



TRANSMISSION CAPACITY SERVICE

Review of the declaration for the domestic transmission capacity service

Final Report

April 2004

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Abbreviations

ACA	Australian Communications Authority
AIEAC	Australian Information Economy Advisory Council
Bps	Bits per second
CAN	Customer access network
CSP	Carriage service provider
DWDM	Digital wave density multiplexing
Gbit	Gigabit
Gbps	Gigabits per second
HFC	Hybrid fibre coaxial
Kbit	Kilobit
Kbps	Kilobits per second
LTIE	Long-term interests of end-users
Mbit	Megabit
Mbps	Megabits per second
POI	Point of interconnection
POP	Point of presence
PSTN	Public switched telephone network
SPT	Soul Pattinson Telecommunications
Tbps	Terabits per second

Glossary

Access provider	Carrier or carriage service provider who supplies declared services to itself or other persons — see s. 152AR of the Act.
Access seeker	Service provider who makes, or proposes to make, a request for access to a declared service under s. 152AR of the Act.
Carrier	Holder of a carrier license granted under the Telecommunications Act 1997
CSP	A carriage service provider as defined under the Telecommunications Act 1997
Declared service	An eligible service declared by the Commission under s. 152AL of the Act. Once an eligible service is declared, access providers are required to supply the service to service providers upon request (access seekers) — see s. 152AR of the Act.
Eligible service	This term is defined in s. 152AL of the Act. An eligible service is a carriage service between two or more points (at least one of which is in Australia), or a service that facilitates the supply of such a carriage service.
Microwave	A form of terrestrial wireless transmission at a very high frequency that can be used for providing telecommunications links and television services.
Optical fibre	Cable made of glass fibres through which signals are transmitted as pulses of light.
Service provider	Defined in s. 86 of the <i>Telecommunications Act 1997</i> . The term refers to a carriage service provider or a content service provider.

1. Introduction

1.1 Background

On 5 September 2003, the Australian Competition and Consumer Commission (“the Commission”) commenced a public inquiry to review the transmission capacity service declaration. The review, which was required under the *Trade Practices Act 1974* (“the Act”), was to determine, having regard to the long-term interests of end users (LTIE), whether to:

- allow the declaration to expire without making a new declaration;
- extend the current expiry date of the existing declaration by a period of up to five years; or
- introduce a new declaration different to the current one.

Declaration means that an access provider supplying transmission capacity to itself or another person must also supply the service, upon request, to carriers or carriage service providers (CSPs). Declaration ensures service providers have access to the inputs they need to supply competitive communications services to end-users and in accordance with the standard access obligations in section 152AR of the Act.

The transmission capacity service is a generic service that can be used for the transmission of voice, data or other communications between transmission points located throughout Australia. It is characterised as being wideband or broadband carriage, the minimum bandwidth for which is 2 megabits per second (Mbps). Carriers/CSPs can use the transmission capacity service to set up their own networks for aggregated voice or data channels or for integrated data traffic (such as voice, video and data).

The Commission deemed various types of transmission capacity as declared services when it became the telecommunications competition regulator on 30 June 1997.¹ The declared service did not include transmission capacity on major ‘intercapital’ routes (specifically defined as routes between the cities of Brisbane, Sydney, Canberra, Melbourne, Adelaide and Perth).

On 4 November 1998, the Commission varied the declared transmission capacity service following a public inquiry process.² The variations involved, *inter alia*, the inclusion of the major intercapital routes with the exception of those between Melbourne, Canberra and Sydney. The Commission also established a monitoring program to assess aspects of market structure and market conduct on all the intercapital routes. The monitoring program began in March 1999 and involved periodically collecting data (on a voluntary basis) from Telstra and Optus.

¹ ACCC, *Deeming of Telecommunications Services*, June 1997.

² ACCC, *Competition in data markets – Inquiry Report*, Chapter 4, November 1998.

In May 2001, following a public inquiry, the Commission decided to vary the declaration to remove the remaining intercapital routes, on the basis that increasing/impending entry was stimulating competition on these routes. The monitoring program was extended to monitor whether competition developed as expected on these intercapital routes by including the new carriers providing transmission services.

On 5 September 2003, the Commission released a discussion paper (“the September 2003 discussion paper”) which commenced the current inquiry. Its purpose was to stimulate discussion and assist its current review of the transmission capacity service declaration.

On 23 December 2003, the Commission released its draft view (“the draft report”) that the declaration should be varied to exclude nominated capital-regional transmission routes, and potentially CBD inter-exchange transmission in the major capital cities. The draft report also recommended that the existing intercapital monitoring program be curtailed to focus on the Melbourne-Adelaide and Adelaide-Perth (“east-west”) routes for 12 months.

Following the release of its draft report, the Commission received four submissions. In addition, the Commission conducted a number of follow-up market inquiries to assist in reaching its final view. A list of written submissions received (including those in response to the September 2003 discussion paper) is at **Appendix 1**.

1.2 Summary findings of the inquiry

The Commission’s final view is there is sufficient competition on all ‘intercapital’ routes, including the east-west routes, such that they should remain outside the scope of declaration and the associated monitoring program should be discontinued. It also has decided that changing the scope of the transmission capacity service declaration to exclude a nominated list of capital-regional routes will be in the LTIE. However, after careful consideration the Commission has decided not to exclude CBD inter-exchange or CBD tail-end transmission from declaration.

In summary, the Commission has reached these views because:

Intercapital transmission — Effective competition exists on all intercapital routes such that none of these should be re-declared. The Commission notes that Leighton Contractors Pty Ltd purchased the Nextgen network after the draft report was released in December 2003. This ensures there are now three infrastructure competitors on these routes and at least two carriers/CSPs that have secured long-term contractual arrangements with surplus capacity to resell transmission capacity services.

Intercapital monitoring program — Given that Nextgen network’s ongoing presence on the east-west routes has been confirmed, the Commission considers that the benefits of continuing to monitor prices on these routes are outweighed by the associated regulatory costs. As such, the intercapital monitoring program is to be abandoned entirely.

Specified capital-regional routes — There is evidence of effective competition and/or sufficient contestability on 14 nominated capital-regional routes (at least three optical fibre

competitors) such as to promote the competitive supply of transmission services. Importantly, since the draft report the Commission has based this decision on more accurate information. This involved confirmation of the ongoing operation of the Nextgen network which had not previously been taken into account due to uncertainty surrounding its future at that time. The new list appears on page 49 of this report.

CBD inter-exchange transmission — There is a concern that there are economies of scope between this service and the CBD tail service that would be undermined by removal of this service from declaration. Therefore, removal of this service from declaration would be damaging to competition and the LTIE. There are also concerns that there is not effective competition and/or sufficient contestability across the full breadth of these markets to promote the competitive supply of these services. As such, they should not be removed from the scope of declaration.

Tail-end transmission — There is not presently effective competition and/or sufficient contestability across the entirety of each CBD to promote the competitive supply of these services. As such, they should not be removed from the scope of declaration.

This report sets out the information, analysis and reasons upon which the Commission’s final decision has been made, and is structured as follows:

- **Section 2** describes the transmission capacity service, including the existing declared and non-declared elements.
- **Section 3** briefly outlines the legislative basis for this review, the public inquiry process and the LTIE test that the Commission must have regard to when reviewing a declaration.
- **Section 4** provides an analysis of transmission markets, including an identification of the markets that are the focus of this inquiry.
- **Section 5** sets out the Commission’s reasons as to why varying the scope of the transmission capacity service declaration will promote competition.
- **Section 6** provides reasons why varying the scope of the transmission capacity service declaration promote efficient investment.
- **Section 7** examines the impact of varying the scope of the transmission capacity service declaration on any-to-any connectivity.
- **Section 8** outlines the Commission’s decisions.
- **Appendix 1** provides a list of submissions received.
- **Appendix 2** provides the service description of the existing transmission capacity service declaration.
- **Appendix 3** provides the service description of the new transmission capacity service

declaration.

2. Transmission Capacity Services

2.1 Generic service description

Transmission capacity is a generic service that can be used for the carriage of voice, data or other communications using wideband or broadband carriage (the minimum bandwidth in the current declaration is 2 Mbps). Carriers/CSPs can use transmission capacity to set up their own networks for aggregated voice or data channels, or for integrated data traffic (such as voice, video, and data).

There are a number of types of transmission capacity services, including:

- intercapital transmission;
- ‘other’ transmission;
- inter-exchange local transmission; and
- tail-end transmission.

Intercapital transmission refers to transmission between transmission points located in different capital cities. Under the service description of the existing transmission capacity service declaration, this includes transmission between the cities of Melbourne, Sydney, Canberra, Brisbane, Adelaide and Perth.

‘Other’ transmission refers to transmission between transmission points located in different call charge areas, except for those between the capital cities listed in the previous paragraph. For example, it includes transmission between Adelaide-Darwin, Perth-Darwin and Melbourne-Hobart, as well as transmission along capital-regional (eg Sydney-Albury) and regional-regional (eg Geelong-Ballarat) routes.

Inter-exchange local transmission refers to transmission between transmission points located at or virtually co-located with an access provider’s local exchanges, that are within a single call charge area. In functional terms, these transmission links, together with switching and network management functions constitute the inter-exchange network, which carries traffic within a call charge area, but where the transmission points are not linked to the same local exchange.

Tail-end transmission refers to transmission between a point at a customer location and some point on the access seeker’s network (such as a point of interconnection or “POI”). For example, in the case of a customer whose premises are located near an access provider’s local exchange where there is a transmission POI, the transmission of traffic from that customer premise to the access provider’s local exchange, and hence to the transmission POI, would constitute tail-end transmission.

2.2 Declared and non-declared transmission services

The service description for the existing transmission capacity declaration (**Appendix 2**) includes all the transmission capacity services outlined above, except for transmission between:

- one customer transmission point and another customer transmission point;
- one access seeker network location and another access seeker network location; and
- intercapital transmission (i.e. transmission between transmission points in Adelaide, Brisbane, Canberra, Melbourne, Perth and Sydney).

In this context, a *customer transmission point* is a point located at customer equipment at a service provider customer's premises in Australia (for the avoidance of doubt, a customer in this context may be another service provider) and an *access seeker network location* is a point in a network operated by a service provider that is not a point of interconnection or a customer transmission point.

The declaration provides for transmission at the designated rates of 2.048 Megabits per second, 4.096 Megabits per second, 6.144 Megabits per second, 8.192 Megabits per second, 34 to 45 Megabits per second, 140/155 Megabits per second, or higher orders as agreed between a carrier/ CSP and another service provider.

3. Legislative Basis and Inquiry Process

3.1 Legislative basis

Access to declared services

Part XIC of the Act establishes a regime for regulated access to carriage services and services which facilitate the supply of carriage services. Access obligations in relation to a particular service are established following the declaration of that service by the Commission.

The Commission's power to declare a service is contained in section 152AL of the Act. Under this section, the Commission can declare an eligible service³ once it has conducted a public inquiry according to Part 25 of the *Telecommunications Act 1997* to determine whether declaration is in the LTIE. Once a service is declared, the access provider must, upon request, make access available to service providers, taking all reasonable steps to ensure that technical and operational quality is equivalent to that which the access provider provides itself.

In addition to the Commission's power to declare a service, it also has the power to vary or revoke an existing declaration. Subsection 152AO(1) of the Act stipulates that subsection 33(3) of the *Acts Interpretation Act 1901* applies to the Commission's declaration powers under section 152AL of the Act. Subsection 33(3) provides that the power to make, grant or issue an instrument shall be construed to include a power to repeal, rescind, revoke, amend or vary such an instrument.

Required review of declarations

In December 2002, transitional provisions associated with the new section 152ALA of the Act came into force. Under these provisions, the Commission is required to specify an expiry date for all existing declarations, within five years of when they commenced.

For the transmission capacity service declaration, the Commission decided upon an expiry date of March 2004.⁴ Under section 152ALA, the Commission must:

- during the 12 months preceding the expiry date of a declaration, hold a public inquiry under Part 25 of the *Telecommunications Act 1997*;
- prepare a report about the inquiry under section 505 of the *Telecommunications Act 1997*; and
- publish the report during the 180 day period ending on the expiry date of the declaration.

³ That term is defined to cover listed carriage services within the meaning of the section and services which facilitate the supply of listed carriage services.

⁴ ACCC Publication, *Expiry Dates for Declared Services*, May 2003.

