

# Australian Competition and Consumer Commission

Supplementary Submission to the Productivity Commission Review of Telecommunications Specific Competition Regulation

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# **INTRODUCTION**

When it lodged its initial submission to the Productivity Commission, the ACCC foreshadowed that it would provide further material relevant to the Commission's terms of reference. This supplementary submission contains that material.

The supplementary submission addresses a number of issues which were raised at the Commission's public hearings and in the submissions of others. It also includes responses to particular claims made in other submissions.

# 1. THE TELECOMMUNICATIONS ACCESS REGIME

Most of the first-round submissions made to the Productivity Commission referred to the telecommunications access regime and the need for continuation of an industry-specific regime. The ACCC submitted that there was a strong case for continuation of such a regime. The ACCC takes this opportunity to expand on its reasoning.

The telecommunications industry was one of the first industries in Australia to acquire an access regime. The regime was established under Section 136 of the *Telecommunications Act 1991* when competition was first introduced to the industry, and was intended to ensure that new entrants, of which Optus was the first, would be able to achieve interconnection with Telstra's facilities and so provide connectivity among telecommunications users of different networks. As such, it pre-dated the general access regime in Part IIIA of the *Trade Practices Act 1974*, which was introduced in 1995. The current telecommunications access regime, which was introduced in 1997 as part of the package of legislation which provided for open competition in the Australian telecommunications market, combines aspects of both those regimes.

#### **1.1** The rationale for regulated access

Like the general access regime in Part IIIA, the telecommunications access regime in Part XIC is intended to achieve the benefits of competition in circumstances in which competitive production is inefficient. This occurs when production technologies are such that it is potentially cheaper to have all production carried out by a single firm than by a number of firms each operating their own facilities. These circumstances arise when production has the characteristics of increasing returns to scale over the relevant range of output, and are usually described as natural monopoly. Natural monopoly conditions are commonly observed in network industries, where the costs of network construction and operation are large relative to the cost of supplying incremental service units through the network.

The problem posed in these circumstances is clear: the introduction of facilities-based competition would inevitably raise the minimum achievable unit cost of production and result in production costs being inefficiently high. Without such competition, however, network ownership confers protection from competitive discipline on costs and market power in the provision of the service in question. This can result in actual costs of production being in excess of the efficient level, network access being charged at rates which incorporate monopoly profit, and/or market power being leveraged into downstream markets through inhibiting network access to potential entrants.<sup>1</sup> Each of these outcomes is detrimental to final consumers. Regulated access arrangements, under which network owners are required to provide access to access seekers on reasonable terms and conditions, were recommended by the Hilmer

<sup>&</sup>lt;sup>1</sup> Independent Committee of Inquiry, *National Competition Policy*, AGPS Canberra, August 1993, pp 240-242.

Committee as a way of achieving production efficiency while also enabling competition in the design and delivery of services which will benefit end-users.

#### **1.2** The rationale for a telecommunications-specific access regime

Beyond these considerations, however, both the 1991 and 1997 telecommunications access regimes recognised that circumstances other than simply the presence of natural monopoly could confer market power in the provision of essential input services which could restrict the development and effectiveness of competition.

The need for any-to-any connectivity among network users, or, as AUSTEL put it in 1991, 'transparent, seamless connectivity between telecommunications users'<sup>2</sup>, was the major consideration. Shared access to customers occurs through interconnection, and access to all customers is necessary both for successful entry and for continued competition. Unlike energy, water or broadcast networks, which require only point-to-multipoint distribution, the requirement for any-to-any connectivity confers on *all* telecommunications network owners market power in access to their own customers. This can potentially be used to frustrate the provision of access to those customers by other carriers on reasonable terms. Whether a dominant operator can use its power to set unreasonable terms and conditions for new entrants, or whether a small operator is able to 'hold out' for higher termination charges from larger operators, the benefits of competition may be compromised.<sup>3</sup> Neither natural monopoly nor market dominance is a necessary pre-condition for the achievement or exercise of such market power.

The object of the Government in introducing the industry-specific access regime also went beyond simply ensuring access to essential facilities. From the outset, it had stated its particular policy interest in promoting diversity and competition in the supply of carriage services and other services provided by means of carriage services.<sup>4</sup> The transition from a market served solely by a vertically-integrated monopoly to one in which a range of carriers and carriage service providers could compete required regulatory certainty. In this respect, the simpler and faster declaration (and undeclaration) processes under Part XIC than under Part IIIA, and the immediate right to access consequent on declaration of a service, may be seen as encouraging entrants to develop service competition with Telstra as much as providing for access to an essential facility.<sup>5</sup>

A further objective of the Government was to satisfy expectations of continuity regarding the access arrangements under Part 8 of the *Telecommunications Act 1991*. The transitional arrangements contained in the *Telecommunications (Transitional Provisions and Consequential Amendments) Act 1997* essentially retained existing rights for carriers, extended those rights to service providers and fulfilled the

<sup>&</sup>lt;sup>2</sup> AUSTEL, AUSTEL Study of Arrangements and Charges for Interconnection and Equal Access, Part 1, July 1991, Melbourne, p 4.

<sup>&</sup>lt;sup>3</sup> The latter has been observed in a number of arbitrations concerning termination charges which have involved small access providers and Telstra as an access seeker.

<sup>&</sup>lt;sup>4</sup> Department of Communications and the Arts, *Australia's Open Telecommunications Market: the New Framework*, Canberra, 1997, p 40.

<sup>&</sup>lt;sup>5</sup> King, Stephen and Rodney Maddock, *Unlocking the Infrastructure: the Reform of Public Utilities in Australia*, Allen and Unwin, 1996, p 146.

Government's election commitment to achieve open access in regard to the carriage of broadcasting services over cable networks.<sup>6</sup>

The criteria established by the legislation reflect these objectives. They give priority to the long-term interests of end-users, and require explicit consideration of the likely effects of declaration on competition, the promotion of any-to-any connectivity and efficient infrastructure use and investment. They provide clearer guidance to the ACCC as to the matters it should consider than the broad discretion implied by the 'public interest' test in Part IIIA of the *Trade Practices Act 1974*.<sup>7</sup>

The particular vulnerability of competitors and competition in a market only recently opened to new entrants was also recognised in the processes which were set up. Under Part IIIA, recommendations concerning the declaration of services are made by the National Competition Council to the Treasurer, who then makes the decision, which is then subject to appeal. Declaration creates a right to negotiate for access. Under Part XIC, the ACCC conducts a public inquiry and then makes its own decision concerning declaration. Following declaration, a right of access is immediately created, as standard access obligations arise with respect to the service, requiring the access provider to grant access and interconnection to the service. These differences make the XIC processes both faster and more flexible than those under Part IIIA. The Government stated that the regime was intended to minimise direct regulatory imposts and provide commercial certainty, while also providing sufficient flexibility to deal with access issues in a rapidly converging industry. It was also intended to reflect the principle that speedy administrative solutions should be available in situations where genuine access disputes existed which could not be resolved by industry consensus or commercial means.<sup>8</sup>

#### **1.3** The continuing need for telecommunications-specific access regulation

Clearly implied in this rationale are transitional elements related to the need to create the conditions in which competition could develop in the telecommunications market. Ten years ago, when(the then) Telecom and OTC had no competitors at all, a strong regime focussed on the particular characteristics of the market was clearly required in order to ensure that an embryonic form of competition could develop. Three years ago, a regime more closely aligned to general industry arrangements, but still reflecting the special conditions of the telecommunications market, was also considered desirable. In the future, however, it is more likely that the industryspecific component of any access regime will be either eliminated completely, or limited to 'safety net' provisions ensuring any-to-any connectivity. A progression from industry-specific to general regulation is desirable as it becomes feasible.

In evaluating the extent to which telecommunications-specific access regulation may still be required, it is appropriate to ask which point in that transition the market has reached. In particular, it is important to ask whether continuation of the regime is desirable in order to address continuing structural and behavioural concerns and

<sup>&</sup>lt;sup>6</sup> Department of Communications and the Arts, *op cit* p 37.

<sup>&</sup>lt;sup>7</sup> Department of Communications and the Arts, *op cit* p 40.

<sup>&</sup>lt;sup>8</sup> Department of Communications and the Arts, *op cit* p 40.

entrench the gains already made, or whether its abandonment would free the market to pursue further competitive development.

Most submissions supported the continuation of a telecommunications-specific access regime in some form. As stated in its own submission, the ACCC supports continuation because it considers that, despite new network development and even duplication in some limited areas of a customer access network, Telstra retains substantial market power in the provision of a number of critical input services, and so has the opportunity and the incentive to exploit that power in the terms and conditions on which it provides access to those services, given the particular requirement in telecommunications for any-to-any connectivity. It should be remembered that Telstra currently has over 10 million basic access lines in operation, compared with around 415 000 by Cable & Wireless Optus<sup>9</sup>. Without certainty concerning rights to access and interconnection on reasonable terms and conditions, competitors are less likely to risk the substantial investments involved in network construction and facilities-based competition is less likely to develop. Trade practices provisions including those enabling the ACCC to act against anti-competitive conduct and the abuse of market power are inevitably reactive and hence, in the ACCC's view, no substitute for access regulation intended to prevent such problems arising in the first place. The more limited criteria and the slower processes of Part IIIA are also, in the ACCC's view, less well-suited to an industry in which competition remains underdeveloped in many areas and where the speed of change means that the costs of delay are high.

It should also be noted that the regime itself is only a little over three years old, and that a number of aspects of its operation are only just becoming established. The amendments which increased its effectiveness have been in operation for less than a year, and a major competitive initiative, the unbundling of the local loop, is still in the early stages of implementation. Pricing principles for a number of major services are still under development.

The ACCC considers that withdrawal or major amendment of the regime at this point risks imposing new uncertainty on an industry still engaged in major (sunk) investments and undermining the benefits it was intended to deliver. The ACCC notes recent criticism of Oftel's 'light-handed' approach to local loop unbundling in the UK, which is claimed to have slowed the unbundling timetable, delivered first mover advantages to British Telecom and jeopardised the further development of competition in the UK market.<sup>10</sup> It seems unlikely that the industry co-regulatory arrangements in Australia, despite a number of significant achievements, are sufficiently mature to manage the pricing as well as the implementation complexities of an initiative of this magnitude when the UK, with its longer experience of deregulation, is clearly experiencing difficulties. It is also clear that, while Australia has witnessed significant price reductions for a number of services and considerable

<sup>&</sup>lt;sup>9</sup> Telstra Corporation, Annual results and operations review, year ended 30 June 2000, 30 August 2000, and Cable & Wireless Optus, Cable & Wireless Optus delivers strong growth in revenue and profitability, news release, 16 May 2000.

<sup>&</sup>lt;sup>10</sup> Andrew Gliniecki, 'Regulator – Find a Remedy', editorial, *Communications Week International*, 9 October 2000; Emily Bourne, 'UK Considers Upping Oftel Powers', *Total Telecom*, 9 October 2000.

competition in some markets, it remains in the middle rank of OECD countries on a number of telecommunications indicators, and that service quality, diversity and prices are not yet at levels which the Australian community considers uniformly satisfactory.<sup>11</sup>

The ACCC also considers that the implications for competition of technological and market convergence remain unclear. While some aspects of convergence are clearly likely to reduce market power, others may create new sources of power, or entrench existing market power in key bottleneck facilities. A key consideration is the extent to which regulation is necessary to ensure that the potential benefits of these developments are realised, and that opportunities are not foreclosed by inappropriate or inadequate regulation. In this connection, swift decisions and cost-based pricing are likely to be crucial.

The submissions of Telstra and Cable & Wireless Optus argued for limitation of the scope of the regime. Telstra claimed that the growth in telecommunications demand, combined with continuing technological change in networks and services, was creating entry opportunities which mean that

 $\dots$  no part of the telecommunications industry can properly be described as a natural monopoly  $\dots$  (Telstra submission, p 5)

Optus claimed that

... the reach of access regimes should only extend to where there is significant market failure, which in practice, arises when there is a dominant supplier of the service in issue. (CWO submission, p 105)

These statements suggest that market power arises from, respectively, natural monopoly and/or dominance in the market. In the ACCC's view, they fail to recognise the range of sources of market power and the nature of market failure in telecommunications markets.

In fact, the existence of natural monopoly is neither a necessary nor a sufficient condition for market power in the provision of input services. Ovum and others have observed that market power exists in call termination, regardless of the number of networks in place, because:

- any-to-any connectivity rules require operators to give their customers the ability to call any other subscribers, including those on mobile networks,
- there is no alternative for call termination, other than to use the network operator that the called party has subscribed to,
- in choosing network operators, a customer does not normally place significance on the price of inbound calls that are paid for by the caller. This means that the price of call termination, which is reflected in the retail price of inbound calls, has little influence on a customer's choice of network operator.<sup>12</sup>

<sup>&</sup>lt;sup>11</sup> For example, see the Telecommunications Service Inquiry (Besley Inquiry), *Report*, October 2000.

<sup>&</sup>lt;sup>12</sup> Ovum Ltd, Regulating Mobile Operators: the Road to Effective Competition, 2000.

Ovum concluded that, as a consequence, 'call termination can be considered a 'bottleneck' service – any operator that provides this service has the ability to set excessive charges without facing substantially increased competition.' These issues are currently being explored by the ACCC in the light of a similar thesis by Professor Stephen King and Associate Professor Joshua Gans in relation to access prices for mobile termination.

The implication of these observations is that the existence of a number of competitors and/or of competing facilities does not, in itself, exclude the possibility that market power exists and can be used to frustrate the emergence or sustainability of competition. For example:

- the ACCC's draft view in regulating non-dominant PSTN networks is that control over termination access is an important consideration for fixed networks; and
- the mobile market appears to be becoming increasingly competitive with an increasing number of new entrants providing mobile services. However control over call termination may still mean price regulation is appropriate. The ACCC is still developing its views on this matter for GSM pricing principles.

Nevertheless, it is true that both the opportunity and the incentive to deny access to facilities or offer it on unreasonable terms and conditions are greater where the facilities have natural monopoly characteristics and/or are operated by a monopoly provider. The exemption provisions within Part XIC enable the ACCC to respond to situations where it may be desirable to exclude particular carriers or regions from the standard access obligations in respect of a particular service.

In any event, Telstra's claims concerning the virtual disappearance of natural monopolies from the Australian telecommunications market must be considered premature. While the number of services in which sustainable facilities-based competition may become possible is undoubtedly increasing for the reasons cited by Telstra, much of that competition, as Telstra has also pointed out, is limited to particular geographic areas, customer groups and/or service types. Some facilities, while no longer technically natural monopolies, are likely to remain unduplicated in some areas for many years. The customer access network in lower-density areas is clearly one such facility. In such circumstances, the only way in which service competition can develop is through ensuring that access to those facilities is available to other carriers or service providers offering interconnection or resale.

#### **1.4** The approaches of other countries

The existence of a telecommunications-specific access regimes is not unique to Australia. Most jurisdictions which have liberalised their telecommunications markets have such systems in place. A number have recently completed reviews of their telecommunications regulation and have recommended retention and/or extension of the regimes. These include the United Kingdom, the United States and New Zealand, all of whom introduced competition to their telecommunications markets before Australia, and so have had a longer period of exposure to competitive forces.

A detailed comparison of the telecommunications access arrangements which operate and/or have been recommended in New Zealand, the European Community, the United States and Canada is being prepared by the ACCC and will be made available to the Productivity Commission.

In the United States, the FCC requires 'comparably efficient' interconnection arrangements to be offered to unaffiliated competitors and imposes rules concerning the disclosure of network interface and customer proprietary information. Because it regards new entrants as particularly vulnerable to discriminatory behaviour by monopoly service providers, the Federal Communications Commission has recently adopted expedited methods for resolving discrimination complaints.<sup>13</sup>

The UK telecommunications regulator, Oftel, considers that:

Rules over and above general competition law are needed to deal rapidly with competition issues [in telecommunications], including high barriers to entry, problems arising from the legacy of historic monopolies and risks of anti-competitive behaviour caused by vertical integration and spectrum constraints... Communications markets also possess certain characteristics which give rise to competitive concerns for which *ex ante* regulation is appropriate. These include interconnection, interoperability, spectrum, numbering and call termination.

Sectoral regulation is needed to enable competitors and new entrants to obtain access to and interconnection with the networks, infrastructure and/or facilities of those with market power. This is essential for fair and effective competition. (Oftel, *Communications Regulation in the UK*, July 2000, paras 23, 24)

As mentioned earlier, recent criticism of Oftel's approach has coincided with indications that the UK government is considering extension of Oftel's powers in order to create a 'larger, stronger regulator' (see footnote 9).

The European Commission's 1999 communications review recommended that the minimum level of regulation for interconnection should, as at present, ensure that network operators have rights and obligations to negotiate interconnection, with the possibility of regulatory intervention to resolve disputes if commercial negotiation fails. It also concluded that member states have a duty to ensure adequate

<sup>&</sup>lt;sup>13</sup> Federal Communications Commission, *Connecting the Globe*, Chap 5.

interconnection of specific networks in order to ensure end-to-end interoperability of services mandated at European Community level.<sup>14</sup>

The recently-released report of New Zealand's Ministerial Inquiry into Telecommunications concluded that the light-handed regulatory regime adopted in NZ was inadequate to meet the Government's objectives for the industry, and that the introduction of industry-specific regulation was warranted. It recommended the introduction of a telecommunications-specific access regime similar in most respects to that currently operating in Australia, and administered by a telecommunicationsspecific regulatory body, the office of the Electronic Communications Commissioner.<sup>15</sup>

<sup>&</sup>lt;sup>14</sup> European Commission, 1999 Communications Review, para 4.2.2.

<sup>&</sup>lt;sup>15</sup> Ministerial Inquiry into Telecommunications, *Final Report*, September 2000, p 19.

# 2 DECISIONS CONCERNING THE REGULATION OF SERVICES

A number of submissions referred to decisions concerning the regulation of services, analysing both the criteria in the current legislation and the manner in which the ACCC interprets and applies those criteria.

#### 2.1 The declaration test

In deciding whether or not to declare a service, to vary or revoke a service declaration or to grant an exemption from the standard access obligations, the ACCC is required to consider whether such action will promote the long-term interests of end-users.

The term 'end-users' refers to the end-users of carriage services or of services provided by means of carriage services. It is interpreted by the ACCC to encompass business and residential consumers as a group, although in some cases, the impact on particular sub-groups of end-users may be considered separately. Carriage services and services provided by means of carriage services traditionally include voice telecommunications, but now increasingly include internet, data, broadcast services and multimedia.

The focus on end-users does not mean that impacts on producers, or on related industries, are irrelevant to the assessment. It cannot be in the long-term interests of end-users to declare services where this would introduce greater cost, risk or delay in commercial processes, impose cumbersome requirements on access providers and access seekers or deter efficient investment and the development of innovative processes and services. Consistent with general economic welfare principles, the long-term interests of end-users are likely to be best served by the development of markets characterised by efficient production, cost-oriented pricing and incentives for efficient investment and innovation.

