Telstra Submission
to the

Productivity Commission

International Telecommunications Market Regulation Inquiry

5 May 1999

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Executive Summary

Australia has one of the most open and liberal markets for competition in international telecommunication services. Market liberalisation has created opportunities for new players to enter the Australian market and provide all types of services to Australian telecommunications users.

An industry estimate suggests that the international telecommunications services market is currently valued at around A$150b. Telstra's revenue from International telephone services in 1997/98 was A$1,380m. It is a market of rapid growth and there is considerable potential for Telstra and other carriers and service providers to increase Australian share of the growing international telecommunications market.

Domestic market liberalisation in Australia is realising direct benefits for consumers through increased choice of service providers (within Australia there are already twelve international carriers and global alliances operating), price reductions in the international telephony and data services market, and from significant investments being undertaken by carriers in expanding network capacity to and from Australia.

The trend internationally towards market liberalisation in other countries has also created opportunities for Telstra and other carriers to operate in "foreign" markets, to use domestic interconnection in these markets and service customers in these markets.

However, there are barriers to trade in international telecommunications services which are inhibiting the achievement of further service and cost benefits for Australian consumers. In the case of voice telephony, these barriers increase the costs to Telstra of terminating international calls and thereby limit the opportunity to pass on cheaper prices to Australian customers.

It is Telstra's experience that "distortions and mispricing" in international telecommunications are reduced significantly and potentially eliminated by deregulation and competition. International telecommunication prices for end users are generally at their lowest in countries where deregulation and competition are greatest. Although there are complicating factors associated with geography and demographics, there is little doubt that for Northern Atlantic and Northern Pacific routes, for example, costs are significantly lower than in other regions.

In the case of international Internet interconnection, which is largely United States-centric, current arrangements with the United States have adverse impacts on costs to Australian consumers. Currently, Australian Internet users incur the full cost of international transmission through to the Internet point of interconnection in the US, which is in contrast with normal bi-lateral arrangements for voice telephony where each carrier meets its international transmission costs on either side of the (notional) mid point. Australian Internet Service Providers, also pay port charges where they accesses the Internet in the United States, but the United States carriers, and hence their Internet users do not pay any port charges to access the Internet in Australia. Australian Internet Service provider costs to access the Internet in the United States are higher than they would be if more symmetrical interconnection arrangements

applied in the United States. Similarly, this adversely affects prices for Australian consumers and effectively represents subsidy by them of Internet users in the United States.

Telstra believes that the impediments and regulatory barriers to reducing international telecommunications costs and expanding services in particular overseas markets need to be addressed in such fora as the WTO, and on a bilateral basis between Governments.

Recognising, in particular, very rapid growth and projected future growth of the Internet, Telstra also urges the Australian Government to pursue within the WTO and other fora having international Internet connections with the US made more symmetrical, and to have US carriers contribute more fairly to their incurred costs. Whilst Telstra is not seeking regulation of the Internet by Governments, we are seeking a fair, equitable and sustainable set of arrangements for international Internet connections.

In working towards a better balance of international settlement arrangements between Australia and the rest of the world in both telephone and data traffic, Telstra recommends adopting a national coordinated approach to liberalisation and overcoming anti-competitive behaviour in the area of international settlement arrangements. The Government should consider focussing its negotiating effort on encouraging international service competition, and adoption of cost-based interconnection rates.

Demand for international bandwidth continues to grow rapidly and the international capacity used for data traffic now exceeds that for voice telephony. New technology is moving rapidly toward provision of higher bandwidths to meet this demand. Issues related to potential constraints on (national and) international bandwidth availability are to be studied under part of the National Bandwidth Inquiry, which is due to report in October 1999.

The trend towards large international telecommunication mergers and alliances is becoming a growing feature of the current international market in that major companies tend to compete and grow by merger and acquisition. For the relatively small Australian market there are potentially strong implications from such concentration of market power, and this need to be understood and closely monitored.

The pursuit of reforms at a government to government level both in relation to voice and Internet services will help provide the necessary flexibility through which commercial operators can reach the settlement arrangements which will allow price and service benefits for Australian consumers to be achieved.

1. International Telecommunications Market Overview.

This section provides a general overview of the international telecommunications market and examines trends through the activities of market participants - service providers, infrastructure providers and consumers.

Dimensions and Growth of the International Telecommunications Market

The international telecommunications services market is currently estimated to be valued at around US$100b. According to the ITU, international telephony revenue between 1990 to 1996 increased from US$42.6b to US$69b[1]. Traffic levels continue to grow rapidly and Ovum[2] has predicted that international telecommunications traffic will increase from 95 billion international minutes at present to 195 billion minutes in 2008. Data traffic is now additionally growing at a much faster rate than telephony.

Telstra's role in the international telecommunications services market

Telstra has historically played an active role in the provision of international telecommunications services. Through OTC and it successor, Telstra has pursued opportunities in the provision of international services to and from Australia and through offshore businesses.

The two major services provided by Telstra to and from Australia are:

- international voice telephony; and
- international Internet access.

Telstra has also established subsidiary businesses in the UK, New Zealand and Japan which compete directly in the international service provider business in these markets for the carriage of global telephony traffic and other services. Telstra's objectives in establishing these points of presence are:

- to provide the "foreign" ends of international services provided in Australia so that Telstra can operate as an end-to-end service provider on these routes - this enables Telstra to reduce its costs of providing international services in Australia, introduce greater product differentiation and provide greater service quality and enhanced customer care on an end-to-end basis;
- provide a greater scope of services across a greater range of countries for global customers of Telstra;
- provide new revenue sources by allowing Telstra to gain new business in other countries.