3.2 Inquiry Process

In September 2003, the Commission commenced a public inquiry to review the existing transmission capacity service declaration by releasing a discussion paper. The inquiry is for the purpose of enabling the Commission to determine whether:

- extending or further extending the expiry date of the declaration (not more than five years);
- revoking the declaration;
- varying the declaration;
- allowing the declaration to expire without making a new declaration under section 152AL of the Act; or
- allowing the declaration to expire and then to make a new declaration under section 152AL of the Act (not more than five years),

would promote the LTIE of carriage services and services provided by means of carriage services:

Under the *Telecommunications Act 1997*, the Commission must provide a reasonable opportunity for any member of the public to make a written submission to the inquiry. The discussion paper was issued on 5 September 2003 and submissions were invited from the public by 26 September 2003. A draft report was issued on 23 December 2003 and submissions were invited from the public by 30 January 2004. The Commission deemed it unnecessary to hold a public hearing.

Should the Commission decide to allow a declaration to expire and issue a new declaration under section 152ALA, or should it decide to revoke, vary or maintain a declaration, the Commission will be deemed to have complied with subsection 152AL of the Act and will not be required to conduct a separate inquiry pursuant to those provisions (provided that the necessary steps to formalise the decision are made within 180 days of the report that is to be issued as a result of an inquiry).

3.3 The LTIE test

For the Commission to come to a decision to maintain or change (including remove) the current service declaration, it must be satisfied that any such decision would promote the LTIE of carriage services, or of services supplied by means of carriage services.

The Commission's approach is to examine how the service is being supplied and utilised under the existing declaration, and what is likely to happen if the Commission decides to either change or maintain the declaration. This is known as the with/without test, and it recognises that an assessment of the effectiveness of competition in a market is not a static analysis, limited to a description of current conditions and behaviour. Rather, it is a dynamic

analysis concerned with features affecting the competitive supply of services in the future.

To determine what is in the LTIE, regard must be had to the extent to which any decision about the transmission capacity service declaration is likely to result in the achievement of the following objectives:

- promoting competition;
- achieving any-to-any connectivity; and
- encouraging the economically efficient use of, and investment in, telecommunications infrastructure.

In coming to its final decision, the Commission has considered how maintaining or changing the declaration meets each of these objectives under the LTIE and made an overall assessment of the effect on the LTIE. Where appropriate, the Commission's assessment is on a route-by-route or area-by-area basis since the market characteristics of each route or area may differ, as outlined in Section 4 of this report.

The remainder of this section outlines in more detail the principles underlying these objectives.

3.3.1 Promoting competition

The concept of competition is of fundamental importance to the Act and has been discussed many times in connection with the operation of Part IIIA, Part IV, Part XIB and Part XIC of the Act. In general terms, competition is the process of rivalry between firms, where each market participant is constrained in its price and output decisions by the activity of other market participants. The Trade Practices Tribunal (now the Australian Competition Tribunal) stated that:

In our view effective competition requires both that prices should be flexible, reflecting the forces of demand and supply, and that there should be independent rivalry in all dimensions of the price-product-service packages offered to consumers and customers.

Competition is a process rather than a situation. Nevertheless, whether firms compete is very much a matter of the structure of the markets in which they operate.⁵

Competition can provide benefits to end-users including lower prices, better quality and a better range of services over time. Competition may be inhibited where the structure of the market gives rise to market power. Market power is the ability of a firm or firms to profitably constrain or manipulate the supply of products from the levels and quality that would be observed in a competitive market, for a significant period of time.

Market power may be drawn from the ownership of infrastructure required for providing services in downstream markets. Without access to the services provided by the

⁵ Re Queensland Co-operative Milling Association Ltd and Defiance Holdings Ltd (1976), *Australian Trade Practices Reporter* 40-012, at 17,245.

infrastructure, a firm would not be able to operate in the downstream market. Therefore, the establishment of a right for third parties to negotiate access to certain services, on reasonable terms and conditions, can operate to constrain the use of market power, which could be derived from the control of these services.

Accordingly, an access regime such as Part IIIA or Part XIC attempts to *limit* or reduce the sources of market power and consequent anti-competitive *conduct*, rather than directly regulating conduct which may flow from its use, which is the role of Part IV and Part XIB of the Act. Nonetheless, in any given challenge to competition, both Parts XIB (or IV) and XIC may be necessary to address anti-competitive behaviour.

When the structure of the market becomes more competitive, as a result of the access regime or due to other factors, the Commission may consider changing (including removing) the service declaration. In this situation, maintaining declaration of the eligible service may not have much affect in terms of promoting further competition. In this regard, the Explanatory Memorandum for the *Trade Practices Amendment (Telecommunications) Bill 1996* states:

It is not intended that the access regime embodied in this Part impose regulated access where existing market conditions already provide for the competitive supply of services. In considering whether a thing will promote competition, consideration will need to be given to the existing levels of competition in the markets to which the thing relates.⁶

This statement recognises the costs of access, such as administration and compliance, as well as potential disincentives to investment. Where existing market conditions already, or are likely to, provide for the competitive supply of services, the access regime should not impose regulated access.⁷ This recognises the costs of providing access, such as administration and compliance, as well as potential disincentives to investment. Regulated provision of services will only be desirable where it leads to benefits in terms of lower prices, better services or improved service quality for end-users which outweigh any costs of regulation.

When considering whether a service declaration should be maintained or changed, the Commission's task is to determine the extent to which declaration (and changes to it) is likely to promote competition. The question of whether competition will actually improve or increase will be highly relevant but is not determinative of this issue. The key issue is whether declaration and its scope will assist in establishing conditions by which such improvement will be more likely to occur. This interpretation of promoting competition was recently endorsed by the Australian Competition Tribunal, which stated that the concept of promoting competition:

...involves a consideration that if the conditions or environment for improving competition are enhanced, then there is a likelihood of increased competition that is not trivial.⁸

⁶ Item 6, proposed section 152AB.

⁷ *Trade Practices (Telecommunications) Amendment Act 1997*, Explanatory Memorandum.

⁸ Re Review of Declaration of Freight Handling Services at Sydney International Airport (2000), *Australian Trade Practices Reporter* 40-775, at 107.

It is, however, not enough to determine if maintaining or changing the declaration will promote competition by simply examining its impact on the competitive process in the market. Rather, the extent to which such a decision promotes competition should be examined from the end-users perspectives; that is, to have regard to the likely results from increased competition in terms of price, quality and service diversity.

In interpreting the objective of promoting competition, section 152AB(4) of the Act requires that regard must be had to, though not limited to, the extent to which the arrangements will remove obstacles to end-users gaining access to carriage services. The Explanatory Memorandum to Part XIC of the Act states that:

...it is intended that particular regard be had to the extent to which the particular thing would enable end-users to gain access to an increased range or choice of services.⁹

Where, for example, a change to the scope of declaration is likely to result in increased competition across all elements of supply, end-users will be able to gain access to an increased range or choice of services. In such a situation, a decision that reduces the scope of an existing declaration may be expected to promote competition to a greater extent than where ongoing declaration of a service, or part thereof, is likely to lead to an increase in the number of suppliers in downstream markets, but with all suppliers essentially offering the same service at the same price.

3.3.2 *Any-to-any connectivity*

Section 152AB(8) provides that the criterion of any-to-any connectivity is achieved if, and only if, each end-user who is supplied with a carriage service that involves communication between end-users is able to communicate, by means of that service, or a similar service, with each other whether or not they are connected to the same network. This allows end-users to communicate with each other, irrespective of the network to which they are connected. As the explanatory memorandum to the *Trade Practices (Telecommunications) Amendment Bill 1996* noted, the concept of any-to-any connectivity is not always relevant in the declaration context.

The reference to “similar” services in the Act enables this criterion to apply to services with analogous, but not identical, functional characteristics, such as fixed and mobile voice telephony services or Internet services which may have differing characteristics.

3.3.3 *Efficient use and investment in infrastructure*

When interpreting this objective section 152AB(6) provides that, regard must be had to, but is not limited to, the following:

- whether it is technically feasible for the services to be supplied and charged for, having regard to:

⁹ Explanatory memorandum for the Trade Practices Amendment (Telecommunications) Bill 1996 – item 6, proposed section 152AB.

- the technology that is in use or available; and
- whether the costs that would be involved in supplying, and charging for, the services are reasonable; and
- the effects, or likely effects, that supplying, and charging for, the services would have on the operation or performance of telecommunications networks;
- the legitimate commercial interests of the supplier or suppliers of the service, including the ability of the supplier or suppliers to exploit economies of scale and scope; and
- the incentives for investment in the infrastructure by which the services are supplied.

What is efficiency?

The phrase “economically efficient, use of, and investment in, infrastructure” refers to the economic concept of efficiency, which has three components, as outlined below.

Productive efficiency refers to the efficient use of resources within each firm such that all goods and services are produced using the least cost combination of inputs.

Allocative efficiency refers to the efficient allocation of resources across the economy such that the goods and services that are produced in the economy are the ones most valued by consumers. It also refers to the distribution of production costs amongst firms within an industry to minimise industry-wide costs.

Dynamic efficiency refers to the efficient deployment of resources between present and future uses such that the welfare of society is maximised over time. It incorporates efficiencies flowing from innovation leading to the development of new services, or improvements in production techniques.

It may not be always possible to promote one component of efficiency without reducing another. For instance, regulatory intervention that leads to a price for the service that equals its cost of supply (allocative efficiency) may have negative implications for a firm’s incentive to improve its production technology (dynamic efficiency).

Efficient infrastructure investment makes an important contribution to the promotion of the LTIE. It can lead to more efficient methods of production, fostering increased competition and lower prices, as well as enhancing the level of diversity in the goods and services available to end-users.

Competition and efficiency

There is a strong relationship between competition and efficiency. The Commission’s analysis of the likely impact of a declaration decision on competition will, therefore, also influence its assessment of issues in relation to efficient use of and investment in infrastructure. This recognises that where a market is subject to effective competition, the correct signals will be generated to encourage efficient investment in infrastructure to supply

the service or related services, both by the incumbent access provider(s) and by potential new entrant providers of infrastructure.

If on the other hand, the Commission comes to a view that supply of a particular access service by access providers is not yet subject to effective competition, then it could conclude that maintaining declaration would:

- facilitate the provision of the declared service to access seekers at a price which is closer to underlying costs, resulting in a more efficient allocation of resources;
- help encourage competition in downstream markets; and/or
- prevent inefficient duplication of infrastructure used to supply the declared service.

However, maintaining declaration in the face of effective competition may result in costs as potential access providers continue to comply with the standard access obligations. Hence, if it is deemed that a market is likely to function efficiently in the absence of the service declaration, removal of regulation will therefore remove these costs, which in turn would be likely to promote competition and encourage efficient investment.

4. Market Definition

In considering whether maintaining or changing the scope of the existing transmission capacity service declaration would promote the LTIE, the Commission was required to identify the relevant markets for consideration. This analysis drew, among other sources, on information provided to the Commission in response to its September 2003 discussion paper and the draft report.

4.1 Market definition

Market definition is an integral part of analysing competition in a market, as it provides the Commission with a basis on which to analyse the extent of competition.

This market definition process begins by identifying the service under consideration and then defining it, in terms of the product, geographic and functional areas of supply. The temporal dimension of the market(s) and any relevant downstream markets are also considered. The market boundaries are extended to include all other sources and potential sources of close substitutes with which the firm supplying the service would compete. Section 4E of the Act provides that:

...“market” means a market in Australia and, when used in relation to any goods and services, includes a market for those goods or services that are substitutes for, or otherwise competitive with, the first mentioned good or service.

As noted by the High Court:

This process of defining a market by substitution involves both including products which compete with the defendant’s and excluding those which because of differentiating characteristics, do not compete.¹⁰

To identify services that are “substitutable” for, or otherwise competitive with, the services under consideration, the Commission uses the ‘price elevation test’. The logic is that the availability of close substitutes (on both demand and supply sides) constrains the ability of suppliers to profitably divert prices or quality of service from competitive levels. The resulting market is the smallest area over which a profit maximising monopolist could impose a small but significant and non-transitory price increase.

In addition, the Commission takes account of “commercial reality” to ensure that the market which it identifies accurately reflects the arena of competition. That is, a firm’s decision making in relation to demand and supply substitution is constrained by the practicalities of using such substitutes; in which case, the Commission needs to consider modifying the market definition to reflect how firms operate.

