Annexure A to Long Form Consolidation Application in relation to proposed acquisition by Bedrock Holdings (Bermuda) Ltd of Pacnet Limited

Statement prepared by Telstra and Pacnet for the iDA

Non-confidential version

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Contents

1 Executive summary

The Proposed Consolidation

Telstra Holdings Pty Limited (**Telstra**), a wholly-owned subsidiary of Telstra Corporation Limited (**Telstra Corporation**), proposes to complete the following transaction which will result in Pacnet Limited becoming a wholly-owned subsidiary of Telstra:

- Bedrock Holdings (Bermuda) Limited (**Bedrock Holdings**), a wholly-owned subsidiary of Telstra , will merge with Pacnet Limited under Bermudian law; and
- Bedrock Holdings will then cease to exist and Pacnet Limited will continue as the surviving company holding all of the undertakings, assets and liabilities of the merged entity and become a wholly-owned subsidiary of Telstra,

(the **Proposed Consolidation**).

Pacnet Limited has 2 relevant subsidiaries that hold telecommunications licences in Singapore and are designated telecommunications licensees:

- Pacnet Global (Singapore) Pte. Ltd (**Pacnet Global**), which holds a facilities-based operator (**FBO**) licence; and
- Pacnet Internet (S) Pte. Ltd (**Pacnet Internet**), which holds a services-based operator (**SBO**) licence.

In this Application, the Pacnet entities are collectively referred to as 'Pacnet'.

As the Info-Communications Development Authority of Singapore (**IDA**) is aware, there has been a recent consolidation whereby Pacnet Cable (S) Pte. Ltd. (a FBO licensee) and Southeast Pacnet Services (S) Pte. Ltd. (a SBO licensee) have been merged into Pacnet Global (as of 1 August 2014). While the licences of Pacnet Cable (S) Pte. Ltd. and Southeast Pacnet Services (S) Pte. Ltd. continued to exist until 31 December 2014, the entities themselves have been deregistered and no longer exist. From 31 December 2014, a consolidated FBO licence for the successor entity, Pacnet Global, took effect and applies to the relevant network and services provided under the current licences. This consolidated FBO licence was granted by the IDA on 28 December 2014.[1]

The Applicants in this Application are therefore Telstra, Pacnet Global and Pacnet Internet.

Pursuant to section 10 of the *Code of Practice for Competition in the Provision of Telecommunications Services 2012* (the **Telecom Competition Code or TCC**), the Applicants seek the approval of the IDA for the Proposed Consolidation.

[1] The SBO licence formerly held by Southeast Pacnet Services (S) Pte. Ltd. is yet to be formally terminated. Pacnet Global therefore separately holds that SBO licence.

The Applicants' principal business in Singapore	In Singapore, Telstra's operations are primarily focussed on providing connectivity services and corporate enterprise services to downstream customers including multinational corporations (**MNCs**) and global service provider (**GSP**) customers via its Singaporean operating entity, Telstra Singapore Pte Ltd.[2] Telstra also has minority interests as a member of consortia that own certain submarine cable systems that connect to Singapore and provides wholesale voice and data services over these and other cable systems. Pacnet also supplies certain corporate enterprise services such as internet, network, IT solutions and hosting and managed services. However, unlike Telstra: • its primary operations in Singapore involve the ownership and management of two submarine cable systems: – the East Asia Crossing C2C submarine cable system (**EAC-C2C**); and – the EAC Pacific submarine cable system (**EAC Pacific**); and • its retail customer base also includes small – medium enterprises (**SMEs**). Pacnet also wholesales capacity on the EAC-C2C and the EAC Pacific cables to customers in Singapore, and provides co-location services through its data centres.
Commercial rationale	Telstra's rationale for the Proposed Consolidation is to acquire the largely complementary cable operations of Pacnet. This will create synergies and additional shareholder value. Specifically, Pacnet's operations will enable Telstra to offer customers in Singapore (and in many jurisdictions in Asia in which MNCs with offices in Singapore also have operations) a more comprehensive range of services and will, by granting Telstra control of its own submarine cable systems, make Telstra a more effective competitor to the large incumbent telecommunications services providers: Singapore Telecommunications Limited (**SingTel**) and StarHub Limited (**StarHub**). Similarly, by acquiring Pacnet's corporate enterprise service operations, Telstra also intends to strengthen its existing offering across a wider customer base in Singapore and become a more effective competitor to SingTel and StarHub. By having its own upstream network, Telstra will be able to guarantee service quality levels to its downstream customers, which will increase its efficiency and competitiveness in the downstream market.
No substantial lessening of competition	The Proposed Consolidation will not have the effect of substantially lessening competition in any relevant market in Singapore. This is because the principal operations of both Applicants are complementary and not competitive. As explained above, Telstra's principal business in Singapore is in the supply of downstream corporate enterprise services, whereas Pacnet's principal business and strong recent focus is the

[2] Telstra also has another Singaporean subsidiary, Telstra Holdings Singapore Pte Ltd. However, that entity is purely a holding company and has no relevant operations.

ownership and management of upstream submarine cable systems.

To the extent that there is any overlap between the operations of the Applicants, the degree of aggregation that the Proposed Consolidation will give rise to in Singapore is immaterial because:

- while Telstra is a member of consortia that own certain submarine cable systems that link Singapore, in each instance Telstra has a minority interest that does not allow it to exercise any effective control over the management and operational decisions of the consortia. It also has no veto rights that may enable it to exercise effective control over the management and operational decisions of the consortia;

- in the Asia Pacific Cable Market, the market share of the Post Consolidation Entity will be approximately [25-30]% of lit capacity. However, in the next 2-3 years, total design capacity in the Asia Pacific Market will increase by 171,400 Gbps and the Applicants' entitlement of this additional capacity is only up to ***[redacted]*** Gbps or [0-5]%. The Applicants' combined estimated share will, therefore, fall significantly as more capacity is lit. If half of all the design capacity of the new cables became lit capacity, even if ***[redacted]*** lit all of its entitlement in the additional capacity from these proposed cables, the Applicants' combined estimated share would fall to approximately [5-10]%;

- in the Western Cable Market, the market share of the Post Consolidation Entity will be approximately [0-5]% of lit capacity (without taking the capacity of proposed cables into account);

- Telstra provides corporate enterprise services primarily to MNCs and other larger customers (and its products are therefore not well suited for the purposes and interests of SMEs), whereas Pacnet's retail customer base also includes SMEs; and

- the Post Consolidation Entity will be substantially smaller than each of SingTel and StarHub and will be competitively constrained by them and a range of other global competitors in respect of Singapore markets. However, the asymmetry in size and the acquired access to directly owned upstream cable capacity will provide Telstra with incentives to compete vigorously.

Finally, Telstra cannot leverage its Australian operations into any Singaporean market. This is because:

- Telstra's Australian retail operations in residential and SME fixed and mobile markets are purely domestic and cannot be leveraged into any overseas market;

- Telstra is not able to leverage its control of Australian domestic local access infrastructure into overseas markets given the contestability of international capacity connecting Australia and, in any case, much of Telstra's Australian domestic infrastructure is being sold to NBN Co as part of the rollout of Australia's national broadband network;

- in relation to Telstra's Australian customer base, it is only Australian MNC customers that may choose to acquire

telecommunications services in Singaporean markets and they represent a very small proportion of the MNCs present in Singapore; and

- while Telstra has a ***[redacted]***% ownership of the SMW3 (Seg3A) cable connecting Singapore to Australia:

  – SMW3 (Seg3A) is also owned by PCCW (***[redacted]***%), SingTel Optus and Telecom NZ; PCCW being the incumbent in Hong Kong, SingTel being the incumbent in Singapore and both being significant regional competitors in the relevant markets;

  – while Pacnet leases capacity on the SMW3 (Seg3A), that capacity is only approximately ***[redacted]*** (or [0-5]% of the overall lit capacity ***[redacted]*** on the SMW3 (Seg3A)). The incremental increase from the Proposed Consolidation (to the extent leased capacities are taken into account) is therefore negligible;

  – ***[redacted]*** other providers apart from SingTel and Telstra include Vocus and Bharti;

  – there is a liquid market for leasing submarine capacity and Pacnet has had no difficulty in leasing capacity on the SMW3 (Seg3A) when required;

  – there are a number of alternative indirect routes that can be used for transmitting data between Singapore and Australia other than SMW3 (Seg3A), which many other providers do use at least as a back-up supply; and

  – in addition to the existing alternative routes, there are a number of proposed cables being planned connecting Australia and Singapore including APX West (with design capacity of 32,000 Gbps), ASC (with design capacity of 36,000 Gbps) and Trident Subsea Cable (with design capacity of 8,000 Gbps). These cables are currently planned to be ready for service in 2015/2016.

Public Benefits

The Proposed Consolidation will create the following public benefits.

First, **increased competition in upstream cable markets**. At the moment, Telstra is a minority shareholder of certain submarine cable systems. As a result, Telstra does not exercise any effective control over the management and operational decisions of the consortia that own and operate these cable systems. Further, other members of the same consortia include Telstra's direct competitors who may not have the same priorities or business plans as Telstra. The Proposed Consolidation will give Telstra the upstream independence it needs to become a more effective competitor against larger incumbents such as SingTel and StarHub because Telstra will control its own capacity in certain cable systems. By having this control, Telstra will have the incentive to invest further in these cable systems which will increase competition in upstream cable markets. This is explained further below.

Secondly, **increased competition in downstream markets**. The Proposed Consolidation will reinforce Telstra's existing corporate enterprise services by adding the services offered by Pacnet. This will allow Telstra to grow its customer base and become a more vigorous and effective competitor to larger incumbents such as SingTel and StarHub. In addition, increased control of upstream cable capacity will allow Telstra to innovate in the service levels and products that it can offer. For example, and as stated above, by having its own upstream network, Telstra will be able to guarantee service quality levels to its downstream customers. This will increase Telstra's competitive position in the relevant downstream markets.

Thirdly, **further investment into Singapore by Telstra**. Telstra has identified Asia as a key growth region and having an increased presence in Singapore is a key to this growth. Over the last few years Telstra has:

- invested more than AUD$40 million;
- bought dedicated data centre space in Singapore;
- transferred most of the Singapore assets owned by Reach International Telecom (Singapore) Pte Ltd and Reach Internet Services Pte Ltd to Telstra;
- more than doubled its number of staff – increasing headcount from 52 on 1 April 2012 to 129 on 31 December 2014; and
- executed agreements in relation to buying capacity on two new cables systems connecting into Singapore. As a new owner of undersea cable assets landing in Singapore, Telstra will expand its presence in the Singapore market beyond being a SBO and FBO and will continue to invest in the maintenance and upgrade of those cable assets.

The Proposed Consolidation will facilitate further investment by Telstra in upstream and downstream markets in Singapore to the benefit of local consumers, by giving Telstra the scale and asset platform (such as data centres) to be able to undertake more significant organic growth and product development (in areas such as cloud computing). Telstra considers that this ongoing investment in its own products and new investment in Pacnet's products will result in increased customer satisfaction across all areas of the existing Telstra and Pacnet businesses.

2 The parties

Key points

- *Telstra's key business in Singapore is the provision of corporate enterprise services to MNC and GSP customers. Telstra has in most cases fractional minority interests in certain cable systems landing in/connecting through Singapore.*
- *Pacnet's principal business in Singapore is the ownership and management of the EAC-C2C submarine cables. While it provides corporate enterprise services to MNCs, unlike Telstra it also provides services to SMEs.*

2.1 Pacnet

Background to Pacnet

As the IDA is aware, Pacnet Limited was formed following the consolidation of Pacific Internet Limited and Connect Holdings Limited, a consolidation that was approved by the IDA on 30 March 2007.

Pacnet Limited is headquartered in Singapore and Hong Kong and operates across 25 offices in 11 countries including Australia, China, India, Japan, Korea, Malaysia, the Philippines, Taiwan, Thailand and the United States.

Pacnet Limited has 2 subsidiaries that hold telecommunications licences and are designated telecommunication licensees under the *Telecommunications Act:*

(a) Pacnet Global, which holds a FBO licence; and

(b) Pacnet Internet, which holds an SBO licence.

As noted above, Pacnet Cable (S) Pte Ltd (which held a FBO licence) and Southeast Pacnet Services (S) Pte Ltd (which held a SBO licence) were merged into Pacnet Global on 14 August 2014. While the licences of Pacnet Cable (S) Pte. Ltd. and Southeast Pacnet Services (S) Pte. Ltd. continued to exist until 31 December 2014 – the entities themselves have been deregistered and no longer exist. As of 31 December 2014, a consolidated FBO licence for the successor entity, Pacnet Global, took effect and applies to the relevant network and services provided under the current licences. This consolidated FBO licence was granted by the IDA on 28 December 2014.