[1] ITU World Telecommunications Development report 1997
[2] Rise of Cost-based Interconnect and the Collapse of International Accounting Rates

Telstra's revenue from international telephone services in 1997/98 was AUD$1,380m[3]

International Service Providers

Australian domestic market liberalisation in July 1997 has opened opportunities for many international telecommunications service providers to operate in the Australian market. In addition to the 28 Australian carriers there are currently 12 international carriers and global alliances operating from Australia These international organisations provide a wide variety of services, including domestic and international telephone, Internet and other data services and managed network services for corporate clients. A number of operating structures have been adopted for service provision in the Australian market:

- some foreign carriers have acquired full or partial equity in Australian telecommunications companies (eg OPTUS, AAPT, Ozemail)
- several foreign carriers have established fully owned "points of presence' (POPs) in the major metropolitan centres for service to both retail and wholesale customers (eg. MCI, WorldCom, RSLCom, Primus, WorldxChange, BT);
- some local operators have established their own operations (eg One.Tel).

These operators, generally use the following means to carry international traffic:

- international leased circuits supplied by Australian operators (this includes re-use of leased international capacity, sometimes referred to as International Simple Resale [ISR]).
- on their own capacity (either directly owned or used on an IRU basis) between Australia and their overseas POPs or head operation.
- resell another carrier's international services (pure re-billing).

Infrastructure Provision

The growth in demand for services is also driving investment in international capacity. For example, Telstra has significant investments in satellite system and international submarine cable networks (eg Telstra has a 1.83% share-holding in INTELSAT and is a main investor in the A$1.7 billion "SEA-ME-WE 3" submarine optical fibre cable project linking more than 30 countries in Asia, the Middle East and Western Europe. In 1997 a A$160 million submarine cable (JASAURUS) was provided through a cooperative venture between Telstra, Optus and the Indonesian Carrier PT Indosat. Telstra/OTC have a long prior history in the provision of international infrastructure. Consideration is now being given by Telstra to a major new Australia-Japan 640 Gbit/s cable, costing between A$462 million to A$692 million. Telstra has direct interconnections and commercial arrangements with over 200 foreign carriers, largely on the basis of shared, bilateral half circuits.

[3] Telstra Annual Report 1998. p.6

Telstra entered the Internet backbone market in 1994 and at that time had only a 1.5 Mbit/s international link to the US. Telstra has invested significantly to increase that capacity since then, using a mix of submarine cable and satellite technology. To provide for traffic growth in Internet access of over 100% per annum, Telstra's international network for Internet carriage has expanded significantly over the last five years. The following table lists the current international Internet network deployment (1999), and is predominantly based on trans Pacific submarine cable systems with the remainder on Intelsat satellites.

Connectivity with the USA	**280 Mbit/s**
Connectivity with Asia	**14 Mbit/s**
Connectivity to NZ	**12 Mbit/s**
Total	**306 Mbit/s**

Table 1. International Network Deployment (trans Pacific submarine cables & Intelsat)

At current growth levels, Telstra's total capacity to the USA will exceed 4 Giga bits per second (Gbit/s) by 2003.

At a global level, several developments have coincided to vastly increase the future availability of international transmission capacity:

- The development of new fibre optic cable technology, in particularly Dense Wave Division Multiplexing (DWDM) , which has massively increased the potential capacity of international submarine cable systems;

- the construction of new cable systems with investment from a new and more diverse range of investors and operators than before, and

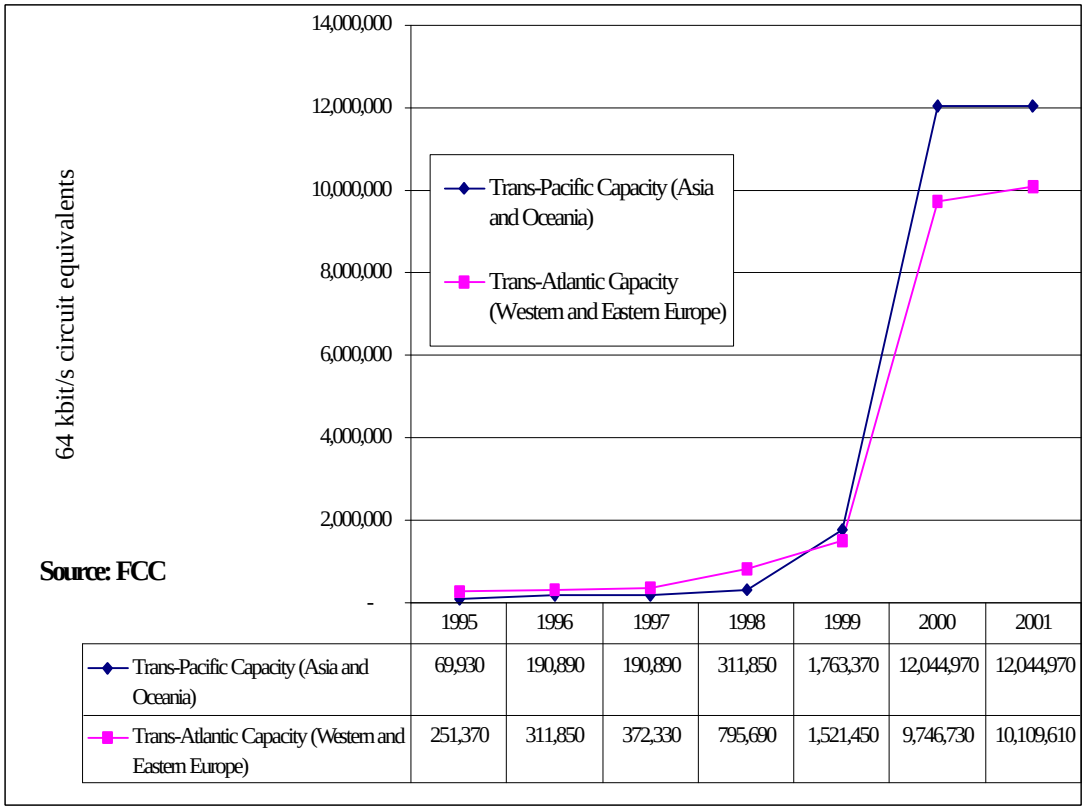
- the construction of new international satellite systems, eg PanamSat and Orion

.

