

## SINGTEL

### RESPONSE TO IDA CONSULTATION PAPER – NET NEUTRALITY

#### 1. INTRODUCTION

- 1.1. Singapore Telecommunications Ltd, SingTel Mobile Singapore Pte Ltd and SingNet Pte Ltd (collectively **SingTel**) refer to the Info-communications Development Authority of Singapore (**IDA**) consultation paper dated 11 November 2010 on net neutrality (**Consultation Paper**).
- 1.2. SingTel has a comprehensive portfolio of services that includes voice and data services over fixed, wireless and Internet platforms. SingTel is a leading provider of mobile telecommunications services over 2G and 3G networks, high speed data services through General Packet Radio Service (**GPRS**) and High-Speed Packet Access (**HSPA**) technology and wireless services on our WiFi platform. SingTel is also a leading Internet Service Provider (**ISP**) in Singapore and has been at the forefront of Internet innovation since 1994, being the first ISP to launch broadband services in Singapore. SingTel offers a comprehensive suite of broadband Internet services delivered both over the Digital Symmetrical Line (**DSL**) and fibre technologies. SingTel is also licensed to offer IPTV services under a nationwide subscription television licence granted by the MDA.
- 1.3. SingTel provides services to both corporate and residential customers and is committed to bringing the best of global communications to its customers in the Asia Pacific and beyond.
- 1.4. SingTel is committed to the provision of state-of-the-art telecommunications technologies and services in Singapore and welcomes the opportunity to make a submission in response to the Consultation Paper issued by the IDA.
- 1.5. This submission is structured as follows:

Section 1 – Introduction

Section 2 – Executive Summary

Section 3 – Net Neutrality

Section 4 – Speed Issues

Section 5 - Conclusion

## 2. EXECUTIVE SUMMARY

2.1. SingTel submits that there are no net neutrality issues in Singapore. In particular, SingTel notes that the net neutrality debate is distinct from issues relating to Internet speeds and differentiated Quality of Service (**QoS**) and prices.

2.2. In respect to net neutrality, SingTel submits that:

- the Singapore Internet market is characterised by strong competition;
- competition leads to the best outcomes for customers;
- any regulation should be evidence-based and proportionate to the identified anti-competitive conduct;
- network management practices are not anti-competitive, and are in fact essential tools that allow service providers to:
  - manage the efficiency of the network;
  - improve latency, jitter and packet loss issues;
  - increase or facilitate usable bandwidth and render reasonable QoS; and
  - invest and innovate in their networks.
- SingTel does not block legitimate Internet content and blocking of websites is only carried out upon request by relevant authorities and in compliance with regulatory requirements; and
- international developments, in particular, regulatory action in the US and Canada must be viewed in the context of those regulators imposing evidence-based responses to deal with systematic market failures in those countries. There is no market failure in Singapore.

2.3. In respect to the issue of Internet speeds, SingTel submits that:

- SingTel complies with minimum broadband QoS standards;
- SingTel complies with prevailing requirements to publish service information and network management practices; and
- the publication of average or expected speeds is counter-productive and likely to confuse consumers.

### **3. NET NEUTRALITY**

#### **Summary**

3.1. The IDA has invited comments on the following:

- the current state of net neutrality developments in the local Internet access market;
- possible developments in net neutrality in the future; and
- IDA's policy approach towards net neutrality.

3.2. In summary, SingTel submits that:

- Singapore is characterised by a highly competitive Internet market and there is no need for regulatory intervention in this market;
- regulation must be evidence-based and there is no evidence for the need for regulation in Singapore;
- network management practices are crucial and essential to the efficient management of the Internet and should not be affected by regulation;
- international developments should be viewed in their context; and
- existing levels of regulation in Singapore are more than sufficient to curb potential anti-competitive conduct in the net neutrality context.

