



**CONSULTATION PAPER ISSUED BY THE
INFO-COMMUNICATIONS DEVELOPMENT AUTHORITY OF SINGAPORE
INDUSTRY STRUCTURE FOR NEXT GENERATION ACCESS NETWORKS**

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PART I: POLICY OBJECTIVE AND REGULATORY FRAMEWORK

- 1 The telecommunications sector is an important driver of the economy and a strategic enabler underpinning the competitiveness of the larger economy. The principle of ensuring that Singapore has a globally competitive telecommunications market, with many players offering a wide range of innovative, high quality and cost effective services to consumers and businesses, has guided the Government's decisions in liberalising and regulating the telecommunications sector. The function of promoting effective and sustainable competition for the telecommunications sector is also one of the statutory duties of IDA.
- 2 To promote competition in the telecommunications sector, the Government embarked on a phased liberalisation of the telecommunications sector, with key milestones like the introduction of a second cellular mobile operator in 1997, and resulting in full liberalisation in all telecommunications markets on 1 April 2000. All markets, including international and domestic telecommunications services were liberalised and no restrictions were imposed on the number of players that could enter the market.
- 3 A regulatory framework was put in place to govern telecommunication operators in a liberalised environment, with the key regulatory principles and obligations included in the Code of Practice for Competition in the Provision of Telecommunication Services¹ ("Telecom Competition Code") first introduced in September 2000, and subsequently reviewed and revised in February 2005. Among others, the framework seeks to promote competition by encouraging market entry, lowering barriers to entry where required.
- 4 Under the Telecom Competition Code, licensees classified as Dominant Licensees are subject to more stringent regulation. These include regulation of

¹ Besides the Telecom Competition Code, the regulatory framework for the telecommunications sector is also provided in various legislative and administrative instruments like the Telecommunications Act (Cap 323) and its related Regulations, the licence for each operator, and other Codes of Practice and Guidelines.

tariffs for all services, including duties to seek IDA's prior approval for new tariffs, requirements to offer Interconnection-Related Services and Mandated Wholesale Services under regulated prices, terms and conditions, including requirements to offer access to unbundled network elements at cost-based prices. A Dominant Licensee may however seek exemption from any regulatory requirement, in respect of one or multiple services or facilities, which IDA will assess based on whether the markets in which those services are in are effectively competitive.

PART II: FUTURE INDUSTRY LANDSCAPE

5 Telecom operators internationally are beginning to upgrade their legacy networks, or deploy new high speed access networks, using Fibre-to-the-Cabinet/Building/Home, or alternative infrastructure of similar capabilities. These next generation access networks with extensive coverage will be strategic enablers for Singapore to exploit new economic opportunities in this digital age, leading to productivity gains and new possibilities for living, working and learning.

6 The economic and social spin-offs resulting from the competitive provisioning of high speed broadband and other value-added services to consumers and businesses will be significant. Through competition, consumers and businesses will be able to benefit from competitive and affordable pricing. A competitive and vibrant market will also foster innovation in the infocomm services market and promote Singapore as the centre of development for new economic activities to transform Singapore into a creative and innovative economy. Because of these reasons, the Government has decided to catalyse the deployment of a Next Generation National Broadband Network (“NGNBN”), with pervasive coverage and capable of providing bandwidth of 1Gbps and above to end users. As mentioned by the Prime Minister in the Budget Statement 2006 –

“Other countries and cities are already implementing ultra-high speed broadband and wireless networks. Some are laying fibre to homes, in anticipation of future demand. In today’s world, a national broadband network is basic infrastructure and a source of competitive advantage. We will develop a new national broadband network that is much faster than what is available today. It will offer fast, efficient connectivity to all – in schools, in offices and homes, and even on the move. It will help us plug into the global knowledge grid, and stay competitive with other cities...”

7 In order for the NGNBN to catalyse the development of a vibrant and competitive infocomm industry, regulated non-discriminatory access to the network is critical to ensure that competing telecom operators are able to obtain access to the network at reasonable prices, on a non-discriminatory

basis, in order to offer competitive and innovative services to end users. An industry structure that promotes such open access to the network elements and wholesale services on the network has been built into the Request for Proposals for the NGNBN which the Government announced on 11 December 2007. The Minister for Information, Communications and the Arts has clearly explained Government's policy intent at the launch of the Request for Proposals for Singapore's NGNBN, stating that –