¹⁰ *Queensland Wire Industries Pty Ltd v BHP Ltd* (1989) ATPR 40-295, p 50,008 per Mason CJ and Wilson J.

It should be noted that the Commission’s approach to market definition for the purposes of a declaration decision does not require a definitive or determinative market definition, as is the case in a Part IV or Part XIB investigation.¹¹ Accordingly, market analysis under Part XIC should be seen in the context of shedding light on how declaration, or changes to it, may promote competition, rather than for developing “all purpose” market definitions.

4.1.1 Product dimensions of the market

The product dimension of a market refers to the good and/or service supplied in that market and the potential sources of substitutes.

There are a number of technologies that can potentially be used to supply transmission capacity services, including:

- terrestrial optical fibre cables;
- satellite;
- digital microwave; and
- submarine cable.

Each technology has different characteristics that influence where and how it is utilised.

Terrestrial optical fibre cables (“optical fibre”) are capable of carrying large volumes of traffic, the amount dependent on the number of fibre pairs in the cable and the use of digital wave density multiplexing (DWDM), which enables different light wavelengths to be combined on the same fibre pairs. It is usually laid underground but can also be carried above ground on poles. This is the main form of technology used in the provision of transmission capacity services.

Digital microwave (“microwave”) does not have the high capacity of optical fibre and must be deployed with direct ‘line of sight’ between towers. This makes it less suitable for transmission on higher traffic routes, such as those between capital cities, major capital-regional routes and for most CBD transmission services. In certain instances, the Commission understands that microwave is more cost effective to install than optical fibre due to lower deployment costs and scalability, though these cost advantages appear to be diminishing due to the declining cost of optical fibre deployment.

As for the other technologies, the Australian Information Economy Advisory Council (AIEAC) has taken the view that:

- satellite technology is more cost-effective when used mainly as a broadcast medium or in remote areas;

¹¹ ACCC, *Telecommunications services – Declaration provisions*, July 1999.

- the economic viability of satellite technology for transmission capacity is only marginal because its capacity is small relative to optical fibre; and
- a disadvantage of using submarine cable is that it is expensive to increase capacity once a given cable is installed.

Submitters to the Commission's September 2003 discussion paper generally agreed with the proposition that although there are technological alternatives, optical fibre remains the most economically viable for intercapital transmission services and for many non-intercapital transmission services. For example:

- Optus submitted that while all current and emerging technologies can compete with fibre economics up to certain amounts of bandwidth and distance, once these two variables exceed certain thresholds, optical fibre becomes the dominant technology. Further, it noted that alternative technologies to optical fibre are becoming less viable as the cost of fibre-based transmission equipment falls, and demand grows.¹²
- AAPT submitted that alternative technologies have not become more or less viable since the previous inquiry and that optical fibre continues to have increased capacity advantages, although in certain geographical situations (eg a short linear distance over difficult terrain) microwave technology may be more useful.¹³
- Powertel submitted that although there are technological substitutes, optical fibre remains the dominant form of transmission technology at the present time and is likely to remain that way, particularly with the relatively recent introduction of DWDM.¹⁴
- Telstra submitted that although there are a number of technologies that can (and are) used to supply transmission, the provision of "backbone" and "inter-exchange" transmission is most likely to be via optical fibre or microwave technologies.

In response to the draft report, Telstra submitted that there are a number of technological alternatives to optical fibre, for the provision of CBD tail-end transmission, including microwave, Hybrid Fibre Coaxial (HFC), Local Multipoint Distribution Service (LMDS), Microwave Multipoint Distribution Service (MMDS) and the Unconditional Local Loop Service (ULLS).

The Commission undertook further market inquiries to better understand the technological limitations and/or practical difficulties involved (if any) in using alternative technologies for providing a range of non-intercapital transmission services.

¹² Optus submission to September 2003 discussion paper, p. 5.

¹³ AAPT submission to September 2003 discussion paper, p. 2.

¹⁴ Powertel submission to September 2003 discussion paper, p. 3.

These investigations revealed that many access seekers are reluctant to use microwave technology as it can only support a limited amount of bandwidth. This is particularly so when the demand for bandwidth/capacity is growing over time.

In addition, many access seekers noted that ULLS is not widely considered a viable commercial alternative to optical fibre given that it will only support services within the lower bandwidth range.

In relation to the other technologies, the Commission understands that multipoint wireless technologies such as LMDS and MMDS are in their infancy and have not been widely employed, while HFC has limited capacity as an access medium.

The Commission considers that optical fibre remains the dominant technology for the provision of all transmission services. In light of information received during this inquiry, it is now inclined not to consider microwave services as a viable substitute on capital-regional routes given that it cannot be utilised effectively across the entire range of downstream demands. Further, the Commission considers that alternative tail-end transmission technologies such as ULLS, HFC, LMDS and MMDS cannot match optical fibre in terms of capacity or customer acceptance for the full range of transmission requirements at this stage.

4.1.2 Geographic dimensions of the market

In its September 2003 discussion paper, the Commission noted that each intercapital transmission route was considered a separate geographic market with differing characteristics. In addition, based on previous analysis, the Commission noted that geographic markets for non-intercapital transmission include capital-regional routes, inter-regional routes and local exchange and tail-end transmission in regional, metropolitan and CBD areas.

In response, all submitters that commented on this issue agreed that each intercapital transmission route was a separate geographic market. However, submitters expressed differing views on the geographic scope of non-intercapital transmission markets.

Powertel agreed with the proposition that markets for non-intercapital transmission services could include CBD, metropolitan and regional/rural areas, and noted that each of these markets is sufficiently distinct in terms of the level of competition present, and as such, should be treated separately when developing regulatory strategies.¹⁵

In contrast, Optus submitted that there is no obvious “one size fits all” market for non-intercapital transmission services. Instead, Optus noted that these markets are best defined as a function of customer demand, which could result in them being route, regional, state, or nationally based. For example, Optus pointed out that:

¹⁵ Powertel submission to September 2003 discussion paper, p. 2.

...a university may require transmission services between its different campuses. The market can then become defined as transmission services between these campuses.¹⁶

In response to its draft report, submitters did not comment further on the appropriate geographic scope of transmission markets.

The Commission believes that broad geographical categories for transmission capacity services are useful in identifying particular transmission markets. It also considers that it is feasible to break these into particular routes where clear distinctions are apparent based on traffic volume and the loci of competing providers.

In many cases routes will not be substitutable for each other (ie Sydney-Brisbane is not substitutable for Melbourne-Adelaide). However in many other cases they will be (eg Sydney-Canberra-Melbourne is substitutable for Sydney-Melbourne). Such considerations need to be factored into any competition analysis.

4.1.3 *Functional dimensions of the market*

The functional dimension of a market refers to the activity, or group of activities, involved in the supply chain. To define the functional market, the vertical stages of production and/or distribution need to be identified by considering whether there are efficiency gains from vertical integration and whether substitution possibilities at adjacent vertical stages can constrain the exercise of market power. Where there are overwhelming efficiencies of vertical integration between two or more stages, it is inappropriate to define separate functional markets.

The transmission capacity service is provided at the wholesale level by vertically integrated suppliers who provide the service to carriers/CSPs as well as utilising the capacity as an input in the production of their own downstream retail services. Access seekers purchase transmission capacity to resell to other service providers or to use as an input in providing downstream retail services to end-users. Access seekers who resell transmission capacity may purchase capacity provided by dark or lit (conditioned) fibre. Dark fibre allows the access seeker to configure the fibre to its requirements. The information available to the Commission indicated that most access seekers purchase capacity provided by lit optical fibre cable.

It is therefore clear that there is a wholesale transmission market, which includes access seekers that purchase capacity for resale at the wholesale level.

4.1.4 *Temporal dimension of the market*

The temporal dimension of the market refers to the period over which demand and supply substitution possibilities should be considered. The Commission believes that the temporal dimension of a market should also reflect the dynamic processes underlying competition. That is, a market may become more, or less, competitive as characteristics of that market change. Consequently, as the market changes over time and its characteristics alter, it would

¹⁶ Optus submission to September 2003 discussion paper, p. 4.

be expected that the product, geographic and functional dimensions of a market would need to be redefined to reflect any changes to the boundaries of the market. The Commission's analysis of competition considers a number of developments in the market since the previous declaration inquiry and since the draft report was released for this inquiry.

4.1.5 *Relevant downstream markets*

In its September 2003 discussion paper, the Commission stated that the relevant downstream markets for transmission capacity services include the long-distance, international call, data-related and IP-based markets. Most submitters to this inquiry supported this view, though "mobile" and "local call" services were also suggested as relevant downstream markets.

However, Telstra submitted that it is not clear that the downstream markets listed by the Commission would each constitute a separate market, and that given the similar competitive nature of supply for the downstream services listed by the Commission, it is not vital to this inquiry that the boundaries of downstream markets be defined categorically.

In response to the draft report, submitters did not provide further comment on this issue.

4.1.6 *Redundant paths for transmission capacity*

The Commission understands that it is common for access seekers to purchase capacity from more than one access provider for a given route. The access seeker uses the capacity from one access provider and retains capacity from other access providers in the event of its main supplier's cable being cut. Access providers also purchase transmission capacity from each other for redundancy purposes, especially if the access provider has only one optical fibre cable on a particular route. This is also to ensure continuity of service for its customers. For example, the Commission understands that Optus owns only one optical fibre cable between Melbourne and Perth, and it therefore purchases capacity from Telstra on that route for redundancy purposes.

Submitters to this inquiry did not comment extensively on this issue.

4.2 Conclusion – market definition

The Commission considers that:

- although there are a range of technological substitutes for the supply of transmission capacity services, optical fibre remains the most suitable technology for intercapital transmission services and for major non-intercapital transmission services;
- each intercapital route is a separate geographic market for the purposes of this inquiry;
- the geographic scope of non-intercapital transmission markets is hard to define due to the diversity of routes between transmission points, although as a conservative approach, each capital-regional point-to-point transmission route is considered a

separate geographic market for the purposes of this inquiry;

- the existence of non-vertically integrated providers and access seekers suggests that there are not overwhelming efficiencies from vertical integration, and thus, that there appears to be a separate wholesale market for transmission capacity services;
- in terms of the vertical elements of the transmission capacity service, the Commission has come to the view that in CBD areas there does not appear to be a discrete inter-exchange local transmission service. Such a service is most commonly purchased from a supplier of a transmission tail service, in conjunction with that service; and
- the relevant downstream markets for the transmission capacity service are national long distance, international call, data and IP-related markets, mobile and local call markets.

5. Competition in transmission markets

Where competition in a market for the supply of a wholesale access service is effective, and is likely to remain so, declaration of the service in those markets is unlikely to be necessary to ensure services are supplied to access seekers, and ultimately end-users, at competitive prices and of the requisite quality. However, if there is not effective competition, declaration is expected to be necessary to achieve these outcomes and to preserve competition in markets for downstream services.

This section analyses the extent and effectiveness of competition in the identified transmission capacity markets by examining the following factors:

- concentration levels;
- barriers to entry;
- prices and costs;
- arbitrations disputes brought before the Commission; and
- competition in downstream markets.

These factors may differ across the different markets for transmission capacity services. An assessment is made of how competition in key markets will be affected by maintaining or changing the service declaration.

5.1 Concentration levels

The concentration level is an indicator of the level of competition in a particular market. High concentration levels increase the scope for coordinated conduct, including both overt and tacit collusion. In some situations where one firm has a large market share, price leadership may be present. In other situations, a firm that supplies a significantly large percentage of a market may be in a position to engage in unilateral exercise of market power such that it can profitably charge high prices and provide poor quality services without being threatened by competing suppliers.

5.1.1 *Intercapital markets*

Telstra and Optus are the major suppliers of optical fibre capacity on all six intercapital transmission routes. The Nextgen network, which was recently purchased by Leighton Contractors, also has optical fibre capacity on these six intercapital routes¹⁷, while Powertel's network supplies transmission services on the four north-south intercapital routes.

¹⁷ ACCC, *Telecommunications Infrastructure in Australia 2002*, October 2003, p. 42.

In addition, two providers (Telstra and Soul Pattinson Telecommunications – (SPT)) offer microwave transmission services on all the intercapital routes. Flowcom, which is currently in receivership, and ntl Telecommunications (ntl) supply microwave services on the Sydney-Brisbane and Sydney-Melbourne routes. As discussed earlier, the Commission is not inclined to treat microwave as a substitute to optical fibre for the provision of intercapital transmission services due to its low bandwidth capacity relative to traffic volumes on these routes.

