
INDUSTRY COMMISSION SUBMISSION TO THE JCPA INQUIRY INTO INTERNET COMMERCE

1. Introduction

The Joint Committee of Public Accounts (JCPA) inquiry into internet commerce provides a valuable opportunity to address many issues which have developed as a result of the rapid growth in Australia's internet usage over the past two years. This submission focuses on one of these issues — the pricing of internet access, and factors which affect it.

Internet commerce presents a range of opportunities for Australian businesses and consumers. It has the potential to make cross-border trade cheaper, easier to conduct and more extensive in geographical scope. It also promises to open new service markets, particularly for information-based services which have not previously been traded (ITU 1997).

To encourage the growth of internet commerce in Australia and create opportunities for Australian businesses to use this medium to increase their international competitiveness, it is vital that internet access is priced appropriately. Pricing internet access too far above cost will discourage consumers from purchasing access to the internet and hamper its adoption as a medium for electronic commerce. On the other hand, pricing internet access too far below cost will jeopardise the willingness of providers to supply the infrastructure needed to support growth in internet commerce in Australia. Getting the internet access price right is therefore necessary, although not sufficient, for sustainable growth in internet commerce. It is also important to ensure that the costs of internet use are as low as possible.

In Australia, competition among internet access and service providers has lowered the price of internet access substantially. However, there remain a number of factors which distort the cost of providing internet access in Australia and have an impact on the price, quality and take-up of internet commerce. Two existing cost distortions discussed in this submission are those associated with:

- the cost of access to the domestic telecommunications network; and
- the cost of international internet capacity between Australia and the United States.

Also important are potential cost imposts which may result from the introduction of new regulations governing use of the internet. In this context, this submission draws attention to regulatory aspects of taxation which may raise the cost of internet commerce.

2. Internet use in Australia

Data on the extent of internet commerce in Australia remain limited. Some indication may be obtained from the significant increase in the number of internet connections in Australia (see table below). In both absolute and comparative terms, the number of internet connections in Australia is significant.¹ In January 1997, Australia had 514 760 internet connections (equivalent to 29 connections per thousand inhabitants), a twenty-four fold increase since 1991. Only five other countries have a higher number of total internet connections, and only four other countries have more internet connections per head of population than Australia.

The table below reveals that significant variation in internet penetration has developed across OECD countries. In part, this variation reflects the prices charged to consumers for internet access. For example, Australia, New Zealand and most of the Scandinavian countries enjoy low access charges and high internet penetration rates. In France and Germany the reverse is true. Other explanations include variation in the use of personal computers and the nature of internet content (OECD 1996). For example, the ability to speak English affects demand for access to what remains essentially an English-language network (ITU 1997).

Internet connections provide an indication of the dimensions of internet access. Unfortunately, there are no reliable international data which can provide information on individual access. However, it is reasonable to assume that growth in connections correlates with growth in individual access, although what multiple should be applied to determine overall access is unknown.

In Australia, various estimates of the number of individuals using the internet have been produced (see ATO 1997). The most recent publicly available survey was undertaken by Roy Morgan Research between July 1996 and June 1997. It found that nearly three million Australians have now used the internet at least once. Around 1.7 million Australians use the internet at least once a month (Roy Morgan Research 1997).

¹ The number of internet connections is not equivalent to the number of individuals using the internet. For example, one large business or university may have only one internet connection, but numerous individual users.

Not all internet use is for internet commerce. AGB McNair and www.consult have produced separate estimates indicating that around 5 per cent of Australia's online users have purchased products over the internet. That figure is growing steadily (ATO 1997). Extrapolating from US data, the ATO has estimated that the total value of internet commerce in Australia was about \$10 million in 1996. MasterCard Australia has indicated that, in the 12 months to June 1997, Australian businesses conducted approximately \$15 million of transactions over the internet. This includes Australian merchant sales to overseas customers, but excludes Australian customer purchases from overseas merchants. The ATO quotes projections for the year 2000 of about \$500 million in internet commerce sales by Australian businesses.