**The concept of net neutrality**

- 3.3. Net neutrality is commonly used to denote a practice where service providers give preference to traffic originating from certain sites or charge specific web sites for preferential treatment. However, much of the debate over net neutrality has extended to cover issues including whether service providers should be permitted to:
- (a) charge differently where end-users access different types of content;
  - (b) take action to deal with traffic that may lead to congestion in their networks;  
and
  - (c) block access to sites or content.
- 3.4. SingTel is supportive of the spirit of net neutrality.
- 3.5. However, SingTel submits that there are good reasons for service providers to implement differentiated pricing, QoS and terms and conditions for usage of their networks to service end-users with different needs. SingTel submits that there are no issues arising from differentiated pricing, QoS and terms and conditions for usage and service providers should be allowed to continue to do so as long as they are transparent about the terms and conditions with their end-users.
- 3.6. Similarly, optimising traffic to ensure efficiency in the networks is in fact a good network management practice implemented by service providers to ensure:
- that the general Internet end-user does not suffer deterioration in service quality;  
and
  - there is sufficient bandwidth available for sensitive higher quality applications.
- 3.7. Lastly, SingTel submits that it does not engage in any blocking of access to specific websites or content except where it is required to do so in compliance with regulatory requirements.

**Singapore Internet service marketplace is highly competitive**

- 3.8. SingTel submits that the strongly competitive Internet service market environment in Singapore will produce the best outcomes for Singapore consumers.

- 3.9. There is strong evidence to show that a highly competitive broadband services market exists in Singapore: End-users have a choice of 69 Internet service providers<sup>1</sup> that offer differentiated prices plans and QoS delivered over different technologies, including wireless technologies (whether over the 3G or 2G networks), Digital Symmetrical Line (**DSL**), coaxial cable or fibre technologies.
- 3.10. This means that end-users have the ability to switch Internet service providers if the service quality they receive from their existing telecommunications provider is not acceptable.
- 3.11. In a highly competitive market, any telecommunications provider that degrades end-user experience to such low levels is at risk of:
- losing customers to other networks; and
  - long-term reputational and commercial damage.
- 3.12. Neelie Kroes, the European Commission Vice President for the Digital Agenda Telecoms Markets has embraced this view, and stated that broadband competition could sufficiently remove the need for further net neutrality regulation<sup>2</sup>.
- 3.13. Kroes has recently stated that<sup>3</sup>:

*“Competition at the network level, combined with appropriate transparency measures, gives customers the ability to choose among different providers for their internet connections, making any potential danger to net neutrality less clear and present. After all, if consumers are dissatisfied with the quality of the internet connection offered by their provider, competition enables them to switch.*

*In other words: **strong competition in broadband markets may allow a more relaxed regulatory approach to net neutrality issues.** This may allow network operators and services and content providers to explore innovative business models, leading to a more efficient use of the networks and creating new*

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<sup>1</sup> Telecoms Licensing System, IDA, 9 December 2010.

<sup>2</sup> Neelie Kroes European Commission Vice-President for the Digital Agenda Telecoms markets – working together for change Brussels, speech delivered on on 23 September 2010.

<sup>3</sup> Ibid.

*business opportunities at different levels of the internet value chain and better services and applications for European consumers (our emphasis).”*

- 3.14. In the UK, under the revised Framework for Electronic Communications, Ofcom has powers to intervene to enforce Quality of Service Guidelines<sup>4</sup>. Notwithstanding this, UK Government Ministers have stated that the use of these powers should not be necessary if there is an overall adherence to regulatory principles, competition in the market and the ability to switch between networks<sup>5</sup>. Minister Ed Vaizey has stated that Ofcom should only intervene if there is anti-competitive conduct in the market that harms consumers or new innovative companies.
- 3.15. Similarly, commentators have noted that competition is the best remedy to curtail discriminatory conduct by operators<sup>6</sup>:

*“Net neutrality is difficult to define and enforce, and efforts to do so merely address the symptom (concern about discrimination) rather than the underlying cause (lack of competition). **Rivalry between access providers offers the best protection against the erection of new barriers to the flow of information online** (our emphasis).”*

- 3.16. As the IDA has already recognised, a competitive environment will reduce the incentive of telecommunications providers to engage in blocking or discriminatory conduct that restricts consumer choice in terms of the content, services and applications they access over the Internet.

