Regulation in the Convergence Era

Speech by Mr M H Au, Director-General of Telecommunications
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Ladies and Gentlemen,

Introduction

It is a fundamental principle that regulation should be used as a surrogate to market forces. Regulation should therefore be scaled back as the market becomes more effective. Over the past few months, initiatives have been taken to reduce the level of regulation in step with technological and market developments. First, mandatory Type II interconnection will be phased out by 30 June 2008, with the minor exception of cases where the incumbent's local loops still satisfy the "essential facilities" criteria. Second, OFTA has proposed that the *ex ante* regulation or prior approval requirement for the incumbent's tariffs is to be lifted and fair competition will be safeguarded by *ex post* regulation.

The technologies and the market will continue to develop in the coming years. In particular, "convergence" will play a significant role in shaping the future of business and regulation in the information and communications technology (ICT) sector. Convergence in this context refers to the convergence of telecommunications, broadcasting and information technology industries of our economy. "Convergence" has been a buzzword for many years, but its realisation will be accelerated as a result of operators' migration to the next generation networks (NGN).

Next Generation Networks (NGN)

Traditional networks are designed to deliver one type of services. So there are telephone networks and consumers buy the telephone services from the telephone companies. Cable television networks used to deliver only television services. UHF terrestrial television networks deliver free television services. There were separate data networks delivering data services – still remember the X.25 data networks delivering packet-switched data services?

Digitisation and compression technologies and the standardisation of Internet Protocol (IP) enable all sorts of traffic – voice, data, video – to be enclosed in IP packets and delivered by the next generation networks through a common protocol. The next generation networks are therefore designed to deliver multiple services. NGN services can also be delivered over a multiple of networks. An NGN service is not necessarily tied to a particular delivery platform. We are already on the way to the NGN environment, as "triple play" services are already in the market.

The operation of next generation networks is often divided into four layers – the access layer at the bottom. On top of it is the transport layer. On top of the transport layer is the control layer. Content, applications and services are riding on the top layer. We may add the fifth layer underneath the network operation – the end-users' devices which may also be convergent. For example, your PC can be used for voice telephony, web surfing, and watching television services.

The "intelligence" for the creation of different services and service features is residing in the software of the switches inside the traditional networks. Thus the development of new services can be time-consuming and dependent on the vendors' support. The next generation networks remove the "intelligence" from the switches inside the networks to the edge of the networks or outside the networks, in the servers attached to the networks. This means that the development of new services by the network operators can be much more flexible and less time consuming. As the interface between the application layer and the control layer below it is open, it is also possible for third-party service providers, who are not network operators, to participate in the development and operation of services using the networks.

The implication on the network operators is that services which traditionally are bundled with the access lines and supplied by the network operators themselves are in the next generation networks just applications riding on the networks. The network operators find that they have to compete with third-party service providers. They would therefore need to modify their business models to make sure that they can recover their capital and operating costs through the delivery services.

In the NGN environment, multiple delivery routes exist for content, applications and services. And multiple operators and possibly multiple technologies are in

competition against one another at each level. The NGN will therefore enable market forces to work more effectively. For example, at the access level, there will be fibre-to-the-building competing with digital subscriber lines (DSL), hybrid-fibre-coaxial cable systems and in due course, the 3G services, the newer technologies such as the next generation broadband wireless access, e.g. WiMax, powerline communications, digital terrestrial television, etc.

In this way, certain bottlenecks in the traditional networks may in the next generation network environment not be bottlenecks anymore. Therefore NGNs offer further opportunities for scaling back regulation, particularly at the lower two layers for transmission.

Role of Regulation

So what would be the role of regulation in the next generation network environment?

In my view, more focus will be made to promote efficient investment in the networks and services so that we shall have an information infrastructure of adequate speed and capacity, accessible to everyone, over which all content, applications and services can be run. Resources will be deployed to facilitate the rollout of the NGN infrastructure guided by market forces. Regulation will be used to intervene only when the market cannot protect consumer and user interest or accomplish certain social objectives such as universal access, public safety, prevention of access to objectionable content by minors, etc.

We shall rely on the market to the maximum and intervene only when the market fails. To realise this, we have got to have a working market. We shall therefore need to foster the development of the market by removing obstructions to effective competition. Although the traditional bottlenecks in the lower layers may disappear, there may well be bottlenecks developing in the upper layers and these may warrant regulatory attention. The future dynamics of the NGN market are still uncertain and it would not be possible to foresee at this stage exactly where such bottlenecks will arise. Perhaps market power might develop around databases containing current customer locations, IP address/telephone number translation databases, certain software platforms for the development of services, application programming interfaces, etc. Open access,

interconnection and interoperability may be necessary to facilitate the effective functioning of the market. Let me also stress that we should not rush to the conclusion to regulate these areas. Some of the market power might arise as a result of business success rather than anti-competitive conduct. It suffices for us to review our legislation and regulatory framework and to make sure that we are ready to address the competitive concerns if they do arise.

To ensure that NGN infrastructure and services can develop under the guidance of market forces, we shall also need to remove any market imperfection arising from asymmetry of information between the suppliers and the consumers. The NGN environment is expected to bring to the users and consumers a wide range of services with different characteristics, capabilities and quality. For example, we would not expect that there will only be one type of voice over IP services in the market. Because of the wide choice in the market, there would be great consumer confusion and the market forces would not work effectively to lower prices and improve quality if the consumers and users did not have access to sufficient information to make informed choices in the market.