Table 1 below outlines, on a route-by-route basis, the carriers that own and operate infrastructure for the provision of intercapital transmission services.

Table 1: Carriers with infrastructure on intercapital transmission routes

Carrier	Sydney- Brisbane	Sydney- Melbourne	Sydney- Canberra	Melbourne- Canberra	Melbourne- Adelaide	Adelaide -Perth
Telstra	O/M	O/M	O/M	O/M	O/M	O/M
Optus	O	O	O	O	O	O
Leighton/Nextgen	O	O	O	O	O	O
PowerTel	O	O	O	O		
SPT	M	M	M	M	M	M
ntl	M	M				
Flowcom	M	M				

O = optical fibre; M = microwave

Source: ACCC, *Telecommunications Infrastructure in Australia 2002*, October 2003.

The table reveals that, when Nextgen/Leighton is included, there are currently four optical fibre infrastructure competitors on the four eastern seaboard routes, and three optical fibre infrastructure competitors on the east-west routes.

Submitters to the Commission’s September 2003 discussion paper generally agreed that there is unlikely to be significant entry in intercapital transmission markets in the short-to-medium term. The Commission notes that submitters to the draft report did not comment on the likelihood of further entry/exit in intercapital transmission markets.

Notwithstanding this, the Commission understands that there are a number of agreements that allow for a degree of resale competition in intercapital markets. For example, AAPT is an active participant as a wholesale provider of optical fibre resale transmission capacity on the east-west routes, while the Commission understands that providers such as Comindico, Powertel and others purchase and resell optical fibre transmission capacity on the eastern seaboard routes.

The Commission considers that the evidence of effective infrastructure competition and extensive resale competition on these routes suggests that they should remain excluded from declaration.

5.1.2 Other transmission (including capital-regional)

As previously stated, “other transmission” refers to transmission between transmission points located in different call charge areas, except for transmission between “intercapital” cities. For instance, it includes transmission on the Adelaide-Darwin, Perth-Darwin and Melbourne-Hobart routes, as well as point-to-point transmission services between capital-regional and regional-to-regional centres.

Table 2 below outlines (on a route-by-route basis) the carriers that own transmission infrastructure on the Adelaide-Darwin, Perth-Darwin and Melbourne-Hobart routes.

Table 2: Carriers with infrastructure between the remaining capital cities

Carrier	Melbourne - Hobart	Adelaide-Darwin	Perth-Darwin
Telstra	O/M	O/M	O/M
SPT		M	

O = optical fibre; M = microwave

Source: ACCC, *Telecommunications Infrastructure in Australia 2002*, October 2003.

The table reveals there is limited infrastructure competition on these routes, with Telstra the sole provider of optical fibre transmission capacity on the Melbourne-Hobart, Perth-Darwin and Adelaide-Darwin routes.

“Other transmission” also includes point-to-point transmission services between capital-regional and regional-regional centres. The Commission understands that there are a number of providers that supply point-to-point transmission services on capital-regional routes. In compiling its draft report, information available to the Commission indicated that:

- Telstra, Optus and Powertel, have spurs that run off their optical fibre intercapital transmission networks to designated regional areas;
- Powercor Australia Telecom supplies transmission services over an optical fibre network in regional parts of Victoria;
- OMNIconnect, ntl Telecommunications, Country Energy, SPT and Flowcom supply transmission services using microwave technology in certain regional areas of eastern Australia;
- Nextgen’s optical fibre network passes a large number of regional centres, but does not yet supply services to these centres. It was not considered to be an infrastructure competitor at this time due to uncertainty about its continuing operation.

This, combined with information provided by Telstra in its submission to the September 2003 discussion paper, led to the Commission’s draft view that the declaration should be removed on 24 capital-regional routes.

In response to the draft report, concern was expressed that that the Commission had incorrectly identified infrastructure competitors on a number of capital-regional routes. In addition, two submitters expressed a concern that Flowcom was listed as an infrastructure competitor given that it was placed in receivership after the draft report was released.

A number of carriers also indicated that microwave technology was not suitable for the full range of transmission services, particularly high capacity data applications. This was corroborated by one of the microwave carriers. Claims were made that microwave transmission suppliers have not been successful in bringing downward pressure to bear on optical fibre transmission prices.

In light of this information, the Commission clarified, via direct consultation as required, which capital-regional routes Optus, PowerTel, Powercor and Uecomm were operating optical fibre infrastructure on.

It also attempted to confirm which capital-regional routes the various microwave carriers operated on. One microwave carrier indicated it did not regard itself as a 'fully fledged' infrastructure competitor with the optical fibre suppliers on any routes. Others contacted proved to be uncooperative with the Commission. In any case, in response to comments received from industry since the draft report, the Commission is now of the view that as microwave networks are not considered suitable for transmission of a full range of services, they should be excluded from the competition analysis for the capital-regional routes.

Another relevant consideration for the Commission is the existence of the Nextgen network, which was not counted as a potential competitor on capital-regional routes in the draft report due to uncertainty about its future at that time. As previously noted, it has since been sold to Leighton Contractors. The Nextgen network does not presently serve any regional locations, but has been designed with that capability in mind. The Commission notes that Leighton Contractors has indicated a desire to supply regional areas. In a press release it stated that:

The Nextgen Network can provide a level of service to the Australian community which is second to none...this will extend, over time, to regional and rural communities.¹⁸

In this context, the Commission has information which indicates that the Nextgen network passes very close to many major regional centres. In addition, the Commission has received advice that the cost of extending its network to service these regional centres is not likely to be prohibitive. This is discussed further in section 5.2.

The Commission considers that in the absence of ongoing declaration, were Telstra or Optus to seek to attempt to exercise market power on these routes by increasing prices or denying access, this would prompt Nextgen's more rapid entry into these markets and a shift in demand to it from access seekers.

¹⁸ Media release, Leighton Contractors Acquires Nextgen Networks Pty Ltd, 24 December 2003.

With this in mind, the Commission considers that Nextgen's optical fibre network should be regarded a source of potential competition on a number of capital-regional routes.

The Commission has therefore applied the criterion that where there are at least three optical fibre providers, including Leighton/Nextgen as a potential provider (where its network is within 1km or less from the GPO of a regional centre for a given capital-regional route), this serves as evidence of sufficient competition/contestability to warrant removal of that route from declaration.

The Commission's final list of capital-regional routes is shown below in Table 3. These routes are served by Telstra plus two of either the optical fibre carriers Optus, PowerTel, Powercor, Uecomm and Leighton/Nextgen.

Table 3 – Nominated capital-regional routes to be removed from declaration

NSW	Victoria	QLD	SA
Sydney-Albury	Melbourne-Ballarat	Brisbane-Toowoomba	Adelaide-Murray Bridge
Sydney-Lismore	Melbourne-Bendigo	Brisbane-Gold Coast	
Sydney-Newcastle	Melbourne-Geelong		
Sydney-Grafton	Melbourne-Shepparton		
Sydney-Wollongong			
Sydney-Taree			
Sydney-Dubbo			

The Commission considers that the extent of competing infrastructure on the routes listed in the above table suggests that there is effective competition and/or sufficient contestability to ensure wholesale transmission services are available to access seekers at reasonable prices. This has contributed to the Commission's decision that removing these routes from the declaration is in the LTIE.

5.1.3 Inter-exchange local transmission

Inter-exchange local transmission comprises transmission between exchanges within a single call charge area. Telstra is the dominant supplier of these types of transmission services on an Australia-wide basis. There is evidence of alternative fibre-based infrastructure competitors in CBDs, however these are understood not to provide ubiquitous coverage of all Telstra's exchanges.

Information obtained by the Commission in the context of its inquiry into the scope of the local carriage service (LCS) and from its most recent infrastructure survey indicates that there are numerous carriers that operate fibre rings within the CBDs of the main capitals (Sydney, Melbourne, Brisbane, Adelaide and Perth). Many of these have relatively few customer connections and therefore are likely to be characterised by a degree of excess capacity. This would tend to suggest that there are a number of competitors capable of offering

inter-exchange local transmission in these areas.

Based on this information, the Commission's draft view was that it would give consideration to removing inter-exchange local transmission in the five major CBDs from declaration. The Commission qualified this by noting that there was some uncertainty as to whether it would be worthwhile for an access provider to supply this as a discrete service in the absence of threshold number of tail transmission services also being provided. It would also be necessary for an access seeker to establish a POI at each local exchange to be able to purchase this service from alternative suppliers.

For areas outside CBDs, the Commission is not convinced that there is sufficient alternative inter-exchange infrastructure to warrant any change in the declaration in these areas.

Information collected by the Commission following the draft report indicates that access seekers that require this service would generally purchase it from the same supplier they use to purchase a CBD tail service from. This is in recognition of the economies of scope involved in purchasing the services together, which means that only one rather than two POIs are utilised to get from the customer transmission point to a second CBD exchange when a second provider was used instead (assuming a return to the access seeker's network at the second exchange). The Commission considers that this proposition would not be viable when only a small number of end-customers are supplied, which is feature of new entrant competition in the CBD transmission market.

Moreover, despite the existence of several optical fibre rings in the CBDs of the main capitals, it is not clear to the Commission that these interconnect with all of Telstra's CBD exchanges and would be readily available to use on a wholesale basis. This means that these rings would require supplementation to provide coverage to all of Telstra's that access seekers are likely to require access to.

Furthermore, given that the Commission does not intend to remove the CBD tail service from declaration (for reasons outlined in the next section), it would be concerned that removal of this service could create a bottleneck that could be used by Telstra to undermine competition in the CBD transmission tail market. That is, by denying access to this service it could undermine the usefulness of access seekers utilising Telstra's CBD tail transmission service. It is considered that, like with tail-end transmission, the ongoing declaration of this service is necessary to enable competition to continue to develop in the supply of downstream retail markets, and help serve as a stepping stone to greater facilities based competition over time.

These considerations have led the Commission to the view that removing inter-exchange local transmission in the five major CBDs from declaration could damage competition, and therefore would not be in the LTIE.

5.1.4 Tail-end transmission

Tail-end transmission refers to transmission between an end customer location and the nearest local exchange. As such, this service could be required anywhere in Australia where an access seeker does not have a direct access to a customer via its own network.

In its draft report, the Commission noted that while there is evidence to suggest that tail-end transmission services are provided by competing suppliers particularly in CBD areas, Telstra remains the dominant provider in this market segment in terms of direct customer connections. On this basis, this market was not considered sufficiently competitive to warrant removal of this service from declaration.

In response to the draft paper, Telstra submitted that tail-end transmission in the five major CBDs should be removed from declaration. In support of this view, Telstra noted that this service is competitively supplied in CBD areas due to significant existing infrastructure competition and low barriers to entry, which include that there are numerous technological alternatives for providing this service (eg HFC, LMDS, MMDS, microwave and ULLS with DSL equipment).

Optus submitted that Telstra's enduring dominance in this market indicated that continuing declaration is required to safeguard competition in downstream markets, at least in the segments of its network where it does not face competition from other providers.

In response to claims by Telstra that the CBD tail market is effectively competitive, the Commission notes that it remains the sole supplier of fibre to around 55 per cent of buildings and has the vast majority of directly connected customers in CBD areas. The Commission considers that this market share remains too high to consider the market to be competitive.

In addition, a number of carriers contacted during this inquiry indicated that building access to install their own optical fibre can be time consuming and costly to organise. Also, one carrier indicated that it will only install its own infrastructure if it has first secured a customer using a Telstra transmission service.

In light of this information, the Commission considers that access to Telstra's network is likely to be an important stepping stone for helping to encourage sustainable infrastructure based competition across these services in the longer term.

Finally, although the Commission removed declaration of the LCS in the CBDs of the major capitals, this was based on the availability of alternative infrastructure plus other declared services (local PSTN originating and terminating access and the unconditioned local loop). The Commission does not consider that there are viable alternative declared services that can supply the full range of services for which the declared tail transmission service is utilised. For example, the copper based ULLS will only support services within the lower Mbps range.

Moreover, when the Commission made its decision on the LCS service, it noted that many of the alternative means of supplying transmission services in CBD areas were only in their infancy and had not been widely adopted. This applies to the multipoint wireless technologies LMDS and MMDS. Further, HFC also only has limited capacity as an access medium and Optus's HFC does not provide coverage to CBD areas.