The SBO licence formerly held by Southeast Pacnet Services (S) Pte. Ltd. is yet to be formally terminated. Pacnet Global therefore separately holds that SBO licence.

Pacnet's principal business

Pacnet's principal business is:

(a) the ownership and management of the EAC-C2C, a 36,800km cable system that loops to connect Hong Kong, China, Korea, Japan, Taiwan, the Philippines and Singapore. Pacnet is the exclusive owner of EAC-C2C; and

(b) its investment in the EAC Pacific fibre network, which is part of the Unity submarine cable system that Pacnet built with other companies including Bharti Airtel, Global Transit, Google, KDDI Corporation and SingTel. The

Unity cable system is a 9,620km trans-Pacific cable system that provides connectivity between Chikura, located off the coast of Japan near Tokyo, to Los Angeles, California and other network points of presence (**PoPs**) on the west coast of the United States. Pacnet is the largest investor in Unity (at 40%) and operates 2 of the 5 fibre pairs in the cable system independently of the other fibres. The Unity cable system does not connect directly to Singapore.

Pacnet wholesales capacity on the EAC-C2C and EAC Pacific, including to customers in Singapore such as AT&T Worldwide Telecommunication Service Singapore Pte Ltd (**AT&T**), KDDI Singapore Pte Ltd (**KDDI**), Orange and Tata Communications (**Tata**).

Attachment A provides details of Pacnet's interests in the EAC-C2C and Unity submarine cable systems.

For routes outside the EAC-C2C system, Pacnet leases capacity on other cable systems including Sea-Me-We-3 (**SMW3**), Sea-Me-We-4 (**SMW-4**), i2i Cable Network (**i2i**) Tata Indicom Cable (**TNG-TIC**), Jakabare and Matrix Cable System (**MCS**). Pacnet uses this capacity predominantly for its own customers rather than to provide wholesale services.

In addition to its cable system business, in Singapore Pacnet also provides corporate enterprise services to downstream customers including MNCs and a significant number of SMEs.

Pacnet's other business

Please refer to the Long-Form Application for Pacnet's other businesses outside of Singapore.

2.2 Telstra

Background to Telstra

Bedrock Holdings is a wholly-owned subsidiary of Telstra. Bedrock Holdings has been incorporated specifically for the purposes of the Proposed Consolidation.

Telstra (that is, Telstra Holdings Pty Limited) is a wholly-owned subsidiary of Telstra Corporation. Telstra Corporation is Australia's leading telecommunications and information services provider, offering a full range of communications services and competing in all Australian telecommunications markets. Telstra facilitates access to more than 1,900 PoPs across the globe and has one of Australia's largest shareholder bases, with 1.4 million shareholders.

Telstra's principal business in Singapore

Telstra has 1 Singaporean operating subsidiary: Telstra Singapore Pte Ltd (incorporated in 2002 and which holds an FBO licence).[3]

Telstra Singapore Pte Ltd operates to provide various downstream services primarily to MNC and a small number of GSP customers in Singapore. These

[3] Telstra also has another Singaporean subsidiary, Telstra Holdings Singapore Pte Ltd, incorporated 18 June 2014. However, that entity is purely a holding company for investments in Indonesia and has no relevant Singaporean operations. See Telstra Annual Report 2014, p168, available at <http://www.telstra.com.au/uberprod/groups/webcontent/@corporate/@aboutus/documents/document/uberstaging_280884.pdf >.

services are mainly corporate VPNs and private lines, with expansion over the last few years into more co-location services and cloud computing.

Telstra also has minority interests in certain submarine cable systems that connect through Singapore. Telstra does not exercise any effective control over the management and operational decisions of the consortia that own and operate these cable systems. It also has no veto rights that may enable it to exercise effective control over the management and operational decisions of the consortia.

Attachment B provides details of Telstra's submarine cable systems interests connecting to Singapore.

3 The Proposed Consolidation

Key points

The Proposed Consolidation is part of Telstra's Asian growth strategy and will allow it to better compete against the entrenched incumbents like SingTel and StarHub in both upstream and downstream markets, providing benefits to consumers.

3.1 Description

Telstra proposes to complete the following transaction which will result in Pacnet Limited becoming a wholly-owned subsidiary of Telstra:

(a) Telstra will subscribe for the number of shares in Bedrock Holdings (a wholly-owned subsidiary of Telstra) required for the value of the issued share capital of Bedrock Holdings to equal the consideration for the Proposed Consolidation;

(b) Bedrock Holdings will merge with Pacnet Limited under Bermudian law. Under the merger:

(i) each issued share in Bedrock Holdings will be converted into one ordinary share of Pacnet Limited. The conversion will occur by way of cancellation of each Bedrock Holdings share and the issue of an equivalent number of shares in Pacnet Limited to Telstra;

(ii) Bedrock Holdings will cease to exist and Pacnet Limited will continue as the surviving company holding all of the undertakings, assets and liabilities of Pacnet Limited and Bedrock Holdings, including the equity invested by Telstra in Bedrock Holdings in accordance with paragraph (a) above; and

(iii) all remaining of the shares in Pacnet Limited that were issued and outstanding at that time immediately prior to the Proposed Merger (that is, excluding the shares issued to Telstra in accordance with paragraph (b)(i) above) will be cancelled and the surviving company, Pacnet Limited, will pay ***[redacted]*** per share to each shareholder whose shares were cancelled.

Attachment C contains diagrams illustrating the process to effect the Proposed Consolidation.

Pursuant to section 10 of the Telecom Competition Code, the Applicants seek the approval of the IDA for the Proposed Consolidation.

3.2 Commercial rationale for the Proposed Consolidation

Telstra has publicly indicated that Asia is a key region for the expansion of its business. For example, Telstra Chief Executive Officer, David Thodey recently said that:

> "*All the projections are that Asia will be 50 per cent of the world's GDP by 2030 so it makes sense for us to participate in that growth if we can find areas where we can offer a really great product and differentiate.*"[4]

Further, over the last few years, Telstra has made significant investments in its operations in Singapore. These are described in detail in section 3.3 below.

In section 2.2 above it was explained how Telstra's current business in Singapore is principally the supply of corporate enterprise services to MNC and a small number of GSP customers. While Telstra is a member of consortia that own certain submarine cable systems that link Singapore, in each instance Telstra's interest is a minority interest that does not allow it to exercise any effective control over the management and operational decisions of the consortium.

As the IDA is aware, in Singapore, SingTel and StarHub are major providers of submarine cable system services (described below in more detail). SingTel and StarHub are also the largest providers of corporate enterprise services, both still having dominant licensee status in a number of telecommunications markets[5].

Consistent with its publicly stated expansion objectives, Telstra's rationale for the Proposed Consolidation is to grow its business in Singapore and Asia by:

(a) acquiring the largely complementary operations of Pacnet; and

(b) reinforcing its existing corporate enterprise services by adding Pacnet's services and customer base.

By consolidating the operations of the Applicants, Telstra will be better positioned to offer customers in Singapore a more comprehensive range of services that present a viable and differentiated alternative to the services offered by SingTel and StarHub. By acquiring direct control and ownership over its own upstream cable capacity (rather than relying on fractional interest in consortia cables which include competitors), Telstra will be in a better position to compete in downstream markets because it will have more autonomy over decisions about expansion of capacity and over its own cost base, as well as increased ability to innovate on products and service levels. Importantly, by having its own upstream network, Telstra will be better able to plan and manage capacity supply against demand and its business expansion plans and to guarantee service quality levels to its downstream customers. As the 100% owner of its upstream cable capacity rather than as an IRU holder in traditional cable consortia, Telstra has autonomy independent of other carriers and operators, some of whom may be its competitors in downstream markets. This will increase Telstra's efficiency and competitiveness in the downstream market.

3.3 Public benefits

Further to Telstra's own rationale, the Proposed Consolidation will also create the following public benefits:

(a) **increased competition in upstream cable markets**. As explained above, at the moment, Telstra is a minority shareholder of certain submarine cable

[4] Christopher Russell, "Asian century key to Telstra's growth, says boss David Thodey", *The Adelaide Advertiser*, 12 July 2014 see: http://www.adelaidenow.com.au/business/asian-century-key-to-telstras-growth-says-boss-david-thodey/story-fni6uma6-1226985723785

[5] Pursuant to the IDA's review of SingTel's Exemption Request for the Business and Government Customer Segment and Individual Markets, 2 June 2009, IDA concluded that SingTel continued to have dominant licensee obligations in business local telephony services, local leased circuits, local managed data services and customer segment requests.

systems. As a result, Telstra does not exercise any effective control over the management and operational decisions of the consortia that own and operate these cable systems. Further, other members of the same consortia include Telstra's direct competitors who may not have the same priorities or business plans as Telstra. The Proposed Consolidation will give Telstra the independence it needs to become a more effective competitor against larger incumbents such as SingTel and StarHub because Telstra will control its own capacity in certain cable systems. By having this control, Telstra will have the incentive to invest further in these cable systems which will increase competition in upstream cable markets. This is explained further in (c) below;

(b) **increased competition in downstream markets**. The Proposed Consolidation will make Telstra a more vigorous and effective competitor to larger incumbents such as SingTel and StarHub by creating the opportunity for the following:

(i) Telstra being able to differentiate itself in downstream markets by being in a position to better manage its capacity levels, upstream technology choices and guaranteeing its service quality levels;

(ii) the establishment of a greater network of sales and pre-sales specialists in Singapore and all other key Asian geographical locations which will benefit the customer bases of both Pacnet and Telstra;

(iii) enhanced brand, scale, capacity, capabilities and cross-sell opportunities. Currently both Pacnet and Telstra struggle to compete in winning enterprise customers with the larger operators in Singapore and Asia;

(iv) Pacnet's footprint and capability being leveraged to expand Telstra's offerings to new and existing customers. Telstra has a more extensive suite of services and products than Pacnet, particularly in areas such as unified communications, cloud computing, enterprise mobility, security and conferencing and these will all be made available to Pacnet customers;

(v) the combined scale of the 2 businesses being used to improve the business cases for and result in larger scale product development and innovation for both Pacnet and Telstra customers;

(vi) Pacnet's customers receiving the benefits of Pacnet having a strategic owner rather than a financial owner. As a strategic owner Telstra will honour the initial terms of all customer agreements and make long-term commitments to serve customers by being committed to the industry, committed to innovation on the back of a 4 year track record of strong organic growth and further investment in Singapore and Asia; and

(vii) Pacnet's customers receiving superior customer service. Both Telstra and Pacnet use the Net Promoter System to score customer satisfaction, quality of customer service and likelihood of customers to recommend. For the May 2014 NPS surveys Telstra's score was ***[redacted]***, Pacnet's was ***[redacted]***, indicating far superior customer satisfaction and service ratings from Telstra customers. The telecommunications industry average for 2013 was ***[redacted]***; and

(c) **further investment into Singapore by Telstra**. Telstra has identified Asia as a key growth region and having an increased presence in Singapore is a key to this growth. Over the last few years Telstra has:

(i) invested more than AUD$40 million; [6]

(ii) bought dedicated data centre space in Singapore; [7]

(iii) transferred most of the Singapore assets owned by Reach International Telecom (Singapore) Pte Ltd and Reach Internet Services Pte Ltd to Telstra;

(iv) more than doubled its number of staff – increasing headcount from 52 on 1 April 2012 to 129 on 31 December 2014; and

(v) executed agreements in relation to buying capacity on two new cables systems connecting into Singapore. As a new owner of undersea cable assets landing in Singapore, Telstra will expand its presence in the Singapore market beyond being a SBO and as a FBO Telstra will continue to invest in the maintenance and upgrade of those cable assets.

The Proposed Consolidation will facilitate further investment by Telstra in upstream and downstream markets in Singapore to the benefit of local consumers, by giving Telstra the scale and asset platform (such as data centres) to be able to undertake more significant organic growth and product development (in areas such as cloud computing). Telstra considers that this ongoing investment in its own products and new investment in Pacnet's products will result in increased customer satisfaction across all areas of the existing Telstra and Pacnet businesses.

[6] Telstra Singapore Pte Ltd audited reports

[7] David Thodey, "Singapore Office Officially Opened", 19 April 2013, see http://exchange.telstra.com.au/2013/04/19/new-singapore-office-officially-opened/

4 Relevant upstream markets

Key points

It is unnecessary to strictly define the relevant markets given the immaterial anti-competitive effects of the Proposed Consolidation, but it may be appropriate to define the relevant upstream markets as the markets for the supply of:

- *international submarine cable capacity from Singapore to:*
  - *the Asia Pacific region (the **Asia Pacific Cable Market**); and*
  - *to the west of Singapore, including India, the Middle East and Europe (the **Western Cable Market**); and*
- *backhaul services in Singapore (the **Backhaul Market**).*

4.1 The Asia Pacific and Western Cable Markets

In section 5 below, the Applicants' analysis of the competitive effects of the Proposed Consolidation shows that it is unnecessary to strictly define the relevant upstream submarine cable system market because, regardless of how the market is defined, the Proposed Consolidation will not have the effect of substantially lessening competition or causing public detriment.

