, to ensure diversity and reliability of the network (or so my engineering colleagues assure me).

So, where does the regulatory framework fit into this, or *vice versa*?

In Hong Kong, there are four fixed line operators, 4 mobile operators, 6 PCS licences and numerous PNETS (Public Non-exclusive Telecommunications Services) licencees. There are no anti-trust laws or laws which spell out the meaning of dominance in any market, let alone the telecommunications market. The rules regarding anti-competitive conduct in telecommunications can, however, be found in the General Conditions of the FTNS Licence, and in particular, in General Conditions 15 and 16.

General Condition 15 deals specifically with anti-competitive conduct, and expressly prohibits 'any conduct which, in the opinion of the Authority, has the purpose or effect of preventing or substantially restricting competition in the operation of the Service' (which is defined in Schedule 1

of the FTNS Licence as *inter alia* 'all telecommunication service between fixed points in Hong Kong capable of being provided utilising the Network', such 'Network' being 'all such telecommunication lines established, maintained possessed or used whether owned by the licensee, leased, or otherwise acquired by the licensee for the purpose of providing public fixed telecommunication network services').

General Condition 16 prohibits a licensee from engaging in conduct which 'has the purpose of preventing or substantially restricting competition in a market for the provision or acquisition of telecommunication installations, services or apparatus', where the licensee is, in the opinion of the Authority, in a dominant position in the market. Such conduct, provides General Condition 16, amounts to an abuse of the licensee's dominant position. Conduct which the Authority may consider falling within the conduct referred to above includes, but is not limited to-

- predatory pricing;
- price discrimination;
- the imposition of contractual terms which are harsh or unrelated to the subject of the contract;
- tying arrangements; and
- discrimination in the supply of services to competitors.

The rules set out in General Conditions 15 and 16 are applied in accordance with the Authority's Guidelines to Assist the Interpretation and Application of the Competition Provisions of the FTNS Licence ('Competition Guidelines').⁽¹⁾ The competition provisions, however, according to the Competition Guidelines, are 'not to establish an exhaustive anti-trust and consumer protection regime for the telecommunications industry in Hong Kong'.⁽²⁾ Rather, as the Competition Guidelines go on to say, 'they lay down standards of conduct required to be observed by FTNS licencees, the object being to ensure that the competition which is sought to be introduced is not rendered illusory'.

In addition to the Competition Guidelines, there are also the Guidelines to Assist the Interpretation and Application of the Interconnection Provisions of the Telecommunication Ordinance and the FTNS Licence ('Interconnection Guidelines')⁽³⁾, which

sets out the bases upon which the Authority will intervene to make determinations in relation to interconnection matters, which are dealt with specifically in General Conditions 13 and 31 of the FTNS licence, and section 36A of the Telecommunication Ordinance of Hong Kong, which are the primary sources of the Authority's power to make such determinations.

General Condition 13 of the FTNS Licence requires New T&T (and other FTNS licenseees) to interconnect its Services and its Network, the definitions of which we discovered earlier, 'to other telecommunication networks and services licensed, or deemed to be licensed, or exempt from licensing under the Telecommunication Ordinance.'

General Condition 13(3) requires a licensee to use 'all reasonable endeavours to ensure that the interconnection is done promptly, efficiently and at charges which are based on reasonable relevant costs incurred so as to fairly compensate the licensee for those costs'.

General Condition 31 provides, amongst other things, that if the Authority reasonably forms the opinion that it is in the public interest for certain types of facilities to be provided, shared or used by a licensee, he may issue directions to that licensee to coordinate and cooperate with other licenseees in respect of the provision, use or sharing of any such facility, or if the parties to an interconnection arrangement cannot agree the terms and conditions of such arrangement within a reasonable time, the terms and conditions will be determined by the Authority. The Interconnection Guidelines state that the 'public interest' will be determined having regard to the following criteria:

- Government policy objectives for the telecommunications industry;
- consumer interest;
- encouraging the efficient investment in telecommunications infrastructure;
- the nature and extent of competition among the parties to interconnection, and their ability to compete with each other fairly; and
- such other matters particular to the circumstances as the [Authority] reasonably believes are relevant to the public interest.

