

Next Generation Regulation

*Presentation by Mr M H Au, Director-General of Telecommunications
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Ladies and gentlemen,

The theme of this Roundtable is about innovation, inspiration and change in the Asian telecommunications industry. Regulation plays a critical role in facilitating new technology adoption, the key factor driving innovation and change. Therefore I have chosen the topic of “next generation regulation”.

Trends in the Telecommunications Industry

We are at the beginning of a transitional period during which conventional circuit-switched networks are progressively replaced by IP-based next generation networks. No one knows how long the transition will take. It would probably depend on the business plans of individual operators, but the future direction of change is obvious.

Next generation networks will have the capability of carrying voice, data, video and multi-media over the same network. Another characteristic is that users will be connected through multiple access networks based on different technologies. Some will be wireline-based, such as optical fibres and coaxial cables, and some will be wireless, such as wireless LAN and 3G networks.

Another development is that intelligence for the provision of various innovative services, which used to reside in the software-controlled switches inside the traditional networks, would be moved to the servers at the network edges. This enables the separation of service provision from network operation. This provides opportunities to those service providers, who are not at the same time operating the network facilities, to offer content, applications and services, possibly in competition with the facilities operators themselves.

Implications for Operators

These trends will bring challenges to existing fixed operators based on

circuit-switched technologies. So far when they supply the telephone lines to their customers, they can expect to supply the services to the customers as well. Suddenly they have to face competition from third-party service providers delivering services over the broadband connections, in addition to the competition that they are already facing from mobile substitution.

Some fees and charges, such as the local access fees and universal service contributions, are designed around the circuit-switched environment. They would not fit an IP environment, and the operators may find that these traditional sources of revenue are increasingly bypassed.

However the new IP environment will not only bring challenges. It will bring new sources of revenue as well. There is scope for a market for sophisticated content and applications to be developed over the IP network. This is already happening, in the form of IPTV services. There are also functionalities that cannot be provided over circuit-switched networks, for example, video phone, triple play services, etc.

Challenges to Regulators

Of course the opportunities from the IP environment cannot be exploited unless there is an underlying network infrastructure. The challenge to the regulators is how to preserve the incentives for efficient investment in the network infrastructure with the necessary speed and capacity reaching as many users as possible at affordable price, and yet at the same time safeguard the long-term benefits of consumers and users by promoting network openness and maintaining a healthy level of competition of content, applications and services. These two objectives may be in conflict with each other. To an investor in network infrastructure, it would certainly not be satisfied with providing only carriage services, which may be of low-margin or commoditized. It would wish to operate in the upper layers of the value chain as well and it would not wish to see non-affiliated service providers to divert revenue away from their high-value services. They would rather capture all revenue from users connected to their networks. But if the networks are closed to non-affiliated service providers, the choice of services would suffer, because one cannot expect too many networks to co-exist for economic reasons. In my view, there is scope for the development of a virtuous cycle whereby network openness would lead to more applications being provided over the infrastructure. This would lead to more usage and more users connected to the infrastructure, and in turn drive more network investment.

Preserving Investment Incentives

As we all know, investment incentives are coming from the opportunities to earn a return commensurate with the risk of investment. Therefore we should take care that regulation should preserve these opportunities.

For example, the considerations for unbundling requirements would be different for local loops which have already been built under the protection of a monopoly, and for optical fibre networks constructed under a competitive environment. Therefore in Hong Kong, we have never extended unbundling, or what we called “Type II interconnection”, to customer access networks based on optical fibres, microwave (the so-called LMDS) or the future broadband wireless access technologies constructed after the commencement of the market liberalization.

With the availability of multiple access networks, perhaps none of these networks would qualify as “bottleneck” for customer access, and unbundling requirements should be applicable to “essential facilities” only. With 71% of our households connected to at least one alternative customer access networks, our mandatory “Type II interconnection” to local loops of the incumbent operator will be terminated from end of June 2008.

At the next level up, the transport network, the question is whether the regulator should use regulation to force “network openness”. I would not rule that out, but I believe that commercially agreed arrangements are preferred to regulator-imposed ones. Access to transport network by non-affiliated service providers should be facilitated by the competition in network infrastructure. By way of example, this is the policy that we have adopted for connection of the Voice over IP (VoIP) service providers to the network infrastructure. Regulatory intervention is justified only when the transport network constitutes “bottleneck”, “essential facilities” or has significant market power. In the case of VoIP service providers, there is a choice of fixed networks in the market for connecting the service to other networks. Therefore we do not consider it necessary for the regulator to intervene in the terms and conditions for the VoIP service providers to access the network infrastructure.

Revenue for the recovery of network investment comes from the end-users and the service providers. While consumer benefits should be safeguarded by competition in the market, the regulator should be prepared to allow more flexibility for the network

operators and service providers to design the pricing and bundling of their services, subject of course to compliance with fair competition law. In Hong Kong, earlier this year, we have replaced the *ex ante* tariff regulation on the incumbent fixed network operator with an *ex post* enforcement of fair competition provisions when the market was judged to have reached a sufficient level of competition.