#### **Regulation must be evidence-based**

- 3.17. SingTel submits that regulation by the IDA should be proportionate and evidence-based.
- 3.18. Evidence-based regulation requires the regulator to obtain market information relating to market trends and customer behaviours necessary to make sensible business and regulatory business decisions and assess the costs and likely success of regulatory intervention. Key elements of evidence-based regulation include:

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<sup>4</sup> EC, *the revised European Framework on Electronic Communications*, see:

[http://ec.europa.eu/information\\_society/policy/ecomm/library/legislation/index\\_en.htm](http://ec.europa.eu/information_society/policy/ecomm/library/legislation/index_en.htm)

<sup>5</sup> Harbottle&Lewis, *The UK Adopts a Permissive Approach to Net Neutrality*, Briefing Note, 19 November 2010.

<sup>6</sup> Editorial, *The web's new walls How the threats to the internet's openness can be averted*, 2 September 2010.

- focused policy-relevant micro-economic research (internal and external) on relevant markets;
- market failure analysis;
- cost-benefit analysis of regulation; and
- regulation impact assessment (a combination of research and cost-benefit analysis and indicators).

3.19. This is consistent with the Singapore telecommunications regulation and overseas best practice.

3.20. The telecommunications law in Singapore requires that regulation should be proportionate and technology-neutral. Article 1.5.4 of the Telecom Competition Code provides, as follows:

*“To the extent that a given market is not yet competitive, significant ex ante regulatory intervention is likely to remain necessary. Where this is the case, IDA will seek to impose regulatory requirements that are carefully crafted to achieve clearly articulated results. Such requirements will be no broader than necessary to achieve IDA’s stated goals.”*

3.21. Article 1.5.5 of the Telecom Competition Code states that:

*“IDA’s regulatory requirements will reflect the phenomenon of convergence, which is eroding historic differences among platforms such as wireline, cable, wireless and satellite. Regulatory requirements will be based on sound economic principles and, to the extent feasible, will be technology-neutral.”*

3.22. Similarly, National Regulatory Authorities (**NRAs**) in Europe are required to impose *ex ante* regulation in a proportionate manner. The European Commission has stated that<sup>7</sup>:

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<sup>7</sup> EC Staff Working Document, *Explanatory Note, Accompanying Document to the Commission Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services*, Brussels 13/11/2007.

*“the NRA will need to demonstrate that the obligation in question is based on the nature of the problem identified, proportionate and justified in the light of the NRA’s basic objectives as set out in Article 8 of the Framework Directive”*

3.23. Furthermore, EC’s recommendation on electronic communications provides that<sup>8</sup>:

*Article 15(1) of Electronic Communications Directive 2002/21/EC requires the Commission to define markets in accordance with the principles of competition law. Competition law principles are therefore used in this Recommendation to set product market boundaries within the electronic communications sector, while the identification or selection of defined markets for ex ante regulation depends on those markets having characteristics which may be such as to justify the imposition of ex ante regulatory obligations*

...