These developments will increase bandwidth availability between the major markets of the world, especially in the northern hemisphere, to meet the expected growth in demand. It is noted that issues related to "bandwidth availability and pricing within Australia, and to and from Australia and key overseas markets"[4] are to be studied under part of the National Bandwidth Inquiry, which is due to report in October 1999.

The following chart (source FCC) forecasts increases in international 64 kbit/s trans-Pacific and trans-Atlantic circuit equivalent capacity, to the year 2001:

[4] National Bandwidth Inquiry - Media release, DCITA, 9 December 1998



	1995	1996	1997	1998	1999	2000	2001
Trans-Pacific Capacity (Asia and Oceania)	69,930	190,890	190,890	311,850	1,763,370	12,044,970	12,044,970
Trans-Atlantic Capacity (Western and Eastern Europe)	251,370	311,850	372,330	795,690	1,521,450	9,746,730	10,109,610

Figure 1. Forecast increase in 64 kbit/s Circuit Equivalents (Trans-Pacific and Trans-Atlantic) to 2001.

In addition to the capacity expansion forecast above, Telstra has recently announced to the market a plan to build a new Australia-Japan submarine cable: the cable is designed for total capacity of 640 Gbit/s, will cost an estimated US$400 million and will be ready for service in March 2001.

Consumer Behaviour

Consumers are also driving changes in the market through demand for new services, particularly for data and Internet. One of the demonstrable changes of demand over the past 3 years is shown by the total growth in international telecommunication traffic to and from Australia.

Australian PSTN Traffic (million minutes)

	1995/96	1996/97	1997/98	1998/99 (10 Months)
Outgoing	1150	1316	1365	1393 (1161)
Incoming	944	1090	1219	1319 (1099)

Australian Internet Traffic (terabytes)

	1995/96	1996/97	1997/98	1998/99 (10 Months)
Outgoing	10	125	325	595 (496)
Incoming	40	235	555	860 (717)

It is difficult to accurately measure Internet traffic flows by geographic destination and origin. However, using network addresses known as AS (Autonomous Systems), Telstra has been able to sample and extrapolate traffic flowing on its international links to produce some estimates. The following is based on a daily sample from February 1999:

Region	**Inward Traffic Share**	**Outward Traffic Share**
USA	86%	64%
Europe	6%	13%
Asia	4%	14%
Other	3%	9%

There are many different types of applications which are encompassed in these traffic flows, including File Transfers, Video/Audio, Email and telephony. However the predominant traffic is from the World Wide Web (www).

The above growth in service demand by Australian consumers has been influenced by a number of factors including:

- *migration patterns*. International calls tend to follow migration patterns of Anglo, Mediterranean, and now the Asian population, and result in demand growth. The strong influence of Anglo destinations also continues as these destinations (UK, USA, NZ, Canada, Ireland) account for approximately 50% of outbound international minutes from Australia.

- *calling trends* (duration and frequency) tend to mirror migration patterns such as those of recent migrants who talk more frequently as they keep regular family contact in contrast to established migrants and second generation Australians who make international calls on particular occasions such as birthdays, Christmas, Easter, Mother's Day. For business customers, calls tend to concentrate during the business week when the B-party is available, with residential customers predominantly calling on weekends with Sunday as the main calling day (weekends account for approximately 40% of outbound international minutes from Australia).

- *price changes*. Another characteristic of the international telecommunication services market has been the demonstrable benefit of price reductions through competition. For example, the average cost of international calling with Telstra has fallen by over 70% in real terms over the past 15 years. Price reductions have been associated with significant demand growth.

- *multinational presence*. An increase in multinational presence in Australia and the growth of Australian companies overseas is seeing more international business calling, coupled by growth in Internet and fax communications.

The strong Australian demand for Internet is matched by its rapid growth in this country.The following table, based on data collected by the OECD, indicates the relative cost of Australian Internet access, comprising both PSTN charges and Internet access charges.