The Interconnection Guidelines state that the key considerations on which the Authority will seek to make determinations at an early stage if commercial agreement has not been achieved will be aimed at:

- the promotion of economic efficiency;
- meeting the Government's intention that competition be introduced;
- ensuring that benefits of competition flow to all sectors of the community as quickly as possible; and
- the need for consumers to be able to access freely competing services and exercise choice in taking up services.'

The Guidelines go on to say that in making his determinations, the Authority will have regard to the 'overall reasonableness of the stated requirements of each party.'

At first blush, the Hong Kong regulatory framework as mapped out above could only be heralded as equal, if not better, than what exists in most newly-deregulated markets.

Strangely, however, all the discretions and powers of determination described before are set against a background of 'light-handed regulation', meaning that the Government has adopted a 'hands-off' policy where the dominant operator is concerned. From a new operator's point of view, this approach leaves quite a bit to be desired.

Leaving aside the issue of whether the Hong Kong Government's policy goals have a fatal flaw - which is not overlooking the fact that the local fixed line market in Hong Kong is a natural monopoly - it would be quite natural for the reasonable man on the Star Ferry (or the No. 48 tram if you live in Melbourne) to ask the following questions:

- how does one deal with the incumbent in such a situation?
- how does one curb the dominance of the incumbent?
- how does one achieve interconnection with the existing network infrastructure of the incumbent?
- what should be the applicable interconnection charges?

- what role does the regulator play in the interconnection negotiations, if any?
- is the regulatory framework in Hong Kong adequate for the protection of new entrants?

A New Entrant's Requirements for Interconnection

Let me first deal with some simple concepts of physical interconnection to preface my remarks on this topic.

In the Interconnection Guidelines referred to before, the Authority has defined 'interconnection' as having the following components:

- the provision of physical facilities to enable two networks to communicate with each other and transfer communications across their boundaries; and/or
- the carriage of services for an interconnecting licensee within networks, and across network boundaries.

The first type of interconnection model prescribed by the Authority for Hong Kong in his Statements No. 6⁽⁴⁾ and No. 8⁽⁵⁾ in relation to interconnection and related competition issues is called

'Type I' interconnection. This form of interconnection involves the meeting of two networks through their respective gateways, at a notional point (or point of interconnection ('POI')) midway between the two gateways, as set out in Figure 1.

The other type of interconnection prescribed by the Authority for Hong Kong is called 'Type II' interconnection. This involves the interconnection of two networks at various points in the local loop, which you can see in Figure 2.

Under Type II interconnection, in a world where all things are possible, network operator 2 can interconnect at points A, B or C of the network of operator 2 or other operators, where point A is the main distribution frame (MDF) of the local exchange; point B is a distribution point out on the street, for example, a manhole or a lead-in duct into a building; and point C is the main distribution frame in a building.

Let us now turn to the difficulties of turning such concepts into practical reality. I should remind you also, before we do so, that under our FTNS Licence, we are obliged, like all other FTNS operators, to achieve interconnection of our network with the networks of all other operators 'promptly and efficiently and at charges which are based on reasonable relevant costs incurred so as to fairly

Figure 1

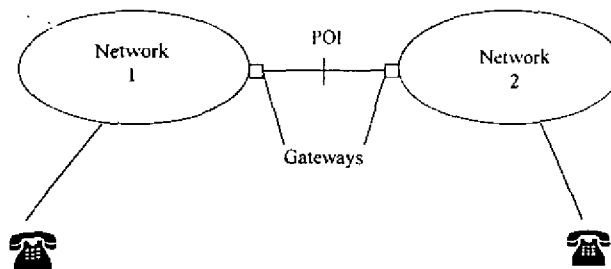
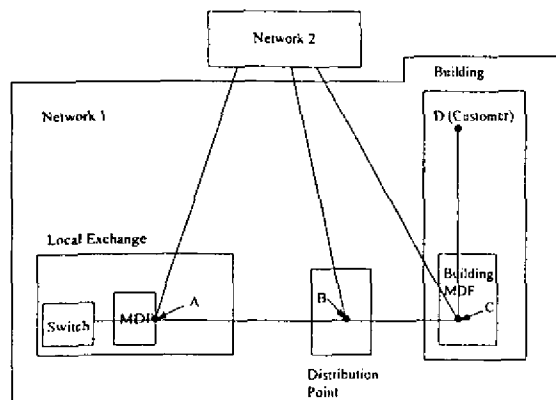


Figure 2



compensate the [other] licensee for those costs'. The significance of my emphasis on this point will become clear later.