#### 2.2 The three criteria

These considerations are clearly apparent in the three objectives specified under section 152AB of Part XIC. In assessing the likely impact of service declaration (or amendment, exemption or revocation) on the long-term interests of end-users, the ACCC is required to consider whether declaration would result in:

- Promotion of competition in markets for carriage services and services supplied by means of carriage services,
- Any-to-any connectivity among end-users,
- Economically efficient use of, and investment in, the relevant infrastructure.

The likely overall effect on the long-term interests of end-users must then be assessed.

The ACCC has stated that where declaration is likely to result in the achievement of one or more of these objectives, it will generally promote the long-term interests of end-users. For instance, if declaration is likely to promote competition in a market for the supply of local telephony services to end-users, then end-users are likely to benefit through lower prices and improved customer service. Similarly, encouraging efficient investment would be expected to promote end-users' interests through lowering the cost and ensuring the continued existence of telecommunications infrastructure. The enhanced efficiency would be generally reflected in lower prices. The ACCC may also conclude that efficient investment will be likely to increase service diversity.<sup>16</sup>

It does not follow from this that when declaration is judged to result in achievement of any one of the objectives that it can also be assumed to imply achievement of either or both of the *remaining* objectives. However, this will frequently be the case. This is because declaration provides for access to the declared service to be made available to access seekers on reasonable terms and conditions. For example, declaration may promote competition by providing potential entrants with an assurance that the necessary facilities will be available to them for interconnection. This will ensure that any-to-any connectivity can be guaranteed to the clients of new networks, and so reduce the risk that a new network will be made unviable by delay, unreasonable access charges or even denial of access. The identification of terms and conditions which reflect efficient costs and processes will then provide incentives for efficient interconnection and/or new investment. (The relationship between terms and conditions of access and efficient investment is considered in detail in Part 5.)

# 2.3 Potential conflict among the criteria

Nevertheless, circumstances exist in which the criteria may conflict. In such circumstances, declaration may result in promotion of one of the three objectives at the expense of another. Should that occur, the ACCC must make a judgement about the *balance* of the effects, in order to determine the likely net effect on the long-term interests of end-users.

It is not difficult to imagine such circumstances. If, for example, the physical process of implementing interconnection arrangements is costly and difficult, then the resulting increase in wholesale charges may offset some or all of the benefits of competition expected to accrue to consumers. Perceptions that declaration will result in loss of control of network infrastructure or loss of reward for innovation may also discourage investment.

# 2.4 The ACCC's approach

In reaching decisions concerning the regulation of services, the ACCC evaluates the likely effect of declaration on each of the secondary objectives, and then weighs that effect against the likely outcome without declaration.

In a number of cases, it has found that declaration is likely to promote all three objectives, and therefore to be unambiguously in the long-term interests of end-users.

<sup>&</sup>lt;sup>16</sup> ACCC, *Local Telecommunications Services*, July 1999, p 5.

The 1999 inquiry into the declaration of local telecommunications services – the most recent of the ACCC's main declaration decisions – made such a finding.<sup>17</sup>

In other cases, the ACCC has found that declaration was likely to promote only one of the three objectives, while leaving the other objectives largely unaffected. This was the case, for example, in the analogue subscription television broadcast cable service, where declaration was considered likely to increase competition in the market for subscription television services. Although the ACCC investigated the possibility that declaration could inhibit the deployment of infrastructure to deliver broadband services, it found no evidence to suggest that this was likely. In addition, it pointed out that the regulatory framework provides for exemptions from the standard access obligations where this would promote the long-term interests of end-users. The ACCC considered that declaration would have no significant impact on the achievement of any-to-any connectivity. On this basis, as positive effects on competition were expected, and no significant negative effects in terms of technical feasibility, the costs of providing access, and the efficiency of investment, the ACCC concluded that declaration would promote the long-term interests of end-users.

A further example is the case of domestic mobile intercarrier roaming.<sup>19</sup> There, the ACCC found that there appeared to be strong incentives for the carriers to enter into commercial roaming arrangements, and therefore that declaration was unlikely to result in a significant further stimulus to competition in the market for mobile services. On the other hand, the ACCC considered that declaration may have adverse effects on investment incentives, particularly in relation to innovative services. As declaration was unlikely to be relevant to achieving any-to-any connectivity (already provided for in the mobile context by the deeming of GSM and AMPS access services), the ACCC concluded that, on balance, declaration would not promote the long-term interests of end-users at that stage.

Accordingly, the ACCC rejects claims by Telstra in its submission that

... the ACCC has focused almost exclusively on promoting short-term competitor gains while ignoring whether its declaration and access pricing decisions will promote efficient investment in infrastructure. (Telstra submission, p 3)

The effects of declaration on infrastructure use and investment are not, of course, confined solely to the *fact* of declaration, although the regulatory risk associated with the possibility of declaration is likely to be considered in any investment decision. They also depend critically on the terms and conditions under which access is provided. The ACCC's approach to access pricing is considered in Part 4.

<sup>&</sup>lt;sup>17</sup> ACCC, *op cit*.

<sup>&</sup>lt;sup>18</sup> ACCC, Declaration of an Analogue Subscription Television Broadcast Carriage Service, October 1999.

<sup>&</sup>lt;sup>19</sup> ACCC, Inquiry into Domestic Intercarrier Roaming Declaration, March 1998.

#### 2.5 Competitors and the incumbent

Warren and Landrigan have pointed out that the promotion of *competition* should not be confused with the promotion of *competitors*.<sup>20</sup> Telstra claimed in its submission that the ACCC does, in fact, err on the side of promoting competitors at the expense of broader objectives:

[The access regime] has been used by the regulator to engineer market outcomes deemed desirable for the promotion of competitors with little regard to the effects on efficient investment incentives and the potential costs that this regulatory over-reach may impose on the Australian community. (Telstra submission, p 4)

The ACCC rejects this claim. While promotion of competition may generally be expected to promote the long-term interests of end-users, merely promoting competitors would compromise the efficiency objectives which underpin future service capabilities and consumer benefits would clearly not be in the LTIE.

In some cases, however, the interests of competitors and of the competitive process coincide. This is particularly so where competition is still embryonic, and where the promotion of competition to benefit end-users will also promote the commercial interests of competitors.

It is an oversimplification to represent competitors in the Australian telecommunications market as having common interests. All may be both access providers and access seekers, as all must provide termination service in order to satisfy any-to-any connectivity requirements. This characteristic clearly affects the dynamics of the market, and makes it different from most other networks.

Obviously, all participants in the market have a significant commercial stake in the outcome of ACCC and other regulatory decisions. They represent those interests strongly to the ACCC. The ACCC evaluates those claims carefully against publicly-available criteria before reaching and publishing its decisions. Those decisions show that the ACCC cannot be claimed to make determinations consistently in favour of any particular group.

For example, the ACCC found earlier this year that originating carriers were clearly competitively disadvantaged in downstream retail markets by Telstra's inability as an access seeker to respond quickly to their requests for the provision of switchports and other interconnection services to enable the supply of declared services.<sup>21</sup> However, although investigation showed that Telstra's forecasting, ordering and provisioning processes lacked efficiency and transparency, the ACCC also took into account apparent overforecasting by some originating carriers and a sudden rapid increase in demand for interconnection services. The ACCC concluded that it did not have a reason to suspect that Telstra was contravening the competition rule in Part XIB of the *Trade Practices Act*. Instead, it recommended that Telstra establish a transparent,

<sup>&</sup>lt;sup>20</sup> Warren, Tony and Mitchell Landrigan, *The Long-Term Interests of End Users or Competitors*, Paper presented at the Industry Economic Conference, Australian Graduate School of Economics and Management, July 2000.

<sup>&</sup>lt;sup>21</sup> ACCC, ACCC monitoring Telstra's interconnection processes, press release, 7 July 2000.

consultative process to deal with forecasting, ordering and provisioning where there is likely to be constrained capacity and has continued to liaise with the industry over a range of strategies to ensure smoother interconnection processes..

Similarly, in its assessment of Telstra's undertaking concerning PSTN origination and termination charges, the ACCC considered claims by Cable & Wireless Optus (and other access seekers) that the charge should be no more than 1 cent per minute, based on international benchmarking. The ACCC's investigation suggested that the charges should be, on average, 1.8 cents per minute for 1999-00 and 1.5 cents per minute for 2000.01. The ACCC also rejected strenuous arguments from both Cable & Wireless Optus and AAPT against the inclusion of an access deficit contribution (ADC) in the charge. An ADC of 0.9 cents per minute was allowed in the final decision.

#### 2.6 The implications of changing market structures

Markets supplied by unregulated monopolists are unlikely to produce socially desirable outcomes. Prices are likely to be higher, production and consumption lower and incentives to innovate weaker than in competitive markets. Consequently, a strong case exists for regulating monopolies (particularly natural monopolies) in order to force outcomes closer to desirable levels.

Markets supplied by a small number of operators produce somewhat different problems. Particularly in rapidly evolving markets, strategic positioning to take advantage of demand growth can motivate aggressive investment and marketing strategies which produce significant short-term benefits for consumers. The longer term implications of such activity may be more difficult to assess.

Because of the uncertainties of such situations, the case for regulation, and the conditions under which regulation is most likely to promote the long-term interests of end-users, are more difficult to assess. The ACCC notes that a number of telecommunications markets, but most particularly the mobile market, are now served by a number of facilities operators. In reviewing the continuing requirement for regulation of such markets, and attempting to develop appropriate pricing principles, the ACCC is now confronting these issues. Work on the development of guiding principles is continuing.

# 3. ASSESSING THE STATE OF COMPETITION IN TELECOMMUNICATIONS MARKETS

In deciding whether regulation of a particular service is in the long-term interests of end-users, the ACCC is required to have regard to the likely effect of declaration on (among other things) competition in markets for particular services. In most cases, the relevant market is the market for downstream services, rather than the market in which the eligible service is supplied (where those markets are separate). However, the ACCC also considers the market in which the eligible service itself is supplied, where this will assist in examining the impact of declaration on competition in downstream markets.<sup>22</sup> For example, access issues typically arise where the upstream (access) market is subject to inadequate competitive pressures. However, the ACCC would wish to examine this aspect as part of its deliberations.

#### 3.1 Measures of competition

The ACCC has stated that its assessment will generally involve an initial focus on the state of competition in the relevant markets. A market in which effective competition is already apparent is unlikely to benefit substantially in terms of increased competition from declaration (*op cit* p 30). However, the ACCC also considers dynamic aspects, including the likely future evolution of competition.

Competitive markets are not usually identifiable by a single, one-dimensional measure. The nature and extent of competition are the outcome of both structural and behavioural factors. Consequently, the ACCC considers a range of indicators.

Measures of market structure and concentration are the most commonly-cited indicators of the level of competition in a market. Market share, which measures the proportion of total revenue or physical turnover accounted for by an individual firm, is the most well-known, and one of the more accessible, of such measures. The smaller a firm's market share, the less likely it is that it will be able to influence developments in the market unilaterally<sup>23</sup>. The number of operators in the market is a related, but inferior, indicator.<sup>24</sup>

Other indicators used by the ACCC to assess the effectiveness of competition include:

<sup>&</sup>lt;sup>22</sup> ACCC, Declaration of Telecommunications Services: A Guide, July 1999.

<sup>&</sup>lt;sup>23</sup> In the European Community, a firm's market share is used to proxy its market power, and predefined levels of market share trigger particular regulatory obligations. In the United Kingdom, a wider range of variables may be considered, but determinations that a firm has market influence and/or significant market power similarly trigger particular regulatory obligations (Oftel, *Guidelines on Market Influence Determinations*, March 2000).

<sup>&</sup>lt;sup>24</sup> A number of indicators have been devised which combine the two elements of number and size of firms in a market. The most well-known of these are the Herfindahl index and the Gini coefficient.

- Barriers to entry, including the risk of sunk costs, economies of scale and scope, legal or regulatory barriers, product differentiation and brand loyalty, and the threat of retaliatory action by incumbents,
- Links between the supply of the service in question and the supply of downstream services, including the extent of vertical integration and the importance of the eligible service to the provision of downstream services,
- Regulation which may constrain the exercise of market power in downstream markets or influence barriers to entry, and
- Dynamic factors, including growth, innovation and product differentiation.<sup>25</sup>

#### **3.2** Defining the relevant markets

In identifying relevant markets for the purpose of regulation, the ACCC is not constrained by Part XIC to take a definitive stance on market definition. (This interpretation was upheld in the recent decision of the Federal Court in the Foxtel case.<sup>26</sup>) Instead, it considers the uses of the service, the area within which it is, or is likely to be, supplied, and services which are close substitutes. The relevant market is generally defined as the downstream market, and includes the downstream service and all those sources and potential sources of close substitutes which effectively constrain the price and output decisions of the supplier(s) of the eligible service.<sup>27</sup> A clear differentiation is made between the wholesale and retail markets.

Geographic and other dimensions of such markets are relevant considerations in telecommunications. The ACCC did not declare the Sydney-Melbourne intercapital transmission route on the basis of its existing and/or prospective competitiveness, while others were declared.<sup>28</sup> It is currently considering the case for the further exemption of additional intercapital transmission routes as well as the exemption of certain CBD areas from the standard access obligations for local telecommunications services.<sup>29</sup>

#### **3.3** Assessing the effectiveness of competition

The use of such a diverse range of competition measures and market definitions means that the effectiveness of competition in a particular market can be examined in considerable depth and from a number of viewpoints. However, the assessment is not an easy one.

<sup>&</sup>lt;sup>25</sup> ACCC, *op cit*, p 31.

<sup>&</sup>lt;sup>26</sup> Telstra Corporation Ltd v Seven Cable Television Pty Ltd [2000] FCA 1160 (18 August 2000) para 136. Foxtel has sought special leave to apply to the High Court.

<sup>&</sup>lt;sup>27</sup> Examples are contained in the ACCC's *Declaration of Services: A Guide*, pp 28-9.

<sup>&</sup>lt;sup>28</sup> ACCC, *Competition in Data Markets*, November 1998.

<sup>&</sup>lt;sup>29</sup> See ACCC, Variation to the Transmission Capacity Declaration: Discussion Paper, June 2000 and Future Scope of the Local Carriage Service Declaration: Discussion Paper, August 2000.

In the first place, systematic data are unlikely to be readily available on any or all of the indicators. The ACCC sought the assistance of the Communications Research Unit (CRU) to compile up-to-date statistics on carrier shares in the wholesale and retail markets for particular services. In the absence of any official collection of such data, the CRU drew on the published data of the carriers themselves and on estimates compiled by industry analysts. No data were available on wholesale market shares. The results are summarised in Attachment 1. There is no independent means of testing the consistency of the definitions used by each source or the validity of the estimation methods applied. The estimates must be considered approximate at best.

Indicators such as barriers to entry and the manner in which negotiations are conducted are even more difficult to quantify.

Second, the interpretation of the data may be complex. Market shares are the culmination of a number of factors in a market, and a firm may achieve a high market share even in a market which, on all other indicators, is likely to be considered competitive. The reverse is also clearly possible. Changes in a firm's market share may also occur for reasons outside its direct control, as a result of strategies adopted by other firms.

As the ACCC noted in its original submission, market share is not the only, or even the major, source of market power in telecommunications markets. In particular, the existence of a number of operators in a downstream *retail* market does not indicate that effective competition exists in the *wholesale* market. The extent to which other operators rely on a particular operator for the provision of critical input services, including call termination, is a better, if less readily measurable, indicator of that operator's ability to exert market power. Behavioural indicators, including the conditions under which contracts are negotiated and the interactions, if any, among the various operators, are likely to be important complementary indicators.

Finally, in a rapidly evolving market, the significance of different indicators may change rapidly. For example, regulatory arrangements are no longer an absolute barrier to entry to the Australian telecommunications market, and the operation of the access regime means that a large infrastructure investment is no longer an essential pre-requisite for entry. In some markets, an entrant's ability to access content and customers and so build economies of scale or scope is emerging as a more likely entry barrier.

#### 3.4 The ACCC's approach

#### The unconditioned local loop service (ULLS)

In examining the likely effect of declaration of a local call service and a local interconnection service, the ACCC examined competitive conditions in the customer access market, the local telephony market, the long distance telephony market and the high bandwidth carriage services market.<sup>30</sup> It found that economies of scale and density, together with the sunk nature of the customer access infrastructure, constituted significant barriers to entry in the customer access market. Although there

<sup>&</sup>lt;sup>30</sup> ACCC, Local Telecommunications Services, July 1999.

were plans for limited cable rollouts in a number of central business districts and even regional areas, the vast majority of customer connections were serviced by Telstra, whose vertically integrated structure consequently gave rise to competitive concerns. The ACCC also found that Telstra was unlikely to supply an unconditioned local loop service in a manner which would meet the demand without regulatory intervention. The ACCC concluded that conditions in the customer access market were not sufficient for effective competition and that this was unlikely to change in the foreseeable future.

The ACCC also found that the conditions for effective competition did not exist in the downstream market for local telephony services (fixed local calls and line rental) and that, although competition had developed significantly in the market for long distance services, Telstra remained the main supplier of long distance telephone services and controlled the supply of PSTN origination and termination services which represent a significant proportion of competitors' costs. It concluded that, while growth in the market for high-speed bandwidth was widely expected, Telstra was likely to be in a position to restrict access to the majority of inputs needed to supply those services to end-users and so to be able to limit the development of competition in the market.

The ACCC concluded that declaration of an unconditioned local loop service was likely to promote competition in the market for high-bandwidth carriage services and the market for local telephony services to a significant extent, with consequent benefits to end-users.

#### Domestic intercarrier mobile roaming

The ACCC reached a different conclusion in its inquiry into domestic intercarrier mobile roaming in the 800 MHz and 1800 MHz bands.<sup>31</sup>

The ACCC considered evidence which showed the mobiles market to be reasonably competitive, on the basis of the number of carriers and service providers in operation, price competition, service and product differentiation, the rate of market growth and declining barriers to entry. It found that there was scope for potential new entry which was likely to increase competition in the mobiles market. It concluded that there were commercial incentives for the incumbents to offer roaming to new entrants, and that any collusive behaviour or anti-competitive action to refuse to provide roaming or to deter or prevent new entry would not be sustainable. Consequently, it decided that it was not in the long-term interests of end-users to declare roaming in those bands at that stage.

#### **3.5** ACCC decisions concerning the competitiveness of particular markets

Telstra and Cable & Wireless Optus made claims in their submissions concerning the competitiveness of certain markets in which service declarations apply. Telstra claimed that the ACCC has:

... declar[ed] services or threaten[ed] to declare services that are competitively supplied... (Telstra submission, p 40).

<sup>&</sup>lt;sup>31</sup> ACCC, Inquiry into Domestic Intercarrier Roaming Declaration, March 1998.

Cable & Wireless Optus suggested that regulation should not be extended into markets with competing networks, because:

... as long as end-users have a choice of carriers, no bottleneck pricing power can exist. (CWO submission, p 104, quoting Dr Jerry Hausman).