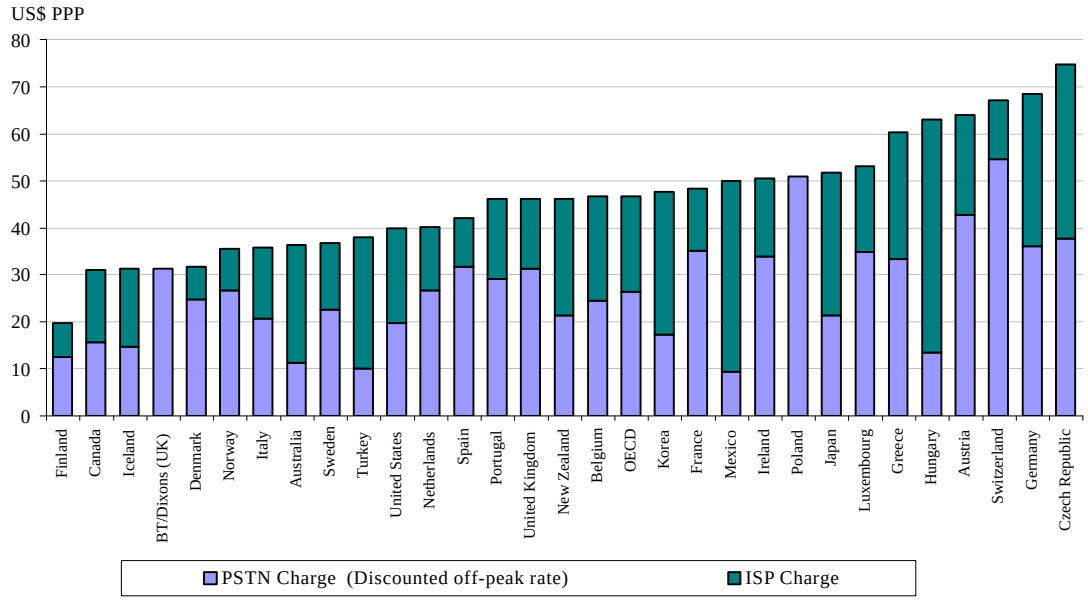


Table 2. Off-peak rate Internet access basket, 1998, 20 hours per month

Past and Future Trends

Most of what has been predicted about international telecommunications growth, and more recently about growth of the Internet in particular, has been an under-estimation. It was not foreseen, for example, that in Australia the volume of international data traffic would equal that for PSTN traffic as quickly as 1998, nor that its rate of growth since then would exceed that of the PSTN to the extent that it has (the equivalent crossover point for domestic PSTN and data traffic has not quite yet occurred but will probabl lags by only a very short time).

As new capabilities such as Internet, voice over IP (Internet telephony), digital audio and video streaming, web TV and other multimedia applications continue to grow, the demand for international bandwidth is expected to grow even more rapidly. New technologies to provide the necessary raw bandwidth in these situations are also appearing (for example, Wave Division Multiplexing or Dense Wave Division

Multiplexing). Issues relating to international bandwidth are currently amongst the items for study under the National Bandwidth Inquiry.

The move toward telecommunications market liberalisation and deregulation is continuing and is further encouraged by its own success. Its uneven international spread however highlights the inequities which remain between liberalised and highly controlled markets, and encourage initiatives which might narrow these differences.

The trend towards large international telecommunication mergers and alliances, and more recently 'mega-mergers', is significant. It is becoming a growing feature of the current international telecommunications market that major companies compete and grow by mergers and acquisition. Recent examples of Worldcom/MCI, AT&T/BT and Deutsche Telekom are cases in point. DT, for example, is 70% owned by the German Government and has been attempting to complete one of the largest takeovers in corporate history by acquiring Telecom Italia. Whilst its success is by no means clear at this stage, such arrangements and attempts are of significance to Australia since in such cases, globalisation and commoditisation of carriage favours consolidation and scale.

Notwithstanding regulatory issues associated with international competition and foreign ownership in such cases, it is clear that this form of globalisation can lead to concentrations of market power in vertically and horizontally integrated corporations. There are significant implications for relatively small markets such as Australia, and for local industry, and for local industry players, with and without strong equity/alliance links with these global operators. This should be the subject of close monitoring.

2. Developments in International Settlement Arrangements

The international telecommunications market has changed dramatically in recent years due to the convergent impact of increased deregulation and competition both in the Australian market and globally. However there are still barriers to market access and restrictive regulations in other countries that inhibit Australian companies from pursuing more market-entry based pricing strategies.

Whilst, Telstra is increasing its provision of end-to-end services to and from Australia, such as through its Points of Presence strategy, Telstra continues to rely heavily on bilateral relationships with overseas carriers for international settlements. These bilateral arrangements limit Telstra's ability to negotiate more favourable commercial conditions where there is only one player at the other end.

International Voice Telephony

In the case of voice telephony, Australia's costs of terminating international voice traffic are largely dependent on the basic structure of bilateral settlement arrangements. The traditional structure of bi-lateral relationships with overseas carriers for international voice telephony is illustrated in Figure 2 below. An agreed charge per minute is applied from one carrier to another to "terminate" outgoing traffic from the notional international mid-point to the overseas called party, ie the "settlement rate". The settlement rate is most often half the accounting rate, although this does not necessarily have to be the case and there are examples of uneven splits of the accounting rate, eg. a 40:60 rather than a 50:50 split.