One of the difficulties of Type I interconnection is that the 'notional mid-way point' is almost always dependent upon the network architecture of the incumbent. In theory, the incumbent has an ubiquitous network at various points of which a new entrant can expect to interconnect. However, in reality a new entrant may come face to face with a network that is apparently so clumsy that one might be excused to think that interconnection with such a network may not be the pot of gold at the end of the rainbow one had hoped it would be. Or would that be swallowing monopolistic rhetoric? Thus, in order to find a mid-way point that is convenient to the incumbent, a new entrant may have to backhaul its optic fibre all around the territory to meet at this mythical mid-way point between its gateway and the gateway of the incumbent. Needless to say, such backhauling would be an extremely expensive proposition for any new entrant.

Even if one did not wish to do the backhauling, and decided to pay the incumbent to provide both ends of the POI links, it is still an expensive proposition, even if the incumbent's charges are cost-based: and, as we all know, the answers to the question as to what 'costs' are is as elusive and profound as the answers to the question as to what truth is.

The difficulty with Type II interconnection is the physical space, or lack thereof. In the Hong Kong environment this is an important issue: even if there is enough of it, it may come at a high price.

However, having recently achieved a Type II interconnection arrangement which involves co-location of our equipment at HKTC's local exchanges, we can attest to the fact that co-location is certainly a preferable way of interconnecting with the incumbent, from a new entrant's point of view. It would be even more beneficial if the road towards reaching that goal does not feel like an Olympic event which resembles a marathon and a decathlon all in the one event. It took us almost 8 months to arrive at a point where we could start engaging in serious discussions with the incumbent in order to achieve such co-location after having spent some months trying to cajole and persuade the incumbent to let us co-locate at their local exchanges on

commercial terms, we spent a few more months trying to cajole and persuade the regulator to use his powers to level the playing field between the incumbent and the new entrants. Achieving interconnection of networks 'promptly and efficiently' took on a different meaning for me after that experience. But those were interesting months, nonetheless. One learns to be thankful for small mercies, as a new operator.

The moral of the story is therefore, whatever form of physical interconnection is possible, it is important, from the new entrant's point of view, that such interconnection be achieved as promptly and efficiently - in the true sense of those words - as possible.

Another important element of the physical interconnection story is that of the unbundling of the Customer Access Network, from the network termination point within the customer's premises right up to the local exchange of the incumbent operator. An Open Network Architecture (ONA) approach in relation to the incumbent's network, as we have seen being adopted in some states in the U.S, is the only way, I would submit, to have fair and equal competition in this environment.

Insofar as the various charges which should be applicable in relation to interconnection between two networks is concerned, it is important for a new entrant to be able to obtain information as to the cost structure of the incumbent - if the incumbent does not disclose this readily, it must be forced to do so by the regulator - in order that the new entrant is able to undertake reasonably useful cost/benefit analyses as to whether it ought to build or buy its own Customer Access Network or the various elements of it. It is also useful for a new entrant to know that it is not forced to pay monopoly rents, or reimbursing the incumbent for the sunk costs of a network built under a monopoly. I would submit that such reimbursement is tantamount to compensating the incumbent for losing its monopoly, which is hardly a fair proposition. Ex-monopolies tend to have self-serving memories: they always forget that they did not share their monopoly profits with anyone else, but are always keen to remind new operators that they should somehow pay for the drop in those profits.