However, for the sake of completeness, the Applicants consider that it may be appropriate for the IDA to define regional markets for the supply of international submarine cable capacity. Reviewing the markets on a regional basis is appropriate for reasons including the following:

(a) there are a significant number of submarine cables in both regions that overlap in terms of the countries that they link Singapore to;

(b) most cable systems are now designed and connected in a "loop" shape which means that the operator is easily able to re-route capacity between the origin and destination without any disruption to the service provided to the customer;

(c) improvements in the latency of submarine cables make distance less important and indirect routes become a more viable alternative to direct routes, especially when it is considered that the price to customers will remain the same regardless of whether a direct or indirect route is used by the operator; and

(d) Singapore serves as a key regional hub for cable systems.

Taking the above information into account, the Applicants consider that there are 2 relevant geographical markets in the wholesale supply of international submarine cable capacity:

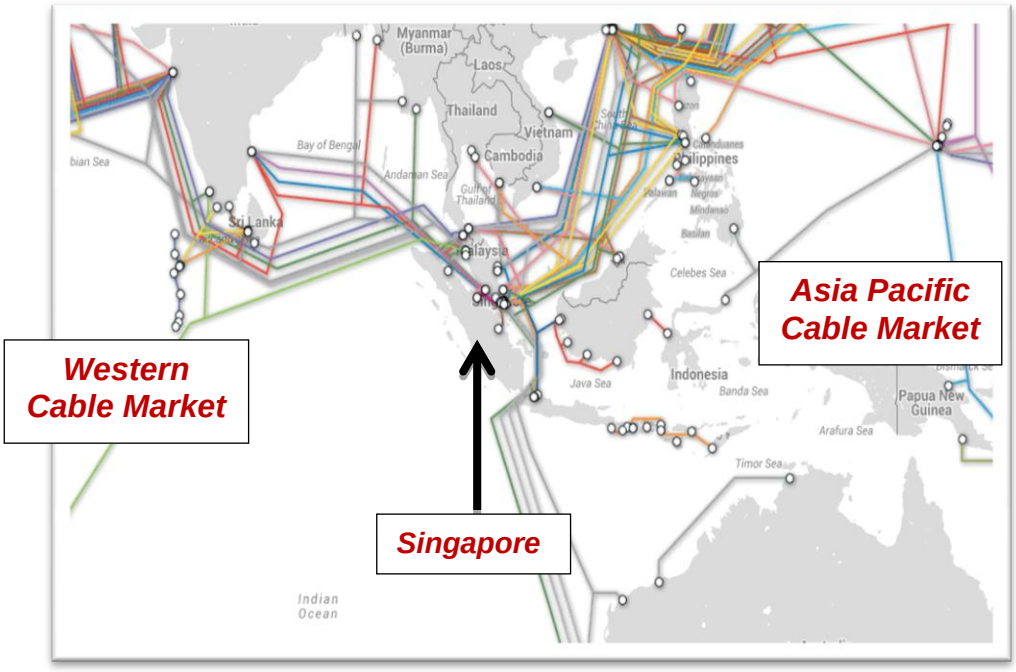
(e) routes from Singapore to the Asia Pacific region including, but not limited to, Hong Kong, Japan, Taiwan, Indonesia and Australia (the ***Asia Pacific Cable Market***). The Asia Pacific Cable Market definition is consistent with the IDA's previous consolidation reviews where it considered the wholesale

supply of international cable capacity from Singapore to the Asia-Pacific region[8]; and

(f) routes from Singapore to the West including, but not limited to, India, Middle East and Europe (the ***Western Cable Market***).

These markets are reflected in **Diagram 1** below.

Diagram 1: Western and Asia Pacific Cable Markets[9]



Attachments D and E provide details of other existing and forthcoming international submarine cable systems that will supply additional capacity into the Asia Pacific and Western Cable Markets.

As the information in Diagram 1 and Attachments D and E make clear, there are a significant number of alternative submarine cable systems in both the Western Cable Market and Asia Pacific Cable Market.

4.2 The Backhaul Market

The IDA has previously defined the Backhaul Market as consisting of:

> "*services that use fibre optic links to enable a Licensee that has capacity on an international submarine cable system to transport that capacity from a cable landing station in Singapore to the Licensee's international gateway or point of presence in Singapore. The Backhaul market includes both self-provided backhaul (i.e., the provision of backhaul, by a Licensee, to itself)*

[8] See IDA's reviews of the change in ownership in Asia Netcom Singapore Pte Ltd, 5 September 2006 and Consolidation involving Pacific Internet Limited and Connect Holdings Limited, 30 March 2007)

[9] Source: http://submarinecablemap.com/#/

and third-party backhaul (i.e., the provision of wholesale backhaul, by a Licensee, to another Licensee)."[10]

The Applicants agree with this definition.

[10] IDA, *Explanatory Memorandum to the Decision of the IDA of Singapore on the Request by SingTel for Exemption from Dominant Licensee Obligations with respect to the "International Capacity Services" Market, 12 April 2005, para 49*

5 Competition analysis – upstream markets

Key points

Asia Pacific Cable Market

- *The Proposed Consolidation will not have the effect of substantially lessening competition in the Asia Pacific Cable Market because:*
  - *the current estimated market share of the Post Consolidation Entity will be approximately [25-30]% of lit capacity. However, in the next 2-3 years, total design capacity in the Asia Pacific Market will increase by 171,400 Gbps and the Applicants' entitlement of this additional capacity is only up to **[redacted]** or [0-5]%. The Applicants' combined estimated share will, therefore, fall significantly as more capacity is lit. If half of all the design capacity of the proposed cables became lit capacity, even if **[redacted]** lit all of its entitlement to the additional capacity of the proposed cables, the Applicants' combined estimated share would fall to approximately [5-10]%; and*
  - *in each market, the Post Consolidation Entity's conduct will be heavily constrained by larger players such as SingTel and StarHub.*

Western Cable Market

- *The Proposed Consolidation will not have the effect of substantially lessening competition in the Western Cable Market because:*
  - *the current estimated market share of the Post Consolidation Entity will be approximately [0-5]% of lit capacity; and*
  - *the Post Consolidation Entity's conduct will be heavily constrained by larger players such as SingTel and StarHub.*

Backhaul Market

- *The Proposed Consolidation will not have the effect of substantially lessening competition in the Backhaul Market because Telstra's presence in this market is very small.*

Public benefits

- *The Proposed Consolidation will create public benefits because it will have a pro-competitive effect in both relevant cable markets and the Backhaul Market. In particular, the Proposed Consolidation would increase competition by making Telstra a more effective competitor against larger incumbents.*
- *The Proposed Consolidation will also result in further investment in Singapore by Telstra.*

5.1 The Asia Pacific Cable Market

The Post Consolidation Entity will be constrained by a number of larger players

Using their best endeavours based on the information available to them, the Applicants estimate the market share of the Post Consolidation Entity on the basis of the Applicants' lit capacity[11] on the relevant cables to be [25-30]% of lit capacity in the Asia Pacific Cable Market (or [25-30]% of lit capacity if the Applicants' leased capacities are taken into account).[12]

Attachment F is a spreadsheet which sets out the basis on which the Applicants have estimated this market share. As can be seen in the spreadsheet, while the estimated combined market share is [25-30]% for the Asia Pacific Cable Market – most of that share arises out of Pacnet's ownership of the EAC-C2C. The incremental increase resulting from the Proposed Consolidation is only [5-10]% as Telstra is not a major participant in the wholesale cable capacity markets.

This market share makes clear that the Proposed Consolidation will not result in the creation of a dominant merged entity in the Asia Pacific Cable Market that will be free from constraint in its supply of services. To the contrary, the small size of the Post Consolidation Entity will see it be constrained by large incumbents such as SingTel and StarHub, and the services offered over the wide range of competitive consortium cables.

Singapore's incumbent operator, SingTel is a formidable force in the global submarine cable industry. SingTel was, historically, a leading proponent of the Sea-Me-We submarine cables in the Western Cable Market. It has also invested in multiple cable systems in the Asia Pacific Market, most notably, Asia Pacific Cable Network 2 (**APCN-2**) and Southeast Asia-Japan Cable (**SJC**). As can be seen from Table 1 below, these cables also land in landing stations owned by SingTel. In late 1990s, it spearheaded two major Asian regional systems, C2C and i2i, but ultimately divested its shares when each venture encountered financial difficulties. Beyond Singapore, SingTel has stakes in two transpacific submarine cables connecting Japan and the United States, namely, the Japan-US Cable Network and Unity. SingTel's Australian subsidiary Optus is also a major submarine cable investor, and SingTel has strategic investments in Globe Telecom of the Philippines and Bharti of India, both of which have considerable international submarine cable capacity. Details of these cable systems are provided in **Attachments B and D**.

While it has not competed in the relevant markets for as long as SingTel, StarHub has quickly emerged as a serious competitor. StarHub has landing-party status in Singapore's only direct trans-Pacific submarine cable – Asia-America Gateway (**AAG**). It also has a stake in the pan-regional Asia Submarine-cable Express (**ASE**).

Other significant players in the 2 cable markets include:

[11] The Applicants' lit capacity includes capacity landing in Singapore as well as capacity transiting through Singapore. The Applicants do not have the data available to calculate market shares on the basis of lit capacity that excludes capacity that merely transits through Singapore, and therefore, the estimated market shares may overstate the Applicants' actual market shares.

[12] The Applicants have adopted lit capacity as this was the approach previously taken by the iDA in previous reviews and is likely to be a more conservative measure of market shares. Nevertheless, design capacity, while it changes with technology, itself reflects the dynamic nature of the cable market and can be important to take into account in considering capacity expansions and falling costs in bringing capacity online as lit capacity.

(a) Tata, which acquired the TyCom Global Network in 2004 and which subsequently expanded the network to include TGN-TIC and TGN-Intra Asia (**TGN-IA**) (see **Attachment B** for details); and

(b) Bharti, the sole owner of the i2i Cable Network and consortium member in EAC Pacific (Unity).

The Proposed Consolidation will result in an entity that is better able to compete in both relevant markets with the likes of the players described above and in **Attachment D**.

Growth in number of submarine cable systems linking Singapore

The contestability of supply in both cable markets:

(c) has increased since the IDA last reviewed these markets as additional cable systems have been built; and

(d) will continue to increase in coming years as the construction of new cable systems is completed.

Since the IDA last considered these markets, a number of submarine cables linking Singapore have been built. These include, but are not limited to, the AAG, ASE, MCS, SJC and TGN-IA systems. These cables alone have added 97,000 Gbps in design capacity and 8,000 Gbps in lit capacity to the overall submarine cable capacity connecting Singapore.

Further, **Attachment E** provides details of additional cable systems that are being planned or are under construction.

It is worth noting that in the Asia Pacific Cable Market, total design capacity will increase by 171,400 Gbps when the proposed cables are taken into account and all of those cables and capacity are expected to be ready for service in the next 2-3 years. Therefore, in the short term, the total capacity in the Asia Pacific Cable Market would significantly increase (the total design capacity would more than double the current total design capacity) while the Applicants (through ***[redacted]***) would only have a negligible increase in their entitlements of up to (***[redacted]*** Gbps] or [0-5]%) in the total additional capacity. The Applicants' combined estimated share would therefore fall significantly. If half of all the design capacity of the proposed cables became lit capacity (and ***[redacted]*** lit all of its entitlement to the additional capacity in proposed cables), the Applicants' combined estimated share would fall to approximately [5-10]% (approximately ***[redacted]*** of its existing estimated market share).

Accordingly, the Proposed Consolidation will not have the effect of substantially lessening competition in the Asia Pacific Cable Market.

Improvements in ability to equip unlit capacity

In 2007, CRA International correctly identified that technological developments had made supply virtually unbounded in terms of capacity that can be laid and lit. Advances in optical technology meant that the present generation of cables has design capabilities often exceeding 2,500 Gbps.[13] For example, in 2014 alone

[13] CRA International, *Analysis of competitive effects of proposed acquisition of Pacific Internet Limited by Connect Holdings Limited*, 26 February 2007, p 24

Pacnet completed ***[redacted]*** upgrades to its cable systems and increased capacity in Singapore by ***[redacted]*** (or ***[redacted]***%).

CRA noted that, with the falling costs of equipment, the barriers to bringing unlit capacity on-stream were falling. It has also been the Applicants' experience that the costs of equipping unlit capacity have dropped materially since 2007.