Number of internet connections per thousand inhabitants in selected OECD economies, July 1991 to January 1997

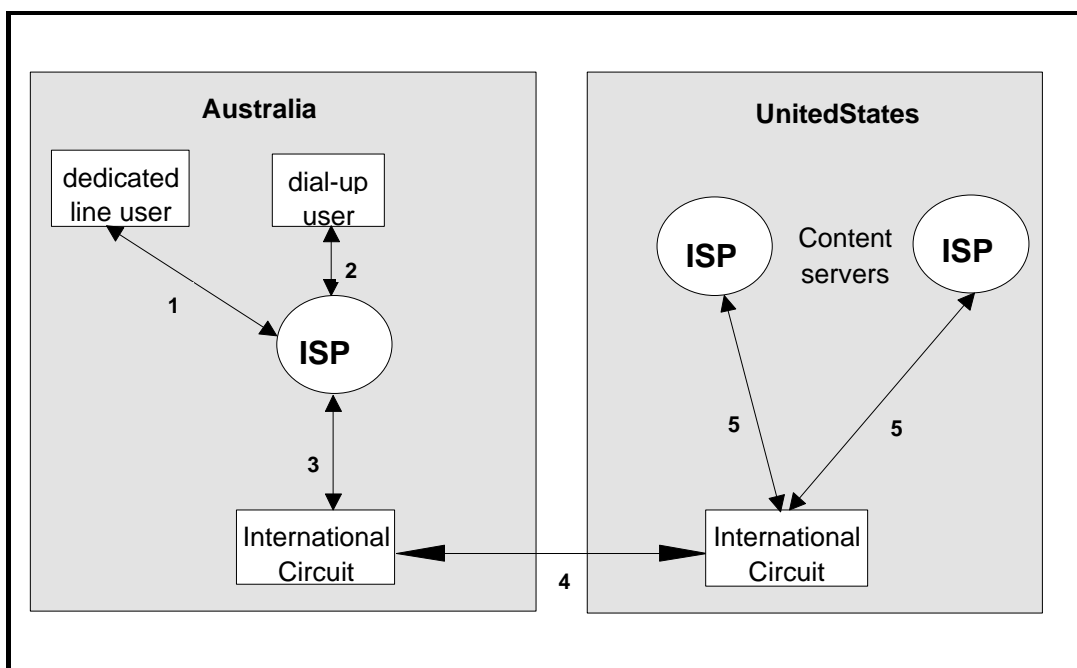
	<i>July 91</i>	<i>July 94</i>	<i>Jan 97</i>
Australia	1.26	7.15	28.51
Austria	0.27	2.51	11.43
Canada	0.69	4.36	20.38
Denmark	0.30	2.33	20.37
Finland	1.74	9.75	55.51
France	0.16	1.24	4.22
Germany	0.26	1.83	8.84
Japan	0.05	0.58	5.86
Netherlands	0.49	3.88	17.50
New Zealand	0.35	4.21	23.61
Norway	1.94	8.94	39.38
Sweden	1.37	6.07	26.39
Switzerland	1.46	6.78	18.23
United Kingdom	0.12	2.67	10.09
United States	1.69	7.84	38.44
OECD average	0.57	3.06	14.94

Source: OECD (1997).

3. An internet transaction

The figure below shows the basic components and pathway of an internet transaction from Australia to the United States. Internet users in Australia will have either 'dial-up' access where they connect to an internet service provider (ISP) via the public switched telephone network (PSTN), or dedicated line access where they lease a line specifically for internet traffic to the ISP. Low volume users such as households and small businesses tend to be dial-up users, while high volume users such as universities, government and large businesses usually have dedicated line access.

The basic components of an internet transaction



- 1 Dedicated leased line.
- 2 PSTN line.
- 3 Dedicated line (leased or owned in Australia).
- 4 International dedicated line.
- 5 Dedicated line (leased or owned in the United States).

An internet transaction between Australia and the United States begins with a user request to gain access to a particular US website. This request is forwarded from the user terminal to an ISP via a modem and the PSTN for 'dial-up' users (shown as 2 in the figure above), or via a leased line for dedicated line users (shown as 1 in the figure). Once received, the ISP sends the request via domestic (3 in figure), international (4 in figure) and US (5 in figure) leased or owned lines to an ISP in the United States which holds the content requested (content server in figure). The US ISP processes the request and, in its role as a content server,

downloads the information to the dedicated line or dial-up user in Australia, via the original path and ISP.