The ACCC regards these claims as flawed in a number of respects:

- They appear to infer from the existence of competing infrastructure that market power cannot exist in the provision of eligible services. (The case of mobile call termination referred to in Part 1.3 above is an example of the existence of market power in the context of multiple infrastructure operators.)
- They appear to infer from the existence of a number of competing providers in downstream markets that any market power in a significant related wholesale market is irrelevant. (Both the effectiveness of competition in the downstream market and the consumer outcomes are, however, dependent on the behaviour of the upstream supplier in these circumstances.)
- They appear to relate to the markets for broad categories of services and to ignore the often significant differences which exist in competitive conditions in particular geographic, customer or service sub-markets.

### 4. TERMS AND CONDITIONS OF ACCESS

While few of the submissions to the Productivity Commission advocated repeal of the telecommunications access regime, a number referred to the manner in which the terms and conditions of access are determined and the impact of such decisions on the industry. In view of these submissions, the ACCC wishes to explain in more detail its role in the determination of the terms and conditions of access to declared services and the principles underlying the approach which it has adopted in practice.

#### 4.1 The ACCC's role

Under the legislation, terms and conditions of access to declared services are either:

- Agreed between the access provider and the access seeker following commercial negotiation,
- Applied in accordance with an undertaking submitted by the access provider and approved by the ACCC, or
- Arbitrated by the ACCC following notification of a dispute.

In practice, price conditions of access for PSTN and GSM originating and terminating services, the local carriage service, unconditioned local loop services and digital data access services have not succeeded in being negotiated commercially and have been referred to the ACCC as disputes for arbitration. Similarly, proposed undertakings have not been considered reasonable. As the ACCC's earlier submission indicated, 34 such disputes have been notified since the commencement of the regime. A number have now reached finalisation, and interim decisions have been issued in others. A summary of the current arbitrations before the ACCC together with finalised arbitrations is Attachment 2 to this submission whilst similar to Table 5 in the Commission's original submission, it also includes interim determinations and deals with each arbitration on a 'dispute notification' rather than 'service basis'.<sup>32</sup>

The role of the ACCC in determining the terms and conditions of access to declared services through bilateral processes has therefore become more significant than was perhaps originally intended. In some respects, it has become pivotal to the economics of the access regime and hence of the industry itself.

To some extent, the evolution of this role reflects the tensions in the market itself. It was to be expected that it would take time to develop the principles and processes

<sup>&</sup>lt;sup>32</sup> The Productivity Commission will see references to different numbers of arbitrations having been notified, resolved etc. The Commission has taken the view that where notifications are given in relation to 2 services that effectively relate to one access dispute (eg PSTN Originating and Terminating Access ) this should be counted as only one dispute. Fees associated with arbitrations are levied only once in these circumstances.

which would guide the relationships between market participants in the early years of operation of the access regime. The evaluation of appropriate costing methodologies and the development of an appropriate model clearly required extensive study. Forward-looking cost-based methodologies require complex in-principle decisions and are data-intensive in practice. Even methods such as retail-minus or benchmarking, which are conceptually less demanding, require time and data to implement. While commercial negotiation was the preferred solution, this was obviously difficult in a situation where new entrants were bargaining with an incumbent whose depth of knowledge was clearly superior to their own. The ACCC expects that commercial negotiation will account for an increasing proportion of intercarrier agreements as the market matures and participants accumulate both greater experience and better information on which to base their negotiations.

Non-price terms and conditions of access produced fewer disputes at the outset of the regime, and are to some extent more amenable to industry-wide solutions than pricing disputes. However, the ACCC has had to deal with a number of significant such disputes, including several which have been dealt with as cases of anti-competitive conduct under Part XIB.

#### 4.2 The ACCC's approach

In these circumstances, the ACCC's approach to the determination of terms and conditions of access has involved two stages:

- Determination, in consultation with the industry, of the principles which will guide its approach to individual cases, and
- Arbitration of individual disputes in accordance with those principles.

In practice, pricing issues have dominated the disputes notified to the ACCC to date. However, as noted in the ACCC's original submission, non-price issues appear to be increasing in significance as new services, such as the unconditioned local loop service, are sought by access seekers.

#### Pricing

The principles and the practice of pricing decisions applied by the ACCC are explained in detail in Attachment 3.

In its price arbitration role, the ACCC seeks to establish price terms and conditions of access which reflect the efficient cost of network operation. These are the prices which will generate incentives for consumption and investment consistent with improvements in economic well-being. As such, they satisfy the broad access objectives of the telecommunications provisions in the *Trade Practices Act 1974*.

For the purpose of identifying the efficient costs of operating the PSTN, a detailed model of Telstra's wired telecommunications network was developed for the ACCC ('the n/e/r/a model') and is updated regularly. The model uses a forward-looking cost-based methodology. Details of the operation of the model are contained in Attachment 3.

The forward-looking costing methodology adopted by the ACCC bases costs on Telstra's own network development as a result of the implementation of its Future Mode of Operation (FMO). These costs may differ in some respects from Telstra's actual costs, which may be inflated by monopoly profits or inefficient network and other work practices. Use of actual costs to determine access charges risks enabling an access provider to pass on its own inefficiencies to its competitors. This would provide weak signals for efficient investment in infrastructure, encouraging inefficient duplication of infrastructure by competitors, and would increase the ability of the access provider to shift costs from competitive areas to less competitive ones, thereby undermining efficient competition. This approach is widely used by telecommunications regulators in other countries.

Nevertheless, Telstra has criticised the ACCC's approach to the pricing of declared services on the grounds that it does not actually reflect Telstra's actual costs of network operation:

... the ACCC [has a] systematic tendency to set access charges at levels that are very low by any reasonable standard ... distorting effect[s are] partly inherent in the costing methodology adopted by the ACCC, and most notably its emphasis on optimisation within a Total Service Long Run Incremental Cost (TSLRIC) framework. (Telstra submission, pp 21-22)

Where the cost estimates generated by this model differ from Telstra's actual costs, there may be a number of reasons:

- The network identified as efficient may differ from Telstra's actual network,
- The network operating parameters (including trench sharing, provisioning, etc) identified as efficient may differ from Telstra's actual operating parameters,
- The charges estimated for individual cost items may differ from those applied by Telstra. This is particularly likely to be the case where the charges are imputed rather than cash costs (depreciation, the weighted average cost of capital) and reflect both different estimates of the network's capital value and different estimation methodologies and assumptions. It also occurs where costs common to the production of a range of services are allocated in different ways by the ACCC and Telstra.

The costs estimated by the ACCC's model are not necessarily always lower than those estimated by Telstra itself. The capital value included in the current version of the model, for example, exceeds the reported value of the network in Telstra's own financial accounts. This occurs because the ACCC model re-estimates the value of the network each year on a replacement cost basis. As a result, the base value from which major capital-related costs (including depreciation and the weighted average cost of capital) are estimated is higher than that applied by Telstra in its own financial reports. Nevertheless, the charges proposed by Telstra in its most recent PSTN undertaking were found by the ACCC to be approximately 30 per cent higher than the costs which would be incurred by an efficient operator in a competitive market.<sup>33</sup>

While Telstra claims that the resulting costs, and hence the access charges determined in arbitral processes by the ACCC, are too low, the Cable & Wireless Optus submission reported data on fixed line call termination charges which suggest that:

... there is still some gap between Australia and world's best practice interconnect rates as found by telecommunications consultants Ovum International in their latest international benchmarking of telecommunications interconnection rates at May 2000. (CWO submission, p 80)

The implication drawn by Cable & Wireless Optus is that Australia's rates *should* converge on those observed in other countries.

The ACCC notes that the Australian charge is augmented by an access deficit contribution which is additional to the incremental network costs estimated using its own model. In 1999-00, this deficit accounted for 0.9 cents per minute, or one-half of the total charge recommended by the ACCC. Unless similar adjustments are included in the charges quoted for other countries, the interpretation of the comparisons is unclear.

This aside, however, the ACCC does not support the notion that benchmarking is the best way of identifying efficient prices in Telstra's PSTN network. Network costs (including efficient network costs) are influenced by a range of variables, including geographic characteristics, population density and distribution, regulatory requirements and 'legacy' effects, and cannot be expected to converge to a common value across countries with significant differences in those attributes. At best, benchmarking may indicate the *range* of values observed elsewhere and the minimum achievable level of costs.

Telstra's PSTN costs and related access charges are significant because of the critical nature of the service to the development of competition in the telecommunications market and the volume of intercarrier business now observed. They will also be a critical component of the ACCC's evaluation of Telstra's proposed charges for its unconditioned local loop service (ULLS). The costs of operating other network facilities, and other networks (notably mobile networks), have not, to date, been modelled to the same extent by the ACCC. The ACCC is considering the use of alternative, simpler pricing methodologies where it regards this as appropriate. For example:

- the ACCC has released a draft report in which a benchmarking approach was proposed for non-dominant PSTN networks,
- a 'retail-minus' approach is being considered in the case of wholesale local call services acquired for resale, and

<sup>&</sup>lt;sup>33</sup> ACCC, Report on the Assessment of Telstra's Undertaking for Domestic PSTN Originating and Terminating Access Services, July 2000.

• any regulation of mobile origination and termination charges will not necessarily be TSLRIC-based.

#### 4.3 Delays in the regulatory process

The volume and complexity of disputes concerning the terms and conditions of access to declared services have resulted in delays between notification and final determination by the ACCC. Many of the submissions to the Productivity Commission referred to these delays and their impact on the market.

The ACCC acknowledges that there have been delays associated with regulatory processes in the early years of the regime. It recognises the desirability of resolving disputes quickly, in order to increase the certainty with which industry participants can plan. It was for this reason that the ACCC proposed in its original submission that processes could be made faster and certainty improved if the access regime included provision for the ACCC (in certain limited circumstances) to require and/or amend undertakings from access providers concerning the price and/or non-price terms and conditions of access to declared services.<sup>34</sup>

#### 4.4 Approach to dispute resolution

There have been a range of factors impacting upon the length of arbitrations. Access disputes have been lodged in relation to a broad range of services. There are arbitrations in relation to fixed network interconnection (PSTN Originating and Terminating Access), mobile interconnection (GSM Originating and Terminating Access) data access (Digital Data Access Service), wholesale local calls (Local Carriage Service) access to copper infrastructure (Unconditioned Local Loop Service) and pay television (Broadcasting Access Service).

There have been a number of access seekers seeking arbitral determinations on each of these declared services. The issues for resolution have been complex and multi-faceted but essentially the same across all the arbitrations for each particular service. They have also involved fundamental decisions of general importance to the industry, including such basic issues as appropriate pricing principles as well as the desirable level of regulation. These issues have had to be determined using an unwieldy and frustrating arbitral mechanism that has encouraged inefficient, resource intensive argumentation over procedural matters such as the use and confidentiality of information. A consequence of the bi-lateral nature of arbitrations and requirements of procedural fairness is the repetition of submissions that may have already been rejected in an earlier matter relating to the same service. There has been little preparedness on the part of either access providers or access a range of disputes relating to the same service.

There is an underlying tension for a competition regulator in deciding matters of industry wide application in private arbitral settings. The TPA requires access

<sup>&</sup>lt;sup>34</sup> ACCC, Submission to Productivity Commission Review of Telecommunications-Specific Competition Regulation, August 2000, Executive Summary, para 29.

arrangements that will have industry wide application (eg access undertakings, access codes) to be subject to public scrutiny. The ACCC has sought to deal with this tension.

As outlined in its initial submission the ACCC has also sought to encourage commercial resolution of access disputes during arbitration. For example, the ACCC will seek to have the parties explore the possibility of resolution after the making of an interim determination or finalisation of the ACCC's view in relation to issues such as pricing principles or capacity.

In the ACCC's view some parties' submissions highlight an inability to recognise that the ACCC's role as a statutory arbitrator with responsibilities to determine disputes on a range of criteria which include public benefit grounds is fundamentally different from the role of a commercial arbitrator, whose primary role is to resolve dispute to the mutual commercial satisfaction of the parties.

#### 4.5 Approach to interim determinations

The ACCC has also noted that some submissions to the Productivity Commission express concerns at delays in the making of interim determinations until the finalisation of assessment of access undertakings (or presumably other similar public processes). Parliament has clearly given the ACCC a broad discretion in determining whether or not to make an interim determination. In exercising this power the Commission has indicated that it will be assisted in making its determination by deciding:

- whether it has sufficient information to make the interim determination; and
- whether it is appropriate in all the circumstances to make an interim determination.

The Commission has to date made interim determinations in arbitrations relating to price in circumstances where it has established a conceptual framework from which it can ultimately derive a set of prices, but further information is required before it can finalise those prices. The conceptual framework may itself have been determined in a draft pricing principles decision. It is often assisted in this process by work that is being undertaken concurrently through a public process but there is no formal relationship between the arbitration and the public process itself. Of course, in some access disputes, the Commission may take the view that is not appropriate for a variety of reasons to make an interim determination.

The Commission is of the view that it is appropriate to issue an interim determination in situations in which access seekers are in dispute about terms and conditions of access to a declared service, but where finalising of the dispute is likely to take a considerable time. Where no access is being provided at all, because of differences about the terms and conditions of access, the interim determination can ensure that access is provided on specified terms. Where access is being provided but on terms that have been set by the access provider, an interim determination can be used to set terms in situations where the Commission considers it has sufficient information to set access prices which are likely to be closer to those that would accord with the legislative objectives than what is being proposed by the access provider. The interim determination can therefore assist the access seeker to obtain access and to do so on terms which are likely to better promote efficient competition than those proposed by the access provider.

# 5. **REGULATION AND INVESTMENT**

Regulation which influences market structures and behaviour undoubtedly alters the incentives for investment. In the Australian telecommunications market, technology and services are evolving rapidly, and both the terms and conditions of access to declared services and the price and quality of certain retail services are regulated directly or indirectly. In these circumstances, the impact of regulation on the level and mix of investment is potentially very significant.

Telstra's submission to the Productivity Commission contained a number of claims concerning the relationship between the principles and practice of the ACCC's approach to access pricing and investment in Australian telecommunications infrastructure. These were summarised in the Executive Summary to the submission as follows:

The provision of regulated access on uneconomic terms has dulled the incentives for facilities-based competition, virtually eliminating investment by Telstra's competitors outside of the CBDs. At the same time, it makes Telstra's continued investment in the core network ever more marginal – thus threatening the long-term sustainability of the Australian telecommunications industry. (Telstra submission, p 3)

The ACCC challenges this assessment on two counts. First, it believes that the empirical evidence does not support a conclusion that competing investment has been 'virtually eliminated' outside the CBDs. Second, it considers that Telstra's submission mis-states the issue, particularly in relation to the need for investment to be *efficient* in order to promote the long-term interests of end-users. In this part of the submission, the ACCC outlines its own assessment of the relationship between regulation and investment in the telecommunications industry.

#### 5.1 Investing in infrastructure

Entrants to the telecommunications market have the option of building an entire network and interconnecting to other networks, or building a partial network and buying access to the network facilities of another carrier. All carriers build infrastructure. The choice is *which elements* and *where* to construct.

The choice will depend, among other things, on the relative costs of constructing a particular network element and interconnecting to an element owned by a competing network owner. If access can be obtained from an existing network at a lower cost than that which would result from the construction of the new network element, then, other things being equal, 'buying' rather than 'building' will be the preferred choice. If access charges are higher than the costs of alternative infrastructure development, then 'building' rather than 'buying' will be favoured. As technological developments typically reduce the costs of partial and even full duplication over time, the 'balance' can be expected to change over time.

Further, even in 'buying' access, service providers may themselves be conditioning the network to provide higher bandwidth or new services. An example is the use of xDSL technologies on Telstra's PSTN network A list of known xDSL rollouts is in Attachment 4. Access charges which do not coincide with the efficient costs of delivering network services distort such infrastructure investment decisions. Access charges which are too high relative to efficient costs will encourage facilities investment which may itself be inefficient. Access charges which are too low relative to efficient costs will discourage facilities investment where it may in fact be warranted. (These issues are discussed in more detail in Attachment 3.)

The existence of legislated retail price caps and the geographic averaging of retail prices may also affect investment decisions for particular services. For example, where a service has a retail price cap that is below cost, or below the access charge for providing that service, then investment in the infrastructure used to supply that service will be discouraged. In such circumstances access providers may be effectively facing regulated 'cross-subsidies'. The ACCC notes, however, that averaging of retail prices may create situations where low-cost/high-traffic areas, such as metropolitan CBDs, may still provide sufficient returns for new entrants and investment in those areas.

Price is not the only consideration in the decision, however. Difficulties and delays in obtaining access to network facilities, lack of reliability in network or ancillary services, or concerns about the future level of access charges, may increase the incentive of entrants to develop their own facilities, as a number of witnesses at the Commission's public hearings attested. Equally, the experience of operating in a market without a high initial investment outlay (e.g. by offering services on a resale basis) may reduce the risk of facilities-based entry and so act as a 'step' to facilities-based competition.<sup>35</sup> New infrastructure may, in addition, offer different functional capabilities to infrastructure already in use, so that the alternatives are not directly comparable. Such non-price considerations may lead to a higher level of investment by competitors than that otherwise implied by efficient prices.

#### 5.2 Efficient investment

In general terms, an investor will have an incentive to invest in infrastructure when the expected returns from that investment exceed its expected cost, taking account of relevant risks and other considerations. The greater the margin of expected returns over expected costs, the more attractive the investment will appear.

The investment will be efficient in a broader economic welfare sense if it generates *social* returns in excess of its *social* cost. Commercial viability does not necessarily imply efficiency in this sense. Where the costs and/or benefits to the community of a particular investment are not fully reflected in its commercial costs and returns, the two criteria will not necessarily coincide. This typically occurs in telecommunications when individuals or groups other than the subscriber or provider involved incur costs or gain benefits from the operation of the telecommunications network, or when costs and prices do not reflect their efficient levels.

<sup>&</sup>lt;sup>35</sup> This has been recognised in the ACCC's report on pricing principles for local carriage services (www.accc.gov.au).

Investors will have an incentive to make efficient investments if the expected returns and costs *to them* of the investment reflect their value to the community as a whole. Except where subsidies, taxes, penalties or other direct financial incentives are involved, these valuations must be inferred from the price signals confronting the investor in the market. Efficient prices are those which accurately reflect community valuations.

Of course, not all new investment projects are either commercially viable or economically efficient. For example, where technologies have natural monopoly characteristics, investment in facilities duplication is unlikely to be efficient. While Telstra has rightly pointed out that natural monopolies are subject to erosion from technological change, new service development and demand growth, it is also true that telecommunications facilities characterised by high per-line costs and/or limited revenue streams are likely to remain uneconomic to duplicate for many years.