Given that cable capacity is readily available and homogenous, customers would be easily able to switch away from the Post Consolidation Entity if it chose to raise its prices or lower its service levels.

Singapore to Australia

We note that the IDA may be particularly interested in the Singapore to Australia route in terms of wholesale supply of cable capacity given Telstra's operations in Australia, and Telstra's ***[redacted]***% ownership of the SMW3 (Seg3A) cable connecting Singapore to Australia. However, for reasons set out below, the Proposed Consolidation has very limited impact, if any, on the Singapore to Australia route, even if that route is considered on its own:

- SMW3 (Seg3A) is also owned by PCCW Global (Singapore) Pte Ltd (**PCCW**) (***[redacted]***%), SingTel Optus and Telecom NZ; PCCW being the incumbent in Hong Kong, SingTel being the incumbent in Singapore, and both being significant competitors;

- while Pacnet leases capacity on the SMW3 (Seg3A), that capacity is only approximately ***[redacted]*** (or [0-5]% **[*Confidential*]** of the overall lit capacity ***[redacted]*** on the SMW3 (Seg3A)). The incremental increase from the Proposed Consolidation (to the extent leased capacities are taken into account) is therefore negligible;

- ***[redacted]***, other providers apart from SingTel and Telstra include Vocus and Bharti;

- Pacnet considers that there is a very liquid market for leasing capacity and that it has been easy for it to lease capacity on the SMW3 (Seg3A) when required;

- there are a number of alternative indirect routes that can be used for transmitting data between Singapore to Australia other than via SMW3 (Seg3A), which many other provides do use at least as a back-up supply. These routes include AJC+AAG; and AJC+APCN-2, both of which have ample of capacity and may be utilised at low cost; and

- there are a number of proposed cables being planned connecting Australia and Singapore including APX West (with design capacity of 32,000 Gbps), ASC (with design capacity of 36,000 Gbps) and Trident Subsea Cable (with design capacity of 8,000 Gbps). Even the cable with the smallest design capacity has a design capacity that is 8 times greater than that of the SMW3 (Seg3A), the cable system primarily used by Telstra and Pacnet for the Singapore-Australia route.

5.2 The Western Cable Market

Using their best endeavours based on the information available to them, the Applicants estimate the market share of the Post Consolidation Entity on the basis of the Applicants'

lit capacity on the relevant cables to be [0-5]% of lit capacity in the Western Cable Market (or [0-5]% of lit capacity if the Applicants' leased capacities are taken into account).[14]

Further, in relation to the cables referred to in section 5.1 that will become operational in 2015/2016, these cables will add another 68,000 Gbps to the total design capacity available in the Western Cable Market. The Applicants' additional entitlement (through ***[redacted]*** would be up to ***[redacted]*** or [0-5]% of the total additional capacity as a result.

Attachment F is a spreadsheet which sets out the basis on which the Applicants have estimated this market share.

The Post Consolidation Entity's market share makes clear that the Proposed Consolidation will not result in the creation of a dominant merged entity in the Western Cable Market that will be free from constraint in its supply of services. To the contrary, the small size of the Post Consolidation Entity will see it be constrained by large incumbents such as SingTel and StarHub, and the services offered over the wide range of competitive consortium cables.

The Proposed Consolidation will also not have the effect of substantially lessening competition in the Western Cable Market for the other reasons given in section 5.1 above.

5.3 Backhaul Market analysis

There are currently 7 cable landing stations in Singapore. To the best of the Applicants' knowledge, the location, owner, available backhaul providers from those landing stations and the submarine cable systems which are connected to those landing stations are set out in the Table below.

Table 1: cable landing stations in Singapore

Name	Location	Owner	Available backhaul providers	Submarine cable systems
Changi Cable Landing Station	1 Changi North Rise, 498817	Pacnet	SingTel, Pacnet, OpenNet and StarHub	EAC and TGN-TIC
C2C Changi Cable Landing Station	Changi Telephone Exchange in Upper Changi Road, Singapore.	SingTel	SingTel, OpenNet, Pacnet and StarHub	C2C
MCS Changi Cable Landing Station	JTC's North Changi Industrial Estate	Matrix Networks	Matrix Networks	MCS
Katong Cable Landing	375 Tanjong Katong road	SingTel	SingTel, StarHub,	APCN-2

[14] The Applicants have adopted lit capacity as this was the approach previously taken by the iDA in previous reviews and is likely to be a more conservative measure of market shares. Nevertheless, design capacity, while it changes with technology, itself reflects the dynamic nature of the cable market and can be important to take into account in considering capacity expansions and falling costs in bringing capacity online as lit capacity.

Name	Location	Owner	Available backhaul providers	Submarine cable systems
Station			OpenNet, Cable & Wireless, Telstra and Verizon	
Tanah Merah Landing Site	[Location unknown to Applicants]	[Owner unknown to Applicants]	SingTel, OpenNet	ASC, APG and new submarine cable systems
Tuas Cable Landing Station	SingTel Tuas Exchange, 9 Tuas Avenue 3	SingTel	SingTel, StarHub, OpenNet, Telstra and Verizon	i2i, SMW3, SMW4, SJC, and new submarine cable systems (including SMW5).
StarHub Changi Cable Landing Station	59 Changi North Crescent, 499630	StarHub	StarHub	AAG

Pacnet only owns one of the 7 cable landing stations. However, while Pacnet is listed as a backhaul provider for the Changi Cable Landing Station and the C2C Changi Cable Landing Station, Pacnet provides backhaul using infrastructure owned predominantly by SingTel and StarHub on a lease or indefeasible rights of use (**IRU**) basis – the only backhaul infrastructure it owns is the connection between the EAC and C2C cable landing stations. Further, Pacnet does not provide backhaul as an independent service, only bundled with its cable transmission services. Pacnet only uses ("self-consumes") backhaul as its backbone (that is, as an input to PoP to PoP or premises to premises international services which Pacnet offers). Therefore, Pacnet does not generate any revenue from its backhaul service. As an indication of the backhaul capacity used by Pacnet, in the week ending 14 November 2014, Pacnet used a total of ***[redacted]*** Gbps of backhaul capacity in Singapore.

Telstra leases dark fibre and is not the owner of any domestic transport networks. Telstra uses this infrastructure primarily to connect its International PoPs in Singapore to the relevant cable landing station in Singapore to access the capacity it holds in the consortium cables in which it holds an interest. Where spare capacity allows, Telstra may sell this backhaul for short term periods as standalone connectivity if the customer requires but this is done very infrequently. In FY14, it only had ***[redacted]*** customers and generated around ***[redacted]*** in annual revenue. The total backhaul capacity in Singapore from Telstra's activated cable capacity which terminated at Singapore PoPs was ***[redacted]*** Gbps as at the end of November 2014.

Since:

(a) Pacnet does not sell backhaul services to other service providers; and

(b) Telstra only does so infrequently – where spare capacity allows and if the customer requires,

the Proposed Consolidation will not have the effect of substantially lessening competition in the Backhaul Market.

5.4 Wholesale international telephony services

As noted above, Telstra also provides wholesale supply of voice services. In FY14, Telstra's total outbound traffic to Singapore was ***[redacted]*** minutes and inbound traffic from Singapore carriers was ***[redacted]*** minutes.[15] While there is limited data on the overall market, TeleGeography estimated global outgoing traffic from Singapore to be 11,260.4 million minutes and global incoming traffic to Singapore at 5,816.9 million minutes in 2012. These figures are likely to have increased since 2012 and therefore likely to overstate Telstra's shares if used, but even with these figures, Telstra's estimated shares for outgoing traffic and incoming traffic are only [0-5]% and [0-5]%, respectively (ie, less than 5%).

We note that the IDA has previously found the wholesale international telephony services market to be effectively competitive.[16] In any case, Pacnet exited the wholesale voice business in 2012/2013. There is therefore no overlap and the Proposed Consolidation has no impact on this market in Singapore.

[15] This includes retail supply of voice, however, Telstra's retail supply of voice is a very limited business. More than ***[redacted]***% of this is likely to relate to wholesale supply.

[16] Request by MCI Singapore, MCI and Verizon for Exemption from Long Form Consolidation Application the proposed change in ownership in MCI Singapore arising from the proposed acquisition of MCI by Verizon, 14 October 2005.

6 Relevant downstream markets

Key points

- The Applicants overlap in the following downstream markets:
  - Internet access services;
  - International managed data services;
  - International IP transit; and
  - International private leased circuit (**IPLC**).

6.1 Internet access services

In the previous consolidation involving a Pacnet entity, Pacnet Internet Limited, in March 2007, the applicants had delineated separate internet access services markets for dial up internet access services (residential and corporate), broadband internet access services (residential and corporate), global internet access roaming services and leased line internet access services. In reviewing that consolidation, the IDA noted that it had not previously determined the relevant markets in which internet access services were provided but believed that to be unnecessary for the purposes of the review.[17]

6.2 Managed data services

Telstra and Pacnet overlap in the provision of international managed data services (**IMDS**) in Singapore.

In relation to the IMDS, the IDA has defined this market as the supply of packet-based services such as asynchronous transfer mode (**ATM**), IP-virtual private network (**IP-VPN**) and frame relay that provided managed connectivity among multiple customer sites, at least one of which is located outside of Singapore.[18]

Pacnet also provides domestic managed data services to customers, though this is not a core business. However, as Telstra does not provide domestic managed data services to customers in Singapore, there is currently no overlap, and as such, no competition concerns arise.

6.3 International IP transit services

The IDA has previously considered the international IP transit services and considered the market to consist of the provision of a service, for compensation, in which one operator terminates international internet traffic on its network or transits the internet

[17] Page 15.

[18] SingTel's Request for Exemption from Dominant Licensee Obligations with respect to the provision of international capacity services, 12 April 2005; Request by AT&T Singapore, AT&T and SBC for Exemption from Long Form Consolidation Application (II) the proposed change in ownership in AT&T Singapore, 18 August 2005; Request by MCI Singapore, MCI and Verizon for Exemption from Long Form Consolidation Application (II) the proposed change in ownership in MCI Singapore arising from the proposed acquisition of MCI by Verizon, 14 October 2005; Consolidation involving Pacific Internet Limited and Connect Holdings Limited, 30 March 2007; SingTel's Exemption Request for the business and government customer segment and individual markets, 2 June 2009; Proposed Consolidation involving Cable & Wireless Global Pte Limited and Vodafone Europe B.V, 11 July 2012.

traffic for termination on a third operator's network.[19] The market essentially involves delivery of internet traffic from Singapore to a network location at the foreign end. It would not include the provision of local connectivity to end user premises.

6.4 International private leased circuit (IPLC)

The IDA has previously considered the IPLC markets, considering the following to be separate markets:

(a) Terrestrial IPLC market;[20] and

(b) Satellite IPLC market.[21]

The Applicants only overlap in the Terrestrial IPLC market as Pacnet does not have any Satellite services in Singapore.[22]

The Terrestrial IPLC market consists of services provided over submarine cables which offer customers the exclusive use of a point-to-point, dedicated transparent transmission path for voice, data or video between a location in Singapore and a location outside of Singapore.[23] In order to provide Terrestrial IPLC services to customers in Singapore, Singapore-based operators would need to acquire the necessary access/termination facilities at the foreign end.

[19] ICS Exemption Decision (12 April 2005); Request by AT&T Singapore, AT&T and SBC for Exemption from Long Form Consolidation Application (II) the proposed change in ownership in AT&T Singapore, 18 August 2005; Request by MCI Singapore, MCI and Verizon for Exemption from Long Form Consolidation Application (II) the proposed change in ownership in MCI Singapore arising from the proposed acquisition of MCI by Verizon, 14 October 2005; Consolidation involving Pacific Internet Limited and Connect Holdings Limited, 30 March 2007; and Proposed consolidation involving Cable & Wireless Global Pte Limited and Vodafone Europe B.V, 11 July 2012.

[20] ICS Exemption Decision (12 April 2005); Request by AT&T Singapore, AT&T and SBC for Exemption from Long Form Consolidation Application the proposed change in ownership in AT&T Singapore, 18 August 2005; Request by MCI Singapore, MCI and Verizon for Exemption from Long Form Consolidation Application the proposed change in ownership in MCI Singapore arising from the proposed acquisition of MCI by Verizon, 14 October 2005; IDA's decision on proposed change in ownership in Asia Netcom Singapore Pte Ltd on 5 September 2006; Consolidation involving Pacific Internet Limited and Connect Holdings Limited, 30 March 2007; BGCS Exemption Decision (2 June 2009); and Proposed consolidation involving Cable & Wireless Global Pte Limited and Vodafone Europe B.V, 11 July 2012.

[21] ICS Exemption Decision, 12 April 2005.