Notwithstanding this information, the Commission does not rule out that the market for CBD tails could become more competitive in the next several years, in which case it could review its decision at that stage. However, on the available information at this time, the Commission

considers that ongoing declaration would serve to help promote competition and more sustainable infrastructure competition over the longer term.

As a result, the Commission considers that removing CBD tail-end transmission from the declaration would not be in the LTIE.

5.2 Barriers to entry

High concentration levels do not necessarily mean that competition is ineffective. Where a market is characterised by low barriers to entry, the behaviour of incumbent firms may be constrained by the threat of potential competition, thereby producing behaviour that is consistent with market outcomes where several competitors exist. However, significant barriers to entry for new suppliers to the market and high concentration levels may indicate that the threat of entry is unlikely to constrain the behaviour of incumbent firms. In this situation, actual entry is likely to be necessary to ensure effective competition.

Potential barriers to entry in transmission markets include:

- the high sunk cost nature of infrastructure investment; and
- the existence of spare capacity in the network.

5.2.1 High sunk cost nature of the investment

One possible barrier to entry in transmission markets is the high sunk cost involved in constructing the necessary infrastructure. While it may be possible to recover the cost of the multiplexing equipment and other associated electronic equipment, the trench construction and laying of optical fibre represents a sunk cost.

In 1999, consultants engaged by AIEAC for the National Bandwidth Inquiry estimated the cost of constructing a new hypothetical optical fibre network, with multiplexing equipment capable of generating 2.5Gbps capacity, linking Brisbane, Sydney, Melbourne and Adelaide, to be approximately \$239 million.¹⁹ Given the significant amount of expenditure required to install an intercapital transmission network, the AIEAC suggested that investment in infrastructure would become viable only if there is a high level of demand for services that are dependant on the infrastructure and a long-term business strategy. Nevertheless, the AIEAC concluded that:

...construction of an intercapital transmission network is “within the strategic and budgetary reach of major Australian corporations...particularly on a joint venture or consortium basis”.²⁰

More recently, the BIS Shrapnel (2001) estimated that entrants Nextgen and IP1 Australia invested approximately \$850 million and \$165 million respectively in installing their respective networks. This report also noted that PowerTel had invested about \$250 million in

¹⁹ AIEAC, *National Bandwidth Inquiry Report*, December 1999, p. 110-126.

²⁰ *Ibid*, p. 126.

its optical fibre network and estimated that Telstra had spent about \$500 million expanding its optical fibre network over the previous two years.²¹ Overall, the Commission estimated that total investment by operators in transmission networks in 2001-02 was approximately \$683.2 million.²²

Submitters to the Commission's September 2003 discussion paper disagreed on the extent to which the sunk cost nature of investment in transmission infrastructure is a barrier to entry for new/potential entrants.

Telstra submitted that other than perhaps on the thin regional routes which exhibit natural monopoly characteristics, there are no substantial structural barriers to the development of competition for transmission services. In particular, Telstra noted that although entry through deployment of network infrastructure requires a significant upfront investment; there are a number of factors, including strong demand, the use of long-term contracts and the high-density of customers in CBD and metropolitan areas that reduce the risks associated with earning an appropriate return on any investment.²³

Optus and Vodafone submitted that there are very few barriers to entry into the intercapital transmission market. However, Optus noted that the primary barrier to entry in non-intercapital markets is that the vast majority of these links display strong natural monopoly characteristics.²⁴

AAPT and Powertel submitted that the principal barrier to entry in transmission markets is the high capital cost involved in either building the necessary infrastructure or taking out a long-term lease over the infrastructure of an incumbent.

The Commission rejects that high costs per se are a barrier to entry, but accepts that their 'sunk' nature could serve as a barrier to entry.

In response to the draft report, Telstra submitted that one of the main reasons why 'tail-end' transmission is competitively supplied in CBD areas is the low barriers to entry in these markets. In support of this view, Telstra noted the:

- relatively low incremental investment required by existing CBD fibre operators to provide tail-end transmission (especially given the high concentration of customers in CBDs);
- existence of alternative technologies, including microwave, HFC, LMDS, MMDS, and ULLS/DSL for providing this service; and

²¹ BIS Shrapnel Report, *Telecommunications Infrastructure in Australia 2001*, July 2001, p. 79.

²² This comprised \$626.4 million on optical fibre networks, \$54.8 on microwave networks and \$2.0 million on satellite networks.

²³ Telstra submission to September 2003 discussion paper, p. 2.

²⁴ Optus submission to September 2003 discussion paper, p. 6.

- characteristics of end customers in CBD areas, including that contracts are typically long-term and are for ‘high-use’ businesses.²⁵

In response to Telstra’s claims, the Commission notes that a number of carriers contacted during this inquiry indicated that securing building access to install their own optical fibre can be time consuming and costly to organise. In addition, the Commission received information from at least one carrier that it would not install its own infrastructure to supply transmission services to a particular building, unless it had first secured that customer using a Telstra transmission service.

In relation to capital-regional routes, the Commission has advice that where the Nextgen network passes 1km from a regional centre it would cost around \$50,000 to run a fibre into that town and around \$50,000 more to establish a switch facility (multiplexer or MUX) and support infrastructure, plus the costs of accommodation. The Commission considers that these costs are relatively small in comparison to the costs of the initial investments involved to construct the intercapital components of the network.

5.2.2 Excess/Potential capacity as a barrier to entry

Another possible barrier to entry in transmission markets is the existence of “excess capacity” by incumbent wholesale transmission providers. This would be on the basis that an incumbent firm may hold spare capacity in order to deter entry, as the presence of spare capacity sends a signal to potential entrants that it has the means to engage in intense competition with potential entrants, should they decide to enter.

In 1999, the AIEAC found that considerable amounts of transmission capacity were available in Australia’s backbone network.²⁶ More recent data available to the Commission suggests that this continues to be the case.

In its submission to the Commission’s 2003 discussion paper, Telstra noted that if “excess capacity” was taken to mean the capacity that could be readily utilised without further investment, then it is “excess provisioned” capacity that is of relevance. In any case, Telstra noted that although the cost of upgrading fibre to meet excess capacity is low relative in terms of the cost of deploying the fibre itself, it is not costless and reduces the ability for an incumbent to engage in entry deterring capacity expansion.²⁷

Powertel submitted that DWDM has the capability to dramatically increase the capacity on intercapital transmission links, and although deployment of this technology involves costs, these are very low compared to the initial cost of deployment of the fibre.²⁸

AAPT agreed that there is excess capacity in transmission markets and that on certain intercapital routes this was upgradeable fairly cheaply, however it considered that this was

²⁵ Telstra submission to draft report, p. 4

²⁶ AIEAC, *National Bandwidth Inquiry Report*, December 1999, p. 208.

²⁷ Telstra submission to September 2003 discussion paper, p. 15-16.

²⁸ Powertel submission to September 2003 discussion paper, p. 5.

not relevant for determining the level of competition in the market, and therefore not highly relevant for this inquiry.²⁹

Submitters to the draft report did not comment on this issue.

The Commission is not aware that excess capacity has been purposely used by the incumbents to deter entry. It also recognises that it is economical for carriers to build well above immediate traffic requirements for the purposes of offering redundancy and to cater for future needs.

5.2.3 Contestability

If barriers to entry are low it could be argued that a market is effectively competitive (ie contestable) despite the presence of few actual competing providers at a given point in time. For example, in section 5.1 of this report, the Commission outlined that it considered that the presence of the Nextgen intercapital transmission network in close proximity to many of the nominated regional centres was a key factor in leading it to the view that these markets were sufficiently contestable to warrant the removal of the declaration on these routes.

Some further relevant indicators that a market is contestable include that:

- there is a history of entry;
- demand is sufficient to support multiple firms; and
- customers have shown a past willingness to move between firms.

These features have to varying degrees been observed in intercapital transmission markets and to some extent in capital-regional markets. It has also been observed in the CBD tail transmission market, but there are other factors at play in that market which point to the positive influence of ongoing declaration to help promote competition. The high market share of Telstra in this market, plus other barriers to entry identified above, suggest that this market may not be contestable in the short-term. Therefore, removal of declaration at this stage could damage competition in the longer-term.

Contestability might also be inferred in one market from behaviour exhibited in a market closely related to the market in question. For example, it would not be unreasonable to extrapolate behaviour exhibited on one transmission route with given characteristics to other routes with the same characteristics – eg those with similar traffic volume.

Telstra itself stated, in its submission to the September 2003 discussion paper, that some thinner regional transmission routes display natural monopoly characteristics. This view was endorsed by many carriers/CSPs during this public inquiry. It would be hard for the Commission to justify removal of declaration in such instances.

²⁹ AAPT submission to September 2003 discussion paper, p. 4.

5.3 Transmission prices and costs

5.3.1 Price movements on intercapital routes

Based on the pricing information obtained under the monitoring program, the Commission notes that prices on all intercapital routes have fallen since the declaration was varied in 2001 to exclude all intercapital routes. Importantly, the Commission notes that this proposition generally appears correct regardless of whether the “list price”, “lowest negotiated price” or the calculated “average price” is considered.³⁰

More specifically, the Commission has determined that there have been significant price reductions on the Sydney-Melbourne, Sydney-Brisbane, Sydney-Canberra and Melbourne-Canberra routes since the 2001 inquiry, in the range of 15-35 per cent. In addition, the Commission has determined that since the entry of IP1 Australia and Nextgen on the east-west routes prices have fallen, in the range of 25-35 per cent.

This is consistent with anecdotal evidence received by the Commission which suggests that prices for intercapital transmission services have declined significantly on those routes where there are at least three infrastructure competitors.

Submitters to the Commission’s September 2003 discussion paper generally agreed that prices for intercapital transmission have fallen in recent years:

- Telstra submitted that there have been significant reductions in prices for wholesale transmission since 1998, and that wholesale prices have continued to decline on intercapital routes that were exempted in 2001;³¹
- Optus submitted that intercapital transmission prices have fallen significantly over recent years due to the competitive nature of the market, substantial entry on key routes, demand growth for high bandwidth services and falling infrastructure costs;
- Powertel submitted that, as an access seeker, it has experienced price reductions on intercapital transmission routes;³²
- AAPT submitted that the price of intercapital transmission had generally fallen over the course of the monitoring program, and that the source of pricing pressure has been real or prospective competition;³³ and
- Vodafone submitted that there have been significant reductions in prices (approximately 75 per cent) for intercapital transmission which has corresponded with the period in which the intercapital transmission service has been undeclared.

³⁰ The differences between these measures of ‘price’ are discussed on pages 38-39 of this report.

³¹ Telstra submission to September 2003 discussion paper, p. 17.

³² Powertel submission, to September 2003 discussion paper, p. 5.

³³ AAPT submission, to September 2003 discussion paper, p. 4.

Information gathered during further market inquiries supported the proposition that prices had declined substantially on all intercapital routes, though anecdotal evidence suggests that prices on the east-west routes are still above those on the eastern seaboard routes.

5.3.2 Price movements on non-intercapital routes

Most submitters to the Commission's September 2003 discussion paper agreed that, in general, prices for non-intercapital transmission have fallen in recent years. However, the Commission notes that submitters had differing views on the magnitude and underlying reasons for these price reductions.

Powertel submitted that the price of non-intercapital transmission has reduced since the service declaration was last reviewed in 2001, but only by a relatively nominal amount largely because:

...there is very little competition in this market, particularly in areas outside the CBD where Telstra is the dominant provider.³⁴

In contrast, AAPT submitted that the price of non-intercapital transmission has decreased since 1997 due to either real or prospective competitive pressure³⁵, while Telstra noted that price reductions for "metropolitan" and "backbone regional transmission" (ie capital-regional) since 1998 could be attributed to competitive pressure.³⁶

Optus agreed that prices for non-intercapital transmission had fallen over recent years, although this was primarily due to the threat of arbitration and new build.³⁷ As such, it believes the revoking the existing declaration on the non-intercapital routes would dampen incentives for Telstra to offer acceptable access prices and leave access seekers with substantially reduced negotiating capacity.³⁸

In response to the draft report, Telstra submitted that prices for CBD tail-end transmission have reduced significantly over the last 2-3 years (data supplied on commercial-in-confidence basis).³⁹ While this is a positive development, it depends on the starting point. In addition, the Commission has indicated that it has other reasons to be concerned about the development of competition in this market in the absence of declaration.