Given these conditions, it is hardly surprising that facilities-based competition developed first and most strongly in those parts of Australia, and in those services, where revenues were high relative to the costs of servicing demand. Intercapital transmission on the Sydney-Melbourne route was one of the first services to exhibit strong facilities-based competition, based on the large volumes of telecommunications traffic generated on that route. Mobile networks developed in response to the strong demand for mobile services and the different scale economies associated with the rollout of wireless facilities compared with fixed services. CBD areas have the highest concentration of high-yield telecommunications subscribers and the strongest demand for telecommunications and related services. They were among the first areas to experience evidence of some CAN duplication in the fixed network. Other areas of high population and business density and strong telecommunications demand are also becoming increasingly attractive to facilities investors, as infrastructure rollouts in a number of regional centres indicate. On the other hand, more remote areas of Australia have so far experienced little facilities duplication, although satellite services are expanding in some areas.

As noted in the ACCC's earlier submission, this pattern of investment is not unique to Australia. It accords with the type of investment behaviour which might be expected to emerge in most commercial environments.

#### 5.3 Investment and competition

The type of investment undertaken influences the type of competition which can develop. Network duplication provides the basis for facilities-based competition. Interconnection implies dependence by a competing carrier on at least some elements of an existing network and so imposes a potential limit on the extent of cost competition and/or service innovation which can be achieved through competition.

However, it does not follow that facilities-based competition is necessarily superior in all instances to competition based on interconnection (or even resale). While efficient network duplication may result in lower prices and improved services for consumers, inefficient network duplication will waste resources, raise production costs and reduce economic welfare. Such an outcome cannot be in the best interests of end-users.

Interconnection enables network elements with natural monopoly characteristics to be used efficiently, and is, in any event, essential to the assurance of any-to-any connectivity for network users.

This is, after all, the rationale for access regimes in the first place.

#### 5.4 Incentives for efficient investment

It is because the ACCC regards the promotion of efficient investment as one of the most important regulatory imperatives that it emphasises the development of incentives which will deliver this outcome. The extent to which regulation will result in the efficient use of, and efficient investment in, telecommunications infrastructure is one of the three criteria by which the ACCC is required to assess the likely impact of service declaration on the long-term interests of end-users. Accordingly, where the ACCC is required to arbitrate terms and conditions of access to declared services, it gives priority to the determination of prices which accurately reflect the efficient cost of operating the infrastructure and so deliver incentives for efficient investment.

(The ACCC's approach to the determination of terms and conditions of access to declared services was outlined in the previous section of this submission. As noted there, the principles and practice of the ACCC's approach to PSTN access pricing is explored in detail in Attachment 3.)

#### 5.5 The impact of regulation on investment

Telstra characterises the pattern of investment in the fixed network as 'skewed' and 'a result of regulatory distortions' (Telstra submission, p 2). Telstra points not only to the perceived underestimation of its costs through the access regime, but also to the distorting effects of the retail price controls, which dissociate prices from costs via price caps and geographic averaging. However, the patterns and sequences are clearly consistent with those which might be expected if the investment were also efficient. Even it its accuracy is assume, there is no reason to assume, as Telstra implies, that inefficiency is necessarily implied by the contention that:

'Telstra's competitors have only really offered access and local call services in the CBDs, while relying on regulated access to Telstra's network to provide services elsewhere.' (Telstra submission, p 18)

Indeed, this is exactly the outcome which might be expected under standard economic efficiency criteria. Build costs are highest on a per line basis in areas with the lowest population density and least where density is high. Access regimes exist precisely *because* it may be efficient to duplicate infrastructure in some areas but not in others. If facilities-based competition were the only means available to a potential entrant to compete with an incumbent operator, the efficiency with which infrastructure is used and new investments made would certainly suffer.

Community concern about the benefits of infrastructure duplication was clearly apparent following the parallel rollouts of broadband cable in some areas of Sydney, Melbourne and Brisbane during the mid-1990s. It has also been evident in the rollout of mobile infrastructure over the last decade. The ACCC notes that infrastructure investment is strong in the Australian telecommunications industry. Three new mobile networks are currently under construction, with One.Tel launching its GSM network in Sydney in May 2000 and complete rollout in the other capital cities expected over the next twelve months. Hutchison launched its CDMA network in June 2000 in Melbourne and Sydney, while the ACCC understands that AAPT plans to launch its CDMA network early in 2001. In addition, a number of high-speed wireless data networks are planned and satellite services are continuing to expand, all boosted by recent spectrum allocations. Fibre and other transmission networks within and between cities are expanding, and wireless, satellite and fibre are providing competition for the local loop in a number of regional centres as well as CBDs.

Telstra itself is investing strongly in the industry. Telstra's senior executives recently announced that Telstra was increasing its capital expenditure to accommodate a further investment of \$1.3 billion on the customer access network, in order to further boost its service performance as well as to provide a more robust base over which to deploy broadband services.<sup>36</sup>

The ACCC has compiled a brief survey of the current and planned infrastructure developments of Australian telecommunications carriers, based on publicly-available data. The survey is included as Attachment 4 to this submission. The ACCC also intends to conduct a more comprehensive facilities audit, commencing later this year. This will include the collection of information concerning the type and location of existing infrastructure used to supply local calls, mobile calls, data services and transmission. The ACCC will also seek information about future plans for infrastructure investment.

The possibility was also considered earlier this year of commissioning a more detailed study of investment patterns in telecommunications and the relationship between regulation and investment. However, preliminary scoping indicated that lack of data would preclude the development of a meaningful study. The ACCC notes that the limited reporting requirements under the current regulatory regime, while reducing the regulatory impost on carriers and being consistent with a regime that promotes commercially negotiated outcomes, may also make it difficult to monitor regulatory impacts and industry outcomes in a comprehensive way.

<sup>&</sup>lt;sup>36</sup> Bob Mansfield and Ziggy Switkowski, 1999-2000 Full Year Results Presentation to Media, <u>http://www.telstra.com.au/newsroom/speeches.cfm</u>, 30 August 2000

## 6. **REVIEWING THE NEED FOR REGULATION**

Regulation is generally imposed in order to deal with circumstances which prevent the achievement of objectives considered desirable by the Government. Continuation of regulation when those circumstances are no longer apparent may well hinder, rather than advance, those objectives. Provisions for review are therefore built into most regulatory arrangements.

#### 6.1 In-built provisions for the review of telecommunications regulation

As a number of submissions noted, Part XIC does not provide for explicit sunsetting of declarations. The legislation does, however, confer on the ACCC the power to vary or revoke declarations, as well as to grant exemptions from regulatory obligations.

Revocation or variation (other than variation of a minor nature) cannot occur unless the ACCC has held a public inquiry. The ACCC can revoke or vary a declaration where it is no longer satisfied that the existing declaration is in the long-term interests of end-users.

Requests for revocation or variation can be sought by any person at any time. The ACCC may also review the continuing need for regulation on its own initiative. If the ACCC considers that a particular declaration may no longer be serving its purpose, it will initiate a public inquiry to consider whether the revocation or variation of the declared service is warranted. The ACCC may also indicate a proposed date at which reconsideration would be appropriate at the time of making a decision to declare an eligible service, and has frequently done so.

The ACCC notes that the current telecommunications regulation makes no provision for the Telecommunications Access Forum to recommend reversal of service declarations. (Under section 4 of the *Telecommunications Act* it can recommend declaration.) The ACCC is currently considering ways of working flexibly within the legislation to increase the involvement of industry in 'undeclaration' considerations.

Exemptions from the standard access obligations may be sought from, or offered by, the ACCC. The ACCC grants such exemptions if it is satisfied that this will promote the long-term interests of end-users.

The ACCC would welcome the introduction of legislative 'sunset' provisions to require the periodic review by it of any determinations concerning the regulation of services.

#### 6.2 The ACCC's approach

The ACCC is currently reviewing the need for continuing regulation in relation to two declared services: transmission capacity and the local carriage service.<sup>37</sup>

#### Transmission capacity

The ACCC announced in June 2000 that it would hold a public inquiry under subsection 152AO(2) of the *Trade Practices Act 1974* to determine whether it should vary its service declaration for transmission capacity. In particular, the focus of the inquiry is on whether to vary those elements of the declaration relating to intercapital transmission. The proposed variation does not relate to other elements of the declared service.

Intercapital transmission capacity is used for the transmission of voice, data or other communications between a point of interconnection located in different capital cities. The ACCC deemed various types of transmission capacity as declared services when it became the telecommunications competition regulator on 30 June 1997.<sup>38</sup> The ACCC varied the declaration of transmission capacity on 4 November 1998 following a public inquiry process.<sup>39</sup> The variations involved, *inter alia*, removing from the declaration the Melbourne-Canberra-Sydney route. All other intercapital routes, where new entry was considered to be less likely to occur in the short to medium term, remained declared.

At the time the ACCC varied the declaration of transmission capacity, it also indicated that a monitoring program would be established to assess aspects of market structure and market conduct on both the declared and undeclared routes, with a view to re-assessing the need for, and scope of, this service.

Importantly, the ACCC considered that the focus of further competitive activity would be concentrated in specific geographic areas, particularly on the eastern seaboard, so that a route by route approach was seen as appropriate.

The decision to hold the current public inquiry was based, in part, on the results of this monitoring program, which suggested that competition on the Sydney-Brisbane route was increasing. The information collected from access providers indicated that the structure and conduct of the intercapital market is continuing to change.

The ACCC is currently examining the submissions it has received. It will then make preliminary decisions about which, if any, intercapital routes to exclude from the declaration. A draft variation to the service description will be included in the draft inquiry report, on which further submissions will be sought.

<sup>&</sup>lt;sup>37</sup> Some further changes of a largely house-keeping nature to remove services which are no longer being supplied are also underway.

<sup>&</sup>lt;sup>38</sup> ACCC, Deeming of Telecommunications Services, June 1997.

<sup>&</sup>lt;sup>39</sup> See Chapter 4 of the ACCC's *Competition in Data Markets – Inquiry Report*, November 1998.
# Local carriage service

The ACCC indicated when declaring the local carriage service that it may be appropriate to vary or revoke the scope of the declaration once the unconditioned local loop service is available to access seekers.

In June 2000, Telstra lodged an application with the ACCC for an exemption, under Part XIC of the *Trade Practices Act 1974* (s. 152AT), from its obligations to supply the local carriage service to its competitors in the CBD areas of Melbourne, Sydney, Brisbane, Adelaide and Perth. The application noted that this is to be one of several applications for exemption orders designed to phase out Telstra's standard access obligations with respect to the local carriage service over a 12 month period. As mentioned above, Telstra envisaged further applications for exemptions, initially in respect of the CBDs of Canberra, Hobart and Darwin and the metropolitan areas of each capital city in Australia. A final application would seek an exemption in respect of all other areas within Australia.

The ACCC has issued a discussion paper seeking comments on Telstra's exemption application, in which it also sought comment from interested parties on views about making a class exemption and the possibility of revocation or variation of the declaration.

The Commission is considering submissions to the discussion paper at present and has started making further market inquiries on particular issues relevant to whether it should grant the exemption.

# Issues

Both the inquiries just described focus on the geographic scope of the services concerned. The review process may well result in progressive lifting of regulation as market conditions change in successive geographic areas. In the ACCC's view, this illustrates the flexibility of the current review arrangements to respond to changes in market conditions.

Nevertheless, both Telstra and Cable & Wireless Optus have indicated concerns about the number and type of services currently coming within the telecommunications access regime. Telstra claimed in its submission that:

... the over-reach of the regulatory regime – with ever more services being brought within the regulatory net – and the 1999 amendments have dramatically overloaded the regulatory machinery... the ACCC, unlike its counterparts elsewhere, has sought to regulate not only the more mature parts of the industry but also those where technological developments are most pronounced ... a move away from these arrangements [is] urgent and important. (Telstra submission, p 3)

Optus noted that the regulation of transmission capacity is currently under review by the ACCC, but indicated concern with the status of some mobile telephone services:

... the ACCC is yet to announce an inquiry into whether the mobile declaration should be revoked. (CWO submission p 100)

It should be noted that the industry itself has the opportunity to seek review and place evidence on whether services should be regulated before the ACCC at any time. In relation to the mobile declarations, Vodafone and Cable & Wireless Optus in particular have, through the auspices of the Telecommunications Access Forum (TAF), made submissions for the revocation of existing GSM declarations, while some other TAF members have opposed these proposals.

The ACCC is presently reviewing the future regulation of mobile services, initially as part of its consideration of GSM pricing principles. This is an important issue, particularly given the increasingly competitive nature of the retail market for mobile services and the likelihood that mobile carriers have some market power over mobile termination. These factors will play an important part in determining the type and extent of regulation for mobile services. Depending on the outcome of the ACCC's considerations in relation to the GSM pricing principles, the ACCC could decide to consider holding a revocation inquiry.

The ACCC notes that the importance of regulating mobile services is recognised internationally where the matter is being considered by other regulators. For example, Oftel is currently conducting a review of the mobile market in the UK, and the ACCC understands that access charges for mobile services are under review in France, Ireland, Sweden and Norway.

Finally, the ACCC notes that the existence of dynamic and developing elements in the telecommunications market does not necessarily eliminate competition issues. As noted earlier (Part 1.3), technological and market convergence may create new sources of market power, even as it reduces other, more traditional, ones. It should not be assumed that dynamic industries are better unregulated, as the Microsoft case demonstrated. The priority should be to identify areas where market power threatens the efficient development of an industry and to target regulation tightly to the elimination of that power or its exploitation.

# ANTI-COMPETITIVE CONDUCT

This section of the submission responds to comments on Part XIB of the *Trade Practices Act* raised in other submissions to the Productivity Commission.

# 7.1 Investigations under Part XIB to date

Chapter 2 of the ACCC's earlier submission sets out the two matters where the ACCC has issued competition notices (internet peering and commercial churn) and other major investigations by the ACCC under Part XIB.

The fact that there has been no court finding that Telstra has breached the competition rule does not mean that Part XIB has proved unnecessary or ineffective. The ACCC's objective is to enhance the welfare of Australians through the promotion of competition by compliance with the *Trade Practices Act*.<sup>40</sup> As outlined in the ACCC's August 2000 submission (Part 5.2), enforcement proceedings were not continued in the internet peering and commercial churn matters as satisfactory outcomes had been obtained. In particular, the commercial churn proceedings were discontinued as Telstra had agreed to further develop an on-line churn system, establish a \$4.5 million fund to assist users and reduce churn fees.

Telstra has argued that Part XIB is unnecessary as both the internet peering and commercial churn matters could have been addressed under Parts IV or XIC of the *Trade Practices Act*.<sup>41</sup> The use of Part IV is addressed in Part 5.5 of the ACCC's August 2000 submission. In the ACCC's view, on the evidence available it would not have been possible to take action under Part IV in relation to the internet peering and commercial churn matters.

The ACCC does not regard Part XIB and Part XIC as mutually exclusive. Part XIB is based on a judicial enforcement model (where the legislature prescribes a general rule of conduct that is enforced by the courts). Part XIC is based on an administrative model (where a regulatory agency establishes rights of access and regulates the terms and conditions of access). The current regime provides the ACCC with the flexibility to use the most appropriate 'regulatory tool' to achieve the objectives of the legislation, in the same way that an issue can be dealt with under both Part IIIA and Part IV of the *Trade Practices Act*.<sup>42</sup>

Part 5.7 of the ACCC's August 2000 submission outlines the circumstances where the ACCC considers that Part XIB or XIC will be most effective. In particular, Part XIB

<sup>&</sup>lt;sup>40</sup> ACCC, *Telecommunications – Competition Notice Guideline* (August 1999) page 5.

<sup>&</sup>lt;sup>41</sup> Telstra submission to Productivity Commission, pp 3, 28-30.

<sup>&</sup>lt;sup>42</sup> Similarly, the ACCC uses a range of tools in addition to litigation to resolve matters under Parts IV and V of the Trade Practices Act. Eg administrative settlement, adjudication, promotion of self-regulation, compliance programs, information and liaison.

has a significant role where anti-competitive conduct occurs and the service has not been declared or the matter cannot be addressed under Part XIC. For example, in the commercial churn matter, there was no relevant declared service. In order to use Part XIC to resolve the matter, the ACCC would probably have been required to conduct a public inquiry process to declare a 'customer transfer service' (which is difficult to define) or a 'local carriage service' (which was subsequently declared by the ACCC in August 1999).<sup>43</sup> Following declaration, it would have been necessary for the ACCC to conduct private arbitrations and make determinations on the terms and conditions for the supply of declared service (including the transfer of customers). In the case of commercial churn, Part XIB provided a faster and less interventionist solution.

# 7.2 Accountability and regulatory error

Telstra argued that there is a significant risk that Part XIB will deter legitimate procompetitive conduct, investment and innovation due to the lack of appropriate procedural and merits review of the use of Part XIB. In particular, Telstra stated that the 'blunt pressure' from the ACCC caused Telstra to enter into internet peering agreements which Telstra considers are economically inefficient. Similarly, in the commercial churn matter, Telstra 'felt obliged to reduce its prices further below its costs as a result of the regulatory pressure brought to bear by the ACCC'.<sup>44</sup>

Part 2.2.1 of the ACCC's August 2000 submission sets out the reasons why the ACCC issued competition notices in the internet peering and commercial churn matters. The ACCC does not consider that the notices resulted in economically inefficient outcomes.

However, if a recipient of a competition notice considers that it has not breached the competition rule, there is no requirement for the recipient to comply with the notice. A competition notice acts as a gate-keeper to the commencement of enforcement proceedings in relation to conduct that occurs after the notice comes into force. No penalty is imposed unless and until a court finds that the recipient has breached the competition rule. In both the internet peering and commercial churn matters, it was open to Telstra to decide not to modify its conduct and to defend any court proceedings instituted by the ACCC or other parties. Indeed this was the approach taken by Telstra in the commercial churn matter.

Further, as noted in Parts 1.4.1 and 5.6 of the ACCC's August 2000 submission, a carrier or carriage service provider may apply to the ACCC for an exemption from the operation of the competition rule. To date, the ACCC has not received any exemption application.

<sup>&</sup>lt;sup>43</sup> The Local Carriage Service is a service for the carriage of telephone calls from an end-user to another end-user in the same standard zone: *Commonwealth of Australia Gazette* No. GN 32 (11 August 1999) 2420. See also: ACCC Press Release, ACCC Opens Up Telstra's Local Network: Lower Prices and New High-Speed Services (22 July 1999).

<sup>&</sup>lt;sup>44</sup> Telstra submission to Productivity Commission, p 29.

# 7.3 Incentives

Part XIB is based on the judicial enforcement model in Part IV. However, unlike Part IV, Part XIB prescribes an effects test in relation to a use of market power, requires a competition notice to be issued before proceedings can be commenced, reverses the evidentiary burden and provides for escalating penalties. Telstra argued that the lower legislative and process hurdles for regulatory intervention under Part XIB increase the incentive for litigation and thus impose potentially significant costs on the Australian community.<sup>45</sup>

The ACCC's *Telecommunications - Competition Notice Guidelines* (revised August 1999) sets out the criteria used by the ACCC to determine whether to issue a competition notice. The criteria are substantially similar to the criteria published by the ACCC for determining whether to pursue complaints under Parts IV and V of the *Trade Practices Act.*<sup>46</sup> The ACCC's *Information Paper on Anti-Competitive Conduct in Telecommunications Markets* (revised August 1999) sets out in detail the ACCC's approach when considering whether a carrier or carriage service provider has breached the competition rule.