*“IDA's findings indicate that a next generation broadband network will contribute to Singapore's continued economic success. It is also critical for the Next Gen NBN to provide **effective open access** to downstream operators. This will create a more vibrant and competitive broadband market. As a policy, we have therefore decided to adopt separation between the different levels of the Next Gen NBN to achieve **effective open access**. The RFP to construct the network will therefore provide for structural separation of the passive network operator from the downstream operators. If necessary, the government is also prepared to consider legislation to achieve such **effective open access for downstream operators in the next generation broadband market**.”*

*... I would like to reiterate that the Next Gen NBN tender will require that the appointed NetCo be structurally separated from downstream operators and vice versa to be consistent with the policy objective of **effective open access**. The successful bidder in the RFP would have met the requirements of **effective open access**.”*

- 8 Structural separation and operational separation have been specified in the tender for the NGNBN, demonstrating the Government's commitment to ensure effective open access to facilitate competition in the downstream market. In the context of the NGNBN tender, structural separation is defined as having No Effective Control², by or over other competing operators, such as telecommunication licensees and holders of broadcasting licences.

² “Effective Control” means the ability to cause the Licensee to take, or prevent the Licensee from taking, a decision regarding the management and major operating decisions of the Licensee.

Operational separation³ includes measures to dictate the way in which business units (or Affiliates) are managed or structured, and the type of relationships, dealings and transactions the business units have, but does not include a requirement that any business unit must be operated by different owners. This is to ensure that we achieve the NGNBN project objective of ensuring a vibrant and competitive Retail Service Provider (RSP) layer in the downstream market.

- 9 The fundamental basis for imposing separation on upstream operators is to ensure that downstream operators are able to compete on a level playing field. Structural and operational separation are not new concepts in the regulation of the telecommunications sector. Traditional regulation, practised by most regulators internationally, has relied on behavioural safeguards, such as the regulation of the prices, terms and conditions of “bottleneck” elements or services offered by dominant licensees or operators with significant market power, and prohibitions on anti-competitive conduct like price squeeze to guard against a vertically integrated operator pricing its upstream product excessively. Beyond such behavioural safeguards, structural safeguards like structural and operational separation will help to remove, or dilute, the commercial incentives and ability of a vertically integrated operator to favour its downstream affiliates and discriminate against competitors that may be reliant on it for an upstream input.

- 10 Especially in the area of non-price terms, vertically integrated operators do not have the right commercial incentives to provide quality wholesale inputs to their competitors, and may act in a manner that disadvantages their competitors with respect to their own downstream businesses or their affiliates. Furthermore, the complexities of service provisioning mean that discriminatory conduct could still exist especially in non-price terms. Structural separation has thus been discussed as a possible measure, to be applied to existing vertically integrated incumbent or dominant telecommunication operators. More recently,

³ Examples of Operational Separation may be found in the Undertakings given to the Office of Communications, UK by British Telecommunication PLC in accordance with Section 154 of the UK Enterprise Act, and the Telecommunications (Operational Separation) Determination 2007 made by the Minister of Communications, New Zealand pursuant to Section 69F of the Telecommunications Act 2001

operational separation has been implemented in various jurisdictions, such as the UK and New Zealand, as a measure to ensure equivalence of inputs in service provisioning, where the incumbent must provide services on the same prices, terms and timeframes, using the same systems and processes, and with the same commercial information made available, for both an operator's downstream business units and its competitors.

- 11 With the high cost of the passive infrastructure of the NGNBN, the operator that will control the passive infrastructure of the NGNBN (the "NetCo") will be classified as a dominant licensee by IDA. It will also be required to be structurally separate from other operators to remove its commercial incentive to act anti-competitively and discriminate against its downstream competitors, and act in favour of its own downstream business divisions or affiliates. This will ensure that the NetCo provides access to the NGNBN on equal terms to any of the service providers using the NGNBN, thereby ensuring a level playing field for all service providers that rely on the NGNBN to provide services to businesses and consumers.
- 12 Instead of structural separation, the operator that will control the active elements of the NGNBN to provide wholesale services (the "OpCo") to other service providers is required to be operationally separate (or functionally separate) from other operators, including its own downstream retail business divisions or affiliates. Operational separation will put in place a set of detailed safeguards for the OpCo to serve its retail business divisions or affiliates in a manner equivalent to how it provides service to other retail service providers ("RSPs"), so that price and non-price discrimination against the OpCo's downstream competitors will be checked. The requirement of operational separation, rather than structural separation on the OpCo took into consideration the fact that replication and competition in the provision of wholesale high speed bandwidth services is possible, but may not be extensive.