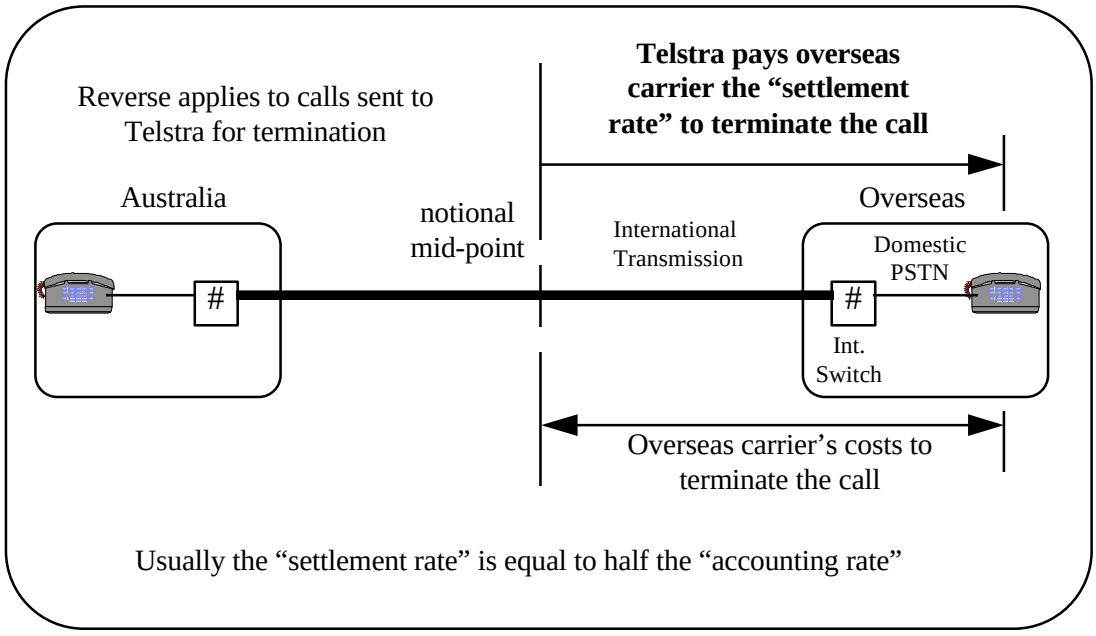


Figure 2: Basic Structure of Bi-lateral Arrangements for Voice Telephony

International Internet Settlement Mechanisms

A central feature of the current international Internet market is the lack of a global settlement or cost distribution mechanism for inter-provider traffic flows. Part of this is due to the nature of the packet switched technology of the Internet which is capable of transmitting data through numerous networks throughout the world without the maintenance of an 'end to end' connection structure and on a 'best efforts' service paradigm.

In the current Internet market, two main types of interconnection structures are used:

- *Peering* in which two comparable or complimentary networks agree to exchange routes (addressees) of their own direct customer base at agreed interconnection points, thereby exchanging traffic, most often on a no settlement basis.

- *Supplier/Client* A larger network will sell connection to its own direct customer base and to other third party networks ranging from the greater Internet (transit) to smaller networks.

A related and equally central feature of the current Internet market is the USA-centric structure of international Internet interconnections. As the Internet evolved from a joint academic, government and military communications platform, a structure has developed under which non-USA operators have to pay the full cost of connecting to the USA. Therefore, interconnection arrangements for Internet traffic have been *asymmetricall* in favour of the US carriers, unlike bi-lateral arrangements for international telephone services which have traditionally been *symmetrical*.

This structure is not an outcome of regulation in the USA or elsewhere but has its roots in the evolution of the Internet, the nature of the technology and the global market power of the USA networks.

There have been some difficulties with peering arrangements, particularly as they operate more effectively when both parties have similar levels of infrastructure. Whilst parity is difficult to measure, Telstra generally favours arrangements which are based on comparable levels of infrastructure by both partners.

The basic structure of Telstra's international interconnection arrangements with US carriers for Internet traffic is illustrated in Figure 3 below.

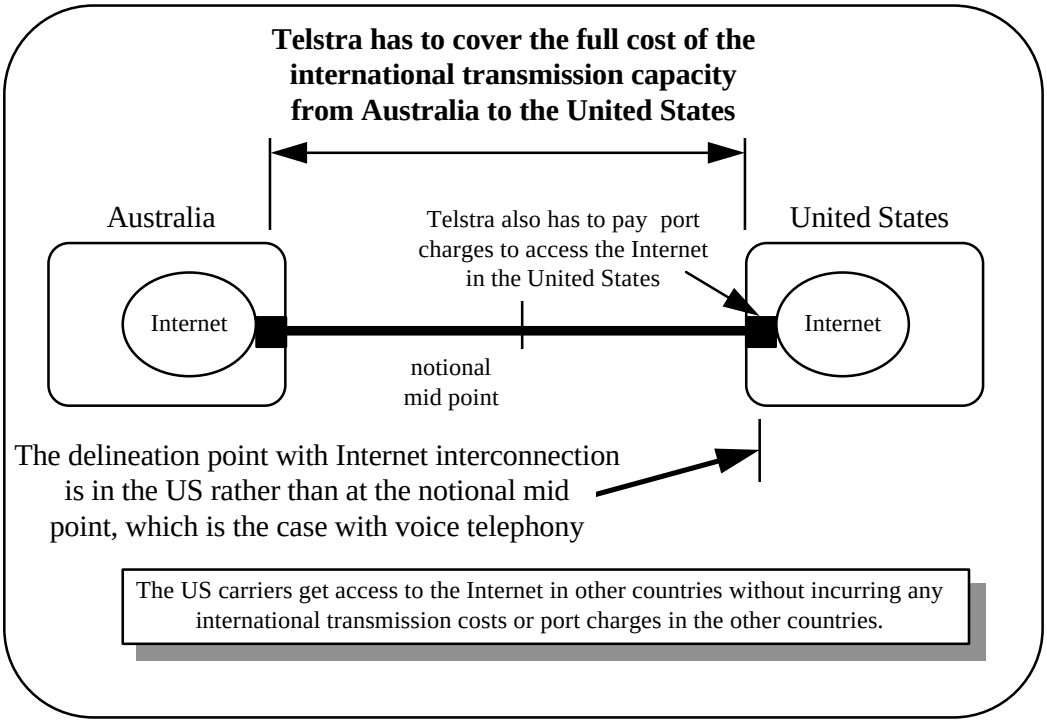


Fig.3. Basic structure Of Telstra's US Internet interconnection arrangement

Comparison of settlement arrangements for voice telephony and Internet

The contrast between voice telephony and Internet arrangements is briefly outlined in the following comparison which summarises some of these differences at the retail/end-user level:

Public Internet	**PSTN**
• Distance/Geography-independent pricing • Duration-independent pricing (except for dial-up access charges) Some flat rate, usage-independent (USA: $20 pm) • Peak-rate & volume usage regulated by congestion • No international premium • Multimedia • No interconnect or termination charges paid by user (except for IP telephony/fax). Deregulated. • Cost-oriented pricing	• Priced by the distance • Predominantly voice service • Priced by the minute • Time of day/week discounts to encourage off-peak use • International service priced at premium • Interconnect reflects call termination costs • Retail price structure still reflects historical cross-subsidies & regulations in regulated markets

The following summarises some of these differences at the wholesale/inter- provider interconnection level:

Public Internet	**PSTN**
• Usage-based wholesale pricing is rare (NZ and AUS are exceptions) • 'Peering' arrangements: mutual exchange of routes/traffic at agreed interconnection points, usually without settlements • No traffic-based settlement payments • No access charges payable for IP traffic • Little regulation of interconnect arrangements • Non-USA operators pay full cost to connect to USA operators	• Per minute pricing (direct and transit) of wholesale international traffic • International carriers paid a termination rate, based on a two way settlements system. • National interconnect regimes, regulated domestically • Access charges payable for call origination and termination

It is noted here that one of the issues to be considered under the National Bandwidth Inquiry in relation to international market structure and commercial issues is an assessment of international settlement arrangements for internet protocol networking.

3. Market Distortions and Negotiating Flexible Commercial Arrangements

Disparity between charging structures for voice and Internet currently creates opportunities for arbitrage and bypass of international carrier termination rates by getting around market distortions and intrinsically inefficient pricing, to effectively achieve lower prices. Telstra's ability to negotiate lower settlement rates in many countries is still limited in some markets by the continued imposition of too onerous and inflexible requirements on international carriers by their national regulatory regimes in relation to agreeing/changing settlement arrangements.

Voice Telephony

The types of inflexible regulatory arrangements of concern include:

- requirements that any changes in accounting/settlement rates receive prior approval of the national regulatory agency or Government - this results in delays and provides a barrier to overseas carriers agreeing changes;

- requirements that bi-lateral agreements be filed with the national regulatory agency or Government - this provides an administrative barrier to carriers agreeing accounting rate reductions and may make them reluctant to do so because of concerns about confidentiality; and

- requirements for Parallel Accounting and Proportional Return - these very rigid requirements may effectively prohibit overseas carriers from entering into new more commercially-orientated settlement arrangements with Telstra or, if they can do so, having such new arrangements made subject to these rigid rules may act as a disincentive to their adoption.

Parallel Accounting is where multiple international carriers must have the same settlement arrangements, eg. accounting rate, with a particular overseas carrier in another country with which they all correspond. Proportional Return is where multiple international carriers correspond with a particular overseas carrier in another overseas country, but each of the multiple carriers must only receive return traffic from the overseas carrier in proportion to the amount of traffic that they actually send to this overseas carrier.

Telstra has raised these issues with the Department of Foreign Affairs and Trade in respect to pursuing these regulatory issues in international fora, such as the WTO, and in bi-lateral and multi-lateral discussions with other Governments.

Some of the ways in which carriers respond in attempting to limit the effect of these barriers include:

International Simple Resale (ISR), in which the international half-circuit transmission capacity used by the operator is derived from international leased circuit services provided by the established international facilities-based carrier or carriers. This is usually accompanied by the establishment of a local Point Of Presence or POP to provide access and other services.

International facilities-based competition, in which new operators use their own international transmission capacity directly acquired in international submarine cable systems or from satellite system operators, such as INTELSAT. This is being actively facilitated in some markets through the construction of new international telecommunication capacity, including submarine cable systems and satellite systems, which are open to participation (ownership/equity, Irrevocable Rights of Use (IRUs) or lease arrangements) by a diverse range of private operators.

Internet telephony - settlement rate bypass. Internet telephony services (sometimes referred to as "Voice over IP" (VOIP) or Voice over the Internet (VON)) has emerged over the last two years in a variety of forms. Using the packet switching technology on which the Internet is based and taking advantage of the lack of regulatory restrictions in most markets, voice calls are possible from a PC to a PSTN (Public Switch Telephone Network) phone, from a PSTN phone to a PC and between PSTN phones via an IP (Internet Protocol) network. It is estimated that around 360 million international minutes are being carried over IP today, which presently represents less than 5% of total international voice minutes.

Most commercial interest has been in phone-to-phone carriage using the Internet for at least part of the call path and requiring an IP/PSTN voice gateway. There is of course great potential for new value added services based on VOIP platforms. This incudes voice enabled directory services and integration with Web site services. As a phone-to-phone substitute, however, most observers agree that VOIP will exploit a finite 'arbitrage' opportunity in certain markets created by high retail international tariffs and high interconnection/termination charges. VOIP allows the bypass of international carrier termination rates, especially in protected/regulated markets. As such, it is yet another market development creating competitive pressure on traditional PSTN carriers and forcing both wholesale and retail prices downwards.