Part XIB is no different from Part IV in that complainants are not required to bear the ACCC's investigation and enforcement costs or the cost to the defendant in dealing with the ACCC during the investigation or defending the proceedings. Nevertheless, it is incorrect to state that Part IV or Part XIB are a 'one way bet' for complainants.<sup>47</sup> For example, complainants are usually required to provide a substantial amount of - often confidential - information to the ACCC. In the commercial churn matter, Telstra made a request under the *Freedom of Information Act 1982* for access to certain documents including all documents provided by other service providers (the complainants). Telstra sought internal review and then applied to the Administrative Appeals Tribunal for review of the ACCC's decision. During this process, the complainants were required to defend the confidentiality of their documents and to appear as witnesses in the Tribunal proceedings.

Further, the ACCC has a considerable incentive not to proceed with unmeritorious claims. The ACCC has limited resources and bears the other party's costs in the event that the ACCC loses the court proceedings.

# 7.3 Delay and cost

Concerns have been raised over the timeliness and cost of the ACCC's use of its competition notice powers. In particular, Telstra referred to the cost and time involved in the commercial churn matter and the \$3 STD investigation.

A summary of the internet peering, commercial churn and \$3 STD matters is set out in Parts 2.2.1 and 2.2.2 of the ACCC's earlier submission. A more detailed

<sup>&</sup>lt;sup>45</sup> Telstra submission to Productivity Commission, p 31.

<sup>&</sup>lt;sup>46</sup> See ACCC, *Making Markets Work: Directions and Priorities* (1999) page 7.

<sup>&</sup>lt;sup>47</sup> See Telstra submission to Productivity Commission, p 31.

chronology of the internet peering and commercial churn matters appears at Attachment 5 to this submission.

Although successful outcomes were achieved in the internet peering and commercial churn matters, the competition notice regime has not provided as expeditious mechanism as intended. In particular, the competition notice regime has provided an opportunity for recipients to engage in regulatory gaming. The problems are discussed in detail in Part 5.3 of the ACCC's earlier submission. Parts 1.4.4 and 5.4 set out the amendments introduced by the Government to improve the robustness of the regime and reduce the incentive for regulatory gaming.

Following the 1999 amendments, the ACCC considers that Part XIB generally provides a more expeditious mechanism than Part IV for addressing anti-competitive conduct in the telecommunications industry (see ACCC's August submission Part 5.5). However, it should be recognised that there will almost always be a considerable delay in instituting proceedings for a breach of section 151AJ(2) or section 46 due to the complex nature of the elements of the provisions and the type of information required to prove these elements. Further, Part XIB, like Part IV, still ultimately relies upon a court to determine the required standards of competitive conduct (ACCC's August submission Part 5.7). Parts IV and XIB are subject to delay in that it is difficult to obtain a court order requiring a person to do a positive act such as replace inefficient technology. Part 5.8 of the ACCC's earlier submission sets out possible amendments to Part XIB to address this issue.

The costs to a recipient of a competition notice are no different from when the ACCC conducts an investigation under Part IV. The ACCC's normal practice is to provide a potential defendant an opportunity to meet with the ACCC and to comment on the allegations and particular issues that arise during the course of the investigation.

It has been suggested that Part IV provides an expeditious mechanism as it is possible to apply to the courts for an interim injunction. The effectiveness of interim injunctions is recognised by the ACCC (this is reflected in the 1999 amendments which allow private parties to apply to the Federal Court for an injunction, including an interim injunction, without the need for a competition notice to be in force).<sup>48</sup> However, the issue is whether this would be sufficient to restrain anti-competitive conduct in the telecommunications industry. Chapter 3 of the ACCC's August 2000 submission sets out the reasons why the ACCC considers that there is a continuing need for regulation.

<sup>&</sup>lt;sup>48</sup> Section 151CA.

# **ATTACHMENT 1**

# MARKET SHARES IN AUSTRALIAN TELECOMMUNICATIONS

The ACCC and the Communications Research Unit have compiled estimates of the market shares of Telstra, Cable & Wireless Optus and other carriers for various retail telecommunications services. The estimates were compiled from a range of industry sources, including industry analysts and consulting groups (Paul Budde Communication, ABN-AMRO and Amos Aked Swift Consulting) and the published data of the carriers themselves. No official data on market share are available.

# Table 1 Share of mobile phone subscribers, June 2000 (per cent)

Company	Paul Budde Communication	ABN-AMRO	Carrier data
Telstra	47.9	48.2	49.5
C & W Optus	33.7	33.4	31.7
Vodafone	18.4	18.3	18.8

Sources: Paul Budde Communication

ABN-AMRO, *Mobile Communications*, TMT 12 July 2000 Telstra Corporation Ltd, *Results announcement of 30 August 2000*, <u>www.telstra.com</u> Cable & Wireless Optus, *Annual financial report 2000*, <u>www.cwo.com.au</u> Vodafone, *Vodafone posts record customer growth in June quarter*, news release 11 July 2000

# Table 2Share of retail mobile market revenue, 1999-00 (per cent)

Company	Paul Budde Communication	Carrier data
Telstra	51.9	49.6
C & W Optus	30.8	30.6
Vodafone	17.3	19.8 <sup>1</sup>

<sup>1</sup> Twelve months to 31 March 2000

Sources: Paul Budde Communication

ABN-AMRO, *Mobile Communications*, TMT 12 July 2000 Telstra Corporation Ltd, *Results announcement of 30 August 2000*, <u>www.telstra.com</u> Cable & Wireless Optus, *Annual financial report 2000*, <u>www.cwo.com.au</u> Vodafone, *Vodafone Australia EBITDA up 64%*, *Revenue up 40%*, news release 11 July 2000

#### Table 3

# Share of retail long distance market (unit unspecified) (excluding mobile calls), 1999-00 (per cent)

Company	Paul Budde Communication	Amos Aked Swift Consulting
Telstra	40.0	52.8
C & W Optus	11.0	23.8
Other	49.0	23.4

Sources: Paul Budde Communication

Amos Aked Swift, Australian Telecommunications Business Survey, 2000

Company	Paul Budde Communication	Amos Aked Swift Consulting
Telstra	72.0	76.8
C & W Optus	14.0	10.4
Other	14.0	12.8

 Table 4

 Share of retail local call numbers (excluding mobile calls), 1999-00 (per cent)

Sources: Paul Budde Communication

Amos Aked Swift, Australian Telecommunications Business Survey, 2000

# **ATTACHMENT 2**

# ARBITRATIONS AS AT 17 October 2000

Category	Number of Current Arbitrations
Public Switched Telecommunications Network (PSTN)	4
Global System for Mobile Communications / Groupe Special Mobile (GSM)	5
Digital Data Access Service (DDAS)	2
Local Carriage Service (LCS)	7
Analogue Subscription Broadcast Carriage Service	2
Unconditioned Local Loop Service (ULLS)	4

Total number of current arbitrations - 24

### PSTN

Access Seeker (notifier)	Access Provider	Service/s	Date notified	Interim decisions
ААРТ	Optus	Domestic PSTN Originating & Terminating Access	11 June 1999	
Telstra	AAPT	Domestic PSTN Terminating Access – for data calls to ISPs	22 November 1999	
Flow Communications	Telstra	Domestic PSTN Originating Access	7 January 2000	Interim determination 31 May 2000
Telstra	Primus	Domestic PSTN Terminating Access – for data calls to ISPs	7 July 2000	

# GSM

Access Seeker (notifier)	Access Provider	Service/s	Date notified	Interim decisions
ААРТ	Telstra	Domestic GSM Originating & Terminating Access	16 March 1999	
ААРТ	Optus	Domestic GSM Originating & Terminating Access	15 June 1999	
Primus	Telstra	Domestic GSM Originating & Terminating Access	1 October 1999	
Primus	Optus	Domestic GSM Originating & Terminating Access	1 October 1999	
ААРТ	Vodafone	Domestic GSM Originating & Terminating Access	30 November 1999	

# DDAS

Access Seeker (notifier)	Access Provider	Service/s	Date notified	Interim decisions
AAPT	Telstra	Digital Data Access Service	8 March 1999	Interim determination 22 December 1999
Macquarie Corporate	Telstra	<ul> <li>Digital Data Access Service</li> <li>Price <ul> <li>Non-price terms and conditions</li> <li>Means by which Telstra proposes to supply DDAS</li> </ul> </li> </ul>	10 May 1999	Interim determination 22 December 1999

Access Seeker (notifier)	Access Provider	Service/s	Date notified	Interim decisions
Optus	Telstra	Local Carriage Service	13 August 1999	Interim determination 20 June 2000
МСТ	Telstra	Local Carriage Service	29 December 1999	
Primus	Telstra	Local Carriage Service	7 March 2000	
AAPT	Telstra	Local Carriage Service	21 March 2000	
One.Tel	Telstra	Local Carriage Service	July 2000 (in dispute)	
dingo blue	Telstra	Local Carriage Service	30 August 2000	
RSL COM	Telstra	Local Carriage Service	5 September 2000	

# LOCAL CARRIAGE SERVICE

# ANALOGUE SUBSCRIPTION BROADCAST CARRIAGE SERVICE

Access Seeker (notifier)	Access Provider	Service/s	Date notified	Interim decisions
TARBS	Telstra	Broadcasting Access Service	23 September 1999	
C7	Telstra, Foxtel and related parties	Broadcasting Access Service	31 August and 1 September 2000	

# ULLS

Access Seeker (notifier)	Access Provider	Service/s	Date notified	Interim decisions
AAPT	Telstra	Unconditioned Local Loop	4 August 2000	
Cable & Wireless Optus (Subsidiaries)	Telstra	Unconditioned Local Loop	5 August 2000	
One.Tel	Telstra	Unconditioned Local Loop	9 August 2000	
Primus	Telstra	Unconditioned Local Loop	9 October 2000	

# MATTERS FINALISED

Access Seeker	Access Provider	Service	Date Resolved
AAPT	Telstra	PSTN	9 December 1997 - withdrawn
Telstra	Vodafone	GSM Terminating	11 November 1998 - withdrawn
Optus	Telstra	PSTN	21 December 1998 - withdrawn
AAPT	Telstra	Domestic Transmission Capacity Service	7 March 2000 — withdrawn
Primus	Vodafone	GSM	10 April 2000 — withdrawn
Cable & Wireless Optus (Optus Networks & Optus Mobiles)	Telstra	PSTN	15 May 2000 — withdrawn
Optus	Telstra	Local Number Portability Routing Option	Final determination 25 May 2000
Optus	Telstra	Intergrated Services Digital Network	4 September 2000 — withdrawn
AAPT	Telstra	PSTN Originating & terminating Access	Final determination 13 September 2000
Primus	Telstra	PSTN Originating & terminating Access	Final determination 18 September 2000

# **ATTACHMENT 3**

# THE ACCC'S USE OF TSLRIC AS A BASIS FOR DETERMINING EFFICIENT ACCESS PRICES

# 1. Introduction

The Commission's initial approach to telecommunications access was guided both by the legislative criteria set out in the *Trade Practices Act* and principles of economic efficiency as reflected in the economics literature on public utility pricing. The public utility pricing literature considers the problem of pricing to 'marginal cost' on the one hand and maintaining incentives for efficient cost recovery and investment on the other, and how these seemingly incompatible objectives can be met. This dilemma is mirrored in Part XIC of the *Trade Practices Act* that requires that pricing be determined to encourage the economically efficient use of, and the economically efficient investment in, the infrastructure of telecommunications services. It is also apparent in the promotion-of-competition objective.

In its July 1997 paper ('Access Pricing Principles, Telecommunications — A Guide') the Commission accepted that access pricing be based on 'total service long run incremental cost' (TSLRIC). This was to be determined so as to recover the efficient costs of a 'forward-looking' network and included a contribution to common costs. This cost concept encompasses both of the above objectives and satisfies the broad legislative criteria, including the reasonableness criteria under section 152AH of Part XIC of the *Trade Practices Act*. The Guide also detailed how the Commission proposed to implement TSLRIC; including discussions of the weighted average cost of capital (WACC), depreciation and the valuation of the capital base.

Since the publication of the 1997 'Guide' various circumstances have arisen that have led to refinements in the way TSLRIC/TELRIC is interpreted and implemented. In particular:

- The Commission's approach to access pricing has developed in response to the challenges presented by the different access issues it has faced. Most recently, the unconditioned local loop service (ULLS), local call resale and the analogue subscription television carriage service declarations have presented different issues from those of the more traditional access to the local exchange network (PSTN).
- The adoption by the Commission of the n/e/r/a costing model has allowed a degree of independent assessment of network costs and has therefore reduced reliance on information from Telstra and other carriers. It has also focussed attention on the interpretation of the 'forward-looking' network.
- Events in other jurisdictions have influenced or challenged the Commission's thinking. Most recently, the United States Court of Appeals for the Eighth Circuit has forced the Federal Communications Commission (FCC) to abandon TELRIC on a forward-looking basis (*Iowa Utilities Board et al v. Federal Communications Commission and United States of America filed 18 July 2000*), although this has virtually no real relevance to Australia and has now been appealed by the FCC. On the other hand, New Zealand

appears to be moving towards an access regime quite similar to that operating in Australia.

This paper reviews the issues of TSLRIC-based access pricing in telecommunications with particular reference to the following six key issues:

- Marginal cost pricing is desirable on efficiency of use grounds, but there is a range of possible 'marginal cost' bases including TSLRIC on which prices could be set. The Commission has adopted TSLRIC, but with the possibility of relating price to short-run incremental cost (SRIC) where capacity is constrained to the extent that SRIC exceeds TSLRIC.
- Consistent with both efficiency in use and efficient investment decisions by access providers and access seekers ('build/buy decisions'), where practicable prices should reflect differences in costs of provision according to time and day of provision (ie application of peak-load pricing principles) and differences in costs according to location of the access. In practice there has been a problem in determining *access* prices reflecting differences in costs while Telstra's *retail* prices have sometimes been uniform across the demand cycle (eg untimed local calls) or uniform across the country (eg customer access charges).
- The ACCC has adopted a 'forward-looking' approach to costing Telstra's network. The Commission's n/e/r/a cost model draws a distinction between the 'scorched node' (hypothetical rebuilding the network with the existing network configuration) and 'scorched earth' (rebuilding from scratch an optimised network) costing bases. In practice the Commission has tended to take a 'scorched node' forward-looking approach which is effectively also a 'best-in-use' approach. In the Commission's view the use of this costing approach results in more efficient infrastructure investment by both access providers and access seekers. However, there appears to be substantial misunderstanding including from Telstra about both the method used and its purpose. For this reason the Commission's costing methodology is treated at length.
- The 1997 'Guide' concludes in favour of some version of the weighted average cost of capital (WACC); depreciation based on the decline in the economic valuation of assets; and normally valuation of capital at the written-down replacement cost determined on a forward-looking basis. The Commission's approach to these capital issues has developed with experience and in the light of theoretical developments, but there are sometimes differences in approach between the Commission and other parties. While all agree on the use of WACC, different specifications and parameter values result in different percentage amounts. Similarly differences in the approach to depreciation and disagreement over use of the forward-looking methodology result in different valuations of the capital base. These capital issues need to be reviewed and reassessed.
- The existence of common (unallocable) costs means that pricing at TSLRIC fails to achieve overall cost recovery. In principle both cost recovery and marginal cost pricing can be achieved simultaneously by the use of two-part pricing (with a component unrelated to use and use charged at 'marginal cost'), but in practice it is difficult to conceive of two-part pricing being used for access pricing. A practical 'solution' to the cost recovery problem has been found by including a contribution to common costs in

TSLRIC (sometimes called TSLRIC+), but this involves an efficiency-in-use cost because the higher price means some units are not supplied even though they have a value in use above their cost of provision to the economy. Issues here are the means of including common costs, the efficiency costs of using TSLRIC+ and the practicality of a two-part pricing structure.

• As a consequence of retail pricing regulation Telstra is unable to retrieve the full costs of the customer access network (CAN) from customer access charges. Prior to the entry of other carriers Telstra retrieved the resulting access deficit (AD) through an element in its service or call prices. This practice has effectively been continued by the Commission allowing an access deficit contribution (ADC) in access prices for PSTN services. The resulting cost including the ADC as well as the common cost contribution has been called 'TSLRIC++'. This means access prices are held even further above the cost to the economy of supplying the service. A more complicated AD issue has arisen through Telstra's attempt to include an allowance for lost ADCs in the ULLS price.

### 2. 'Marginal Cost' Concepts

#### Introduction

Marginal cost (or, synonymously, incremental cost) is the change in cost resulting from a change in the quantity produced. This apparently simple concept has many interpretations relating both to the 'change in cost' and the 'change in output'. The time frame in which the change in output occurs is particularly important as this determines which inputs *can* be changed. Misunderstandings can arise if there is a lack of clarity in defining 'marginal cost' so it is important to set out the different interpretations.

#### Short-run Incremental Cost

#### **Conventional Interpretation**

Short-run incremental cost (SRIC) of supplying the service is conventionally interpreted as the change in cost from changing the amount supplied, given that the availability of at least one factor of production is fixed. The fixed factors are usually the capital equipment and the technology embodied in them. However, SRIC will vary according to the circumstances. In off-peak circumstances SRIC of greater use of a telecommunications network can be very low or even zero, while as capacity is approached SRIC will increase, in some circumstances eventually becoming 'arbitrarily large' as absolute capacity is reached.

#### **Congestion Costs**

SRIC can also include or reflect congestion costs imposed on others as a facility reaches its capacity. As networks approach capacity users may impose negative externalities on one another, manifested in reduced call quality, calls dropping out, and inability to make calls.

#### Long-run Incremental Cost

Long-run marginal cost concepts determine the change in cost given that all factors of production are variable. It has a number of interpretations according to the circumstances.

# Directly Attributable Incremental Cost (DAIC)

Under DAIC capital and operating costs 'directly attributable' to the provision of access are included in the access price, inviting a more 'long run' interpretation of 'marginal cost'. However, this is open to a wide range of interpretations ranging from a strictly incremental cost (effectively the costs that would be avoided after long-run adjustment if the access seeker went away)<sup>1</sup> to TSLRIC (considered below) as interpreted in 1991 by the Australian Telecommunications Authority (AUSTEL) in determining the price for Optus's use of the PSTN.