[22] Telstra has a very small satellite business. Telstra's satellite business comprises satellite IPLC, VSAT private lease service and satellite IP Trunk Service, however, together, that business only generates approximately S$***[redacted]*** million. This is estimated to be substantially less than 5% in any satellite market and the satellite IPLC (and other satellite markets) is therefore not discussed.

[23] ICS Exemption Decision, 12 April 2005.

7 Competition analysis – downstream markets

Key points

- *While Pacnet and Telstra overlap in a few downstream telecommunications markets, the Applicants are very small participants in those markets and generally have less than 5% estimated combined share in most markets.*
- *The only markets in which the Applicants may have more than 5% estimated combined share is IPLC, the wholesale corporate wired broadband access (to the extent that is considered its own market and on the basis that market shares cannot be estimated, although Telstra does not participate in this market in Singapore), and co-location services (which the IDA does not license).*
- *There are no vertical effects arising from the Proposed Consolidation.*
- *Telstra cannot leverage its control of Australian domestic local access infrastructure into overseas markets.*

7.1 Internet access services

Whether the IDA considers the internet access services market as a whole, or as 4 separate markets as previously delineated, we consider that the internet access services market will not be impacted by the Proposed Consolidation.

Both Pacnet and Telstra participate in the leased line internet access services in Singapore:

(a) Telstra has ***[redacted]*** customers and generates approximately ***[redacted]***[24] in revenue on an annual basis; and

(b) Pacnet has ***[redacted]*** customers and generates approximately ***[redacted]***[25] in revenue on an annual basis.

Based on the Enterprise Network Forecast report,[26] the leased line data retail revenue in Singapore was USD$316m in FY13 and USD$284m in FY14. The Applicants' combined estimated share based on revenue is therefore [0-5]% (ie, less than 5% of the leased line internet access services in Singapore, to the extent leased line internet access services is a separate market in Singapore). The Applicants also compete against major organisations such as SingTel, StarHub, Tata, Verizon Communications Singapore Pte Ltd (**Verizon**) and Orange.

In addition, while Pacnet provides corporate dial-up and broadband internet access services, Telstra does not participate in the dial-up, broadband or global internet access roaming services markets. There is therefore no overlap between the Applicants in these services. In any case, Pacnet only has:

(c) ***[redacted]*** customers[27] and generates ***[redacted]*** in monthly revenue for corporate dial-up internet access services. According to IDA's statistics on Telecomm Services for 2014, as of September 2014, there were 18,700

[24] Based on OANDA, calculated 19 December 2014. (AUD1 = USD0.81544)

[25] Based on OANDA, calculated 19 December 2014. (SGD1 = USD0.76134)

[26] Gartner, Forecast: Enterprise Network Services, Worldwide, 2010-2017, 4Q13

[27] As of October 2014.

subscriptions for total internet dial-up services.[28] Pacnet's share of customers is therefore [0-5]%, less than 5% of the market share based on subscriptions;

(d) ***[redacted]*** customers and generates annual revenue of ***[redacted]*** for retail corporate wired broadband access services. Pacnet also does not actively promote this service. According to IDA's statistics on Telecomm Services for 2014, as of September 2014, there were 105,500 subscriptions in total for corporate wired broadband services.[29] Pacnet's share of customers in retail corporate wired broadband access services is therefore [0-5]%, less than 5% of the market share based on subscriptions; and

(e) ***[redacted]*** customers and generates approximately ***[redacted]*** million in annual revenue for wholesale corporate wired broadband access. Pacnet is not aware of its exact market share since total sales for wholesale services in internet access services are not publicly available. In any case, Pacnet believes its share to be less than [5-10]%, and may even be less than [0-5]%.

Further, as recognised by the IDA in the proposed consolidation involving Cable & Wireless Global Pte Limited and Vodafone Europe B.V in July 2012, there are numerous operators in the market for internet access and related services to MNCs including SingNet Pte Ltd, StarHub and M1 Net Ltd. Additionally, many corporate customers, especially MNCs, are likely to enjoy strong buyer power and will be able to assert counter-veiling bargaining power.

Therefore, the Proposed Consolidation is unlikely to have an impact on the internet access services market, regardless of market definition.

7.2 Managed data services

In relation to the IMDS market, the IDA has concluded that the market subject to IDA's jurisdiction is the sale of IMDS to customers in Singapore ("A-end" sales) and not sales to MNCs overseas, for which Singapore is a "spoke" in their regional or global network ("B-end" sales).[30]

Since the IDA's review of SingTel's Request for Exemption from Dominant Licensee Obligations with respect to the provision of international capacity services on 12 April 2005 (**ICS Exemption Decision**), the IDA has concluded that the IMDS market was competitive. In the subsequent BGTS Exemption Decision, IDA noted there were numerous market participants in the IMDS market which also included AT&T, BT Singapore Pte Ltd (**BT**), Verizon, NTT Singapore Pte Ltd (**NTT**), Tata, T-Systems Singapore Pte Ltd (**T-Systems**), PCCW, Sprint International Communications Singapore Pte Ltd (**Sprint**), KDDI and SingTel. All of these players are still active competitors in the market. There is no evidence to suggest that the competitive landscape has since changed.

In particular, the IDA concluded that, as of 2009, SingTel had a market share by revenue of approximately 70% in the managed data service market, more than 5 times that of its nearest competitor. SingTel also had a market share by revenue of approximately 65% for new services such as metro-ethernet.

[28] http://www.ida.gov.sg/Infocomm-Landscape/Facts-and-Figures/Telecommunications/Statistics-on-Telecom-Services/Statistics-on-Telecom-Services-for-2014-Jul-Dec

[29] http://www.ida.gov.sg/Infocomm-Landscape/Facts-and-Figures/Telecommunications/Statistics-on-Telecom-Services/Statistics-on-Telecom-Services-for-2014-Jul-Dec. Total Corporate Wired Broadband includes all retail corporate wired broadband subscriptions provided over xDSL, cable modems, leased line and optical fibre.

[30] Eg, Proposed Consolidation involving Cable & Wireless Global Pte Limited and Vodafone Europe B.V, 11 July 2012.

Neither Telstra nor Pacnet are large participants in the IMDS market in Singapore. Pacnet has ***[redacted]*** customers and generates approximately ***[redacted]*** (on an annual basis) while Telstra has ***[redacted]*** customers and generates approximately ***[redacted]*** (on an annual basis) in the IMDS market. We note Telstra ceased the sale of frame relay / ATM network services since 2013 and has migrated customers to IP-VPN.

In providing a confidential report to Telstra in February 2013, McKinsey and Company included the following diagram – **Diagram 2**. In this diagram, the market share figures include dedicated leased lines, IP-VPN, frame relay and ATM for FY12. The ***[redacted]*** that appears in the diagram is the FY12 market size in USD million.

Diagram 2: Enterprise international connectivity market share

[redacted]

While the Applicants do not know what the current market size of the IMDS market in Singapore is, assuming the market is still ***[redacted]*** (or ***[redacted]***[31]), the Applicant's estimated combined share is only [0-5]% (ie, less than 5% share).

Further, as recognised by the IDA in the ICS Exemption Decision, customers in Singapore purchase IMDS on a "network basis". That is, IMDS customers purchase a service that provides both network management and connectivity between Singapore and multiple customer sites outside of Singapore. Given that IMDS sales between Singapore and any given customer site is only a portion of the IMDS service offering, even if the merged entity were to discriminate in favour of itself post-Consolidation in the provision of connectivity services to locations outside of Singapore where it may have significant market power, this is unlikely to provide it with a material competitive advantage in the offering of IMDS to Singapore end users. Based on the evidence available, there is little risk that, following the Proposed Consolidation, Telstra would be able to use its significant market power in Australia (to the extent it has any) to substantially lessen competition in the Singapore IMDS market. In any case, subsection 8.3 of the Telecom Competition Code provides a remedy in the event that the merged entity seeks to benefit from any anti-competitive conduct by an affiliated entity. The Proposed Consolidation will therefore not result in a significant lessening of competition in the IMDS market.

7.3 International IP transit services

The IDA has previously concluded that the international IP transit services market is effectively competitive, with numerous participants including SingTel, Equant, Verizon, Reach, Sprint and StarHub.[32] There is no evidence to suggest that the competitive landscape has since changed.

Further, neither of the Applicants are major providers nor have large customer bases:

(a) Telstra has ***[redacted]*** customers and generates approximately ***[redacted]*** in annual revenue. In October 2014, its overall IP Transit capacity sold was ***[redacted]***[33]; and

(b) Pacnet has ***[redacted]*** customers and generates approximately ***[redacted]*** in annual revenue. As of December 2014, , Pacnet's total IP Transit capacity was ***[redacted]***.

[31] Based on OANDA, calculated 19 December 2014. (SGD1 = USD0.76134).

[32] IDA Pacnet paras 39 - 40

[33] ***[redacted]*** was sold to Global Wholesale customers and [***redacted***] was sold to MNCs.

These revenue figures are minuscule in the context of the global IP transit market. The estimated combined market share is therefore less than 5%.

7.4 IPLC

In the BGCS Exemption Decision, the IDA considered market shares on the basis of capacity data for self-use, A-end sales to End Users and sales to FBOs and SBOs. The IDA also requested data on the capacity of Terrestrial IPLCs that were purchased from another operator for resale as a Terrestrial IPLC (and not used as an input to any other service), in order to avoid double-counting these sales in calculating the total size of the market.

We note that:

(a) Pacnet has ***[redacted]*** customers and generates approximately ***[redacted]*** in annual revenue from these services. Pacnet's A-end sales to End Users, including FBOs and SBOs, in FY14 also amounts to only approximately ***[redacted]*** in capacity;

(b) Telstra has ***[redacted]*** customers and generates approximately ***[redacted]*** in annual revenue from these services. Telstra's IPLC sales to End Users, including FBOs and SBOs, in FY14 also amounts to only approximately ***[redacted]*** in capacity.

Based on the IDA website, total capacity of IPLC circuits sold (in Mbps) as of December 2013 was 4,623,000.[34] The capacity sold in 2014 is likely to have increased, however, even based on the 2013 figure (which is likely to overstate the Applicants' share), the Applicants' estimated combined market share is only [10-15]%.

The IDA has also concluded that the market is competitive and participants in the market include SingTel, StarHub, Telecom Italia Sparkle Singapore Pte Ltd (**Italia**), Verizon, T-Systems and Tata.[35] There is no evidence to suggest that the competitive landscape has since changed. Further, the IDA noted in the BGCS Exemption Decision that the development of a competitive backhaul market had contributed towards lowering the entry barrier into the Terrestrial IPLC market in Singapore and the presence of multiple operators in the Terrestrial IPLC market suggests that barriers to entry in this market are relatively low. The IDA also found instances of switching, noting that switching service providers did not appear to be an issue of concern to End Users.

While the IDA has noted that there are Singapore-based operators operating in this market which have foreign affiliates that have significant market power in their domestic markets, which therefore provides the operator with an ability to impede competition on the Singapore-[respective end-user location] routes by way of foreclosure, discriminatory terms or conditions and/or imposing above-cost prices thereby subject competitors to a price squeeze, the IDA has, to date, not detected evidence of anti-competitive conduct on such routes. In any case, subsection 8.3 of the Telecom Competition Code provides a remedy in the event that the merged entity seeks to benefit from any anti-competitive conduct by an affiliated entity. The Proposed Consolidation will therefore not result in a significant lessening of competition in the Terrestrial IPLC market.

[34] http://www.ida.gov.sg/Infocomm-Landscape/Facts-and-Figures/Telecommunications/Statistics-on-Capacity-Bandwidth-Services

[35] BGTS Exemption Decision, 2 June 2009; Proposed Consolidation involving Cable & Wireless Global Pte Limited and Vodafone Europe V.W, 11 July 2012.

7.5 Co-location services

The Applicants also overlap in the provision of co-location services (being data centres and facilities management services). In particular, as of June 2013, on the basis of raised floor space, Pacnet had ***[redacted]*** sq ft while Telstra had ***[redacted]*** sq ft. However, the total size of data centre facilities in Singapore was approximately 2.5 million sq ft, giving the Applicants an estimated share of [5-10]% and [0-5]% respectively. Further, the raised floor space of Pacnet's data centres was less than Equinix (537,380 sq ft or 22.35%), SingTel (500,000 sq ft or 20.7%), Global Switch (230,042 sq ft or 9.5%) and Keppel Data Centres (194,800 sq ft 8.1%).[36] There are also various other competitors including 1-Net, NTT, T-Systems, Verizon, Tata, Indosat, AT&T, StarHub and BT Global Services, among others. The number of entrants and the large floor space held by individual suppliers suggests that the barriers to entry in this market are low.

We note that the IDA does not license the provision of data centres and facilities management services.

