Latest Telecoms Regulatory Developments and Challenges

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Lawyers who know Asia

An Overview

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- Network Neutrality
- Infrastructure Sharing Agreements and Maximising Infrastructure Usage
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Next Generation Nationwide Broadband Network Structuring and Rollout

- The Next Generation Nationwide Broadband Network ("**Next Gen NBN**") is the wired network of the Next Generation National Info-communications Infrastructure.

- OpenNet Consortium was led by Axia NetMedia Corporation, and included Singapore Telecommunications Ltd ("**SingTel**"), Singapore Press Holdings Ltd and SP Telecommunications Pte Ltd. As the Next Gen NBN NetCo, OpenNet will design, build and operate the passive infrastructure of the network, which includes the dark-fibre network and ducts.

- Nucleus Connect is a wholly owned subsidiary of StarHub Ltd. As the Next Gen NBN OpCo, Nucleus Connect will design, build and operate the active infrastructure, comprising switches and transmission equipment.

Next Generation Nationwide Broadband Network Structuring and Rollout

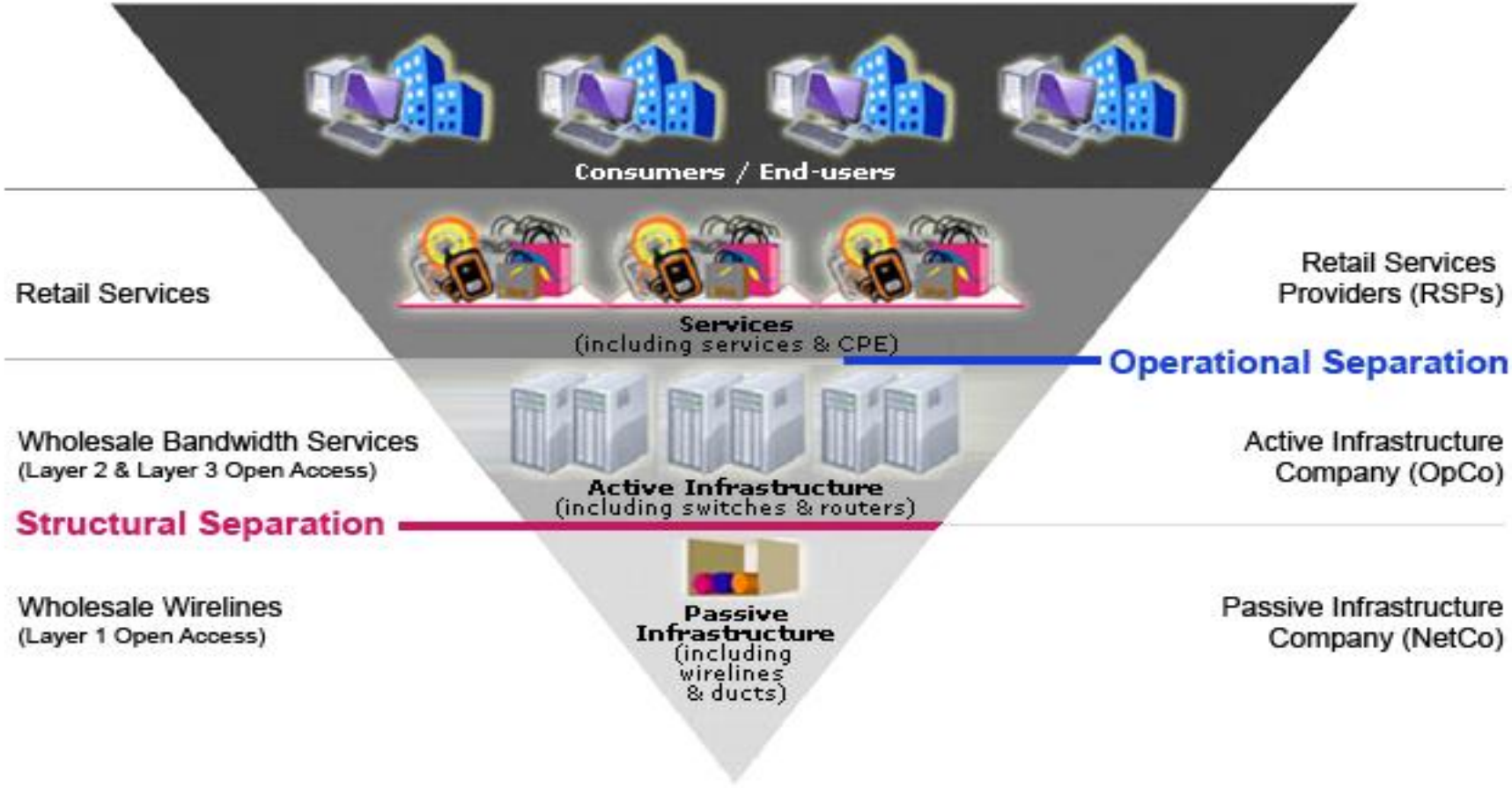
- Next Gen NBN's industry structure will be made up of three layers with structural and operational separation in place.