Indeed, information is a precious commodity for new entrants - it is very easy for an incumbent to claim that any

or all information relating to telecommunications traffic is commercially sensitive, including that information which is collected during the period in which it enjoyed a monopoly, such as the geographical splits of such traffic. Any regulator serious about making competition work must ensure that historical market information is available for new entrants, otherwise the dominance of the incumbent would be insuperable. In an age of faster and more information than you need, sometimes, at your fingertips, the lack of such essential information on which to base your business decisions is bizarre, if not downright frightening. On that note, I must say that OFTA's [Office of the Telecommunications Authority - the Hong Kong regulator] website is very informative on current statistics relating to the industry.

As to the charges payable by one network operator to another for the passing of traffic over the point of interconnection, again the "invisible hand" theory is likely to disappoint us: it is no secret that in a deregulated market, the incumbent will always perceive itself as the loser, and will employ delaying tactics to frustrate the process, and the new entrants along with it. With the best will in the world, it is unlikely that a new entrant will ever be able to walk away from commercial negotiations regarding interconnection charges feeling that a reasonable compromised commercial position has been agreed between the parties. Regulatory intervention at the early stages of interconnection negotiations between network operators is essential. To his credit, in Hong Kong, the Authority did do something about it, which culminated in the publication of a statement on carrier-to-carrier charging principles.⁽⁶⁾

Here in Hong Kong, we also adopt the theory that all interconnection charges should be based on Long-Run Average Incremental Costs (LRAIC). So far, we have been unable to ascertain what this highly commendable concept of costs means in practical terms, or whether it has been applied strictly in the charges we are paying for interconnection. Given a light-handed approach by a regulator who obviously believes that interconnection charges will follow the mythical economic principle that the prices will reflect what the market will bear, we have chosen to take a commercial view of the matter: we cannot afford not to be earning revenue for months on end whilst economists debate with each other as to the meaning

of such costs. Anyone used to monopoly pricing will know that one's bargaining position with a single supplier is not very strong.

I cannot over-emphasise the need for a new entrant to achieve physical interconnection with the incumbent's network as quickly and efficiently as possible: after all, the essence of competition in the industry is about customer access.

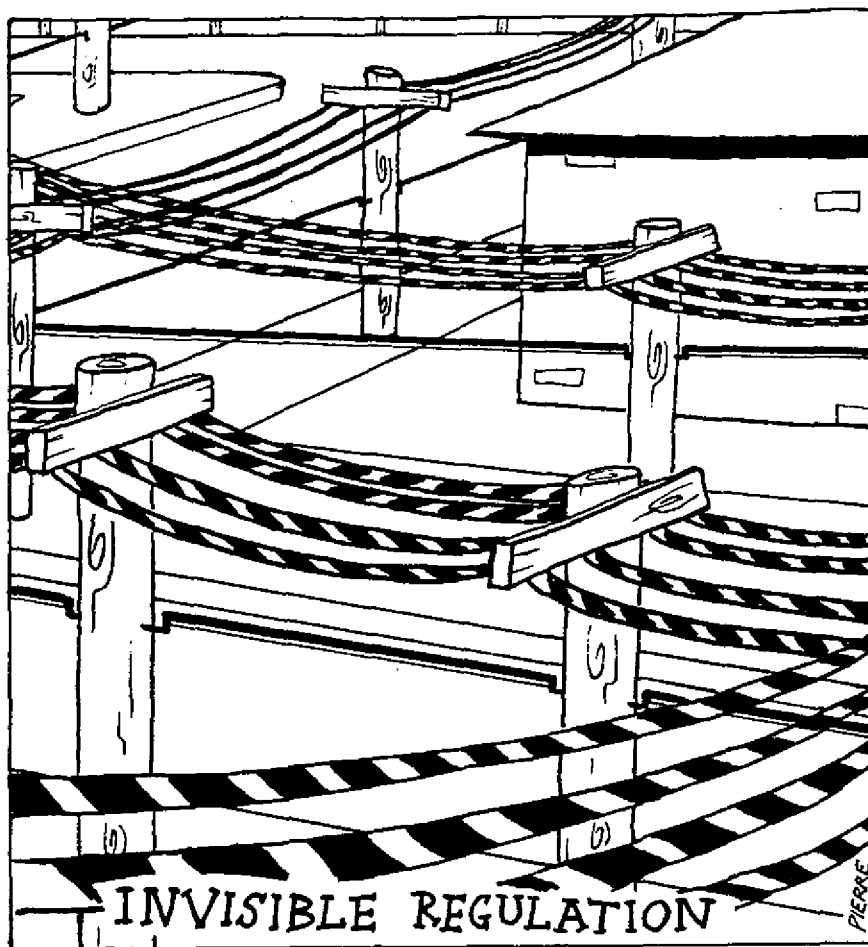
The most frustrating aspect about customer access in Hong Kong is the rate of access to buildings. Hong Kong's local loop is primarily a vertical loop hence access to this loop is essential, because it is effectively a bottleneck facility.

