

## **Evolving Regulation for a Networked Hong Kong**

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Hong Kong's living environment may be more crowded than other cities. Hong Kong's high population and building densities, however, present some unique business opportunities. Take for example the rollout of telecommunications networks. Most people in Hong Kong live in multi-storey apartment buildings. The cost of an optical fibre laid to one building can be shared by many customers. Thus it is technically feasible and economically viable to roll out "alternative" access networks based on "fibre-to-the-building" to reach customers in 80% of the households. "Alternative" access networks mean networks competing with the ubiquitous copper local loop network of the incumbent fixed line operator. (This has not included the hybrid-fibre coaxial cable network initially built for TV broadcasting, which covers over 90% of households, except in buildings where it has been upgraded to provide voice and data telecommunications services.) Recent statistics indicate that 76% of households in Hong Kong have a choice of at least two access networks (i.e. one incumbent network and one "alternative" network) and 51% have a choice of at least three.

In addition to the coverage of the fixed networks, four 3G mobile networks are in operation. They have been, or are being, upgraded to 3.5G based on the HSDPA technology. In an era of convergence, when the boundary between fixed and mobile services becomes blurred, the mobile networks are just "alternative" access networks connecting customers.

Hong Kong has therefore become one of the most "networked" cities in the world. Household broadband penetration reached 67% while mobile penetration reached 129%. Competition in the market is intense and consumers have plenty of choices of attractive packages. What is remarkable is that the competition in the market is mainly "facilities-based" rather than "services-based". This is the sort of target aimed at by many regulators.

The status of a multi-networked society is attained through some deliberate effort of the regulator, OFTA, over the past years. All investment is market-driven and undertaken by the private sector. The government does not participate in the investment in the telecommunications industry. The regulator's task is to liberalize the market, lower the entry barriers and provide a level-playing field, so that if

investors, local or foreign, can identify business opportunities, they can enter the market. Their success or failure is based on the merits of their products and services and their own efficiency.

OFTA realized by simply opening up the market, effective competition might not materialize. Therefore OFTA had introduced a series of regulation to foster the development of competition. These included interconnection on terms based on reasonable relevant costs, mandatory unbundling of local loops (which in Hong Kong is called “Type II interconnection”), sharing of bottleneck facilities, fair access to numbering resources, number portability, and so on. In particular, to prevent fledgling competition being nipped in the bud by anti-competitive pricing of the ex-monopoly operator, OFTA initially applied *ex ante* regulation on the incumbent’s retail prices – these prices were subjected to prior approval by the regulator.

OFTA had also made special effort to facilitate the rollout of networks. One of the potential obstructions to network rollout is entry into buildings. OFTA has deployed resources to help the network operators to gain entry into buildings to lay their cables. Although there is a statutory right of access for the fixed network operators, OFTA prefers to use persuasion to gain the cooperation of the landlords and building managers. OFTA launched publicity campaigns, attended numerous meetings between network operators and building managers, and sorted out problems among operators in the use of duct space or sharing of in-building wiring. OFTA also asked the building authority to amend the codes of practice for architects so that new buildings are provided with adequate ducts and equipment rooms for telecommunications cables and equipment.

All regulators accept that regulation is just to replace market forces. It should be withdrawn when the market has become effective. The more vexing question is however when the market is competitive enough to withdraw the regulation. Hong Kong has undergone this process of intense debates on whether the market was competitive enough for some regulation to be withdrawn. The consultation took place in 2004 and is now a matter of history. Following public consultations, decisions were made to terminate the *ex ante* regulation on the incumbent’s retail prices from January 2005 and to phase out mandatory Type II interconnection in a phased manner from 2004.

The decision to withdraw the *ex ante* regulation on the retail prices of the incumbent was based on the intensity of competition in the market. The competitors were able

to exert competitive pressure on the incumbent through their own self-built networks or Type II interconnection. The *ex ante* approval procedure constrained the incumbent in its ability to respond to competitive offers in the market. Anti-competitive pricing of the incumbent can be dealt under the fair competition provisions in the telecommunications law.

The decision to withdraw the Type II interconnection was based on the assessment of the extent of coverage of “alternative” customer access networks built by the new entrants. It was estimated that the construction of “alternative” access networks was technically feasible and economically viable for 80% of households. OFTA has also considered the impact of Type II interconnection on the investment incentive to roll out competing networks in the longer term and the fact that facilities-based competition, with potential for product differentiation and higher performance services, is the preferred target.

What is unique in OFTA’s approach is perhaps the phasing out of mandatory Type II interconnection on a building-by-building basis. OFTA regularly publishes building lists identifying buildings with “alternative” access networks. Mandatory type II interconnection to these buildings is phased out three years after a building has been so connected. Mandatory Type II interconnection to all buildings will end in the middle of 2008. After this, regulation will be confined to locations where the copper local loops of the incumbent operator remain as “essential facilities”. This may still be the case for the minority of users at the remotest part of Hong Kong or for some old low-rise buildings in the urban areas.

The present regulatory environment puts more emphasis on market-based *ex post* regulation than rule-based *ex ante* regulation. Basically the regulator should set up a regulatory environment promoting competition and facilitating investment. This includes lowering the entry barriers, maintaining a level-playing field and making sure that the rules are transparent and clear. When such an environment has been set up, the regulator would sit back and allow the market players to compete with the minimum regulatory interference. The regulator would intervene when the market fails.

All *ex ante* regulation will be subject to review from time to time as the market develops. If the market can deliver, the regulator will not intervene. Some *ex ante* regulation needs to be retained to address actual or potential market failures. For example, the *ex ante* regulation on number portability remain because number

portability lowers switching barriers and facilitates the working of the market.

We are now more focused on creating a regulatory environment conducive to technological and market developments expected in the future. New radio technologies will require some overhaul of the spectrum management policies which have in the past been largely based on “command and control”. Consideration will be given to more extended use of market mechanisms in spectrum management. Convergence of the telecommunications and the broadcasting industries would require the establishment of one single regulator dealing with issues in the convergent industry in a more holistic manner. Merger of the existing separate telecommunications and broadcasting legislation will be necessary. Fixed and mobile convergence will require a review of the existing separate regulation on fixed and mobile services. The next generation networks, in a multiple network environment, would probably require little regulation at the access and transport levels, but may require some attention at the control and application levels if new “bottlenecks” are identified.

In conclusion, the current status of network rollout in Hong Kong is attributed to our market liberalization and privatization policies, the use of regulation to foster the development of competition during the initial stages of market liberalization, and the scaling back of the regulation as the market becomes more effective. The future focus of regulation is to create a regulatory environment conducive to convergence, investment in new technologies and next generation networks, with more emphasis on market-based *ex post* regulation than rule-based *ex ante* regulation.

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