*Regulatory obligations must be appropriate and be based on the nature of the problem identified, proportionate and justified in the light of the objectives laid down in Directive 2002/21/EC, in particular maximising benefits for users, ensuring no distortion or restriction of competition, encouraging efficient investment in infrastructure and promoting innovation, and encouraging efficient use and management of radio frequencies and numbering resources (our emphasis).”*

3.24. In addition, Neelie Kroes, the European Commission Vice President for the Digital Agenda Telecoms Markets has recently stated that net neutrality regulation should remain proportionate. Kroes has stated that<sup>9</sup>:

*“... access obligations can only be applied when, following a market analysis, NRAs conclude that the relevant markets are not competitive and network operators have significant market power. Access remedies are not automatically imposed – and any remedies imposed must comply with the principle of proportionality. And this is also why the Recommendation allows NRAs to fine-tune ex ante remedies to reflect the different level of competition*

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<sup>8</sup> EC Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services

<sup>9</sup> Neelie Kroes European Commission Vice-President for the Digital Agenda Telecoms markets – working together for change Brussels, speech delivered on on 23 September 2010.



*existing in different geographic areas (rural and urban) – **more intense competition can imply less intrusive regulation** (our emphasis).”*

3.25. Further, Ofcom has recently adopted evidence-based regulation in the context of net neutrality and stated that existing regulatory safeguards should be explored first before imposing additional Internet regulation.

3.26. Ofcom has stated that<sup>10</sup>:

*“our initial position is that discriminatory behaviour is only a potential issue where firms have substantial ‘market power’ and could discriminate in favour of their own services. In this case, any form of discrimination will come under very close scrutiny to ensure that there are no anti-competitive effects. We believe that there is **insufficient evidence at present to justify the setting of blanket restrictions on all forms of traffic management**.”*

*The Revised Framework gives NRAs the power to impose a minimum Quality of Service on communications providers. Our initial view is that in that event there are a number of approaches we could take but it is likely that our initial view would be to **explore existing competition tools and consumer transparency options before considering a minimum Quality of Service** (our emphasis).”*

3.27. In Australia, the Australian Communications and Media Authority (ACMA) has adopted a model for evidence based regulation in the context of convergence<sup>11</sup>. First, the ACMA looks at external drivers for regulation, including:

- changing customer attitudes towards use of communications and service expectations;
- market and industry diversity and fragmentation of traditional and new media and communications;
- technology trends; and
- the convergence of boundaries between content creation and distribution channels and global versus local networks.

<sup>10</sup> Ofcom, *Traffic Management and Network Neutrality*, A Discussion Paper, 24 June 2010.

<sup>11</sup> ACMA, *ACMA Research: evidence for communications and media regulation*, 20-21 May 2008.

- 3.28. The ACMA then reviews implications for regulation in the context of existing external drivers, including:
- whether existing regulation meets community standards and attitudes;
  - what consumer and audience safeguards are needed;
  - whether regulation needs to be adjusted to allow new investment and service delivery models;
  - whether plans and allocation rules needed for new services need to be refined; and
  - whether regulatory intervention is in the public interest.
- 3.29. Following this analysis, the ACMA implements proportionate and evidence-based regulation.
- 3.30. As recognised by the IDA, the Singapore Internet market is highly competitive. Further, to date, there has been no evidence of blocking of content or legitimate Internet content by ISPs or telecom network operators.
- 3.31. SingTel submits that in the absence of market failures or insufficient competition, it would be a significant deviation from best-practice in economic regulation to impose remedies that would restrict operators from engaging in basic network management practices.

**Network management is essential**

- 3.32. SingTel agrees with the IDA's statement that network management techniques can help balance the use of bandwidth-heavy applications versus the time and quality sensitive applications on the Internet and maintain reasonable QoS for all end-users.
- 3.33. SingTel submits that network management techniques are increasingly relevant and necessary to the management of the Internet. In short, network management techniques maintain Internet connectivity and enable higher quality-sensitive services.
- 3.34. Therefore, SingTel submits that the IDA must proceed with additional caution when considering whether to regulate in the field of net neutrality because any such

proposed regulation could have significant and material adverse impacts on current network management techniques which protect end-users.