# **TSLRIC**

TSLRIC is a special kind of 'long-run marginal cost' concept in that it comprises the annualised costs that an efficient firm would incur over the long run (all factors variable) in supplying the *entire* production element or service in question as against abandoning it's production. The concept of TSLRIC can be understood by breaking it up into its components:

- *'Total element'* refers to it being the cost of production of an entire production element (or service); not to the cost of a particular unit. With respect to telecommunications carriage services it is usually expressed on a per-minute basis by dividing the annual total cost of the production element by the number of minutes carried.
- *'Long run'* refers to it being a long-run cost concept in contrast to a short-run one. In the short run the amount of at least one factor of production (usually capital equipment) is fixed, while in the long run the amount of all factors of production can be varied.
- *'Incremental cost'* means that it is a form of 'marginal cost', although not the more familiar 'marginal cost' of the change in cost incurred through a change in the *amount* of output produced. In the case of TSLRIC it refers to the change in cost from the two alternatives of producing or not producing at all 'all or nothing'.
- It is also an *attributable cost* concept as it refers only to those costs that can be attributed to the production of the service. Costs common to more than one service cannot be attributed to a particular service and therefore do not form part of TSLRIC. It also precludes those 'incidental costs' that form part of the ECPR.

Given these attributes TSLRIC can be defined in the following alternative ways:

• It is the incremental or additional cost — on an annual basis — the utility incurs in the long run in providing a particular production element or service as a whole, assuming all of its other production activities remain unchanged.

<sup>&</sup>lt;sup>1</sup> In the United States, the Federal Communications Commission (FCC) uses total *element* long-run incremental cost (TELRIC) rather than TSLRIC, in reference to access being provided to production elements. While the *Trade Practices Act* (s 152AL) refers to access to 'declared services', this can be either a listed carriage service or 'a service that facilitates the supply of a listed carriage service'. A facilitating service like domestic PSTN originatingand terminating access is effectively a production element.

- It is the total cost (on an annual basis) the utility would avoid in the long run if (everything else being equal) it ceased to provide the production component or service as a whole.
- The TSLRIC can be expressed as the sum of the operating and maintenance costs, and the capital costs that the utility incurs in providing the production component or service as a whole. *Operating and maintenance costs* are the continuing operational costs of providing the component or service, including the labour and materials costs that are causally related to the provision of the component or service. *Capital costs* comprise the cost of capital (ie, the opportunity cost of debt and equity used to finance the firm) and depreciation (ie, the decline in economic value of assets) of capital that is specific to the production of the component or service.

The difference between TSLRIC and SRIC can be highlighted in this way: TSLRIC comprises the costs that an efficient firm would avoid over the long run if it ceased to supply the production component or service, whereas SRIC is limited to those costs which the firm would immediately avoid by reducing or abandoning output.

#### Actual and Forward-looking Costs

Where there are different production technologies and network configurations — either available or in use — there are alternative ways of evaluating the cost components of TSLRIC. Broadly, there are three bases on which the network could be costed:

- It could be based on the costs of the *actual* technology in use and the existing network configuration.
- Where the network has different vintages of equipment and configuration, the *best-in-use* technology and network configuration could be used as a cost basis.
- Costs could be based on a *forward-looking* technology, as if the most efficient technology commercially available were used, but there are two possible assumptions about network configuration 'scorched node' (broadly, rebuilding with the existing network configuration) and 'scorched earth' (building from scratch an optimised network).

In practice the Commission's approach — based on the n/e/r/a cost model — has tended to take a 'scorched node' forward-looking approach in that it takes as given the location of Telstra's higher-level network nodes ('local exchanges') and it is a best-in-use approach in that it estimates the cost as if the best-in-use equipment were used throughout.

# 3. Efficient Use of Telecommunications Infrastructure

#### Introduction

One of the key objectives of the legislation is the promotion of efficient use of telecommunications infrastructure. It is efficient to set price (representing the value to users of the marginal unit) equal to 'marginal cost' (representing the extra cost to the economy of supplying that unit). Producing a further unit beyond this would reduce economic welfare because the additional unit costs the economy more than it is worth to users. Going in the

other direction, producing one less unit would reduce economic welfare because the saving in cost to the economy is less than the value in use of the foregone unit.

In practice there are three problems with applying the 'marginal cost' pricing approach:

- There is a range of possible 'marginal cost' bases on which prices could be set, ranging from capacity-unconstrained SRIC (which is effectively zero in some off-peak situations) through TSLRIC (effectively the average of all operating and capital costs) up to capacity-constrained SRIC.
- In the presence of common (unallocable) costs, with one important exception considered below, pricing *all* units at any of these marginal cost bases fails to achieve overall cost recovery.
- In principle both marginal cost pricing and full cost recovery can be achieved simultaneously by the use of a two-part pricing structure, either with a pricing component unrelated to use (a customer access charge) and use charged at 'marginal cost' or with a 'block tariff arrangement' where some initial units are charged above marginal cost while the remainder are charged at marginal cost. While such arrangements are common for retail pricing it is difficult to conceive of multi-part pricing being used for access pricing, although access pricing has involved use of a flagfall combined with a per-minute charge.<sup>2</sup>

# Which Marginal Cost?

At one extreme there is the possibility of setting the price for use of the production element or service by reference to the SRIC; while at the other it could be related to TSLRIC. However, SRIC will differ according to the relativity of demand with available capacity and will be low when capacity is not a constraint and high when available capacity has to be rationed by price. Indeed, SRIC could exceed TSLRIC if capacity were sufficiently constrained.

However, SRIC is not an efficient cost basis even where there is excess capacity. There are three main reasons for this:

- First, setting price equal to capacity-unconstrained SRIC may appear to be 'efficient' in the short run as it appears to equate the marginal value of the user to what the economy gives up in supplying that unit. However, this makes no allowance for what the economy gives up in 'keeping the productive capacity alive'. Taking into account this 'shadow cost' of maintaining capacity as well as the actual operating cost involves use of TSLRIC as the pricing benchmark.
- Second, looking at the first point another way, no one will provide infrastructure unless they can at least cover the full capital and operating costs of providing it. Otherwise it would be a matter of 'there one day, gone the next'.

<sup>&</sup>lt;sup>2</sup> The different means of retrieving common costs are considered below.

• Third, while it would be possible to vary price over time as the capacity constraints are approached (resulting in rising price) and as capacity limits are overcome by new capacity installation (falling price), this could result in large fluctuations in price. This 'saw tooth' pricing approach would lead to higher transaction costs for all parties and the greater uncertainty could be reflected in a higher risk-adjusted rate of return.<sup>3</sup>

# Capacity Expansion

Where the level of capacity is inadequate to meet current demand, SRIC will exceed TSLRIC and the efficient price is then based on capacity-constrained SRIC. This rations available capacity and provides the signal that capacity needs to be expanded.<sup>4</sup> This efficient peak-load pricing approach is recognised in the 'Guide'. However, the Guide also recognises that access providers are not primarily motivated to pursue economic efficiency, and cautions that 'access prices should not provide incentives ... to artificially constrain capacity to earn excess profits' (fn. 20, p. 14).

# Relationship between Access Prices and Retail Prices

Efficiency of use of the telecommunications infrastructure ultimately depends on retail pricing, and access price is only one component of retail price. Service providers must also cover retailing costs and make contributions to common costs. The level and structure of retail prices depends also on the extent of competition in retail markets and on retail price controls. This raises several issues, including:

- The extent of competition across retail markets differs markedly resulting in different abilities to hold prices above costs.
- Some of Telstra's retail prices are subject to an overall price cap and some of these are subject to sub-caps. Some other prices are subject to direct Ministerial control.
- Prices that are not subject to controls may be influenced by the existence of controls elsewhere.
- Controls on customer access charges have resulted in an access deficit and this has been allowed as a component ('access deficit contribution' or ADC) in access prices.
- Constraints on local calls mean that these are priced on a per-call basis and are effectively the same price across geographical markets while wholesale access to the PSTN interconnection services is usually on a per-minute basis.

<sup>&</sup>lt;sup>3</sup> This problem is discussed in detail by Kahn and Shew (1987, p. 240).

<sup>&</sup>lt;sup>4</sup> Technically it is efficient to expand capacity when 'demand-for-capacity' (Williamson 1966) is at least as great as the long-run incremental cost of output expansion.

# 4. Efficient Infrastructure Investment

# Introduction

Another of the legislative criteria is the encouragement of efficient investment in telecommunications infrastructure. This has three dimensions — an efficient overall level of investment in telecommunications infrastructure; an efficient mixture of investment between access providers and access seekers (ie, efficient 'build/buy' decisions) and an efficient geographical mix of investment.

# Recovery of Common Costs

In its pure form, TSLRIC includes only those costs that can be attributed directly to the provision of the particular service. In addition to these attributable costs there may be costs of facilities that are shared between two or more services and are therefore 'unallocable' to a particular service or are 'common' to more than one service. Costs incurred in the provision of a *group* of services are incurred if any one of the services within the sub-group is produced and are not avoided unless the production of *all* the services in the group ceases. Hence, if the firm ceased to supply one service from that group, these costs would not all be avoided. As previously noted, charging all units at TSLRIC will not result in the recovery of these unattributable or common costs. However, in principle there are two efficient ways of addressing this impasse:

- *Two-part Pricing*: Where there is sufficient overall economic surplus, in principle it would be possible to achieve cost recovery through a two-part pricing arrangement. In practice, it is very difficult to conceive of two-part pricing being used for access pricing other than the existing practice of including a flagfall as well as a per-minute charge.
- *Capacity-constrained Pricing*: Kahn and Shew (1997, p. 225) note that while 'pricing at short-run marginal cost (SRMC) seems to ignore fixed [common] costs, it is not incompatible with their recovery'. This is because the SRMC can be above average variable cost, and when it is 'pricing at SRMC will make a contribution to the coverage of capital costs...'.

In the absence of these efficient ways of achieving cost recovery, in practice TSLRIC has usually been interpreted to include a contribution to common costs. As common costs are not directly attributable to the production of any one service, the allocation of these costs across services is somewhat arbitrary and there is a range of possible methods of allocating them. There are two major approaches:

• *Equi-proportionate Mark-up or 'Beesley Rule'*: A commonly used approach is to use an equi-proportionate mark-up over directly attributable costs. This involves measuring the directly attributable costs of each service within the group and allocating the common costs based on each service's proportion of the total directly attributable costs.<sup>5</sup>

<sup>&</sup>lt;sup>5</sup> Brown and Sibley (1986, p. 44) note other bases of allocations under what they call 'fully distributed cost' (FDC) — 'common costs are allocated ... based on their relative shares of quantities such as output, peak demand, revenue or attributable cost.'

• *Inverse Elasticity or 'Ramsey' Rule (IER)*: In this case the mark-ups over directly attributable costs are inversely proportional to the elasticity of demand. This approach — the 'Ramsey rule' — means that the common cost contribution can be achieved with the least overall cost to economic efficiency.<sup>6</sup> In practice there are substantial informational difficulties in applying the IER, and getting it wrong could be worse than using equiproportionate mark-ups.

In practice, the common cost contribution is based on the application of percentage supplements to attributable capital asset value and direct operating and maintenance costs. The use of the Beesley rule appears to be agreed between Telstra and the Commission in most applications. This is considered in the discussion of the n/e/r/a model below.

#### Forward-looking Costs Ensures Efficient Build-Buy Decisions

In principle use of a forward-looking cost basis rather than actual costs gives the right incentives to both access providers and access seekers.<sup>7</sup> Using actual costs will result in an inefficient outcome.

For the access seeker, an access price based on the actual cost of the access provider's network is inefficiently high because it reflects a cost above that of *the network the access-seeker would actually build*. This would result in an artificial stimulus for the access seeker to 'build' (facilities-based competition) rather than to 'buy' (access-based competition). Basing it on the 'forward-looking' cost places the access seeker in a 'knife-edge' situation, providing precisely the right build/buy incentive.

There are other 'in-principle' considerations in determining an access price to get the right 'build-buy' choices. On the one hand the existence of large sunk costs in typical telecommunications investments cautions against setting the access price too high as the costs of mistakes are irredeemable both to the investor and to the economy. On the other hand, setting an access price based on the costs of a purely hypothetical network could provide undue incentives to access-based competition as all possible efficiency savings or benefits from deploying a separate network are already reflected in the fully optimised access price.

For the access provider, the forward-looking approach results in a strong incentive to modify its network in the direction of conformity with the basis on which it is costed. Investments reflecting forward-looking costs are fully rewarded by this procedure. (To the extent that the forward-looking approach results is any deficiency of the allowed return from an economic return this applies to sunk capital, not new investment.) It provides an incentive to avoid 'bad decisions' which otherwise (under an actual cost basis) would be completely 'forgiven' by guaranteeing a return on the investment irrespective of how imprudent it may be. Further, it discourages the practice of the access provider cost-shifting from competitive areas to less competitive ones as these shifted costs would not enter the cost pool used for access price determination.

<sup>&</sup>lt;sup>6</sup> Telstra has advocated the use of the Ramsey rule in relation to access to analogue pay-TV carriage service. Its usual procedure is a uniform percentage mark-up.

<sup>&</sup>lt;sup>7</sup> This would not matter in the (unlikely) circumstance that actual and forward-looking costs were the same.

In practice the 'forward-looking approach' is heavily qualified and cautious. The Commission's approach is based on *how Telstra's network is actually evolving* and not on some hypothetical vision. It has taken a 'scorched node' approach (in that it takes as given the location of Telstra's network nodes) and a 'best-in-use' approach (in that it estimates the cost as if the best-in-use equipment were used throughout). As it relates to the existing network configuration and to existing 'best practice' equipment, in no sense does it — as claimed by Telstra in its Submission to the Productivity Commission Inquiry — assume 'perfect foresight' or 'omniscience' on Telstra's part.<sup>8</sup> The Commission's actual procedures are explained in greater detail in section 5.

The in-practice approach is also influenced in two ways by the Commission's statutory obligation to consider an access provider's 'legitimate business interests'. First, as the Commission did not adopt an extreme forward-looking approach as the basis for costing (adopting instead the network that Telstra is in the process of building), this approach means that assessed costs are much closer to actual costs than would be the case with a totally optimised network basis. Second, the Commission looks beyond the immediate costs of providing access by including an access deficit contribution (ADC) in access prices applying to the PSTN (see section 7). This has the adverse consequence of presenting the access seeker with an access price above the knife-edge one so that, in practice, the access seeker is provided with an artificial stimulus to building rather than buying.

### **Reflecting Location-specific Costs**

An efficient geographical mix of investment requires that differences in costs in different geographical locations are reflected in access prices. This so-called 'de-averaging' of access pricing at the network level has acceptance in the market in spite of the existence of price controls that promote averaging of prices at the retail level.<sup>9</sup> A location-specific approach to pricing is less likely to distort either the build-buy decision of competitors or Telstra's own investment plans. An averaged pricing approach, by contrast, is likely to result in inefficient investment decisions.

This can be illustrated with respect to averaged pricing the unconditioned local loop service (ULLS):

• Competitors less efficient than Telstra could enter into the high value customer areas and capture these customers by building their own infrastructure; unnecessarily duplicating the local loop in CBD and certain Metropolitan areas.

<sup>&</sup>lt;sup>8</sup> Telstra in its Submission (pp. 20, 44 and 50) both misrepresents the Commission's procedures and the relevance of the US Court of Appeals judgement. The Court does not make any economic arguments against the FCC's approach; the discussion is rather flippant (eg 'Congress was dealing with reality, not fantasizing about what might be', pp. 7-8) and misrepresents the FCC's actual methodology as one of using 'some state of the art presently available technology ideally configured' (p. 8) as against what is actually a 'scorched node' approach (as described by the Court of Appeal itself, the 'only nonhypothetical factor ... is the use of the actual location of ... existing wire centers', p.6).

<sup>&</sup>lt;sup>9</sup> Because of the regulatory tradition of requiring uniform or average prices for *retail* telecommunications services, the practice of relating prices to costs is sometimes known as 'de-averaging', even though in the case of new services like ULLS there is no existing average price to 'de-average'.

• Competitors will make more use of Telstra's infrastructure in non-urban areas than is efficient and therefore make correspondingly smaller investments in terms of rolling-out their own alterative infrastructure in non-urban areas, even if such investment was cost effective.

Telstra has often expressed concerns about the practice of entrants targeting high-call volume customers located in CBD and inner metro areas ('cream skimming' or 'cherry picking'). Although neither pricing approach is likely to prevent cream skimming, this outcome is exacerbated under the averaged approach that more seriously affects Telstra's ability to recover its line costs, both through line and call-related charges. This occurs because, in comparison with the location-specific approach to pricing, Telstra will:

- lose more line revenue in those areas where the CAN is duplicated, typically involving higher-yield customers;
- gain insufficient line revenue to recover costs in those areas where line charges are priced below costs (typically involving lower-yield customers); and
- lose more calls to competitors in both the areas where the CAN is duplicated and where its infrastructure is used to provide ULL services below cost.

This will mean that Telstra's own customers across a range of its existing services are likely to bear an increasing share of line costs and make it more difficult for Telstra to remain competitive in the longer term.

# 5. The n/e/r/a Model

# Introduction

In order to make independent costings of Telstra's PSTN, the Commission has developed an 'engineering model' of the network. This is known as the n/e/r/a model after the consultants engaged by the Commission to construct it. The model has to deal with what is essentially an evolving network where there are different production technologies and network configurations (essentially node locations) either available or in use.

Broadly, there are three bases on which the network could be costed:

- It could be based on the costs of the *actual* technology in use and the existing network configuration.
- Where the network has different vintages of equipment and configuration, the *best-in-use* technology and configuration could be used as a cost basis.
- Costs could be based on a *forward-looking* technology, as if the most efficient technology commercially available were used, but there are two possible assumptions about network configuration 'scorched node' (rebuilding with the existing higher-level network configuration) and 'scorched earth' (building from scratch an optimised network).

The Commission has taken what is both a 'scorched node' approach (it takes as given the location of Telstra's higher-level network nodes or wire centres) and a 'best-in-use' approach (it estimates the cost as if the best-in-use equipment were used throughout). This is a very weak 'forward-looking' approach that essentially mirrors what Telstra is doing under its Future Mode of Operation (FMO) plan of network modernisation.

# The n/e/r/a Model

To date the Commission has used the n/e/r/a model to estimate:

- the efficient costs of supplying the Domestic PSTN Originating and Terminating Access services (which involve the conveyance of calls between end-users' premises and points of interconnection using the PSTN); and
- efficient PSTN line costs.

# Conveyance costs v. line costs

For the purposes of calculating costs, the PSTN is divided into two components: The Customer Access Network (CAN): This is the network connecting each end-user to a node such as a Remote Subscriber Stage (RSS), Remote Switching Units (RSU), and a Remote Integrated Multiplexers (RIM). The node is often referred to as an 'exchange'. This network consists of infrastructure such as network termination points, copper lines, trenches, pillars and line cards.

The Inter-exchange Network (IEN): This is the network connecting nodes. It consists of infrastructure such as optical fibre, trenches, multiplexers, remote concentrators and switches. Broadly, the costs of the customer access network are treated as line costs, whereas the costs of the inter-exchange network are treated as conveyance costs.