- Structural separation is the stricter form of separation requirement. OpenNet is required to have no effective control over its downstream operators, such as operating companies and Retail Service Providers ("**RSPs**"), and vice versa.

- Operational separation is the less stringent form of separation requirement. Nucleus Connect is required to be operationally separated from its downstream operators, such as other operating companies and RSPs, and vice versa.

- RSPs which form the third layer, will offer services over the Next Gen NBN to end-users, including businesses and consumers.

Next Generation Nationwide Broadband Network Structuring and Rollout



Next Generation Nationwide Broadband Network Structuring and Rollout

- OpenNet will own and deploy all the fibre optic cables, and offer wholesale dark fibre services to qualifying RSPs on a non-discriminatory basis.

- OpenNet will make use of the relevant and existing underlying passive infrastructure assets, such as ducts, manholes and exchanges that belong to SingTel.

- OpenNet's wholesale prices are expected to bring about competitive retail prices in the ultra-high speed broadband market.

- Under a Universal Service Obligation, which will take effect from 2013, OpenNet will be required to fulfill all subsequent requests to install connectivity to homes, offices and buildings.

Next Generation Nationwide Broadband Network Structuring and Rollout

- Nucleus Connect is responsible for building a fibre-to-the-home (FTTH) architecture using GPON and Active Ethernet network elements. The network architecture will incorporate an OSS/BSS platform which is capable of providing end-to-end, real-time assurance of service quality and reliability across different operational domains and network segments.

- For RSPs, the deployment of advanced technologies on Nucleus Connect's infrastructure will enable a comprehensive range of ultra-high speed and innovative next generation services to end-users.

- Nucleus Connect is required to ensure that the prices for its services remain competitive, transparent and non-discriminatory for RSPs.

- Milestones in Network Coverage:

  end-2010: 60%
  mid-2012: 95%
  Jan 2013: Universal Service Obligations

Network Neutrality

- "Net neutrality" is a term generally used to refer to Internet service or network providers treating all sources of Internet content equally, and the right of a consumer to access content and services on the Internet on a non-discriminatory basis.

- Proponents of net neutrality claim that blocking or discrimination of Internet traffic by ISPs or telecom network operators curtails consumer choice and impedes innovation. Proponents contend that without net neutrality rules, telcos have the incentive to engage in anti-competitive behaviour by blocking, degrading or imposing charges for specific Internet content in favour of their own services.

Network Neutrality

- Opponents of blanket net neutrality rules argue that telecom network operators and ISPs have the right to optimise the use of their network resources and charge Internet companies or content providers for use of their broadband networks to reach consumers. Restricting the telecom network operators' or ISPs' abilities to recoup their network costs will undermine future investments and deployment of broadband infrastructure.

- Opponents of blanket net neutrality assert that Internet traffic shaping or traffic prioritisation measures are necessary to ensure a reasonable Quality of Service ("**QoS**") standard for all users of the Internet, as otherwise heavy users who download or upload massive amounts of data will hog the Internet bandwidth and degrade the Internet access experience of other users.

Network Neutrality

- Infocomm Development Authority of Singapore ("**IDA**") issued a Consultation Paper on Policy Framework for Net Neutrality conducted in late 2010.