**Traffic management is necessary to ensure basic service qualities**

- 3.35. Network or bandwidth management practices like traffic shaping or prioritisation are sound practices to ensure that the general QoS provided to end-users is not jeopardised as a result of certain end-user behaviours.
- 3.36. Internet traffic is typically pressed by users of high-data-rate applications such as online video streaming and peer-to-peer (**P2P**) file sharing (e.g. bitTorrent applications). Despite network operators increasing their network capacity, congestion is an everyday problem that results in downgrading service quality for end-users.
- 3.37. As the IDA has noted, global IP traffic is expected to significantly increase in the coming years. Therefore, telecommunications operators are required to employ traffic management technologies that limit the impact of certain bandwidth-hungry applications on normal Internet usage while prioritising traffic flows associated with time-critical applications.
- 3.38. The NGNBN in Singapore also recognises the importance of prioritisation as a form of traffic management. NGNBN services are provided by Nucleus Connect using various Traffic Classes which prioritise traffic based on service or application demands. Given that the NGNBN serves as a single platform for voice, data and other forms of traffic, traffic prioritisation represents an essential component of the provision of services over this platform.
- 3.39. The need to manage traffic on mobile broadband services is even more critical, as spectrum is a scarce resource and is typically shared with traditional services such as voice and messaging. Therefore, mobile broadband is much more likely to suffer from congestion issues as a result of a handful of users that use the available capacity for high-bandwidth applications.

**Traffic management is necessary to ensure innovation in services and products**

- 3.40. Traffic management is also important in ensuring that differentiated levels of products and services are available.

- 3.41. Different services have different quality requirements, such as time, latency, jitter and packet loss – these requirements are well beyond ordinary bandwidth requirements. Some of the latest applications using the Internet are quality sensitive and require increased and dedicated bandwidth. An example of such an application is e-Health: e-Health services rely on high QoS to deliver time, latency and jitter-sensitive traffic.
- 3.42. Due to the open and un-policed nature of the Internet, there is a real tendency for high-value and quality applications such as e-Health being crowded out by services with low economic and social value that are less sensitive to the quality of the transport mechanism. This results in the potential for significant deterioration in the network quality and limits the potential for innovation using the high-value, high quality services.
- 3.43. While it is possible for network operators to develop vast amounts of reserve capacity to deal with these congestion issues and assure quality-sensitive traffic is delivered appropriately, the risk of packet loss is unavoidable.
- 3.44. Also, the over-provisioning of capacity on networks is a waste of resources and over-burdens networks unnecessarily while subjecting operators to high costs. Network operators are increasingly unable to justify investment in reserve capacity, especially when faced with ever-decreasing price levels at the retail level as well as increased customer demand for higher quality services.
- 3.45. Accordingly, the only efficient way to address congestion issues is to not address all incoming traffic with the same priority and assign priority rights to specific services to be transported immediately at a higher price.

**Traffic management does not equal blocking access**

- 3.46. SingTel stresses that network management practices do not result in blocking of access to sites or content by end-users.
- 3.47. SingNet does not block P2P traffic. Rather, SingNet has implemented a fair usage policy that ensures no single traffic protocol monopolizes most of the available bandwidth at the expense of other traffic protocols, and that end-users using the Internet for other purposes like web browsing, e-mails and streaming etc. will not be affected by any surge in P2P traffic in our network.

- 3.48. The only instance where SingTel blocks access to specific Internet content is to comply with licensing and regulatory obligations. For example, service providers are required, under the MDA Internet Code of Practice, to deny access to sites when notified by the MDA.
- 3.49. SingNet also publishes information in relation to its network management practices.