In any case, the incremental increase from the Proposed Consolidation is negligible, and the combined Applicants' estimated share is minimal. There are larger competitors than Pacnet and also a number of other competitors in the provision of this service. There are also relatively low barriers to entry and expansion to provide such services. The Proposed Consolidation is therefore unlikely to impact the provision of co-location services in Singapore.

7.6 No vertical effects

While submarine cable capacity is important for the purpose of competing in downstream retail services markets, the Post Consolidation Entity will not be able to restrict or distort competition in the downstream markets in Singapore.

The Post Consolidation Entity would only have the ability and/or incentive to increase upstream prices or withhold capacity if:

(a) there was a lack of alternative sources of supply for submarine cable capacity; and

(b) the Post Consolidation Entity had the ability to successfully drive its competitors from the downstream markets.[37]

As set out above in section 5, there is no lack of alternative sources of supply for submarine cable capacity. Further, most of the existing cables currently have excess capacity such that much of the design capacity is not lit. Lit capacity can therefore be brought on at low cost. We note that a number of new cables are also being planned / under construction which would significantly increase the capacity available.

Given the number of alternative sources of supply, the extent of excess cable capacity currently in the market (and the larger amount of unlit capacity that could readily be brought to market) as well as the number and size of other competitors, including very large and dominant licensees, the Post Consolidation Entity would not have the ability to drive the competitors from the downstream markets and exclude them from the markets through predatory pricing or any other means.

[36] We note that Pacnet has since installed a new facility, increasing its capacity by ***[redacted]*** sq metres (or ***[redacted]*** sq ft). However, Pacnet's overall capacity is still less than its next competitor and Telstra's capacity is still miniscule.

[37] See IDA, Explanatory Memorandum on the Decision of the Info-Communications Development Authority of Singapore on the Consolidation involving Pacific Internet Limited and Connect Holdings Limited, 30 March 2007, paragraph [49].

7.7 No ability for Telstra to leverage Australian operations

Finally, regardless of whether the Proposed Consolidation takes place, Telstra is not able to leverage its control of Australian domestic local access infrastructure into overseas markets because:

(a) Telstra's Australian retail operations are purely domestic and cannot be leveraged into any overseas market;

(b) Telstra's Australian based infrastructure also only operates domestically, and, in any case, much of its legacy fixed network infrastructure is being sold to NBN Co as part of the rollout of Australia's national broadband network;

(c) in relation to Telstra's Australian customer base, it is only MNCs headquartered in or with a large Australian presence that will relevantly acquire telecommunications services in Singaporean markets and they represent a very small proportion of the MNCs present in Singapore; and

(d) while Telstra has ***[redacted]***% of the SMW3 (Seg3A) cable connecting Singapore to Australia:

  (i) SMW3 (Seg3A) is also owned by PCCW (***[redacted]***%), SingTel Optus and Telecom NZ;

  (ii) while Pacnet leases capacity on the SMW3 (Seg3A), that capacity is only approximately ***[redacted]*** (or [0-5]% of the overall lit capacity (***[redacted]*** Gbps) on the SMW3 (Seg3A)). The incremental increase from the Proposed Consolidation (to the extent leased capacities are taken into account) is therefore negligible;

  (iii) ***[redacted]***, other providers apart from SingTel and Telstra include Vocus and Bharti;

  (iv) there is a liquid market for leasing capacity and Pacnet has had no difficulty in leasing capacity on the SMW3 (Seg3A) when required;

  (v) there are a number of alternative indirect routes that can be used for transmitting data between Singapore to Australia other than SMW3 (Seg3A), which many other provides do use at least as a back-up supply; and

  (vi) in addition to the existing alternative routes, there are a number of proposed cables being planned connecting Australia and Singapore including APX West (with design capacity of 32,000 Gbps), ASC (with design capacity of 36,000 Gbps) and Trident Subsea Cable (with design capacity of 8,000 Gbps). These cables are currently planned to be ready for service in 2015/2016.

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8 Conclusion

Through the Proposed Consolidation, Telstra is looking to continue its growth and investment in Singapore and Asia more broadly.

Telstra considers that the Proposed Consolidation will provide it with the opportunity to:

(a) have effective control over the management and operational decisions of certain cable systems of which it will be the 100% owner, providing it with the independence it needs to compete more vigorously and effectively against larger incumbents in both relevant cable markets; and

(b) reinforce its existing corporate enterprise services by adding the services offered by Pacnet. This will allow Telstra to grow its customer base and become a more vigorous and effective competitor to larger incumbents such as SingTel and StarHub.

Telstra's increased investment and competitive position in Singapore will mean that the Proposed Consolidation will also result in significant public benefits.

Attachment A Pacnet submarine cable system interests

Cable systems in which Pacnet has an interest

Cable system	Main paths from/to Singapore (Sg) [38]	Ownership	Design capacity (Gbps)	Lit capacity (Gbps)	Pacnet entitlement	Pacnet lit capacity (Gbps)
EAC-C2C	Sg – HK Sg – Philippines C2C: Sg – HK Sg – Japan	Pacnet (100%)	30,720	**[*redacted*]**	100%	Sg-HK: **[*redacted*]** Sg-Philippines: **[*redacted*]** Sg-Japan: **[*redacted*]** Total: **[*redacted*]**
EAC Pacific (Unity)	Japan – US[39]	Consortium: Pacnet 40% Bharti Airtel 10% Global Transit 10% Google 20% KDDI Corp. 10% SingTel 10%	7,680	**[*redacted*]**	2 fibre pairs out of 5	**[*redacted*]**

[38] EAC-C2C provides connectivity between Japan, Korea, China, Taiwan, Hong Kong, the Philippines and Singapore.

[39] Provides connectivity between Chikura, Japan and Los Angeles and US.

Pacnet leased capacity on submarine cables linking Singapore

Cable system	Main paths from/to Singapore (Sg) [40]	Ownership	Design capacity (Gbps)	Lit capacity (Gbps)	Pacnet entitlement	Pacnet lit capacity (Gbps)
Sea-Me-We-3 (**SMW3**)	Main:[41] Sg – HK Sg – India Sg – Myanmar Seg 3A: Sg – Australia	Consortium[42] **[*redacted*]**	640	370	N/A	**[*redacted*]**
Sea-Me-We-4 (**SMW4**)	Sg-India[43]	Consortium[44] **[*redacted*]**	6,400	3,200	N/A	**[*redacted*]**
i2i Cable Network	Sg – India	Private (Bharti Airtel (previously Bharti Group and SingTel))	8,400	640	N/A	**[*redacted*]**
Tata Indicom Cable (**TGN-TIC**)	Sg – India	Tata Communications	20,480	1,280	N/A	**[*redacted*]**
Jakabare	Sg – Indonesia	PT Indosat	1,280	160	N/A	**[*redacted*]**
Matrix Cable System	Sg – Indonesia	Private (Matrix Networks, PT NAP Info	6,400	500	N/A	**[*redacted*]**

[40] EAC-C2C provides connectivity between Japan, Korea, China, Taiwan, Hong Kong, the Philippines and Singapore.

[41] SMW3 (main) provides connectivity between Europe, Middle East, India, Singapore, HK, Taiwan and Korea. It also has a Segment 3A that provides connectivity between Singapore and Australia.

[42] Orange, BT, KDDI, SingTel, Telecom Italia Sparkle, Telekom Malaysia, OTEGLOBE, AT&T, Belgacom, Communications Authority of Thailand, China Telecom, Deutsche Telekom, Etisalat, Telecom Egypt, CTM, PT Indonesia Satellite Corp., Jabatan Telecom Brunei, KT, Portugal Telecom, Maroc Telecom, PLDT, Saudi Telecom, Sri Lanka Telecom, Turk Telekom, Tata Communications, Chunghwa Telecom, Verizon, KPN, Telekom Austria, SingTel Optus, Telstra, Vietnam Telecom International, Omantel, PCCW, Pakistan Telecommunications Company Ltd., Cyta, eircom, LG Uplus, Softbank Telecom, Telkom South Africa, Rostelecom, Orange Polska, SingTel Optus, Telecom Argentina, Myanmar Post and Telecommunication, Sprint and Vocus Communications

[43] SMW4 provides connectivity from Singapore to Middle East to Europe.

[44] Bangladesh Telegraph and Telephone Board (BTTB), Orange, SingTel, Telecom Italia Sparkle, Tata Communications, PT Indonesia Satellite Corp., Telekom Malaysia, Airtel (Bharti), Sri Lanka Telecom, Etisalat, Saudi Telecom, Communications Authority of Thailand, Tunisia Telecom, Verizon, Pakistan Telecommunications Company Ltd. and Telecom Egypt.

Cable system	Main paths from/to Singapore (Sg) [40]	Ownership	Design capacity (Gbps)	Lit capacity (Gbps)	Pacnet entitlement	Pacnet lit capacity (Gbps)
(**MCS**)		Lintas Nusa)				

Note: The Applicants' lit capacity includes capacity landing in Singapore as well as capacity transiting through Singapore. The Applicants do not have the data available to calculate market shares on the basis of lit capacity that excludes capacity that merely transits through Singapore, and therefore, the estimated market shares may overstate the Applicants' actual market shares.

Attachment B Telstra submarine cable system interests

Cable systems in which Telstra has a minority interest

Cable system	Main paths from/to Singapore (Sg) [45]	Ownership	Design capacity (Gbps)	Lit capacity (Gbps)	Telstra entitlement	Telstra lit capacity (Gbps)
Asia-America Gateway Cable System (**AAG**)	Sg – HK[46] Sg – Philippines Sg - US	Consortium[47] Telstra owns **[*redacted*]** of the capacity interests relating to Singapore.	8,400	1,880	**[*redacted*]**	**[*redacted*]**
Asia Pacific Cable Network 2 (**APCN-2**)	Sg – HK Sg – Japan Sg – Philippines[48]	Consortium[49] Telstra owns **[*redacted*]**	21,100	3,840	**[*redacted*]**	Sg – HK: **[*redacted*]** Sg – Japan: **[*redacted*]**
Sea-Me-We-3 (**SMW3**)	Main:[50] Sg – HK Sg – India Sg – Myanmar Seg 3A: Sg – Australia	Consortium[51] Telstra owns **[*redacted*]** of the seg 3A cable.	640	370	Main: **[*redacted*]** Seg3A: **[*redacted*]**	Main: (Sg-India/ Asia/ EU): **[*redacted*]** Seg3A (Sg-Australia): **[*redacted*]**

[45] EAC-C2C provides connectivity between Japan, Korea, China, Taiwan, Hong Kong, the Philippines and Singapore.

[46] AAG provides connectivity between Malaysia, Singapore, Thailand, Brunei Darussalam, Vietnam, Hong Kong SAR, Philippines, Guam, Hawaii and the US West Coast.

[47] Telekom Malaysia, AT&T, Starhub, PLDT, Communications Authority of Thailand, Airtel (Bharti), Telstra, Telkom Indonesia, BT, Eastern Telecom, PT Indonesia Satellite Corp., Telecom New Zealand, Viettel Corporation, Saigon Postel Corporation, Vietnam Telecom International, Brunei International Gateway, BayanTel

[48] APCN2 provides connectivity between China, Japan, Korea, Taiwan, Hong Kong, the Philippines, Indonesia, Singapore, Malaysia and Thailand in a ring configuration (four fibre pairs connecting 10 submarine cable landing stations in Asia region)

[49] SingTel, Verizon, KDDI, Chunghwa Telecom, AT&T, BT, Orange, Softbank Telecom, NTT, Tata Communications, Telekom Malaysia, Starhub, PLDT, China Unicom, KT, SingTel Optus, Telstra, PCCW, China Telecom, LG Uplus, New World Telecom, Vodafone

[50] SMW3 (main) provides connectivity between Europe, Middle East, India, Singapore, HK, Taiwan and Korea. It also has a Segment 3A that provides connectivity between Singapore and Australia.