Internet

In relation to *international Internet access*, the effects on Telstra and Australia of the current international Internet interconnection arrangements with the US are principally that:

- Telstra, and hence effectively Australian Internet users, incur the full cost of the international transmission through to the point of interconnection with the Internet in the US - this is in contrast with normal bi-lateral arrangements for voice telephony where each carrier meets its international transmission costs on either side of the mid point;

- Telstra, and hence effectively Australian Internet users, also pay port charges where Telstra accesses the Internet in the US, but the US carriers, and hence effectively US Internet users, do not pay any port charges to access the Internet in Australia - the analogy in the voice telephony case would be if Telstra continued to pay settlement rates to US carriers which included a contribution towards domestic termination of calls in the US, but the settlement rates paid by US carriers to Telstra did not include any contribution towards domestic termination in Australia;

- Telstra's costs to access the Internet in the US are higher than they would be if more symmetrical interconnection arrangements applied with US carriers, and these higher costs reduce Telstra's ability to reduce the prices of Internet services to Australian consumers; and

- the US carriers', and hence US Internet consumers', costs to access the Internet in Australia are artificially lowered by the asymmetry in the international interconnection arrangements and hence Telstra, and Australia Internet users, are effectively subsidising the provision of Internet services by US carriers to US Internet users.

Given the growth and volume of Internet traffic and the relative lack to date of accurate and agreed traffic measurement tools, it is difficult to quantify the additional costs which Telstra and other Australian Internet operators must bear due to this structure. Telstra is only able to provide broad estimates for the whole of the Australian industry.

Of Australia's total Internet traffic, it is estimated *70%* of total traffic is *international* in origin or destination. It is further estimated that at least *60%* of total traffic has the *USA* as its origin or destination.

Telstra estimates that *trans-Pacific bandwidth costs* incurred by Australian Internet backbone providers/operators currently represent around *75 - 80%* of the total costs incurred for IP bandwidth operations.

The estimated "extra cost" for Australian Internet users is the cost of the US half-circuit which non-US IP operators have to bear, which is then passed on to end-users in access pricing. If , under symmetrical arrangements, Australian users should not pay anything for the US half-circuit, the "extra cost" would be at least half of the "75 - 80%" referred to above.

Although there is debate about how to measure 'use of' and 'benefit from' the Internet, it is probably appropriate to acknowledge that for Australia, use of and hence benefit from Internet connection to the US is higher than that from the US to Australia, and that therefore the 'traditional' half circuit sharing formula should not automatically apply. Telstra estimates that the *"extra cost"* Australian users bear as a result of Australian IP backbone providers/operators paying for both half-circuits is

approximately *20 - 30%* of the 75 - 80% trans pacific bandwidth cost referred to above. In an estimated total annual cost for the Australian market of around A$300 million (1999) for international Internet connections, this is significant.

4. The Need for Reform

Telstra believes that competitive reform of the international services market provides the best prospect for achieving ongoing benefits for Australian consumers. From a Telstra perspective, competition in international service provision in overseas countries will assist Telstra in reducing our international termination costs, firstly by providing a choice of alternate suppliers to terminate Telstra's traffic that offers price competition to existing carriers and, secondly, through competitive pressure on existing correspondent carriers, as options would be available to Telstra to consider establishing a presence and its own separate arrangements to terminate traffic in their country.

To that end, Telstra believes that there is much that Governments can do at a broad level to facilitate regulatory reform to open to competition other country telecommunications markets.

International Telephony:

Telstra considers that there are a number of regulatory conditions which, if present in overseas countries, will assist in enabling Telstra and other international carriers to provide more competitive international, in particular:

- individual country regulatory arrangements which allow competition in the provision of international voice telephony services;
- individual country regulatory arrangements which give freedom and flexibility to their international carriers to commercially negotiate and agree new and innovative international settlement arrangements;
- individual country regulatory arrangements which require the offering of cost-based domestic interconnection arrangements that could be used to terminate incoming international traffic in that country; and
- moves by individual country, regional or international regulatory bodies to develop recommendations and rules covering the setting of accounting or settlement rates that will force them closer to cost.

In conjunction with negotiating for more flexibility for international carriers in "competitive" overseas countries to enter into more innovative and flexible settlement arrangements, Telstra believes that the Australian Government should be supporting the use of broader regulatory provisions by overseas Governments to protect against possible anti-competitive conduct, eg. misuse of market power. Such provisions should provide for the relevant regulatory agency to receive complaints, seek and receive information from carriers in that country that is required to investigate the complaints and take enforceable action to address the issue if the complaint is proven.

The regulatory arrangements that have applied in Australia to international services since the early 1990s provide a good example of the flexibility in this area that we would like to see made available to international carriers in other countries *that allow international services competition.*

Domestic Cost-Based Interconnection Rates. We would like to see negotiations to ensure that as many other countries as possible introduce domestic market competition and, in conjunction with this, regulate for the provision of cost-based domestic interconnection rates.

The availability of cost-based domestic interconnection rates will greatly assist Telstra in negotiating down the settlement rates that it pays out:

- even if a country does not allow international services competition, or only provides limited scope for such competition, Telstra will be able to use the actual or likely level of cost-based domestic termination charges as leverage in its negotiations to obtain lower settlement rates; and

- where a country allows international services competition, the overseas carrier will always know that if they don't agree to sufficiently reduce the settlement rates that Telstra pays them, then Telstra may choose to bypass use of the existing bi-lateral settlement arrangements and terminate calls in their country at the domestic interconnection rates.

Guidance on Setting of Accounting/Settlement Rates: We would like to see the Australian Government support multi-lateral regulatory initiatives intended to force accounting rates closer to costs, but only provided that such initiatives could be guaranteed to force rates closer to genuine costs across *all* types of countries. It is important to make clear that it would be inappropriate to support initiatives which would force settlement rates paid to already liberalised countries, such as Australia, even closer to genuine costs thus perpetuating the present inequities. In summary, support for an approach that ran this risk would be harmful to Telstra and Australia because:

- it would penalise more liberalised countries that have taken a genuine and rigorous approach to assessment of domestic interconnect costs and provide a disincentive to more countries adopting this approach; and

- it may increase the costs to Telstra to terminate international calls, and hence limit the ability of Australian consumers to access lower prices. Whilst the settlement payments in both directions may reduce on particular routes, the relative reduction at the Australian end might be significantly greater than for the overseas carrier, thus actually increasing the net out-payment made by Telstra.