**International developments in context**

- 3.50. The IDA has noted the various international developments, including the net-neutrality debate and the regulatory responses in the US and Canada. SingTel submits that while international developments are important, they should be viewed in their context.
- 3.51. In particular, the regulatory response in the US and Canada to net neutrality issues has been evidence-based and proportionate to the occurrence of anti-competitive conduct in that market.
- 3.52. In the US, the net neutrality debate arose when Comcast Corporation (**Comcast**), the largest US cable company and a major broadband service provider, was accused by a public interest group and several of its customers of blocking customers' ability to download video material when they used BitTorrent, an opensource, P2P networking protocol. In response to the complaints, the FCC opened a formal investigation into Comcast's conduct and found its conduct to be arbitrary and discriminatory. The FCC ordered Comcast to stop its network management practices and develop a compliance plan. Comcast's conduct in the US largely stemmed from a lack of wholesale regulation that made retail services far less competitive than those in Singapore<sup>12</sup>.
- 3.53. The debate around net neutrality is ongoing in the US as instances of discriminatory behaviour continue to occur. Accordingly, the FCC has recently implemented proportionate regulation to deal with continuing issues of net neutrality in the US. On 21 December 2010, the FCC approved new regulations designed to prevent content discrimination by Internet service providers<sup>13</sup>. The network neutrality rules will prohibit providers from impeding the flow of legal and reasonable bandwidth use or favouring their own content with preferential placement along the information superhighway.

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<sup>12</sup> FCC Decision, 1 August 2008.

<sup>13</sup> FCC *Acts to Preserve Internet Freedom and Openness*, 21 December 2010.

- 3.54. However, the rules have stopped short of preventing Internet providers from creating tiered speed service or charging customers based on their bandwidth use.
- 3.55. Similarly, the response by the Canadian regulator, the CRTC, arose from an instance where one of the leading ISPs blocked access to labour union blogs during a worker strike, prompting the CRTC to respond with a ban on blocking of websites or content.
- 3.56. This contrasts with regulatory responses in Hong Kong and the UK where the regulator has refused to regulate in light of little or no evidence of discriminatory behaviour by service providers and the existence of strong competition in the market.
- 3.57. The international director at Ofcom, Alex Blowers has recently stated that “*there is very little evidence that big beasts of the content application and services world are coming together and doing deals with big beasts of the network and the ISP world<sup>14</sup>*”. Ofcom’s director has stated that under strong competitive conditions, Internet subscribers have the ability to switch service providers if and when a service provider engages in discriminatory behaviours such as the throttling of traffic or blocking of websites.
- 3.58. The above examples show that overseas regulators only regulate when there is clear evidence that market conditions are failing to prevent anti-competitive conduct in the Internet services context.
- 3.59. SingTel submits that bespoke net neutrality regulation is not necessary in Singapore.

**Existing regulation provides effective deterrent to potential anti-competitive behaviour in the net-neutrality context**

- 3.60. In summary, for the reasons discussed above, SingTel does not believe that additional measures are necessary to regulate the Internet service market. The market is highly competitive and any issues that arise in this market such as net neutrality will be dealt with through competition.
- 3.61. Even if the issue does arise, SingTel submits that the level of regulation in Singapore is sufficient to:
- address potential anti-competitive behaviour; and

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<sup>14</sup> PC Pro, *The End of The Net As We Know It*, February 2011.

- promote a competitive Internet services environment.
- 3.62. As the IDA has recognised, there are a number of existing regulatory safeguards that restrict anti-competitive behaviour and promote consumer interests.
- 3.63. Section 8 of the Telecom Competition Code prohibits a licensee from engaging in “*unfair methods of competition.*” Further, section 3 of the Telecom Competition Code provides a number of obligations that service providers must observe, including:
- (a) duty to comply with IDA’s QoS standards;
  - (b) duty to disclose prices, terms and conditions;
  - (c) duty to disclose service quality information that is readily accessible to all end-users; and
  - (d) complying with mandatory contractual provisions, including on prices, terms and conditions.
- 3.64. Also, there are existing safeguards to ensure an open and interconnected telecommunications network in Singapore. Section 5 of the Telecom Competition Code requires that all telecommunications licensees must co-operate to promote a competitive environment.
- 3.65. These provisions serve to ensure that service providers and operators do not engage in discriminatory behaviour. SingTel has been, and continues to be fully compliant with these obligations in respect of its Internet service offerings.