So far, the owners, managers and developers of buildings are reluctant to give access to a building to a new entrant. The incumbent, it appears, is not yet convinced that using its existing local loop is an efficient use of existing infrastructure. The new entrants, meanwhile, are feeling like sandwich filling.

However, to be fair to the regulator, two important breakthroughs in Hong Kong were brought about as a direct result of his actions: these were the allocation of indirect access codes to each FTNS operator and the requirement that CLI (Customer Line Identification) be passed between the networks on every call. This action allowed the new entrants to provide services earlier, without having to await the completion of the construction of their network infrastructure.

These two elements, including the requirement that network number portability be implemented through an interim solution (which is call forwarding), and by an IN (Intelligent Network) solution as a permanent solution by the end of 1996, have been instrumental in the new entrants, and in particular, New T&T obtaining some semblance of a customer base.

Have those actions been sufficient? From a new entrant's viewpoint, the answer is, on balance, that there is room for improvement. But it would probably be unfair to attribute the blame entirely to the Authority. Could it be that the legislative and administrative framework render him a "toothless tiger"? Do we need a much more complex set of rules regarding dominance, for example, given the current dearth of legislation dealing with such concept? How can the



incumbent's dominance be curbed? Can it be curbed at all? Let me share some war stories with you.

Negotiating with the Incumbent

In the beginning of the interconnection bargaining process, it was considered a useful tactic for the new entrants to engage the incumbent in multilateral negotiations - a microcosm of the WTO Round Table Talks, and equally as frustrating and non-productive - in an attempt to counter the dominance and negotiating power of the incumbent and in the hope that things could be resolved much faster. Corporations, like nations, often have differing agendas and priorities, hence, unsurprisingly, this 'unholy alliance' was not the miraculous success everyone had hoped it would be.

In my opinion, however, despite the not unforeseen demise of the 'alliance' formed by the new entrants, there is definitely some benefit to be derived from the co-operation of smaller new entrants, when faced with the obviously bigger and strongly entrenched ex-monopoly provider. Even if it is a fact that a regulator should not be surprised by any claims that the incumbent is stalling

in interconnect negotiations, he or she could or would more readily act if such claims represented a clear majority of the industry, as represented by the new entrants, as opposed to the claims of one entrant engaged in bilateral negotiations with the incumbent. Alternatively, appointing a spokesperson amongst a group of new entrants could be a useful tactic, like the experience of Nynex in U.K. in respect of the interconnect negotiations between BT and the cable TV operators turned telecommunications operators.

However, it is questionable whether blocs, alliances or arrangements of a similar ilk are actually effective in overcoming or reducing the dominance of the incumbent. In my opinion, it is ultimately the action (or inaction) of the regulator which has the most impact, positive or otherwise. As stated earlier, without the intervention of the Authority early in the process here in Hong Kong, we might still be attempting to negotiate the passing of CLI and the porting of numbers with the incumbent!

There is, of course, also the possibility that the incumbent realises the economic opportunities that the supply of customer access network services to new

entrants presents. Apart from enjoying the pecuniary benefits of being the sole supplier of such goods and services, and therefore still able to price at will to a certain extent, the incumbent can still control competition at the local loop through the provision of such customer access network services.