# Costs for the Domestic PSTN Originating and Terminating Access Services

Infrastructure used to supply the Domestic PSTN Originating and Terminating Access services is also used to supply other PSTN services (eg local calls, STD calls, IDD calls, 1300 calls, etc). Additionally, Telstra uses this infrastructure to supply ISDN and leased line services.



Diagram 1 — Infrastructure used to supply Domestic PSTN Originating and Terminating Acces Services

For example, as shown in Diagram 1, the supply of the Domestic PSTN Originating Access service involves the carriage of communications from end-user A's premises along the end-user's line to the relevant node (eg, an IRIM). There, the communications are aggregated with calls from other end-users (eg, end-user B) on to an optical fibre link and carried to another node (eg, an RSS) and then to a local switch (ie, a LAS). At the local switch, the call may be handed over to a competitor or carried to another switch (eg, a transit switch - TS) where it is handed over to the competitor.

Other calls (eg, local calls) made by end-user A use the same infrastructure and traverse the same path. They are carried down the same line, aggregated at the same node and carried down the same optical fibre route to the same local switch. Local and long distance calls made by other end-users (eg, end-users B and C) also use this infrastructure — they share the nodes, the optical fibre link to the local switch, the local switch and the route to the transit switch. Similarly, ISDN services share this infrastructure — ISDN lines run in the same trench as PSTN lines and ISDN line cards are housed at the same node locations and are carried on optical fibre links between nodes.

In fact, very little infrastructure is used exclusively to supply the Domestic PSTN Originating and Terminating Access services. Accordingly, a narrow 'incremental cost' approach to pricing these services would involve excluding the majority of inter-exchange network costs because they would not be avoided if Telstra ceased supplying these services.

To date, in estimating the costs of supplying the Domestic PSTN Originating and Terminating Access services, the approach adopted by the Commission has been to include costs for infrastructure shared between those services and other services, both PSTN and non-PSTN services. This recognises that an efficient operator is unlikely to supply PSTN services on a 'stand-alone' basis but would share those costs among other services as well, such as ISDN and leased line services.

#### Estimating conveyance costs

In the n/e/r/a model, the inter-exchange network is divided into four categories, reflecting the location of end-users — CBD, metropolitan, provincial, and rural/remote. This enables separate costs to be estimated for each geographic category.

Modelling conveyance costs involves estimating the volume of capital required to convey calls during the relevant demand year (eg 2000-01). Investment undertaken in anticipation of future demand is incorporated within the capital base only when the demand materialises.

Once the volume of capital is estimated, it is valued using a replacement cost approach. This value is then used to calculate particular annual costs — depreciation, cost of capital, operations and maintenance costs, and indirect costs. Annual costs are then used to derive a per-minute cost for the use of particular network elements by any of these services.

#### Volume of capital — network dimensions

To determine the volume of capital required to convey calls over the relevant year, it is necessary to estimate the network dimensions. In essence, this is a function of node locations and demand forecasts for that period.

The approach used by the Commission, reflected in the n/e/r/a model, is a 'scorched node' network. That is, rather than determining the optimal network that an efficient operator would build in Australia in order to meet demand over the relevant year, the network used for costing purposes is that which Telstra planned to build in accordance with its future mode of operation (FMO).<sup>10</sup>

Thus the network is based on Telstra data about the location, number and types of nodes, and distances between nodes. Telstra data about the average distances between node sites are used to calculate trench and cable (ie optical fibre) lengths.

Demand forecasts and routing factors<sup>11</sup> (also provided by Telstra) are then used to determine the volume of equipment that an efficient operator would deploy at each of these node sites (eg number of ports) and between those sites (eg volume of optical fibre and regenerators). As demand grows from year to year, the volume of capital included in the model for costing purposes increases.

#### Volume of capital — shared infrastructure

Where infrastructure for the inter-exchange network is shared with other networks (eg the customer access network), it is apportioned between those networks.

For instance, cable for the inter-exchange network and customer access network can share the same trench. In this regard, the Commission estimates the level of sharing that could be achieved by an efficient operator. It then apportions the trench between each network on the

<sup>&</sup>lt;sup>10</sup> Pursuant to its FMO, Telstra planned to rationalise the number of switches in operation through the deployment of Remote Subscriber Stages (RSSs), Remote Switching Units (RSUs), and Remote Integrated Multiplexers (RIMs).

<sup>&</sup>lt;sup>11</sup> These are factors representing the average use of each network component by particular call types. For example if, on average, 31 per cent of calls using the Domestic PSTN Originating Access service involve use on an IRIM, then the routing factor applied to IRIMs for those calls is 0.31.

basis of the proportion of cables in the trench which are inter-exchange network cables and customer access network cables (ACCC, 2000, pp. 117-8).

#### Valuing the capital

Once the volume of capital necessary to meet demand over the relevant year has been estimated, that volume is multiplied by the replacement cost for each piece of equipment. Equipment prices were estimated by n/e/r/a and are updated each year, to reflect the impact of both inflation and technological development. For each year, network capital is valued as if it were being rolled out 'brand new' in that year.

#### Annual capital and operations and maintenance costs

These costs are calculated as a percentage of the capital value for the relevant year. For instance, if the network (valued using the replacement cost approach described above) is worth \$25 billion in 2000-01, and the nominal post-tax weighted average cost of capital is 10 per cent, then \$2.5 billion is included in the cost pool for that year, representing the cost of capital. Similar calculations are undertaken in respect of depreciation and operations and maintenance costs.

The Commission estimates the weighted average cost of capital for each year (see section 6, below). For deprecation and operations and maintenance costs, the Commission uses the asset lives and percentages provided by n/e/r/a, which are specific for each type of equipment (ACCC, 2000, pp. 52-3 and 96-101). These were estimated following industry-wide consultation during 1997-98.

#### Annual indirect costs

Annual capital and operations and maintenance costs are summed to produce total direct costs for the year under consideration. Indirect costs are then estimated as a percentage of direct costs. To do this, the Commission uses percentages provided by n/e/r/a (ACCC, 2000, p. 54).

#### Estimating line costs

While line costs are not directly related to supply of the Domestic PSTN Originating and Terminating Access services, the Commission has considered it reasonable for Telstra to include an access deficit contribution in charges for those services. Estimating line costs is, therefore, necessary in order to assess the quantum of the access deficit.

The approach used to estimate line costs is similar to that used to estimate conveyance costs. As for the inter-exchange network, the customer access network is divided into four categories on the basis of end-user location — CBD, metropolitan, provincial and rural/remote.

The scorched node approach means that the network used for costing purposes largely resembles Telstra's actual network. For instance, the volume of cable and trenches in the customer access network has a significant impact on line costs and is largely a function of the distances between end-users' premises and node sites. With the scorched node approach, these distances are those estimated by Telstra for its FMO network.<sup>12</sup>

<sup>&</sup>lt;sup>12</sup> When assessing Telstra's first undertaking, there was considerable uncertainty over these distances, resulting in the Commission expressing costs as a range. However, in its assessment of Telstra's most recent undertaking, the Commission was able to estimate those distances with greater certainty.

In estimating the volume of equipment that an efficient operator would deploy between endusers' premises and node sites, the Commission uses demand forecast by Telstra for the relevant year and allows 1.25 to 1.33 lines per service in operation, providing a sparing level of 25 to 33 per cent.<sup>13</sup> The Commission also takes account of the extent to which an efficient operator would be able to share trenches with other operators and with the inter-exchange network (in the manner described above in relation to the inter-exchange network).

Annual capital, operations and maintenance and indirect costs are calculated in the same manner as for conveyance costs.

# New network each time the model is run

The estimation of costs is undertaken by running the cost model afresh for each year under consideration, using the demand forecasts for that year. Rather than estimate the value of the network over a period of years based on a year 1 value and projected depreciation, the network is revalued each year as if it were a completely new network. That is, capital costs are always taken for year 1. To ensure that this does not result in an overstatement of costs, the Commission uses an annuity approach which 'levelises' annual capital costs.

# 6. Determination of Capital Costs<sup>14</sup>

# Introduction

As sketched in the previous section, the capital costs of a production element in a time period comprise the opportunity cost of the capital employed (the weighted average cost of capital multiplied by the value of capital) plus the change in the value of capital (depreciation). The Commission must evaluate these three components of capital cost as part of its estimation of TSLRIC.

# WACC

The Commission includes in its annual capital costs an allowable rate of return on capital which is designed to reflect the opportunity cost of funds invested in Telstra's wholesale PSTN infrastructure. This rate of return on capital reflects a weighted return on equity and debt and is determined according to the following weighted average cost of capital (WACC) formula:

$$WACC = r_e \cdot \frac{E}{V} + r_d \cdot \frac{D}{V}$$

where: D/V is the proportion of total capital financed out of debt;

E/V is the proportion of total capital financed out of equity;

re is the return on equity; and

r<sub>d</sub> is the return on debt.

<sup>&</sup>lt;sup>13</sup> The higher level of sparing (33 per cent) is for that part of the customer access network closest to the enduser (known as the distribution network) and the lower level of sparing is for that part of the customer access network closest to the node (known as the feeder network).

<sup>&</sup>lt;sup>14</sup> Details on the matters discussed in this section are found in ACCC (2000), Appendices 3, 4, 5 and 6.

The WACC is sensitive to different assumptions about taxation and a number of other parameters. The WACC estimated by the Commission represents a hybrid of traditional pretax and post-tax WACC formulations and is termed a 'vanilla' WACC (or 'v'). In turn, the rate-of-return on equity ( $r_e$ ) is determined according to standard capital asset pricing model (CAPM) formulations. This determines  $r_e$  according to the following formula:

 $r_e = r_f + \beta e (r_m - r_f)$ 

where:  $r_f$  is the risk-free rate-of-return;  $\beta e$  is the equity beta; and  $r_m$ - $r_f$  is the market risk premium.

Finally, the equity beta term  $(\beta_e)$  is calculated according to the well-known Monkhouse formulation:

$$\beta e = \beta a + (\beta a - \beta d) \{1 - [r_d / (1 + r_d)](1 - \gamma)T_e\} \cdot D / E$$

where:  $\beta e$  is the equity beta;  $\beta a$  is the asset beta;  $\beta d$  is the debt beta;  $\gamma$  is the imputation factor;  $T_e$  is the effective tax rate;  $r_d$  is the return on debt; and D/E is the debt to equity ratio.

Accordingly, determination of the vanilla WACC required the estimation of a number of parameters by the Commission. The parameter values estimated by the Commission are listed in the table below:

Variable	Commission estimate
Debt ratio (D/V)	0.4
Equity ratio (E/V)	0.6
Risk-free rate (r <sub>f</sub> )	6.4%
Market risk premium (r <sub>m</sub> -r <sub>f</sub> )	6.0%
Equity beta ( $\beta$ )	0.83
Effective Tax rate (Te)	0.2
Debt Premium	0.8
Return on debt (r <sub>d</sub> )	7%
Imputation factor (γ)	0.5
Return on Equity (ROE)	11.39%
WACC (pre-tax)	10.47%
Vanilla WACC (v)	9.71%

Table 1 — Estimates of WACC Parameters for Telstra's PSTN

The adoption by the Commission of a debt ratio of 40 per cent is designed to reflect the optimal market gearing ratio for a regulated infrastructure asset of the form of Telstra's PSTN. The Commission regards this as an appropriate debt ratio for a stable infrastructure asset (recognising that a lower debt ratio is likely to be applicable for Telstra as a whole), a view which is in large part informed by the market gearing ratios observed for other similar infrastructure assets.

In determining the risk-free rate of return of 6.4 per cent, a key principle adopted is that that the relevant time period for determining the opportunity cost of funds is the 'regulatory period', or in this instance the term of the undertaking which is 2 years. This reflects that a new capital base is allowed from the start of the period of any subsequent undertaking (although the Commission also allows a new capital base for each year of the undertaking).

The Commission's market risk premium of 6 per cent reflects the premium observed in investing in the stock market over the risk-free rate for bond terms of varying lengths. The Commission adopted a risk premium at the lower end of the range reflecting recent research that suggests a fall in the risk premium in more recent years.

The Commission's estimate of the equity beta of 0.83 reflects its view that the returns to the PSTN are likely to be less risky than other parts of Telstra's business and that it was not necessary to account for unique diversifiable risks such as demand and stranded asset risks. The Commission has not been persuaded that the PSTN is subject to unique demand-related risks. In regard to stranded asset risks, the Commission captures this through its tilted annuity approach in determining annual capital cost which takes account of asset price trends. In adopting a post-tax framework for determining the WACC and treating taxes on a cashflow basis, this means that the WACC does not need to be as high as otherwise to cover for taxation payments. The WACC does however need to be adjusted for taxation as the rate of return on debt is usually expressed in a pre-tax form and the rate of return on equity is usually expressed in a form that does not take account of the effect of imputation credits. As a result of the availability of accelerated deprecation which enables deferral of tax payments, and allowing for the time value of money, the effective tax rate faced by Telstra is lower than the statutory rate. On this basis the Commission estimated the average effective tax rate across all PSTN assets to be 20 per cent.

The imputation factor estimated by the Commission reflects the extent to which Telstra pays franked dividends and the extent to which imputation credits are valued by equity investors. The Commission is of the view that given that Telstra does not pay all of its profits as dividends and does not distribute all of its franking credits to investors (effectively producing a deferral in the payment of imputation credits) the value of the imputation factor should be below one. At the same time, as at least some investors value imputation credits, the value of the imputation factor will be above zero. The Commission has therefore adopted the estimate of 0.5. It also expects that any re-estimation of this number as a result of the recent Ralph taxation reforms would result in an upward revision of the imputation factor and a lower WACC.

#### Depreciation

The Commission adopted an annuity approach for determining annual capital costs that captures the return on capital, depreciation and tax cash flows.

The rationale behind the annuity approach for determining annual capital costs is to address the 'year 1 problem'. The year 1 problem can arise with the TSLRIC cost methodology where it is assumed that a new optimised network is installed each year and capital costs (depreciation plus cost of capital) are higher in the earlier years of an asset's life (as the result of straight line depreciation or economic depreciation, for example). If assets have long-lives and annual capital costs are determined for a relatively short period such as the term of an undertaking, this can lead to the owner of the assets being over-compensated. This is because the infrastructure owner would be continually receiving revenue to compensate for year 1 capital costs.

The use of an annuity for determining annual capital costs addresses this by smoothing annual capital costs over the life of the asset. This accords with the observation that in competitive markets prices tend to be relatively stable and are not dependent on the age of assets. Nonetheless the annuity used by the Commission is a tilted annuity which reflects the price trends in the replacement costs of assets and which therefore seeks to reflect cost recovery in a potentially contestable market.<sup>15</sup>

#### Valuation of the Capital Base

As a result of its TSLRIC methodology for costing Telstra's PSTN, the Commission sets an initial asset base that reflects the current replacement value of assets (ie the costs of installing a newly built network today). In reality, Telstra's PSTN has been built over many decades and some of Telstra's most significant PSTN assets (notably trenches and cables) have been installed for a long period of time. These are likely to have been substantially recovered by Telstra and appear on its books at low historical values. Recent analysis by the Commission indicates that the estimated current replacement value of Telstra's PSTN assets determined on the basis of TSLRIC exceeds the entire asset base for Telstra as a whole calculated on a historical cost basis. Consequently the TSLRIC methodology can be expected to reward Telstra with returns above those that may be regarded as satisfactory on a historical costs basis and which are used as the basis of financial reporting.

The TSLRIC asset valuations are based on an average of equipment prices as supplied by Cable and Wireless Optus, Telstra and n/e/r/a's experience (although not all three price sources are available for each piece of equipment). Asset values include the capital investment and the installation cost. A similar averaging approach across these sources of information is adopted with respect to real price trends used to bring forward the price of assets to the start of each year.

The actual equipment prices are those that applied over 1997-98. These were assumed to be equipment prices applying at 31 December 1997. To bring these prices forward in nominal terms to 1 July 1999 and 1 July 2000, the real price trend data were used for each asset along with an adjustment for general price inflation.

# 7. Access Deficit Contribution Issues

<sup>&</sup>lt;sup>15</sup> The replacement cost of assets may vary from year to year. In some instances, the replacement cost may fall due to technological advances (eg switches and processors). In others, it may increase due, for example, to increases in installation costs (eg trenches).

#### Introduction

As a consequence of retail pricing regulation Telstra is unable to retrieve the full costs of the customer access network (CAN) from customer access charges. The resulting access deficit (AD) was traditionally retrieved by Telstra through an element in its service or call prices. This practice has effectively been continued by the Commission allowing an access deficit contribution (ADC) in access prices charged by Telstra to service providers and other carriers using the PSTN. Effectively this has meant that the access deficit is retrieved from all services using the PSTN (including those exclusively provided by Telstra). Where it is included in the access charge it comprises both a flagfall and per minute charge. The inclusion of an ADC effectively creates a TSLRIC++ cost basis. To the extent this flows through to retail prices it results in an additional efficiency cost by further raising price above the cost the economy.

#### Efficiency Consequences

Artificially holding customer access prices below their cost of provision results in direct and indirect efficiency costs, and impacts on investment incentives:

- *Direct Efficiency Cost*: Because some services are consumed with a cost of provision above their value in use there will be an efficiency cost of the difference between the value to users and the cost of provision of these units. However, in the case of customer access this is likely to be small given the relatively low elasticities of demand for access, especially by business.
- Indirect Efficiency Costs: The AD that results from under-pricing customer access flows
  through to the inclusion of an ADC in access prices. These are now based on TSLRIC++
  (TSLRIC plus common cost attribution plus ADC). Efficiency in use is further
  compromised (to the extent it flows through to retail prices access prices are raised further
  above the cost to the economy of supplying access) and access seekers are presented with
  an excessive access price, providing an artificial stimulus to build rather than buy.
- *Investment Incentives*: An additional problem arises because, as the ADC is averaged, there is no separate AD (and ADC) for each geographic region and type of end-user within that region. For instance, in CBD areas, there is unlikely to be an AD in respect of business users' lines. In metro areas there will be an AD, but the AD for business users is likely to be smaller than the AD for residential users, and so on. As a result, in some areas, the costs of providing the full bundle of communications services over an end-user's line will be less than the revenue generated from that line, and in other areas, the reverse will be the case. This can lead to inefficient bypass in those areas, or for a grouping of end-users within those areas.

#### First- and Second-best Approaches

As in all such situations where there is an obvious source of the problem, the *first-best* approach is to address that source. In this case the most efficient response is to remove the access deficit by raising customer access charges to levels that recover costs. In this way the access deficit could be removed while at the same time achieving an efficiency gain (the

elimination of the existing efficiency loss). Telstra is effectively precluded from doing this by the retail price control arrangements under which it operates.

The present approach of determining an ADC is a *second-best* response. While it solves the problem of under-recovery of costs, it perpetuates the direct inefficiency of under-pricing customer access, creates an indirect efficiency cost by being loaded on to carriage service prices and may have adverse investment incentives.