Once the market has developed, we shall safeguard the market by stamping out anti-competitive practices that prejudice the effective functioning of the market and prevent mergers and acquisitions from substantially lessening the level of competition in the market. In the absence of a general competition law, sector specific competition law will continue to play a significant role.

Regulatory Institutions

This brings us to the question of whether our legislation and regulatory structures are adequate to deal with issues that may arise in the next generation network environment.

Traditional regulation is organised around individual industries – the telecommunications industry and the broadcasting industry.

With convergence, services can be delivered over a number of different networks. In many countries, before merging of the telecommunications and broadcasting regulatory authorities, services may be subjected to different regulation administered by

different regulators depending on the delivery platforms.

To a large extent, such problems do not exist in Hong Kong as Hong Kong has addressed the convergence by organising the regulation around content and conveyance. This simulates the industry structure in the NGN environment, in which activities are organised in horizontal layers, rather than vertical segments.

The Telecommunications Authority (TA) regulates conveyance of all services, be they telecommunications or broadcasting services, under the Telecommunications Ordinance.

The Broadcasting Authority (BA) regulates the content of the sound broadcasting and television programme services under the Telecommunications Ordinance and Broadcasting Ordinance respectively. To be exact, the BA does not only regulate the content, but also the economic and technical aspects of the services. For example, the BA also enforces fair competition law in the provision of television programme services. The BA is also concerned with certain technical aspects of the services, such as technical standards and coverage.

In Hong Kong, the TA regulates all aspects of conveyance. We no longer restrict the types of services that can be carried over networks. Telephony, data and television services may all be carried. Thus we do not have the classification of telecommunications networks or broadcasting networks. The TA manages all radio spectrum, including that for telecommunications and broadcasting. Television programme services transmitted through a cable television network and the DSL access lines of a telephone network are regulated by the BA in the same manner. Therefore we do not have some of the problems in UK and Australia which led to their decisions to merge their regulatory authorities for telecommunications, broadcasting and radio spectrum.

However, it does not mean that the existing regulatory structure in Hong Kong is without imperfection in the convergence environment.

Video services carried over the Internet are not treated as “television programme services” and are therefore not licensed under the Broadcasting Ordinance. Whether video services carried on mobile phones are caught by the Broadcasting Ordinance will

depend on whether the mobile network is considered as an extension of the Internet. Sound broadcasting services under the Telecommunications Ordinance are confined to those transmitted using radio waves. Thus sound broadcasting services transmitted by a wired network are not subject to regulation.

Both the TA and BA carry out economic regulation, including the enforcement of competition provisions under the respective ordinances. But there could be gaps in the coverage. For example, if the conduct of a television programme service licensee prejudices competition in a telecommunications market, neither the TA nor the BA has power to take action. Conversely, if the conduct of a telecommunications licensee prejudices competition in a television programme service market, neither the TA nor the BA has power to take action. To a certain extent, gaps in the coverage may be mitigated by the fact that today television programme service licensees are also telecommunications licensees themselves or affiliated with the telecommunications licensees for the carriage of their services.

The TA's regulation is not entirely unrelated with content. For example, in the regulation of the Infoline service, a voice-based content service accessible over the public switched telephone networks, the TA has through a numbering plan required operators to control access to the adult content. Access control in this particular case is regarded as a conveyance matter, but actually the purpose is related to content regulation.

There is bound to be interdependence between the regulatory decisions of the TA and BA. For example, TA's decision on interconnection would affect competition in the television programme services market. TA's regulatory policy on the development of the networks would impact on the development of the content services delivered over the networks. TA's spectrum decisions would impact on the capacity of television programme service licensees to deliver content. A broadcaster has to obtain a television programme service licence from the BA and a network licence from the TA. What if the BA agrees to license a certain television programme service provider but the TA refuses to issue a network licence because the application fails to meet certain licensing criteria?

Such problems have in the past been avoided through coordination and cooperation between the BA and the TA. But in the convergence environment, a regulator that can take a broader look and make coherent and consistent decisions rather than each focusing on its own area of responsibilities might be more effective in accomplishing the policy

objectives. We might simply note at this stage that some of the potential areas of regulatory concerns in the NGN environment may be outside the jurisdictions of a telecommunications or broadcasting regulator.

The Government will be consulting on the appropriate regulatory structure in the convergence environment. We need not jump to the conclusion that a converged regulator would necessarily work better. A different split of responsibilities, for example, split between economic and technical regulation and pure content regulation might be an option. Undoubtedly, the industry and the community will be deliberating on these issues in the coming months.

Conclusions

To conclude, the regulatory principles applicable to the next generation network environment need not be different from those for the traditional environment. Regulation is only to address market imperfections. *Ex ante* regulation may be required to deal with obstacles that would obstruct the development of competition. Once the market has become effective, *ex ante* regulation will be scaled back. Fair competition and consumer interest would be safeguarded by *ex post* regulation. The difference is that the nature of obstacles to the development of the NGN market may well be different from those in the traditional environment. Some of these may be beyond the reach of the existing legislation or separate regulators with split responsibilities. What we need to do is to ensure that proper legislation and regulatory structure are in place so that the community can benefit from an effective market in the convergence environment.

Thank you.

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