However, other submitters expressed concern with the proposition that prices had fallen for non-intercapital transmission services. More specifically, two carriers that purchase a range of non-intercapital transmission services indicated that in percentage terms, prices for capital-regional, CBD and metropolitan transmission have not declined as much as those for intercapital transmission.

³⁴ Powertel submission, to September 2003 discussion paper, p. 5.

³⁵ AAPT submission, to September 2003 discussion paper, p. 4.

³⁶ Telstra submission, to September 2003 discussion paper, p. 17.

³⁷ Optus submission, to September 2003 discussion paper, p. 9.

³⁸ Optus submission, to September 2003 discussion paper, p. 9.

³⁹ Telstra submission to draft report, p. 5.

The Commission considers that evidence which suggests that prices for non-intercapital transmission services have not fallen (in percentage terms) commensurably with prices for intercapital transmission services tends to reflect that the extent of infrastructure competition is not as pervasive in many of these markets. However, the Commission notes that many capital-regional routes have a number of infrastructure competitors.

5.3.3 *Comparisons of prices and costs*

During the previous inquiry, the Commission received anecdotal evidence to suggest that prices for transmission capacity services remained above incremental, or underlying, cost.

In examining these claims during the 2001 inquiry, the Commission referred to the AIEACs 1999 findings that retail prices for bandwidth were 30 to 50 per cent higher than prices for comparable retail services in Europe and the United States.⁴⁰ The Commission also noted that the AIEAC had acknowledged that Europe and the US had experienced more years of competition than Australia, and that as a result, prices would continue to decline in Australia over the 2000-2005 period, at a rate of 30 to 50 per cent per annum.⁴¹

Based on this and other information, the Commission's assessment at the conclusion of the 2001 inquiry was that:

...the high levels of excess capacity complicate the calculation of per unit costs and (the Commission) it has not reached concluded views on the current difference between price and costs. However, on the information available it is possible that Telstra and Cable and Wireless Optus are obtaining significantly above commercial returns at present. However, and more importantly, any above commercial returns being earned by the incumbents are likely to be dissipated in the short to medium term with the entry of new carriers.⁴²

In response to the Commission's 2003 discussion paper, there were differing views on whether wholesale prices for intercapital and non-intercapital transmission reflect underlying costs, and further, whether it is even possible to reach robust conclusions on this issue.

Powertel submitted that prices for intercapital transmission continue to be in excess of costs, while prices for non-intercapital transmission are sold at prices "well-above" cost.⁴³ In contrast, Optus submitted that competition in the intercapital transmission market has been effective in ensuring that prices reflect efficient underlying costs, although for non-intercapital transmission, it noted that:

...although it does not have access to the specific costs faced by Telstra in the provision of transmission services, it is likely that, on the monopoly routes, the wholesale prices offered by Telstra exceed the prices that would prevail in a competitive market.⁴⁴

⁴⁰ AIEAC, *National Bandwidth Inquiry report*, December 1999, p. 98.

⁴¹ *Ibid*, p. 206.

⁴² ACCC final report

⁴³ Powertel submission, to September 2003 discussion paper, p. 6.

⁴⁴ Optus submission, to September 2003 discussion paper, p. 10.

AAPT submitted that since a number of transmission capacity contracts are negotiated for extensive time periods and cover multiple services, it may be difficult to assess the relationship between individual service pricing and underlying costs.⁴⁵ On the subject of using international benchmarks as a guide in this regard, AAPT noted that:

... (it) does not believe that these are likely to be informative given vastly different geographies, the highly dynamic structure of transmission capacity markets and a general global over-investment in capacity.⁴⁶

Submitters to the draft report did not comment on this issue, though the Commission received further anecdotal evidence that prices for many non-intercapital transmission services are likely to be substantially above-cost.

Despite this, the Commission is unable to come to a definitive view of how closely transmission prices currently reflect costs. However it considers that price are likely to be closer to costs where there are several competitors operating in a particular transmission market.

5.3.4 Monitoring program

The Commission established a monitoring program in 1999 to monitor competition on the intercapital routes. The monitoring program originally involved the Commission collecting six-monthly information from Telstra and Optus on:

- revenue;
- price;
- capacity utilisation; and
- customer numbers.

In 2001, the Commission extended the monitoring program to cover all those carriers that provided wholesale transmission services on intercapital routes.⁴⁷ The Commission's first monitoring report (prepared for internal purposes) covered the two six-month periods between 1 January 2001 and 31 December 2001.

In preparing this report, however, the Commission noted that the data collected under the monitoring program only provided a partial view of movements in the market and did not provide sufficient scope for a full assessment of competition to be undertaken. In particular, there were some concerns about the usefulness of the price data collected (list prices and lowest negotiated prices) for accurately identifying price changes over time. For example, the Commission received anecdotal evidence to suggest that the "list price" is generally considered merely a starting point for negotiating a lower price while the "lowest negotiated

⁴⁵ AAPT submission, to September 2003 discussion paper, p. 5.

⁴⁶ AAPT submission, to September 2003 discussion paper, p. 4.

⁴⁷ These providers included Macrocom, SPT, IP1 Australia, Powertel, Transgrid and SPI Powernet.

price” can be a misleading measure of the price actually paid if one or a small number of customers pay a much lower price than other customers for a given service.

To rectify this problem for subsequent reports, the Commission requested that transmission suppliers provide additional information about the “number of links” utilised on each intercapital route. Links data can be combined with total revenue data to calculate the average revenue earned per link, or a proxy “average price”. The Commission considers that this measure is a better estimate of the price actually paid in the market for intercapital transmission services. As a result, the Commission has increasingly placed more emphasis on the calculated “average price” in conducting its internal analysis on the competitive nature of each intercapital route.⁴⁸

In response to the Commission’s 2003 discussion paper, submitters had differing views on whether the monitoring program should be retained.

Optus submitted that the monitoring program is a form of quasi-regulation, and since the intercapital market is competitive, it should be abandoned and replaced with a system whereby the industry provides the data to the Commission on request. In supporting this position, Optus noted that:

The compliance costs associated with the current intercapital price monitoring programme imposed on the industry are very high. At the same time, we (Optus) question the value of the information that the data is capable of revealing.⁴⁹

In contrast, AAPT and Vodafone submitted that the monitoring program should be retained in its current form and that publication of this data (in summary form) could aid competition in the relevant markets⁵⁰, while Powertel submitted that the monitoring program should be extended to include non-intercapital transmission markets.

In the draft report, the Commission’s position was that the scope of the monitoring program should be curtailed to focus only on those intercapital routes where there was some residual concern about the level of competition in the immediate future. At the time these were the east-west routes, on the basis that the future of Nextgen (the third infrastructure competitor) was unclear. In view of this, the Commission recommended that the monitoring program be curtailed to these routes for 12 months.

In response to the draft report, Optus was the only submitter to comment on this issue. It welcomed the Commission’s proposal to remove price monitoring on the north-south routes but opposed the proposal to continue price monitoring along the east-west routes. Optus believed that it would be more appropriate to either abandon the reporting requirements altogether, or require only Telstra to report. In reaching this view, Optus reiterated its view

⁴⁸ Despite this, the Commission recognises that there are limitations with using the calculated “average price” to assess competition in intercapital transmission markets. For example, it does not take into account that some of the links may not have been active for the full reporting period and therefore the calculated average price may be distorted, particularly on routes where the number of links is small.

⁴⁹ Optus submission, to September 2003 discussion paper, p. 11.

⁵⁰ AAPT submission, to September 2003 discussion paper, p. 5.

that there are high compliance costs associated with this program for little benefit, particularly since competition is considered effective in these markets.

Since the draft report was released, Leighton Contractors purchased the Nextgen network, and indicated that it would continue to service current customers under existing agreement conditions, and would undertake additional works worth approximately \$100 million over the next five years to extend its service capabilities.⁵¹ The residual concerns the Commission had about the level of competition on the east-west routes has been largely alleviated by the continuing presence of a third optical fibre-based infrastructure competitor.

As a result, the Commission now considers that there is no longer a need for continued price monitoring on the east-west routes and thus proposes to discontinue the intercapital monitoring program entirely. If need be, the Commission can request pricing information from intercapital transmission providers on a case-by-case basis under its information gathering powers in the Act.

5.4 Arbitrations

Since the domestic transmission capacity service was declared in 1997, there have been two disputes notified to the Commission (by AAPT and Primus, both against Telstra). Both these disputes occurred several years ago and were subsequently settled commercially between the respective parties, circumventing arbitrated outcomes by the Commission.

As noted by the Commission in the previous inquiry, there are various possible reasons for the limited number of arbitrations concerning supply of this service, including:

- the threat of arbitration has been successful in constraining prices;
- the cost of notifying a dispute and undergoing the arbitration process outweighs the potential benefit of a lower prices, particularly where there is uncertainty about the result of an arbitration;
- smaller access seekers may have limited financial resources to allocate to regulatory affairs, which may be allocated to disputes over other services, such as those relating to customer access;
- there is sufficient competition or contestability in the markets; and
- prices for the transmission capacity service are considered reasonable by access seekers.

A further possible reason for the lack of arbitrations was raised during this inquiry. This was that access seekers remain cautious about lodging arbitrations in the absence of pricing principles for the transmission capacity service. As detailed below the Commission will

⁵¹ Media Release, *Leighton Contractors Acquires Nextgen Networks Pty Limited*, 24 December 2003.

develop these, including indicative prices where possible, after the new declaration is instituted.

The absence of arbitrations concerning the supply of the domestic transmission capacity service is likely to be due to a combination of the reasons outlined above. Importantly, to provide an end-to-end call, an access seeker relies on access to other inputs, such as the PSTN originating and terminating service, to offer services to end-users. The Commission understands that the regulatory focus of many access seekers has been on the customer access network (CAN). This is consistent with evidence provided to the Commission during the previous inquiry that indicated that the cost per call of intercapital transmission capacity, to provide an end-to-end voice or data service, is lower than the costs of originating and terminating calls on the CAN.

Pricing Principles and indicative prices

The Commission has not established pricing principles for the transmission capacity service, as this service was deemed to be declared in 1997. This meant that there was no legislative requirement on the Commission to develop pricing principles for this service. Further, there have not been any arbitration disputes where the Commission has been required to determine prices that would have required pricing principles to be developed by the Commission.

In making a new declaration, under the new legislative requirements contained in section 152AQA, the Commission will be required to develop pricing principles for those elements of the transmission capacity service that are subject to ongoing declaration. The Commission will develop pricing principles soon after the new declaration is instituted.

To provide for greater regulatory certainty and to aid commercial negotiations, particularly by smaller access seekers, the Commission will seek to release indicative prices in accordance with the pricing principles.