#### **4. DIFFERENTIATED QOS, SPEEDS AND PRICING**

##### **Summary**

- 4.1. The IDA has invited comments in relation to improving information transparency on:
- the actual or expected Internet access speeds; and

- other issues including potential benefits for consumers, impact on ISPs and the development of the Internet access market, and the extent of information that should be made available.

4.2. In summary, SingTel submits that:

- issues relating to the speeds at which Internet services are provided are unrelated to the net neutrality debate;
- publication of average or expected speeds is likely to be counter-productive and confuse customers; and
- the information already provided by the IDA and SingTel relating to differentiated services is sufficient to allow customers to make informed choices.

**Speed issues are unrelated to net neutrality debate**

- 4.3. SingTel submits that the speed at which Internet services are supplied to end-users is unrelated to the net neutrality debate – that is, the availability of differentiated speeds and QoS at differentiated prices does not equal non-net-neutral Internet.
- 4.4. In the current market, it is typical for service providers to differentiate price plans based on speed and usage levels of end-users. It is not unreasonable, for example, for service providers to also have different price plans for different speeds and QoS, and impose tiered charges on wholesale customers.
- 4.5. Service and QoS differentiation is necessary to ensure the development of new services, significantly increased levels of demand for bandwidth and maintaining Internet connectivity for all customers.
- 4.6. Service and price differentiation provide more choice for end-users. In Singapore, a plethora of network operators and service providers offer a wide range of differentiated products and services at different prices. Customers have the power to choose which content, services and applications they wish to access.
- 4.7. In a highly competitive marketplace, end-users have the ability to switch providers if the QoS levels are inappropriate for their needs. Customers with needs for a cheap low QoS service should not have to bear the burden of paying the same price for high



QoS services. Equally, a customer with high-data-rate needs should be able to switch providers and obtain a higher bandwidth – higher quality service that meets its needs.

- 4.8. Moreover, ensuring service providers have the freedom to differentiate QoS, prices and terms and conditions allows them the flexibility and freedom to innovate, both in terms of product and quality to meet the ever-changing needs of a diverse customer base.
- 4.9. Innovation in this respect leads to more customer choice and strengthens competition.
- 4.10. SingTel notes that there are no critical issues in the Singapore market arising from differentiated service offerings, or which could arise from the implementation of such practices. In fact, any regulatory intervention that prevents such practices would:
  - disincentivise service providers or carriers from further innovation in their service delivery;
  - reduce the number and choice of available services to customers; and
  - ultimately weaken competition.
- 4.11. Notwithstanding the above, SingTel agrees with the IDA’s proposal that where service providers provide differentiated prices, QoS, terms and conditions, usage plans or selected restricted Internet websites, they must provide information to end-users in advance to enable end-users to make informed choices about the service(s) they intend to take up.
- 4.12. SingTel submits that the level of information it currently provides to end-users in terms of the differentiated QoS, price and terms and conditions is sufficient to ensure end-users can make informed choices.

**Notifying end-users of average speeds is counter-productive**

- 4.13. SingTel is concerned about the IDA’s proposal to require service providers to publish average speeds. SingTel believes that publishing average Internet access speeds under normal surfing conditions or calculating average Internet access speeds experienced over one (1) month is counter-productive and confuses end-users.