Cable system	Main paths from/to Singapore (Sg) [45]	Ownership	Design capacity (Gbps)	Lit capacity (Gbps)	Telstra entitlement	Telstra lit capacity (Gbps)
Sea-Me-We-4 (**SMW4**)	Sg-India[52]	Consortium[53] **[*redacted*]**	6,400	3,200	N/A	**[*redacted*]**

Telstra leased capacity on submarine cables linking Singapore

Cable system	Main paths from/to Singapore (Sg) [54]	Ownership	Design capacity (Gbps)	Lit capacity (Gbps)	Telstra entitlement	Telstra lit capacity (Gbps)
Matrix Cable System (**MCS**)	Sg – Indonesia	Private (Matrix Networks, PT NAP Info Lintas Nusa)	6400	500	N/A	**[*redacted*]**
Moratelindo International Cable-system One (**MIC-1**)	Sg – Indonesia	Private (PT Moratel Indonesia and ViewQwest)	1,280	160	N/A	**[*redacted*]**
Tata TGN-Intra Asia (**TGN-IA**)	Sg – HK Sg – Japan[55]	Tata Communications[56]	9,600	1,920	N/A	Sg-Japan: **[*redacted*]**
Tata Indicom Cable (**TGN-TIC**)	Sg – India	Tata[57]	20,480	1,280	N/A	**[*redacted*]**

[51] Orange, BT, KDDI, SingTel, Telecom Italia Sparkle, Telekom Malaysia, OTEGLOBE, AT&T, Belgacom, Communications Authority of Thailand, China Telecom, Deutsche Telekom, Etisalat, Telecom Egypt, CTM, PT Indonesia Satellite Corp., Jabatan Telecom Brunei, KT, Portugal Telecom, Maroc Telecom, PLDT, Saudi Telecom, Sri Lanka Telecom, Turk Telekom, Tata Communications, Chunghwa Telecom, Verizon, KPN, Telekom Austria, SingTel Optus, Telstra, Vietnam Telecom International, Omantel, PCCW, Pakistan Telecommunications Company Ltd., Cyta, eircom, LG Uplus, Softbank Telecom, Telkom South Africa, Rostelecom, Orange Polska, SingTel Optus, Telecom Argentina, Myanmar Post and Telecommunication, Sprint and Vocus Communications

[52] SMW4 provides connectivity from Singapore to Middle East to Europe.

[53] Bangladesh Telegraph and Telephone Board (BTTB), Orange, SingTel, Telecom Italia Sparkle, Tata Communications, PT Indonesia Satellite Corp., Telekom Malaysia, Airtel (Bharti), Sri Lanka Telecom, Etisalat, Saudi Telecom, Communications Authority of Thailand, Tunisia Telecom, Verizon, Pakistan Telecommunications Company Ltd., Telecom Egypt

[54] EAC-C2C provides connectivity between Japan, Korea, China, Taiwan, Hong Kong, the Philippines and Singapore.

[55] TGN-IA provides connectivity between Singapore, Hong Kong, Japan, the Philippines, Vietnam and Guam.

[56] http://www.submarinecablemap.com/#/submarine-cable/tata-tgn-intra-asia-tgn-ia

[57] http://www.submarinecablemap.com/#/submarine-cable/tata-tgn-tata-indicom

Telstra minority interest in submarine cables linking Singapore that are being planned or are under construction

Cable system	Main paths from/to Singapore (Sg)	Ownership	Design capacity (Gbps)	Party entitlement	Ready for service
Asia-Africa-Europe 1 (**AAE-1**)	Europe – Middle East – India – Singapore – Hong Kong[58]	Consortium[59] Telstra owns **[*redacted*]**	40,000	**[*redacted*]**	**[*redacted*]**
Bay of Bengal Gateway (**BBG**)	Singapore – India – Middle East	Consortium[60] Telstra owns **[*redacted*]**	8,400	**[*redacted*]**	**[*redacted*]**

Note: The Applicants' lit capacity includes capacity landing in Singapore as well as capacity transiting through Singapore. The Applicants do not have the data available to calculate market shares on the basis of lit capacity that excludes capacity that merely transits through Singapore, and therefore, the estimated market shares may overstate the Applicants' actual market shares.

[58] Provides connectivity between South East Asia to Europe across Egypt, connecting Hong Kong, Vietnam, Cambodia, Malaysia, Singapore, Thailand, India, Pakistan, Oman, UAE, Qatar, Yemen, Djibouti, Saudi Arabia, Egypt, Greece, Italy and France.

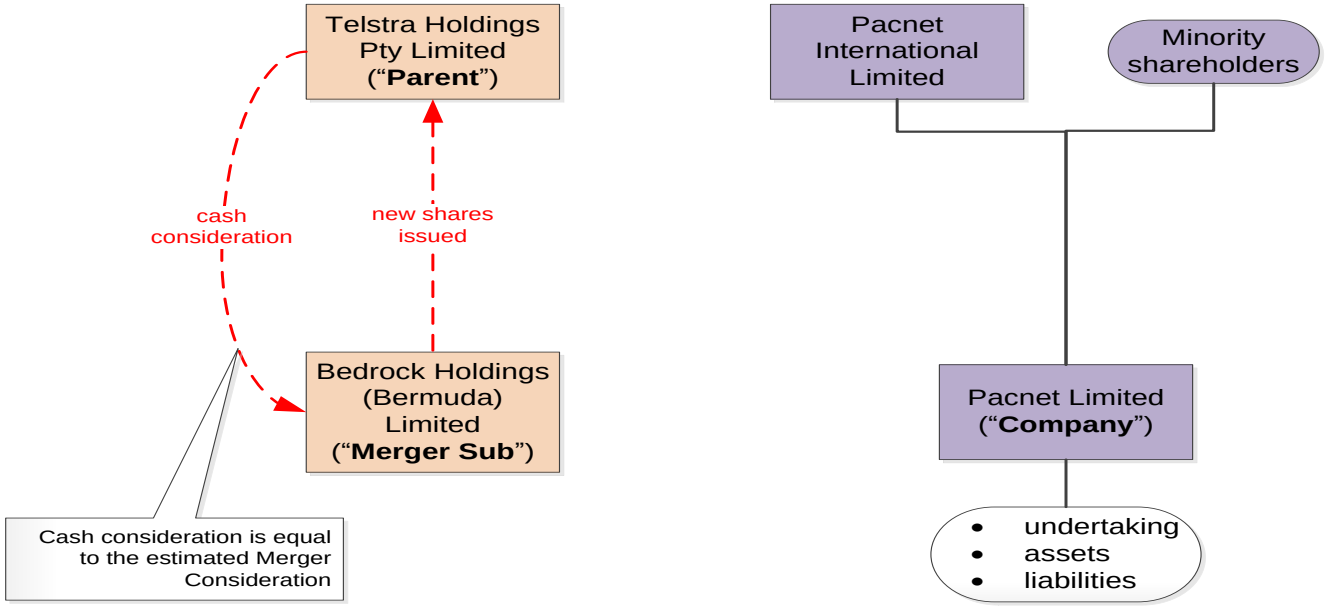
[59] China Unicom, Telecom Egypt, Etisalat, Omantel, Djibouti Telecom, OTEGLOBE, Pakistan Telecommunications Company Ltd., PCCW, Ooredoo, Mobily, Viettel Corporation, TeleYemen, Chuan Wei, Retelit

[60] Vodafone, Telekom Malaysia, Omantel, Reliance Jio Infocomm, Dialog Axiata, Etisalat

Attachment C Diagrams illustrating the process to effect the Proposed Consolidation

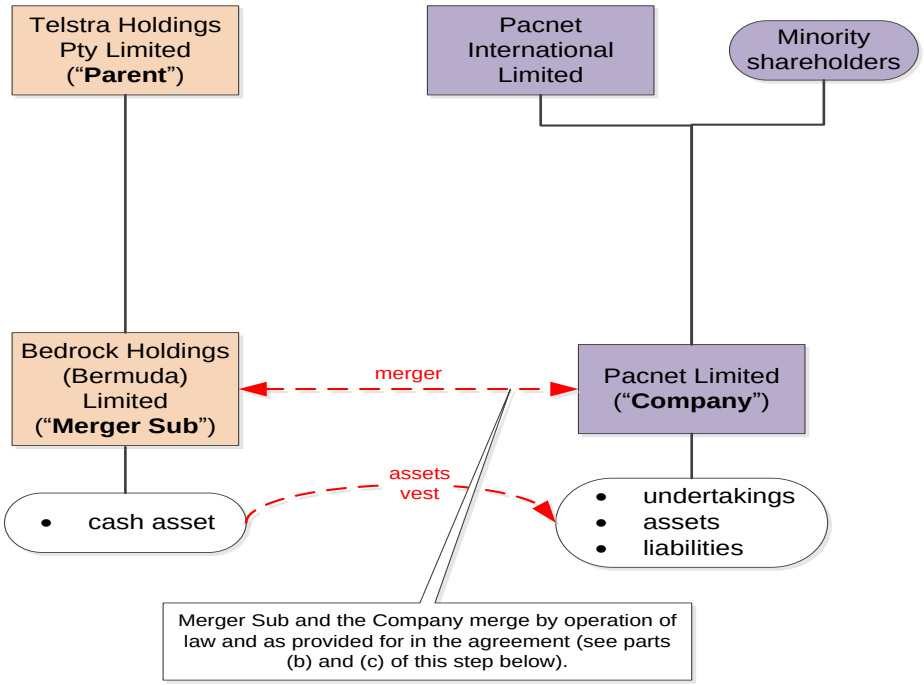
Step 1

Prior to the effective time



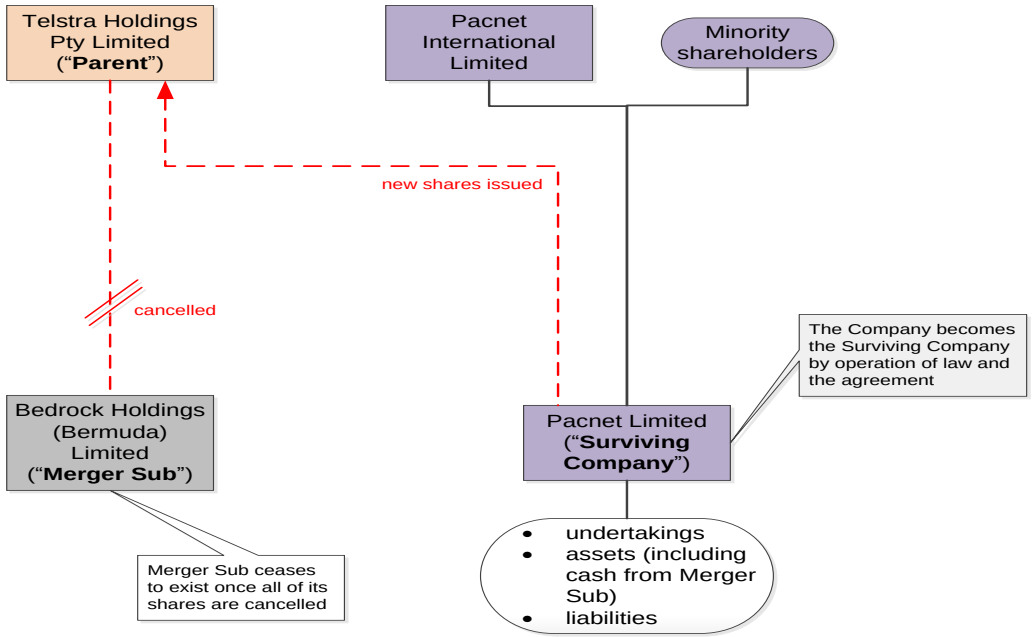
Step 2(a)

At the effective time



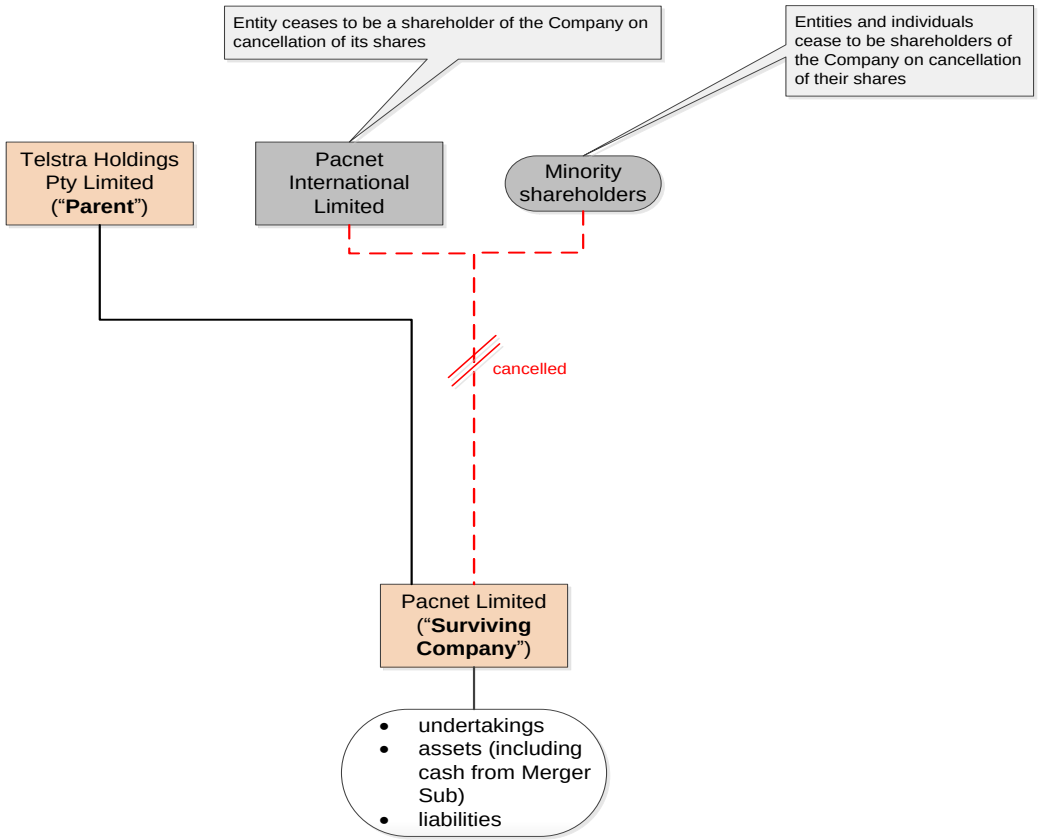
Step 2(b)