It is a very optimistic soul who expects an ex-monopoly to suddenly change its outlook and become customer-oriented, particularly in relation to a competitor. However, I would like to think that here in Hong Kong, there is slowly but surely, a gradual understanding that not only is being user-friendly to a new entrant good business sense, it also engenders strength and trust in the industry, which can only benefit all the operators and bring about the Government's policy goal of making Hong Kong a communications hub for the Asia Pacific Region. My view is that if ex-monopolies take the attitude that they must try to stop the competitors, they only end up hurting themselves in the process. If they took a more positive, commercial approach to the process of interconnection, that can only lead to healthier profits and higher share prices, because the new entrants would inevitably generate traffic and grow the market. Driving out competitors with financially healthy backers is not a cheap proposition, and foolhardy, when the alternative approach is not only to save money, but to make money off one's competitors. This would almost be as good as getting compensated for the loss of one's monopoly.

Role of the Regulator

We come now to the prickly issue of the role of the regulator in the matter of interconnection between networks.

In Hong Kong, the Government's policy goals for the telecommunications industry are set out in the Position Paper on Hong Kongs Telecommunications Policy⁽⁷⁾, issued in January 1994. These policy goals are namely:

- that the widest range of quality telecommunications services should be available to the community at reasonable costs;
- that telecommunications services should be provided in the most economically and efficient manner possible; and

- that Hong Kong should serve as the pre-eminent communications hub for the region now and into the next century.

To bring about these policy goals the Hong Kong Government had decided on a 'light-handed approach', as opposed to what has been described in the TA's own words as 'intrusive'⁽⁸⁾, in a reference to the US and other regulatory models. The Hong Kong approach is said to be deliberately 'less intrusive' on the basis of 'Hong Kong's 'free economy' philosophy'. What remains unanswered in my mind is whether this approach can still be justified on the few gains the new entrants have achieved in over a year of competition without the direct intervention of the Authority. In my opinion, the sort of 'intrusive' regulatory activity such as we have witnessed in Australia, the US and in the UK is needed in any newly competitive market environment especially one where space is a critical problem, and access to multi-storey buildings equates to access to customers. Even in those jurisdictions where the regulators have been interventionist in their approach, we have not seen the new entrants gain the sort of market share that would reasonably be expected with a more or less level playing field, let alone in an environment where the incumbent has the opportunity and ability to play new entrants off against one another.

Accordingly, if I could give a message to any regulator here today, I would caution against taking a light-handed approach so seriously that the very existence of the regulator is almost academic. Whether you believe in Adam Smith's 'invisible hand' theory or not, we would argue that no market is perfect, and markets do, and constantly, fail. Hence regulators do have an important role to play, even if they are coy as to their powers of intervention. In particular, their role becomes even more important in the early stages of competition, where they would arguably be required to act as 'surrogates for competition'⁽⁹⁾. Whether regulators use tools such as competitive checklists or gives directions under an operator's licence, they must act, and be seen to act, to stop any abuse or potential abuse of dominance by the incumbent operator.

Whilst it is all very well to be prepared to deal on a commercial basis with the incumbent, new entrants have a right to balk at paying too much, and certainly should object to being toyed with through disingenuous tactics such as

delay. When this happens, they should expect the regulator to take a serious view of such behaviour, and to take action to stop it. Sometimes new entrants can sound like eternal whingers, but the only way to stop the whinging if you are the regulator is to maintain an environment where the competition is real, not virtual. If companies invest in virtual profits, then virtual competition may be acceptable. Non-trivial sums of money are usually spent when new entrants engage in building real telecommunications networks. Therefore, it is not unreasonable for new entrants to hope for real market share through real competition.

Conclusion

Whilst dealing with incumbents and other interconnecting network operators is never easy, it is one of the most challenging and thought-provoking jobs around. Here in Hong Kong there have been some important gains by the new entrants partly due to regulatory action, and partly due to changes in some attitudes in the incumbent. New T&T looks forward to working closely with the Authority and OFTA to bring about an environment in which the terms 'virtual' and 'illusory' are never juxtaposed with the word 'competition'. All we ask for, like all new entrants everywhere, is an environment where it is possible to have fair and equal access to customers.

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