5.5 Competition in downstream markets

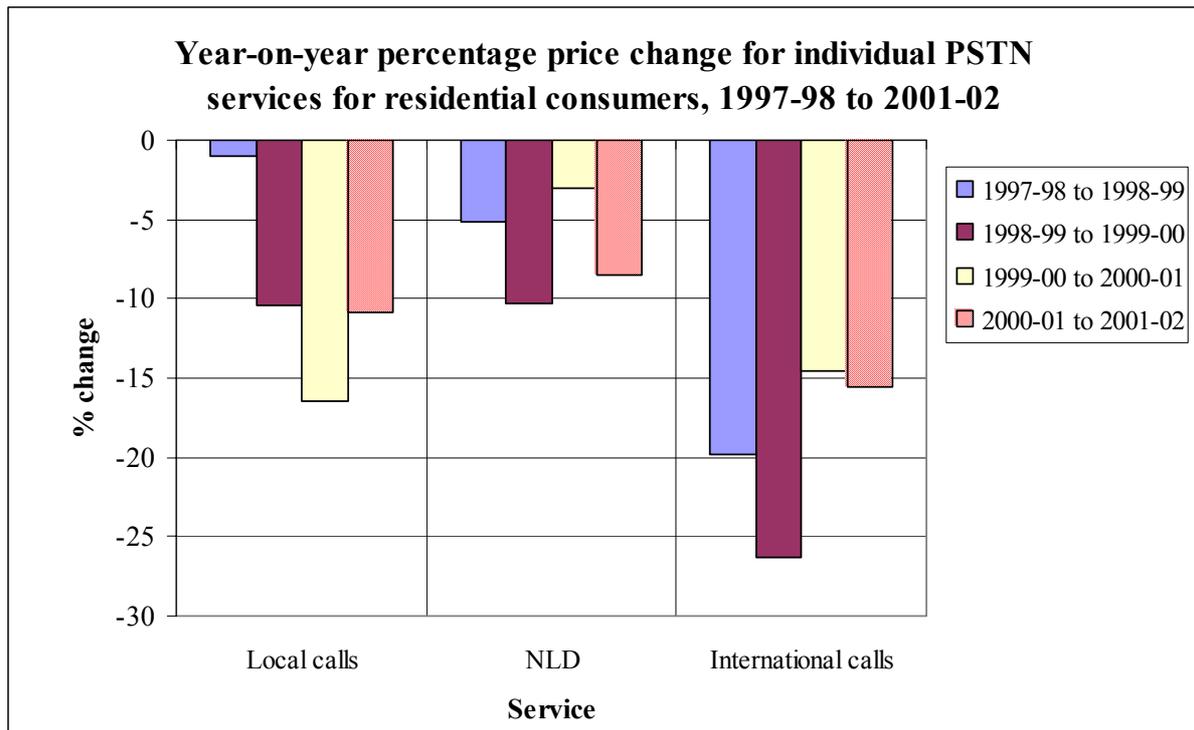
The Commission considers that competition in several downstream markets into which the transmission capacity service serves as an input appears to be being sustained on the basis that in 2001-02:

- residential prices for local calls, long distance calls and international calls declined by 10.9 per cent, 8.5 per cent and 15.6 per cent respectively;
- prices paid by small business for local, long distance and international calls declined by 3.0 per cent, 6.6 per cent and 13.2 per cent respectively;
- prices paid by other business consumers for local, long distance and international calls declined by 15.4 per cent, 9.5 per cent and 13.8 per cent respectively; and

- prices paid for mobile services declined by 2.5 per cent, which followed a 6.7 per cent decrease and a 12.4 per cent decrease in the two previous periods.⁵²

The price movements, as well as selected price trends since over 1997-98 to 2001-02 are shown in Figures 1, 2, 3 and 4 below. They indicate that prices paid by both residential and business consumers of selected PSTN and mobile services have decreased steadily since the transmission capacity service was originally declared, although in several cases, the rate of decrease has slowed in more recent years. These reductions provide some comfort that greater competition in the supply of transmission services would be expected to be passed on to end-users in the form of lower retail prices.

Figure 1



⁵² ACCC report, *Changes in prices paid for telecommunications services in Australia: 2001-02*, June 2003.

Figure 2

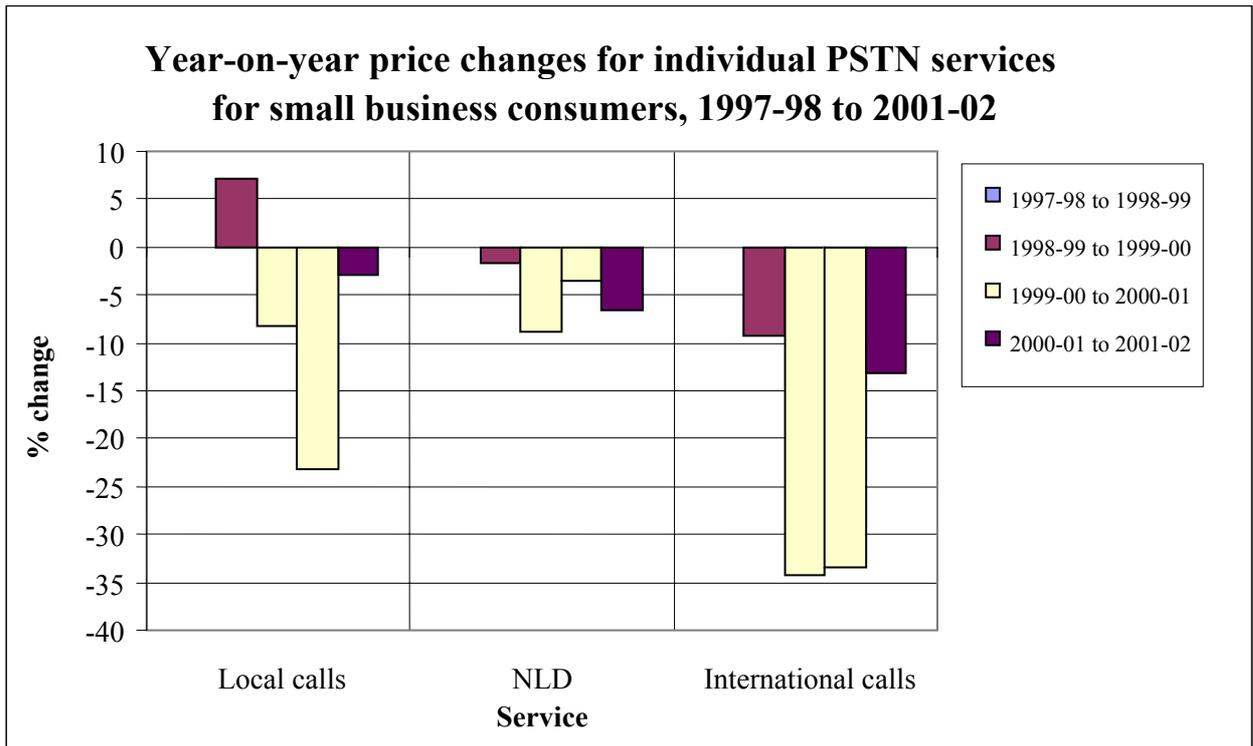


Figure 3

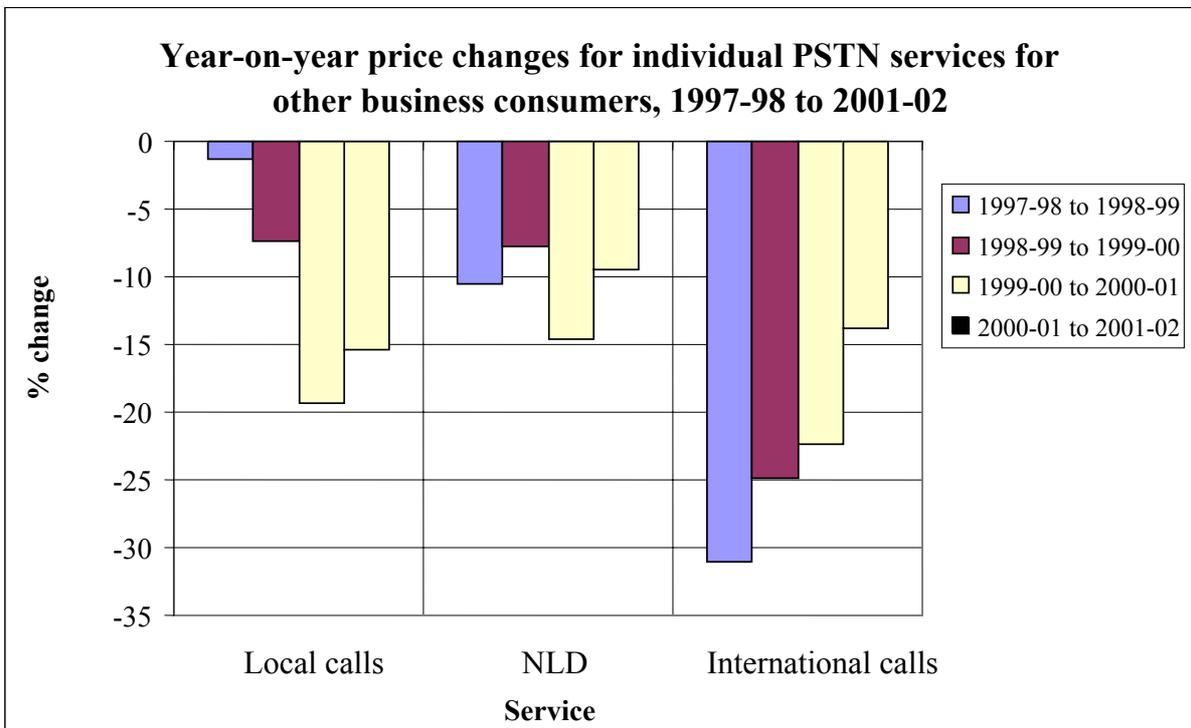
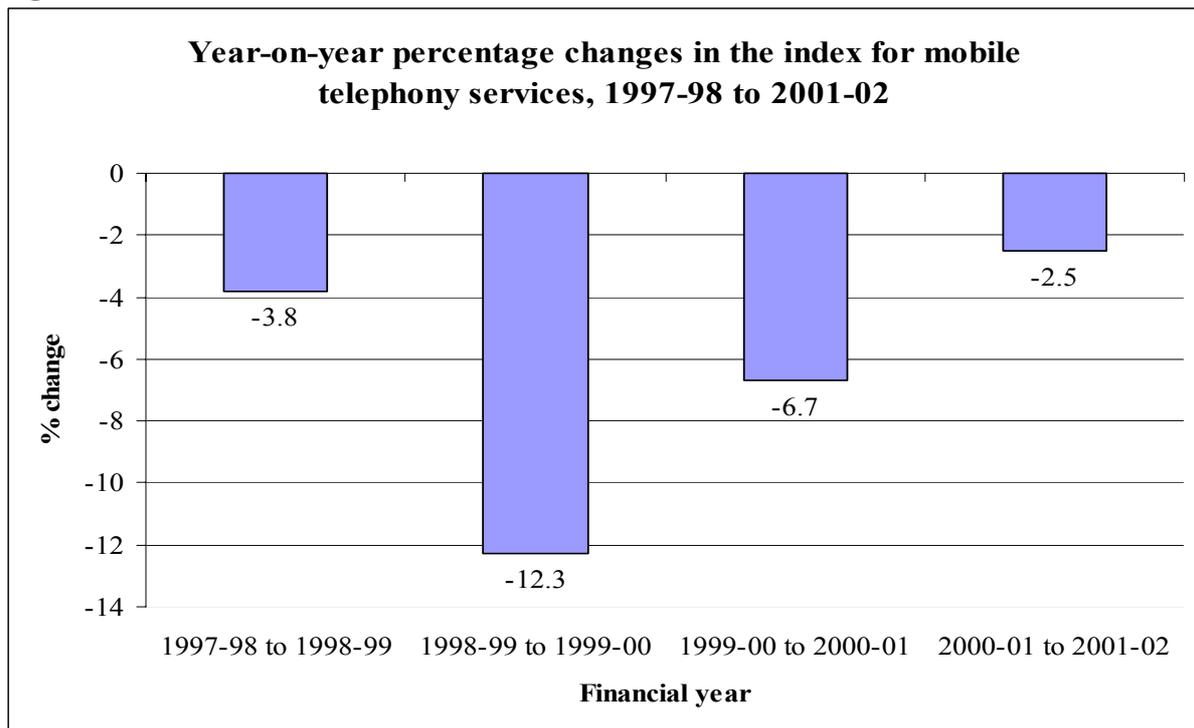


Figure 4



5.6 Conclusion – competition

The Commission considers that:

- competition is effective and/or there is sufficient contestability to ensure competitive supply in the intercapital and nominated capital-regional transmission capacity service markets, such that these services should continue to be excluded or removed from declaration; and
- there are not yet the conditions conducive for effective competition in the remaining transmission markets, including ‘inter-exchange local’ and ‘tail-end’ transmission in the five main CBDs, to warrant the removal of these services from the scope of the declaration.

6. Investment in transmission infrastructure

As discussed earlier, the level of actual and planned investment in transmission infrastructure is closely related to the extent of current and future competition in transmission markets. The Commission considers that where competition is effective the correct incentives for efficient use of and investment in infrastructure will exist.

6.1 Efficient use of infrastructure

Technical feasibility

In general, the technical feasibility criterion appears to be particularly relevant when an inquiry concerns the threshold decision of whether to declare a particular service or services.

However, the Commission accepts that where removal from declaration of aspects of the transmission capacity service could affect the technical feasibility by which access seekers are able to obtain transmission services and provide retail services to end-users, this may not be in the LTIE.

Legitimate commercial interests of access providers

The legitimate commercial interests of access providers includes a commercial return on its investments, its interests in maintaining contractual commitments and its interests in using the network for future requirements. The legitimate commercial interests of access providers also include their ability to exploit economies of scale and scope.