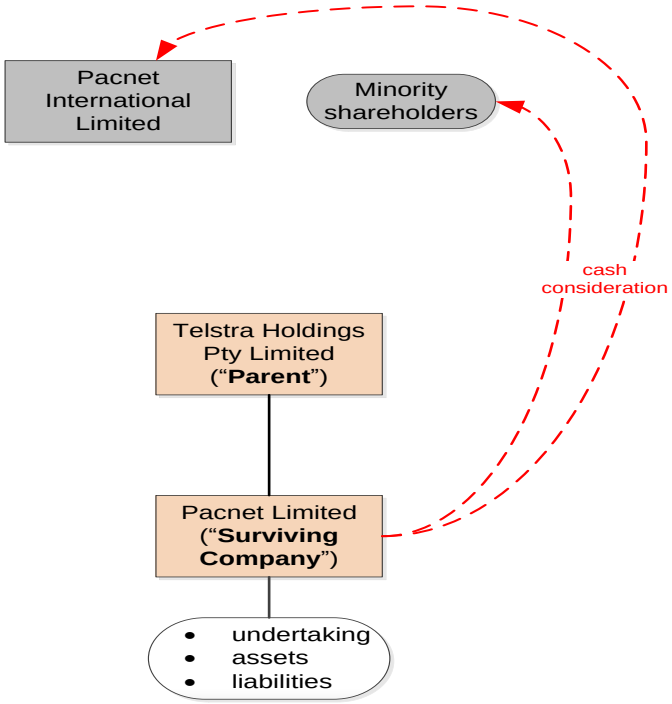
At the effective time

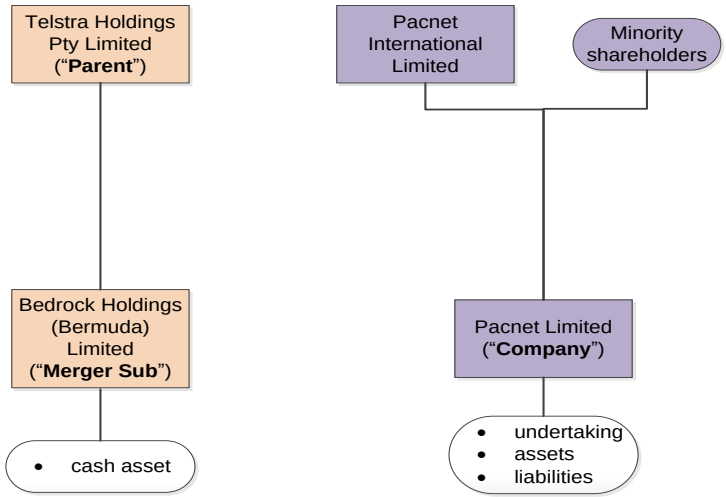
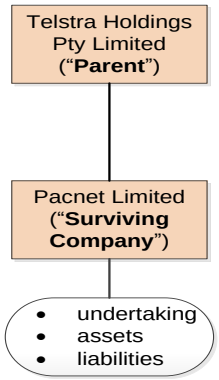


Step 2(c)

At the effective time



Step 3 Immediately after the effective time	

Existing corporate structure Immediately prior to the effective time	
Resulting corporate structure Immediately after the effective time	

Attachment D Other submarine cable systems linking Singapore and providing capacity to the Asia Pacific or the West

Existing submarine cable systems

Cable system	Main paths from/to Singapore (Sg)	Ownership	Design capacity (Gbps)	Lit capacity (Gbps)
Asia Submarine-Cable Express (**ASE**)	Sg – HK Sg – Japan Sg - Philippines[61]	Consortium[62]	15,000[63]	1,360
Batam-Singapore Cable System (**BSCS**)	Sg – Indonesia	PT Telkom	1,280	160
i2i Cable Network	Sg – India	Private (Bharti Airtel (previously Bharti Group and SingTel))	8,400	640
Jakabare	Sg – Indonesia	PT Indosat	1,280	160
Jakarta-Bangka-Bintan-Batam-Singapore (**B3JS**)	Sg – Indonesia	PT Moratel Indonesia	5,120	380
PGASCOM Java-Sumatra-Batam-Singapore (**JSBS**)	Sg – Indonesia	PT PGAS Telekomunikasi Nusantara (**PGASCOM**)	1,280	160
Southeast Asia-Japan Cable (**SJC**)	Sg – HK	Consortium[65]	28,800	2,400

[61] Links Japan to Philippines, Malaysia, Singapore, with branch to Hong Kong and potential landing in PRC.

[62] Owned by NTT, PLDT, Telekom Malaysia and Starhub.

[63] This is the publicly reported minimum design capacity (see, for example, http://www.ntt.com/aboutus_e/news/data/20140612.html). Other sources may place the design capacity significantly higher. The Applicants have chosen to use the 15,000 Gbps figure in order to show that even on the most conservative estimate of the ASE's design capacity the Proposed Consolidation will not substantially lessen competition or result in public detriment.

[65] Globe Telecom, Google, KDDI, Telkom Indonesia, SingTel, China Telecom, TOT, China Mobile, Chunghwa Telecom, Brunei International Gateway.

	Sg – Japan Sg – Philippines[64]			
Thailand-Indonesia-Singapore (**TIS**)	Sg – Thailand Sg – Indonesia	Private (CAT, PT Telkom and SingTel)	1,280	160

[64] SJC provides connectivity between Brunei, PRC, Hong Kong, Japan, Singapore, the Philippines and Thailand.

Attachment E Submarine cable systems being planned or under construction

Cable system	Main paths from/to Singapore (Sg)	Ownership	Design capacity (Gbps)	Party entitlement	Ready for service (expected)
Asia-Pacific Gateway (**APG**)	Links Malaysia, Singapore, Vietnam, Hong Kong, Taiwan, Mainland China, Japan, and Korea	Consortium[66]	54,800	N/A	2015
APX West	Australia – Singapore	Private (SubPartners)	32,000	N/A	Sept 2016
Australia-Singapore Cable (**ASC**)	Australia – Singapore[67]	Private (Ontario Teachers Pension and Leighton Holdings)	36,000	N/A	March 2015
Sea-Me-We-5 (**SMW5**)	Europe – Middle East – India – Singapore	Consortium[68]	24,000	N/A	2016
Trident Subsea Cable	Australia – Indonesia – Singapore	Trident Subsea Cable Pty Ltd	8,600	N/A	June 2016
Asia-Africa-Europe 1 (**AAE-1**)	Europe – Middle East – India – Singapore – Hong Kong[69]	Consortium[70] **[*redacted*]**	40,000	**[*redacted*]**	**[*redacted*]**
Bay of Bengal Gateway (**BBG**)	Singapore – India – Middle East	Consortium[71] **[*redacted*]**	8,400	**[*redacted*]**	**[*redacted*]**

[66] NTT, China Telecom, China Unicom, Chunghwa Telecom, KT, Starhub, LG Uplus, China Mobile, Viettel Corporation, Vietnam Telecom International, Global Transit, Facebook

[67] Provides connectivity between Australia and Singapore through Indonesia.

[68] Telekom Malaysia, Bangladesh Telegraph and Telephone Board (BTTB), China Mobile, China Telecom, Orange, Myanmar Post and Telecommunication, Saudi Telecom, Sri Lanka Telecom, Telkom Indonesia, TOT, SingTel, Telecom Italia Sparkle, TeleYemen, China Unicom, du

[69] Provides connectivity between South East Asia to Europe across Egypt, connecting Hong Kong, Vietnam, Cambodia, Malaysia, Singapore, Thailand, India, Pakistan, Oman, UAE, Qatar, Yemen, Djibouti, Saudi Arabia, Egypt, Greece, Italy and France.

[70] China Unicom, Telecom Egypt, Etisalat, Omantel, Djibouti Telecom, OTEGLOBE, Pakistan Telecommunications Company Ltd., PCCW, Ooredoo, Mobily, Viettel Corporation, TeleYemen, Chuan Wei, Retelit

[71] Vodafone, Telekom Malaysia, Omantel, Reliance Jio Infocomm, Dialog Axiata, Etisalat

Attachment F Basis of Applicants' estimate of market shares

1 Applicant entitlements and lit capacities

Cable	Design Capacity (Gbps)	Lit Capacity (Gbps)	Pacnet entitlement (Gbps)	Pacnet lit (including leased capacity) (Gbps)	Telstra entitlement (Gbps)	Telstra lit (including leased capacity) (Gbps)
Cables where an Applicant has a stake						
EAC-C2C	30,740	[redacted]	30,740	[redacted]		
AAG	8,400	1,880			[redacted]	[redacted]
APCN-2	21,100	3,840			[redacted]	[redacted]
SMW3 (main)	640	370			[redacted]	[redacted]
SMW3 (seg3A)	1,000	140		[redacted]	[redacted]	[redacted]
SMW4	6,400	3,200		[redacted]	[redacted]	[redacted]
Cables where neither Applicant has a stake						
MCS	6,400	500		[redacted]		[redacted]
MIC-1	1,280	160				[redacted]
TGN-IA	9,600	1,920				[redacted]
TGN-TIC	20,480	1,280		[redacted]		[redacted]
ASE	43,800	1,360				
BSCS	1,280	160				[redacted]
i2i	8,400	640		[redacted]		
Jakabare	1,280	160		[redacted]		[redacted]
B3JS	5,120	380				[redacted]
PGASCOM	1,280	160				[redacted]
SJC	28,800	2,400				

Cable	Design Capacity (Gbps)	Lit Capacity (Gbps)	Pacnet entitlement (Gbps)	Pacnet lit (including leased capacity) (Gbps)	Telstra entitlement (Gbps)	Telstra lit (including leased capacity) (Gbps)
TIS	1,280	160				
Proposed cables						
AAE-1	40,000				[*redacted*]	
BBG	8,400				[*redacted*]	
APG	54,800					
APX West	32,000					
ASC	36,000					
SWM5	24,000					
Trident	8,600					
Total						
Total (existing)	197,280	22,930	30,740	4,224	2,033	1,094
Total (existing and proposed)	396,680	22,930	30,740	4,224	3,913	1,094

Note: The Applicants' lit capacity includes capacity landing in Singapore as well as capacity transiting through Singapore. The Applicants do not have the data available to calculate market shares on the basis of lit capacity that excludes capacity that merely transits through Singapore, and therefore, the estimated market shares may overstate the Applicants' actual market shares.

2 Calculation of market shares

Capacities	Total lit capacity (Gbps)	Pacnet lit capacity (Gbps)	%	Telstra lit capacity (Gbps)	%	Combined lit capacity (Gbps)	%
Asia Pacific Cable Market[72]							
Existing capacity (excluding leased capacity)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Existing capacities (including leased capacity)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Existing capacity (excluding leased capacity) Including proposed cables (assuming 50% of design capacity became lit and Telstra lit all of its entitlement of additional capacity from those proposed cables)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Western Cable Market[73]							
Existing capacity (excluding leased capacity)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Existing capacities (including leased capacity)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]
Including proposed cables (assuming 50% of design capacity became lit and Telstra lit all of its entitlement of additional capacity from those proposed cables)	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]	[redacted]

Note: The Applicants' lit capacity includes capacity landing in Singapore as well as capacity transiting through Singapore. The Applicants do not have the data available to calculate market shares on the basis of lit capacity that excludes capacity that merely transits through Singapore, and therefore, the estimated market shares may overstate the Applicants' actual market shares.

[72] Relevant cables: EAC-C2C, AAG, APCN-2, SMW3 (main), SMW3 (Seg3A), MCS, MIC-1, TGN-IA, ASE, BSCS, Jackabare, B3JS, PGASCOM, SJC and TIS. Proposed cables: AAE-1, APG, APX West, ASC and Trident.

[73] Relevant cables: SMW3 (main), SMW4, TGN-TIC, i2i. Proposed cables: AAE-1, BBG and SMW5.