- IDA's policy approach towards net neutrality :

- ISPs and telecom network operators are prohibited from blocking legitimate Internet content

- ISPs and telecom network operators must comply with IDA's competition and interconnection rules in the Telecoms Competition Code

- ISPs and telecom network operators must comply with IDA's information transparency requirement and disclose to end-users their network management practices

Network Neutrality

- IDA's policy approach towards net neutrality :

- ISPs must meet the minimum broadband QoS standards to ensure a reasonable broadband Internet experience for end-users

- Reasonable network management practices are allowed provided the minimum broadband QoS are adhered to

- ISPs and telecom network operators are allowed to offer niche or differentiated Internet service offerings that meet IDA's interconnection, information transparency, minimum QoS and fair competition requirements

Infrastructure Sharing Agreements and Maximising Infrastructure Usage

- Infrastructure sharing can bring material benefits to both consumers (lower prices) and operators (lower costs).

- Operators would be able to use cost savings from the sharing of infrastructure to develop more innovative products and services for consumers. Competition will be more intense as more operators will have access to the necessary infrastructure from the outset and will not be able to use coverage quality as a differentiating factor.

- Operators will seek to differentiate themselves in the market through the rapid roll-out of innovative products and services thereby substituting competition at the infrastructure level with competition at the service level.

Infrastructure Sharing Agreements and Maximising Infrastructure Usage

- Operators would also benefit from reduced network redundancy. This means that they would not suffer from the potential opportunity cost involved in rolling out networks which are not significantly utilised until later stages of market development. This benefit would be particularly significant in the early years of deployment when the focus is on coverage.

- Alongside service competition, increased price competition is expected. Average service and product prices for consumers would be expected to be lower in sharing than in non-sharing environments.

Infrastructure Sharing Agreements and Maximising Infrastructure Usage

- Infrastructure sharing would benefit a new entrant into the Singapore market which, in turn, would further increase competitive pressures.

- Building an entire network would represent a significant additional expenditure for any new entrant and would significantly reduce its financial viability, especially as it has to be assumed that such a new entrant would only be able to command a relatively small market share.

- The possibility of infrastructure sharing, therefore, would aid the launch of a possible new entrant and further enhance the competitive environment.

Spectrum Allocation – To Auction or not to Auction

- As of 2001, IDA has adopted the auction methodology as the mechanism to allocate spectrum.

- Auction methodology is an objective, efficient, transparent and market-based approach that recognizes the scarcity of spectrum which is a finite resource.

- Spectrum has traditionally been allocated on an administrative basis and charged on a cost-plus recovery pricing approach. However, with rapid technological changes in the industry and the consequential competing demands from new operators and new services being offered, the traditional administrative allocation approach is ineffective in ensuring efficient use of spectrum.

Spectrum Allocation – To Auction or not to Auction

- Of the alternative spectrum allocation methods, administrative process, lottery, first come first served and auction, experience from various countries have proven that auctioning is the preferred methodology to adopt.

- In addition to raising revenue, an auction assigns licences to the institutions best able to use them and can be designed to enhance public policy goals such as avoiding anti-competitive behaviour.

- Administrative processes for allocating spectrum is advantageous to the extent that IDA is able to impose any criteria it chooses and thereby use the process to address its policy goals. However, such administrative processes lack transparency.

- Lotteries are not preferred as there is no way to ensure that the successful applicant's technical competence to develop, maintain and operate a public telecommunications service.

Cloud Computing and Continuing Transformation of Telcos from Infrastructure Developers and Managers to Pure Play Service Providers

- The Internet has enabled the creation of these new forms of applications and services by bringing together the traditionally separate worlds of information technology ("IT"), telecommunication ("telecom") and broadcast, a trend often called "convergence".

- This has caused shifts in market boundaries and business models with some telcos entering the IT arena to offer such services in competition with the traditional IT players.

Cloud Computing and Continuing Transformation of Telcos from Infrastructure Developers and Managers to Pure Play Service Providers

- Telcos have been aggressively looking at new areas of growth, and cloud computing has received an immense amount of industry attention as a potential candidate.

- Telcos have an innate ability to offer cloud computing services because of the inherent integration with network functionality and data connectivity, which alleviates concerns relating to reliability. Telcos are able to offer a guaranteed QoS covering storage, processing power and connectivity, which leads to a more seamless experience for customers.

- Additionally, because cloud computing is a natural extension of network competencies and leverages core network assets, it should lead to higher profit margins than other managed services that are typically more opex heavy.

CONCLUSION

THANK YOU

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