# The AD and ULLS

With respect to the declaration of unconditioned local loop service (ULLS), Telstra has proposed including an element in the ULLS price to recover its lost ADC on those lines. Even though there will be no access deficit on ULLS lines *per se*, Telstra has argued that the lines it will lose are those high-revenue lines contributing disproportionately to the AD. This is a different argument from that previously accepted by the Commission, and requires separate appraisal.

In effect Telstra is arguing the following:

- The provision of ULLS access will result in it losing lines to competitors that yield above-average service revenues.
- That these lost lines make an above-average contribution to recovery of the access deficit.
- That ULLS provision 'would leave the AD underfunded' unless there is an AD component in the ULLS price.

The case for including an ADC in the ULL access price is inconsistent with the Commission's approach in three main respects:

- First, the ADC would be made from a component in an access price rather than a component of a service price. All previous access deficit inclusions accepted by the Commission have been on a consistent flagfall and per-minute basis across call conveyancing services.
- Second, at first appearance pricing ULLS at full TSLRIC is part of a *solution* to the access deficit problem rather than a cause there is no access deficit with ULLS access *per se* but there is an access deficit on the lines displaced.<sup>16</sup>
- Third, the approach is inconsistent with the Commission's requirement to consider only the *direct costs* of access provision. As stated in the explanatory memorandum to the *Trade Practices Amendment (Telecommunications) Act 1997*:<sup>17</sup>

<sup>&</sup>lt;sup>16</sup> This is inherent in Telstra's statement that as 'ULL is priced to recover the costs of the line, there would be no need to take account of the AD in ULL prices if the take-up of ULL was uniform ...'.

<sup>&</sup>lt;sup>17</sup> Trade Practices Amendment (Telecommunications) Bill 1996 Explanatory Memorandum, at p. 44.

... 'direct' costs of providing access are intended to preclude arguments that the provider should be reimbursed by the third party seeking access for consequential costs which the provider may incur as a result of increased competition in an upstream or downstream market.

The ADC sought by Telstra constitutes a consequential cost rather than a direct cost, and would therefore is not admissible under the direct-cost-only rule.<sup>18</sup>

The combined omission of an ADC from the ULLS price and continuing to allow retrieval of the access deficit through surcharges on all calls made using Telstra's PSTN, whether directly supplied by Telstra or by other carriers and service providers, has conflicting effects on the efficiency of telecommunications pricing:

- It would avoid the distortion of the ULLS price by excluding an element that would increase its price above the cost to the economy of providing it.
- On the other hand, it would increase the per-line AD for PSTN lines resulting in a greater efficiency loss from voice service pricing.
- It may artificially encourage the use of ULLS to provide voice services, although the impact of this would depend on the degree of substitutability between PSTN and ULLS voice services.

The conflicting efficiency effects can only be resolved empirically.

#### 8. Conclusions

The Commission's task of setting *efficient* access prices is complicated by three main sets of factors. First a single access price cannot do all of the jobs required by the legislation in all of the circumstances, so trade-offs are necessary; in particular between the objectives of promoting efficiency in use of, and efficient investment in, the telecommunications infrastructure. The need for compromises forms a basis for considerable disagreement between the Commission, access providers and access seekers. Second, there are various 'second-best' considerations, particularly those consequent upon retail price controls and remaining market power flowing from incumbency advantages and remaining natural monopoly characteristics. These mean that seemingly sensible efficiency standards may not be appropriate in the circumstances in which they are being applied. Not only do these complicate the Commission's work but they can also lead to misunderstandings. Third, disagreements arise over the conceptualisation and measurement of TSLRIC itself and of key elements of estimating it. The Commission accepts the in-principle argument that efficient investment can only be ensured by use of a 'forward-looking' costing basis, but in practice applies a very weak form of this. The reason for the approach and how it operates have been both misinterpreted and misrepresented in some commentary. Disputes have also arisen over the interpretation and application of WACC and other key elements of capital costing.

<sup>&</sup>lt;sup>18</sup> Telstra's case appears to be based on the so-called efficient component pricing rule (ECPR) or 'Baumol-Willig rule' that allows the incumbent the full opportunity cost of access provision (Baumol, 1995; Baumol and Sidak, 1994).

The Commission has assessed that, in the absence of various other constraints and circumstances, efficiency in use of the telecommunications infrastructure is best approached by pricing access according to narrowly-defined TSLRIC. In the absence of second-best considerations and in the long-run context, pricing on this basis ensures efficiency as it equates value to the user with cost to the economy at the appropriate margin.

However, narrow TSLRIC does not result in cost recovery for the production element, does not provide the right incentives for either access providers or access seekers and ignores the existence of the access deficit arising from retail price controls. In practice then, narrowly-defined TSLRIC is supplemented by two further amounts.

First, because pricing at basic TSLRIC will not result in full cost recovery where there are common costs, the Commission allows an additional amount in access prices to contribute to the coverage of these common costs. TSLRIC inclusive of this contribution is called TSLRIC+. The allowance of common costs is related to other legislative criteria; particularly efficiency in investment and legitimate business interests of access providers. The actual amount of this contribution has, however, been the subject of disagreement between Telstra and the Commission.

Second, as a consequence of retail pricing regulation, Telstra is unable to retrieve the full costs of the customer access network (CAN) from customer access charges. The resulting access deficit (AD) was traditionally retrieved by Telstra through an element in its service or call prices. This practice has been continued by the Commission allowing an access deficit contribution (ADC) in access prices — effectively this has meant that the access deficit is retrieved from all services using the PSTN (including those exclusively provided by Telstra) at the same rate per minute. The inclusion of an ADC effectively creates a TSLRIC++ cost basis.

Each of these supplementations of TSLRIC results in a divergence of value in use from cost to the economy, thereby reducing the efficiency in use of telecommunications infrastructure. But these departures are necessary to meet other legislative imperatives. This illustrates starkly the inherent trade-offs required in pursuing the legislative criteria.

In an attempt to ensure efficient infrastructure investment decisions by both access providers and access seekers, access providers' costs are assessed on a weak 'forward-looking' basis encompassing the existing network configuration and the costs of best-in-use equipment, both of which involve substantial departure from a fully-optimised forward-looking approach. Costings are made using the Commission's n/e/r/a model. There are various reasons for this approach, but most particularly:

- An access price based on the actual cost of the access provider's network is inefficiently high because it reflects a cost above that of *the network the access-seeker would actually build*. Basing the access price on actual costs would result in an artificial stimulus to 'build' (facilities-based competition) rather than to 'buy' (access-based competition). Basing it on the 'forward-looking' cost places the access seeker in a 'knife-edge' situation, providing precisely the right build/buy incentive.
- The Commission's approach results in the access provider having a strong incentive to move its network further into line with the basis on which it is costed. The access
provider's new investments will reflect these forward-looking (best-in-use) costs and therefore they are fully rewarded by the Commission's procedures. Telstra has active plans to reduce its cost levels to best-practice levels. While this is largely driven by competitive pressures, it is reinforced by the ACCC's access pricing approach.

- To the extent that the forward-looking approach results in any deficiency of the allowed return from an economic return this applies to sunk capital, not new investment, and therefore cannot stifle investment.
- It provides an incentive to avoid 'bad decisions' which otherwise (under an actual cost basis) would be completely 'forgiven' by guaranteeing a return on the investment irrespective of how imprudent it may be.

Further, in the pursuit of both efficient infrastructure use and efficient infrastructure investment, access prices are determined on the basis of location-specific costs within four geographical bands built in to the n/e/r/a model. To use uniform geographical prices would result in too little use and too much access-seeker investment in low-cost areas and to too much use and too little access-seeker investment in high-cost areas. (Telstra blames the regulatory regime for the concentration of competitor investment in urban areas — 'In Telstra's view, the highly concentrated pattern of network service provision by Telstra's competitors is overwhelmingly due to regulatory intervention' (p. 21). However, on the basis of the analysis in this paper, any urban concentration of competitor investment cannot be attributed to the operation of the access regime and if anything the ACCC's approach tends to ameliorate the worst effects of this type of cream-skimming.)

Finally, a ruling that the 'cost of providing the actual facilities and equipment that will be used by the competitor' (p. 8) by the United States Court of Appeal for the Eighth Circuit (2000) has no bearing on the use of a forward-looking cost basis in Australia — in particular it is based totally on legal argument relating to legislation that is very different from that in Australia. Apart from this irrelevance there are dangers in an access provider appealing to this judgement in criticism of the Commission's approach. What the Appeal Court does endorse is a DAIC costing basis that would result in a lower access price than TSLRIC in all but the most capacity-constrained situations.

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## **ATTACHMENT 4**

### **INVESTMENT IN INFRASTRUCTURE**

The following tables provide a summary of existing and proposed communications infrastructure in Australia. All of the information was sourced from carriers' web sites and from publicly available documents such as media releases and public summissions to the Commission. The Commission intends that information collected will be made public as far as possible. The Commission intends to undertake a detailed facilities audit in the near future. The audit will examine the level of existing infrastructure, infrastructure under construction and planned infrastructure.

Carrier	Routes/Coverage	Technology	Status
Telstra	National	Fibre optic / Satellite	In operation
C & W Optus	National	Fibre optic / Satellite	In operation
	Brisbane–Cairns	Fibre optic	Under construction
ААРТ	Links to regional Fibre optic centres such as Geelong and Gold Coast.		In operation
Soul Pattinson	Melb-Sydney	Microwave	Under construction
	Sydney-Brisbane	Microwave	In operation
	Northern NSW	Microwave	In operation
PowerTel	Melb-Sydney	Fibre optic	Completed
	Syd-Brisbane	Fibre optic	In operation
Amcom Comm	Melb-Hobart	Fibre optic & submarine	Under construction
	Melb-Adelaide	Fibre optic	Planning
	Perth-Adelaide	Fibre optic	Planning
	Perth-Sydney	Fibre optic	Under construction
	Perth-Bunbury	Microwave	Under construction
Macrocom	Melb-Canberra,	Microwave	In operation
	Canberra-Sydney,	Microwave	In operation
	Sydney-Adelaide,	Microwave	Planning
	Sydney-Brisbane	Microwave	In operation
Telecasters	Cairns-Newcastle	Microwave	Under construction
Australian Fibre Network	Between capital cities	Fibre optic	Planning
Leighton, Macquarie Bank and Lucent Technologies	Between capital cities	Fibre optic	Planning

Transmission – Inter capital and regional

#### Mobile

Carrier	Coverage	Technology	Stage	Services
Telstra	National National (covers 95.6% of population, 97% from Oct 2000)	GSM, CDMA	In operation	
C & W Optus	National (covers 93% of population)	GSM	In operation	
Cellular One (subsidiary of AAPT)	Spectrum covers Qld, WA, Tas, Darwin, ACT, majority of SA, regional NSW and Vic. (just over 50% of population).	CDMA	Under construction, expected start date is late 2000	Initially service will be in SE Qld, WA, SA and ACT
Vodafone/ Globalstar	National (91% of population)	GSM, Satellite	In operation	
Hutchison (Orange)	Melbourne, Sydney (42% of population)	CDMA including local telephony	In operation	Also allocated spectrum in Adelaide, Brisbane and Perth
One.Tel / Onenet	Melbourne, Sydney, Perth Brisbane, Adelaide	GSM	In operation	Extending coverage in these cities

Carrier	Routes	Technology	Stage	Services
AAPT	Unknown	xDSL	Planned	Trialing xDSL in Sydney CBD exchanges.
OneTel	Unknown	xDSL	Planned	
Primus	Unknown	ADSL	Under development	Trialing ADSL in Melbourne CBD exchanges.
Request	Melbourne and Sydney CBD	xDSL	In operation	Expecting approx. 50 exchanges by end of 2001.
Telstra	National	PSTN	In operation	
	All capital cities and Launceston, Toowoomba, Bunbury	xDSL	In operation	Reach 7 million homes and 90% of population within 3.5km of ADSL exchange.
XYZed (Optus subsidiary)	Initially SA, Vic, NSW & QLD metro and CBD areas	xDSL	In operation	100 exchanges by 2001

**PSTN** (including conditioning of the network)

Aside from installing ULLS equipment as per the above, a number of carriers (and larger ISPs) are offering or expecting to offer ADSL retail products by reselling wholesale offerings. For instance, Pacific Internet is currently providing ADSL for high speed Internet access via both Telstra and XYZed wholesale products and Primus is offering a residential ADSL Internet access product via Telstra.

The below table outlines the Commission's current information in relation to the owner/operator of high bandwidth infrastructure within Australia. The table includes both infrastructure on the customer side of the exchange, and transmission infrastructure/networks (including inter-exchange transmission and inter-call charge area transmission aspects of the networks).

Carrier	Routes	Technology	Stage	Services
AAPT	CBDs of Melbourne, Sydney, Canberra, Brisbane, Adelaide, links to regional centres such as Geelong and Gold Coast.	Fibre optic	In operation	ATM, FR, VPN, IPLC, Internet (broadband, e-commerce)
	Mainland capital cities	LMDS	In operation (20 nodes by May 2000)	146 nodes expected to be in operation by Dec 2001 of which 46 will be in regional areas
Agile	Adelaide	Broadband wireless data	In operation	Will offer voice services in future
AirNet	Adelaide	Microwave broadband	In operation	Planning national broadband microwave rollout. High speed data.
Amcom / Fibertel	Perth and Adelaide	Fibre optic	In operation	
	Darwin	Fibre optic	Planned	
C & W Optus	National	HFC ATM, fibre optic		ATM, FR, VPN, VAS, Pay TV
Chello broadband	16 regional towns	Satellite broadband	In operation	Further 26 regional rollouts (2000), metro rollouts with Austar.
Davnet	Melbourne and Sydney	Fibre, microwave	In operation	ATM, FR, VPN, Internet
MCI Worldcom / UUNet (Ozemail)	Melbourne and Sydney CBDs	Fibre optic	In operation	ATM, FR, Internet
OMNI-connect	Metropolitan areas	Wireless networks	In operation	ATM, FR, Internet (broadband), wholesale

**Data**<sup>1</sup>

Carrier	Routes	Technology	Stage	Services
PowerTel	Melbourne, Sydney and Brisbane CBDs	Fibre optic		
Primus	Melbourne and Sydney CBDs	Fibre optic	In operation	DDS, FR, Internet
Pulsat	Perth, Melbourne and Sydney	Broadband wireless network	In operation	
RSL COM	CBD	ATM Backbone network	In operation	
Swiftel	Perth and WA	Fibre optic	Under construction	Internet, ATM and FR
Telstra	National	Fibre optic, HFC	Completed in August 2000	
TransAct	Canberra	Copper and Fibre local network	In operation	Terrestrial TV, Pay TV, video on demand, Internet
UE Comm (United Energy)	Melbourne, Sydney and Brisbane	Fibre optic	In operation	VISP services
Windytide	Regional Australia, Darwin	Hybrid fibre optic	In operation	Pay TV and Internet access services
Xinhua News	Asia Pacific Region	Satellite in Sydney	In operation	Voice and data services for Chinese speaking people in the Asia Pacific region

<sup>1</sup> Abbreviations: ATM – asynchronous transfer mode, WAP – wireless application protocol, DDS – digital data services, FR – frame delay, HFC – hybrid fibre coaxial, LMDS – local multipoint distribution service, VAS – value added services, VPN – virtual private network, VISP – virtual Internet service provider

## **ATTACHMENT 5**

# **COMPETITION NOTICES**

## **Internet Peering**

Date	Action
July 1997	ACCC received complaints about Telstra's conduct
July and August 1997	ACCC sought information from international carriers, IAPs and backbone providers
September 1997 to May 1998	ACCC sought extensive evidence (as it would for a Part IV proceedings) from IAPs and technical, industry and economic experts on the elements of s 151AJ(2) (eg definition of the market; degree of Telstra's market power; particulars of Telstra's conduct; whether, by engaging in this conduct, Telstra could be said to have taken advantage of this power; and whether Telstra's conduct had the effect, or likely effect, of substantially lessening, preventing or hindering competition in the relevant market)
	ACCC also sought information from Telstra and provided Telstra with an opportunity to comment on the general nature of the allegations and, as the competition notice was refined, the particulars set out in a draft notice
28 May 1998	ACCC issued a competition notice to Telstra (notice came into force on 5 June 1998 to allow Telstra time to cease the conduct)
2 June 1998	ACCC varied the date on which the notice came into force to 19 June 1998
16 June 1998	Telstra made a reciprocal compensation agreement with OzEmail on 22 May 1998 and made another such agreement with Connect on 5 June 1998. Telstra requested the ACCC to revoke the notice and, on 16 June 1998, filed a motion seeking to have the notice set aside
17 June 1998	ACCC revoked the original notice (despite a contrary submission from Optus) and issued a revised notice with an effective date of 26 June 1998 to reflect the changed arrangements. Telstra subsequently amended its application to refer to the revised notice
18 June 1998	Initial hearing of Telstra's application. Court adjourned until 23 June 1998
19 June 1998	Telstra made a reciprocal compensation agreement with the third IAP (Optus). ACCC sought submissions on whether it should revoke the notice
22 June 1998	ACCC revoked notice. Telstra discontinued its Federal Court application

### **Commercial churn**

Date	Action
August 1997	ACCC received complaints about a revised customer transfer process introduced by Telstra

August & September 1997	ACCC sought information from service providers
October 1997	ACCC notified Telstra of its concerns and requested certain information
October 1997 to July 1998	ACCC sought extensive evidence and advice from service providers, experts and counsel to establish a contravention of the effects test. This also involved the use by the ACCC of its powers in section 155 to obtain information from Telstra
10 August 1998	ACCC issued a competition notice to Telstra (to come into force on 30 September 1998)
21 September 1998	Telstra advised that it would make changes to the transfer conditions effective from 28 September 1998
14 October 1998	The ACCC considered that Telstra's revised conduct did not address the anti- competitive concerns but changed the nature of the conduct and thus precluded enforcement proceedings. The ACCC revoked the original notice and issued another notice covering Telstra's conduct for the period 17 July 1997 to 27 September 1998
2 December 1998	ACCC issued a further three competition notices dealing with Telstra's conduct from 28 September 1998. The notices specified that Telstra was contravening the competition rule by: (i) charging for total debt severance; (ii) using partial debt severance (which both came into force on 9 December 1998); and (iii) refusing to use an automated transfer system (which came into force on 25 January 1999)
24 December 1998	ACCC instituted Federal Court proceedings in relation to two of the competition notices (the third notice came into force on 25 January 1999)
9 April 1999	ACCC issued a fourth notice against Telstra which came into force on 13 April 1999. This alleged that the 'package' of conduct covered by the first three notices and, in addition, the fees charged by Telstra to transfer customers, was in breach of the competition rule
23 April 1999	ACCC instituted further proceedings against Telstra in respect of the third and fourth competition notices. Trial was scheduled for 13 March 2000 before Justice Hill
23 February 2000	Matter was settled. ACCC and Telstra reached agreement on a \$4.5 million package for telecommunications service providers who use Telstra's commercial churn process