- 4.14. A representation that an Internet service is likely to achieve an ‘average of’ or ‘up to’ a certain speed may be misleading if the expected speed is a technical speed that has come about under controlled conditions. This is because a multitude of factors impact on Internet speeds in the actual uncontrolled Internet environment.
- 4.15. First, an end-user’s fixed broadband Internet service experience depends not only on the customer broadband setup, but, also on the application downloaded by the end-user and the bandwidth and the loading of the overseas servers, which is not within the control of local service providers.
- 4.16. Secondly, speeds experienced by end-users are also affected by the means of connectivity within the premises. For example, in an NGNBN environment, an end users experience will differ depending on the means of connectivity within the premise e.g. Cat 5(e)/6 cabling versus Wi-Fi versus powerline networking versus coaxial-line networking. It is impossible to formulate a single statement which takes into account the myriad ways in which an end user may connect to the NGNBN
- 4.17. Thirdly, even when high quality internal wiring is installed at an end user premises, the average speeds experienced by end-users vary depending on how many people are using the network at any given time. For example, the average speeds using mobile broadband Internet can vary based on location or due to the number of end-users logging onto the same base station.
- 4.18. Actual Internet speeds are also dependent on other factors, including:
- user mobility, which changes the way traffic is handled;
  - the use of different types of smart-phones and/or tablets, which make it difficult for end-users to appreciate the meaning of average speed in context; and
  - the radio signal quality, which can be affected by external interference.
- 4.19. Even if the speed testing methodology is standardised across the industry, it does not guarantee end-users that these speeds can be achieved at all locations and at all times irrespective of the devices and applications they use.

- 4.20. In considering the issue of publishing average speeds, the ACCC in Australia has adopted a similar view, and stated that<sup>15</sup>:

*“The ACCC considers that maximum, “up to”, or peak network speeds based on technical specifications can be misleading even when coupled with further information on the speeds obtainable. A consumer is still likely to understand the reference to mean that the claimed speed has a reasonable basis and is achievable, albeit not at all times and in all circumstances.*

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*Similarly, the ACCC considers such speed claims to be misleading even if described as a “theoretical speed”, “hypothetical speed” or “technology speed”. A consumer is still likely to understand the reference to mean that the claimed speed has a reasonable basis and is achievable, albeit not at all times and in all circumstances”*

- 4.21. SingTel submits that the amount of information that is already provided to end-users, either by the service providers or as published by the IDA, is sufficient to allay any concerns regarding transparency around different speeds and QoS.
- 4.22. Service providers are already required under the Telecom Competition Code to publish all the key terms and conditions of their services and price plans. In addition, the IDA publishes a consumer guide on broadband services, which includes the monthly throughput and latency performance of the main residential broadband plans as well as the quarterly broadband QoS standards for network availability, latency and complaints, and the quarterly mobile QoS standards for service coverage, call success rate and average throughput speeds. End-users are also given information about factors affecting Internet access speeds and how to improve their broadband connection.
- 4.23. SingTel submits that the information currently published by the IDA and service providers provides sufficient transparency on the different variables related to broadband and mobile services.
- 4.24. In addition, SingTel notes that business end-users typically enter into agreements with their service providers that entail specific Service Level Agreements (SLAs) covering

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<sup>15</sup> ACCC, *Mobile and Other Wireless Internet Speed Claims and the Trade Practices Act 1974*, An ACCC Information Paper, September 2009.

QoS and other quality matters. The information relating to expected and average Internet access speeds will be largely irrelevant to business broadband end-users.

- 4.25. Therefore, SingTel submits that, if the IDA is to require that service providers publish expected or average Internet speeds, that services available to business end-users should be exempt from this requirement.

## 5. CONCLUSION

- 5.1. In light of the above, SingTel submits that there are no net-neutrality issues in Singapore.

- 5.2. Furthermore, SingTel submits that bespoke regulation in the Internet services market in Singapore is necessary for the following reason:

- the Internet services market is highly competitive in Singapore;
- existing levels of regulation are sufficient to address potential anti-competitive conduct;
- services providers should be free to manage the efficiency of their networks, improve customer experience and innovate to facilitate high-quality applications;
- SingTel complies with prevailing to publish service information and network management practices; and
- SingTel already complies with minimum QoS standards and is transparent in terms of its network management techniques;
- the publication of average or expected speeds is counter-productive and likely to confuse consumers.