Safeguarding Long-Term Benefits of Users

As competition is the best vehicle to safeguard the interest of consumers and users, the regulator should foster the development of competition in the market. Regulatory entry barriers into the market should be lowered. Innovation and creativity do not necessarily depend on the availability of resources to invest in network infrastructure. Choice and innovation of consumers would be restricted if service providers could not enter the market without hindrance. Therefore, in our design of the service-based operator licence for VoIP services, we would not use excessive licence fees or unnecessary licence conditions to raise the entry barriers for service providers. Limited resources under the management of the regulators, for example, spectrum and numbers, should be made available for incumbents as well as new entrants.

To promote competition, we have to identify and tackle any potential blockage to effective competition. Interfaces between layers of the next generation networks could become bottlenecks. For example, if for some reason due to proprietary standard between the application layer and the underlying infrastructure, only service providers affiliated with the network infrastructure could have access to the infrastructure, this would be a cause for concern.

The right of consumers to access any content, applications and services should be upheld. Last year in Hong Kong there was the debate of whether consumers connected to broadband connections may have access to any VoIP service on the Internet. This issue has now been resolved and the right of access for consumers upheld.

If networks can be interconnected, then the chance of network closure is minimized. For example, if a service provider cannot gain access to a particular network to reach its intended customers, the service provider can gain access to another network and if that network is interconnected with the network connected to the intended customers, and the network-to-network interconnection allows customers connected to one

network to have access to services connected to another network, the customers can still access the service. The public Internet would ensure that services and applications can be delivered to their customers provided that the open and interconnected nature of the public Internet is upheld.

To facilitate network interconnection, basic interconnection rules should be laid down. If there were no such basic rules, the operators could take an inordinate length of time to negotiate. The outcome would be too unpredictable. These uncertainties and transaction costs would become entry barriers to the market. There ought to be an effective mechanism to resolve interconnection disputes. The regulator needs not have monopoly over this resolution mechanism. The resolution can be done by an arbitrator if that is agreeable between the parties.

To make sure that the market can work effectively, consumers ought to be able to switch service providers with the minimum of hindrance. Thus number portability should be preserved. Consumers could be given sufficient information for them to make informed choice in the market. This is to address a category of market failure caused by information asymmetry between the service providers and the consumers. In the next generation networks, we expect choice of services and applications to multiply. Services will also become more complicated. Disputes will be expected to increase. To ensure that the market can work smoothly with the least of friction, there ought to be an efficient mechanism for resolving contractual disputes between operators and consumers. The regulator is not empowered to perform this function and recourse by consumers to the court may be too unwieldy.

Regulation to Evolve with Market

With the elimination of bottlenecks, “next generation regulation” should be more focused on ensuring that the market works, rather than prescribing how the market should work. In Hong Kong, we have moved on from asymmetric regulation to foster the development of competition to symmetric regulation to ensure that the market works properly. We have scaled back the more prescriptive *ex ante* regulation and progressively replace it with *ex post* competition law where appropriate.

Regulation should not impede the deployment of new technologies. For example, in Hong Kong, we have tried to apply the minimum regulation to the newer types of IP phone services. IP phone services are not necessarily the same as conventional

telephone line services. We do appreciate that some consumers may need conventional telephone line services and they might expect the IP phone services to provide some essential features such as the capability to call emergency centres and continuity during power supply interruptions. That is why we have classified IP phone services into two types - Class 1 and Class 2. For Class 1 services, all the essential features of the conventional telephone line services should be available. This also ensures competition on a level playing field with providers of telephone line services using the traditional technologies. For Class 2 services, we would not hinder the deployment of technologies by imposing unnecessary licence conditions.

With the convergence of broadcasting, telecommunications and IT industry, the next generation regulation should cope with the convergent environment. The next generation networks will be organised in horizontal layers. This is how we should organise our regulation. In Hong Kong, for many years, we have a sort of horizontal layer structured approach to regulation. The Telecommunications Authority regulates the conveyance at the lower layer. The Broadcasting Authority regulates content at the upper layer. To cope with convergence, the Government is planning to merge the two authorities and to harmonize the telecommunications and broadcasting regulation. This will enable issues to be approached in a holistic manner.

To cope with the rapidly changing technologies, we shall need to make sure that our regulation is technology-neutral. Only when regulation is technology-neutral can it be future-proof. For example, we would not draw a distinction between voice services provided by circuit-switched networks and VoIP services provided by packet-switched networks. Like services should be regulated under like conditions.

Finally, in the next generation networks, users will be able to migrate from one access network to another. This will realise the communications goal of one device, anywhere, anytime. But this would also mean that a service may not be easily classified as a fixed service or mobile service, as the user may be fixed at some times and moving at other times. There is a need for review of the regulation to cope with the fixed-mobile convergence.

Conclusions

Ladies and gentlemen, I have just provided a quick overview on how the next generation regulation should perhaps look like. Let me say that there is not yet a settled view on the shape of the next generation regulation. In particular, the

regulator may have to grapple with complex tradeoffs in deciding to what extent regulation should be applied to promote network openness and interconnection while at the same time preserving the incentives to roll out network infrastructure. There ought to be continual dialogue among the regulators and the stakeholders in order to identify a course that would best uphold the long-term benefits of the users.

Thank you.