Submitters to the Commission's September 2003 discussion paper and the draft report did not raise specific issues relevant to this criterion.

6.2 Efficient investment in infrastructure

When assessing whether to change the scope of the declaration, the Commission needs to evaluate the effect of a declaration decision on efficient investment in networks or network elements. This includes consideration of both:

- incentives for investment in the existing infrastructure used to supply the eligible service; and
- incentives for investment in new infrastructure which could be used to supply the eligible service.

In its submission to the Commission's September 2003 discussion paper, Telstra noted that where competitive constraints in transmission markets are effective, declaration is unnecessary and may distort efficient investment signals. Where the price signal of a service is inaccurate, distortions will occur in the use of and investment in, the service at issue and related services. Telstra went on to note that three potential consequences of artificially low

pricing for transmission could cause a number of distortions and inefficiencies including:

- a reduction in the incentive for competitors to build, maintain and innovate their own network infrastructure;
- a reduction in the incentives for Telstra to improve its transmission service given that there is an increased risk that an adequate return on investment will not be earned; and
- a reduction in the incentives for Telstra to innovate and invest in other wholesale services.

Telstra also noted that with declaration there is the risk that the prices may be set too low by the regulator in future thereby deterring investment in the current period.

Optus submitted that revoking the declaration on any of the non-intercapital routes could lead to monopoly pricing by the access provider, which may in turn encourage too much investment. With the exception of the Brisbane-Cairns route, Optus considers all elements of non-intercapital transmission as exhibiting natural monopoly characteristics, and that any additional investment in this infrastructure would be economically inefficient.⁵³

AAPT submitted that there is no evidence that the existence of declaration has deterred investment, nor that its variation made investments any more successful.

Submitters to the draft report did not comment extensively on this issue, except for Telstra which noted that continued declaration of CBD inter-exchange transmission would undermine efficient investment incentives. The particular distortions to investment signals are the same as those listed in Telstra's submission to the September 2003 discussion paper detailed above.

In compiling its report *Telecommunications Infrastructure in Australia 2002*, the Commission requested information from carriers about planned investment in transmission infrastructure for 2002-03. Key planned investments included that by Telstra to add a second optical fibre link from Victoria to Tasmania, continued development by IP1 and Nextgen of their mainland fibre networks and those of OMNIconnect and ntl Telecommunications to extend their existing microwave networks in eastern Australia.

The Commission considers that where a service remains declared when there is effective competition in the provision of that service declaration can reduce efficient investment more broadly in the market. This is on the basis that it can maintain reliance on the main supplier in the market, thus reducing efficient investment by access seekers in utilising alternative suppliers or services and hence the ongoing investment in infrastructure by these alternative suppliers. This in turn can be deleterious to maintaining competition and in delivering service diversity to end users in the longer term.

⁵³ Optus submission to September 2003 discussion paper, p. 10.

However, as the Commission has noted in the past, where there is not effective competition to ensure the competitive supply of particular services, continued declaration should promote efficient investment in alternative infrastructure. For example, in relation CBD transmission services the Commission considers that allowing entrants guaranteed access to both inter-exchange local and tail-end transmission allows the opportunity for a carrier/CSP to build a customer base. At some point in the future, when that carrier/CSPs has secured a customer or its retail customer base reaches a certain threshold, it may be encouraged to invest in its own infrastructure due to the greater certainty of a return on investment. The Commission is of the view that this process is valuable for helping to encourage more sustainable competition in the longer term, and therefore, is in the LTIE.

7. Any-to-any connectivity

Concept of any-to-any connectivity relates to the objective whereby end-users on different networks have the ability to communicate with each other. The Commission is required to consider whether maintaining or changing the declaration is likely to affect any-to-any connectivity in relation to carriage services that involve communications between end-users.

Submitters to the Commission's September 2003 discussion paper and the draft report did not address this particular objective with respect to any elements of the transmission capacity service.

The Commission does not believe that a variation to remove certain transmission routes from the declaration will have an impact on the achievement of any-to-any connectivity between end-users. This is on that basis that key criteria for removal of any component of the transmission capacity service is that there are a sufficient number of alternative suppliers of the services or alternative services in question, thus ensuring that any-to-any connectivity should be able to continue to be achieved.

8. Conclusion

Having considered the objectives under the LTIE test, the Commission has made the following final decision in relation to the scope of the transmission capacity service declaration.

8.2 Intercapital markets

The Commission considers that, based on the available evidence, competition across all intercapital transmission routes appears sufficient so as not to require the re-declaration of any of these routes.

The Commission recognises that competition in intercapital transmission markets has not developed evenly across Australia. The high degree of market entry on the eastern seaboard routes combined with the fact that there have been substantial price decreases in these markets since 2001, suggests that regulation continues to be unnecessary on these routes.

On the east-west routes, the Commission notes the financial difficulties experienced by the two new entrant infrastructure competitors (IP1 Australia and Nextgen Networks) during 2003. These saw IP1 purchased by Telstra and Nextgen by Leighton. Given that Optus competes on these routes and an independent third party has purchased the Nextgen network, the Commission considers that there is now effective infrastructure competition on these routes. In addition, the Commission has received evidence of a number of carriers/CSPs that have secured long-term contractual arrangements to resell transmission capacity on these routes on a wholesale basis.

Based on this, the Commission considers that the intercapital monitoring program should now be abandoned on all routes. If need arises the Commission is able request pricing information from intercapital transmission providers on a case-by-case basis under its information gathering powers.

8.2 Other transmission

The Commission considers that, based on the available evidence, changing the scope of the transmission capacity service declaration, to exclude 14 capital-regional transmission routes where there is effective competition or sufficient evidence of contestability to ensure the competitive supply of these services, is in the LTIE. These are routes which have at least three optical fibre suppliers either serving these regional centres or in very close proximity (in the case of the Leighton/Nextgen network).

These routes are listed in Table 4 below.

Table 4: Capital-regional routes removed from declaration

NSW	Victoria	QLD	SA
Sydney-Albury	Melbourne-Ballarat	Brisbane-Toowoomba	Adelaide-Murray Bridge
Sydney-Lismore	Melbourne-Bendigo	Brisbane-Gold Coast	
Sydney-Newcastle	Melbourne-Geelong		
Sydney-Grafton	Melbourne-Shepparton		
Sydney-Wollongong			
Sydney-Taree			
Sydney-Dubbo			

The Commission has based its decision to exclude the above capital-regional routes from declaration, on information available to it at the time. The Commission considers that the decision and the criteria underlying it outlined in the previous paragraph applies as a general principle, such that market developments and additional information provided to the Commission could prompt it to make occasional changes to capital-regional routes excluded or included in the new declaration by way of a minor variation under section 152AO of the Act.

8.3 Inter-exchange local transmission

The Commission considers that, based on the available evidence, varying the declaration to exclude inter-exchange local transmission would not be in the LTIE.

In reaching this view the Commission considers that there is not effective competition and/or sufficient contestability to ensure competitive supply of these services.

In addition, there is evidence of scope economies in the provision of inter-exchange local and tail-end transmission in CBD areas, such that in practical terms, there is unlikely to be a separate wholesale market for inter-exchange local transmission in CBD areas.

Furthermore, given that the Commission does not intend to remove the CBD tail service from declaration, it would be concerned that the removal of this service could create a bottleneck that could be used by Telstra to undermine competition in the CBD tail transmission market.

8.4 Tail-end transmission

The Commission considers that, based on the available evidence, changing the scope of the transmission capacity service declaration to exclude ‘tail-end’ transmission would not be in the LTIE.

In reaching this view, the Commission notes that Telstra remains the sole supplier of optical

fibre to around 55 per cent of buildings with such connections, and has the vast majority of customer connections. It also notes that a range of alternative access technologies for supplying transmission services remain in their infancy and have not been widely adopted. The Commission considers these factors point to the absence of sufficient competition in this market segment and ongoing access to Telstra's tails would aid competition in downstream markets.

Furthermore, Commission notes that guaranteed access to Telstra's network appears to be an important stepping stone for helping to encourage sustainable infrastructure based competition in the supply of tail services in the longer term, particularly in CBD areas.

Although the Commission removed declaration of the LCS in the CBDs of the major capitals, this was based on the availability of alternative infrastructure plus other declared services (local PSTN originating and terminating access and the unconditional local loop). The Commission does not consider that there are viable alternative declared services that can supply the full range of services for which the declared tail transmission service is utilised.

Appendix 1: List of written submissions received

Submissions to draft report (December 2003)

Optus	30 January 2004
Powertel	30 January 2004
Telstra	12 February 2004
Comindico	28 February 2004

Submission to discussion paper (September 2003)

AAPT Limited	10 October 2003
Telstra	22 October 2003
Optus	3 November 2003
Vodafone	7 November 2003
PowerTel	13 November 2003

Appendix 2: Existing transmission capacity service description

The Domestic Transmission Capacity Service is a service for the carriage of certain communications from one transmission point to another transmission point via network interfaces at a designated rate on a permanent basis by means of guided and/or unguided electromagnetic energy, except communications between:

- a) one customer transmission point and another customer transmission point; and
- b) a transmission point in an exempt capital city and a transmission point in another exempt capital city; and
- c) one access seeker network location and another access seeker network location.

Definitions

Where words or phrases used in this Annexure are defined in the *Trade Practices Act 1974* or the *Telecommunications Act 1997*, they have the meaning as given in the relevant Act.

In this appendix:

an ***access seeker network location*** is a point in a network operated by a service provider that is not a point of interconnection or a customer transmission point; and

an ***exempt capital city*** means Adelaide, Brisbane, Canberra, Melbourne, Perth or Sydney; and

a ***customer transmission point*** is a point located at customer equipment at a service provider's customer's premises in Australia (for the avoidance of doubt, a customer in this context may be another service provider); and

a ***designated rate*** is a transmission rate of 2.048 Megabits per second, 4.096 Megabits per second, 6.144 Megabits per second, 8.192 Megabits per second, 34 to 45 Megabits per second, 140/155 Megabits per second (or higher orders agreed between a carrier or carriage service provider and another service provider); and

a ***point of interconnection*** is a physical point of connection in Australia agreed between a network operated by a carrier or a carriage service provider and another network operated by a service provider; and

a ***transmission point*** is any of the following agreed between a carrier or carriage service provider and another service provider:

- a) a point of interconnection;
- b) a customer transmission point;
- c) an access seeker network location.

Appendix 3: New transmission capacity service description

The Domestic Transmission Capacity Service is a service for the carriage of certain communications from one transmission point to another transmission point via network interfaces at a designated rate on a permanent basis by means of guided and/or unguided electromagnetic energy, except communications between:

- d) one customer transmission point and another customer transmission point; and
- e) a transmission point in an exempt capital city and a transmission point in another exempt capital city;
- f) a transmission point in Sydney and a transmission point in any of the following regional centres; Albury, Lismore, Newcastle, Grafton, Wollongong, Taree and Dubbo;
- g) a transmission point in Melbourne and a transmission point in any of the following regional centres; Ballarat, Bendigo, Geelong and Shepparton.
- h) a transmission point in Brisbane and a transmission point in any of the following regional centres; Toowoomba and Gold Coast;
- i) a transmission point in Adelaide and a transmission point in Murray Bridge; and,
- j) one access seeker network location and another access seeker network location.

Definitions

Where words or phrases used in this Annexure are defined in the *Trade Practices Act 1974* or the *Telecommunications Act 1997*, they have the meaning as given in the relevant Act.

In this appendix:

an ***access seeker network location*** is a point in a network operated by a service provider that is not a point of interconnection or a customer transmission point; and

an ***exempt capital city*** means Adelaide, Brisbane, Canberra, Melbourne, Perth or Sydney; and

a ***customer transmission point*** is a point located at customer equipment at a service provider's customer's premises in Australia (for the avoidance of doubt, a customer in this context may be another service provider); and

a ***designated rate*** is a transmission rate of 2.048 Megabits per second, 4.096 Megabits per second, 6.144 Megabits per second, 8.192 Megabits per second, 34 to 45 Megabits per second, 140/155 Megabits per second (or higher orders);

a ***point of interconnection*** is a physical point of connection in Australia between a network operated by a carrier or a carriage service provider and another network operated by a service

provider; and,

a *transmission point* is any of the following:

- d) a point of interconnection;
- e) a customer transmission point;
- f) an access seeker network location.