PART III: STRUCTURAL AND OPERATIONAL SEPARATION IN THE REGULATORY TOOLKIT

- 13 Structural and operational separation will be imposed on the operators of the NGNBN as part of the requirements of the tender. Apart from the NGNBN, IDA is considering whether such measures should be considered for other players in the telecommunications industry. IDA is thus considering whether structural and/or operational separation should be included in the regulatory toolkit for regulating other telecommunication operators, in addition to the existing regulatory measures described at paragraph 4 that IDA can already impose on operators today. In exploring this possibility, IDA recognises that while facilities-based competition has brought about effective competition for many market segments in Singapore, there are some market segments where facilities-based competition might be lacking and competing operators might be reliant on a vertically integrated operator's input products to compete in the provision of next generation services to end users.
- 14 Such a review is timely, in view of the deployments of next generation access networks and the economic benefits that can be reaped from competitive provisioning of services on next generation networks with extensive coverage. Furthermore, it is noted that as early as 2003, the ICT Working Group of the Economic Review Committee had asked the Government to explore the possibility of requiring the incumbent network operators to structurally separate their network and services provision, so as to promote services-based competition.
- 15 While IDA believes that such structural and/or operational separation may be required to catalyse the competitiveness of the infocomm sector and enable competitive provisioning of new and innovative next generation services to residential and business end users, IDA is cognisant of the need to ensure that the inclusion of structural and operational separation in the regulatory toolkit is necessary and reasonable. IDA thus seeks feedback on the following issues.

Scope for separation

- 16 IDA recognises that structural and operational separation is not required for all telecommunication licensees to achieve the policy objective of achieving a vibrant and competitive telecommunications sector for the future, through open access. Also, structural and operational separation may only apply in respect of some infrastructure types or network elements, and not all types of networks, depending on whether access to these networks and/or network are required by competing operators to achieve the stated policy objective. For example, given that there are three competing and substitutable nationwide cellular mobile networks with nationwide coverage in Singapore today, IDA is of the view that it would not be necessary to impose structural and operational separation on operators that control these networks.

Question 1: IDA seeks views and comments on the scope of separation that may be included in the regulatory toolkit, particularly differentiation in terms of types of operator, network elements, markets, or any other manner of differentiation. For example, should separation be considered for dominant licensees, and/or network elements that are costly and difficult to replicate, in respect of next generation access networks with extensive coverage etc.

Conditions for imposing structural and operational separation

- 17 IDA recognises that there may be different conditions and criteria under which structural and operational separation may be imposed. International practices also differ in this respect. For example, structural separation or the division and/or divestiture of business divisions is often provided for in competition law as a remedy to rectify anti-competitive conduct like the abuse of a dominant position. In the UK, the Enterprise Act 2002 allows the UK Competition Commission to make an order, which may provide for the division of any business (whether by the sale of any part of the undertaking or assets or otherwise), to remedy, mitigate or prevent the adverse effect of competition, if it has decided on a market investigation reference that there is an adverse effect on competition. For operational separation, some cases of implementation have been through voluntary undertakings by the incumbent operator, e.g., in the UK, while there have been instances where operational separation has been required through legislation, to promote more competitive service

provisioning with equivalence of inputs being offered for the access network, e.g., in New Zealand. The European Commission has also recommended the introduction of operational separation (or functional separation) as a possible regulatory tool in its Access Directive.

Question 2: IDA recognises that international practices differ in the criteria for imposing structural and/or operational separation, although the policy objective of most jurisdictions when imposing any form of separation is to ensure effective competition in the telecommunication markets.

IDA seeks views and comments on the appropriate criteria for the imposition of structural and/or operational separation as a regulatory measure.

Question 3: IDA seeks views and comments on the comparative benefits of structural separation vis-à-vis operational separation, in relation to the scope of separation and the criteria for separation for both structural and operational separation, stated in Questions 1 and 2.

- 18 IDA notes that the questions stated in above are non-exhaustive, and may be inter-related. IDA welcomes general feedback on the introduction of structural and operational separation as measures in the regulatory toolkit to be imposed on existing telecoms operators. IDA may follow up with further public consultations on the matter subsequently, given the complexity of the matter.

PART IV: INVITATION TO COMMENT

- 19 IDA would like to seek the views and comments from the industry and members of the public on the matters stated in the above paragraphs. This will allow IDA to have a better understanding of the issues at hand.
- 20 All views and comments should be submitted in writing and in both hard and soft copies (Microsoft Word Format), and should reach IDA by **12 noon, 13 June 2008**. Respondents are required to include their personal or company particulars, correspondence address, contact number and email address in their submissions. IDA will make all or parts of any submissions made in response to this consultation paper public and disclose the identity of the source. Any part of the submission which is considered commercially sensitive must be clearly marked and placed as an annex to the comments raised. IDA will take this into account in its review. All comments should be addressed to:

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AND

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