Whilst in April 1999 the FCC announced[5] some limited reform of its longstanding international settlements policy, deregulating inter-carrier settlements between U.S. carriers and foreign non-dominant carriers on competitive routes, Telstra urges the Australian Government to work towards substantially further reform of the traditional approaches still adopted by the FCC, to reduce accounting rates to/from the United States. As the Inquiry may be aware, many countries and carriers share these critical views of the current FCC approach. We believe that the Australian Government's interactions and negotiations with these other countries would likely be enhanced if it were to clearly indicate is disagreement with the FCC's continuing restrictive approach on this issue.

Priority Countries

In terms of negotiating for other specific countries to make changes that will assist Australia in reducing its international voice termination costs, we would like to see the Australian Government give priority to the following countries where settlement arrangements are mostly inadequate:

- India;
- Sri Lanka;
- Pakistan;
- Nepal;
- the Middle East countries; and
- Russia.

These countries are priorities for Telstra because the accounting/settlement rates that we have with their international carriers are significantly above cost and because there is a net outflow of traffic from Australia to these countries which means that Telstra is a net out-payer of settlement charges, or in trade terms, the arrangements on these routes are contributing to our trade deficit.

One other situation where Telstra would like to see the Australian Government concentrate its negotiating efforts is in relation to the US's continued requirements for Parallel Accounting and Proportional Return. Whilst there is strong competition in the provision of international services at both the US and Australian ends, Telstra, and hence effectively Australia consumers, are being disadvantaged by the imposition of these requirements in the US:

- it is difficult for Telstra to negotiate a new settlement arrangement with one US carrier which will offer a lower termination rate for calls to the US, because US regulation would require that this arrangement then be applied to all US carriers with whom Telstra corresponds;

[5] FCC International Settlement Rates (International Bureau Docket No. 98-148), April, 1999

- however, in the reverse direction, US carriers have the option of entering into arrangements with new entrants in Australia giving lower termination charges for their calls terminating here which can be quarantined because Australia has more flexible regulatory arrangements; and

- the effect of this is that Telstra faces a barrier in reducing its termination costs for calls into the US, and hence a barrier in reducing its charges to Australian consumers, while US carriers do not face this barrier in terminating calls into Australia and hence have greater opportunities to reduce the costs of international calls to US consumers.

Internet:

Telstra would like to see the Australian Government, within the WTO forum and elsewhere, strongly negotiate to have the international Internet interconnection arrangements with the US changed to make them more symmetrical and have the US carriers contribute more fairly to the costs they incur.

Telstra has been active in many international fora in raising awareness of this issues and in seeking reform. Telstra has already worked closely with the Department of Communications, Information Technology and the Arts (DCITA) in pursuing international reform. This includes work in ITU Study Group III and in APEC-Tel. In the latter forum, a major study has been established to report to APEC governments on international charging arrangements for Internet services. (See http://www.apii.or.kr/telwg/ICAIS/ICAIS-frame)

National Approach

Australia Pursuit of reform within overseas Governments would be assisted if the Australian Government were to adopt a national coordinated approach to overcoming anti-competitive behaviour in relation to international settlement arrangements. Such a process would strengthen Australian suggestions to overseas Governments that if they were concerned about the effects of anti-competitive behavious in their markets if they were to be opened to international services competition and relaxed international settlement regulation, then this could be addressed by broad-based provisions specific to misuse of market power by overseas carriers, such as we have here in Australia under the ISPCL, the ICOP and, since 1997, the International Rules of Conduct.

5. Conclusions

In a society which is increasingly global and where there are consequential impacts on national competitiveness, there is considerable scope for benefit to Australia from pursuing a national approach to the international telecommunication market.

One of these approaches is for the Government to promote and support international provisions which protect Australia from anti-competitive behaviour in the area of international settlement arrangements. Another is to encourage other countries at a government to government level, particularly those identified in this submission, to allow international services competition. Government encouragement of domestic cost-based interconnection rates in such countries would further impact beneficially upon Australia in negotiating down international settlement rates.

Concerning the Internet, Telstra would like to see the Australian Government within the WTO and other fora strongly pursue the objective of having international Internet connections with the US changed to make them more symmetrical, and to have the US carriers contribute more fairly to the costs they incur. Whilst we do not seek or want direct regulation of the Internet by Governments, we are seeking a fair, equitable and sustainable set of arrangements for international Internet connections.

Telstra has actively participated in international accounting rate fora over many years, to raise issues and seek reform. In the process we have worked closely with DOCITA (for example on ITU 'tariff and accounting rate' issues, participating with them in ITU-T Study Group 3, with other carriers on National Study Group 3, and on related issues with APEC-Tel) and the Department of Foreign Affairs and Trade and its predecessors, and believe continuing pursuit of these issues to be important.

The trend towards large international telecommunication mergers is becoming a growing feature of the current international market in that major companies compete and grow by merger and acquisition. Globalisation and commoditisation of carriage favours consolidation and scale and can lead to concentrations of market power in vertically and horizontally integrated corporations. There are strong implications for relatively small markets such as Australia, and for local industry and for local players, with and without strong equity or alliance relationships with these global operators, and these need to be closely monitored.

We urge the Government to exercise its international influence on the issues raised in this submission to further help ensure Australia's international competitiveness.