In Australia, Telstra and Optus are the major owners of internet capacity (shown as 1,2,3 and 4 in the figure above). There are also numerous resellers who lease capacity from Telstra and Optus and sell it to ISPs. ISPs also may lease lines directly from the owners of internet capacity. In most cases, the owners of internet capacity, or internet access providers, are also ISPs.

4. Domestic internet access

As discussed above, the domestic component of an internet transaction can use both the PSTN and leased lines, or leased lines only. In Australia, the market for leased internet lines is already quite competitive, with Telstra, Optus and a number of smaller internet capacity owners leasing lines to resellers and directly to ISPs. Therefore, this section focuses on the pricing of the PSTN for internet traffic and the implications of including internet access in the universal service obligations for telecommunications.

Pricing of the PSTN

For most users, the PSTN component of an internet transaction involves a local call to their ISP's site over a standard copper-pair line. The pricing of local calls is a contentious issue in Australia, particularly in relation to internet access. Under the current regulatory regime, local calls for both voice and data services have to be charged at a flat rate per call. Furthermore, the rate itself is subject to price-cap regulation. However, the average length, and hence cost, of voice and data calls are very different. Estimates indicate that the average length of a local voice call in Australia is 3 to 4 minutes, while that of an internet session is 30 minutes.

While Telstra has acknowledged that it overestimated the congestion problems associated with internet traffic (Geoff Long, "Telstra: We were wrong about the Net", *The Australian*, Tuesday 14 October 1997), there are still economic efficiency costs involved in supplying a telephone circuit for the length of an internet session at current prices. For example, the Industry Commission estimated that the average long-run marginal cost of providing a local call service is 2.5 cents per minute (IC 1997). Hence, based on the estimated average length of calls, a carrier providing local calls incurs an average cost per call of approximately 10 cents for voice calls and 75 cents for data calls. For both calls, the most that carriers are able to charge customers is 25 cents. The implication of these figures is that internet users are being cross-subsidised by users of voice telephony.

While the subsidisation of local data calls by users of voice telephony probably has encouraged an increasing number of Australians to use the internet, the current pricing arrangements may hamper the development of internet commerce in the longer term. For instance, the losses made by carriers on local data calls may undermine the incentives to upgrade the technology of the PSTN to provide higher quality internet access. The current pricing of local data calls may even explain the development of a separate network in some areas to carry data between dial-up users and their ISPs at high speeds for a timed charge, with the current PSTN continuing to carrying voice and low speed data at an untimed rate. Were prices of PSTN use more in line with costs, a single, upgraded PSTN may have carried both types of traffic at a lower total network cost.

To avoid the inefficient proliferation of networks and to ensure that the incentives to upgrade the PSTN are not distorted, one option would be to allow carriers to charge internet users directly on a timed basis when they connect to their ISP. This would not preclude continuation of the Government's policy of untimed voice calls. Alternatively, carriers could charge ISPs on a timed basis for receiving local data calls and allow the ISP to pass this cost on to users. The current Telecommunications Act does not prevent charging in this manner.² Thus, there is currently the potential for carriers to charge twice for local data calls — once on an untimed basis for connecting the dial-up user to the ISP and once on a timed basis for the ISP to receive incoming traffic. Neither charge need reflect the cost of providing the service. The Commission's preferred alternative would involve carriers charging only once on a timed basis for the cost of the service — either charging the subscriber or the ISP. The former option may entail greater transparency for the user.

Universal service obligations

In July 1996, the Minister for Communications and the Arts established the Standard Telephone Service Review Group to examine, among other things, whether the definition of the standard telephone service mandated under the universal service arrangements should be upgraded to accommodate new technologies and minimum service levels. In December 1996, the Group recommended that a digital data service, capable of providing a range of services including access to the internet and electronic commerce, should be reasonably accessible to all Australians on an equitable basis wherever they reside or carry on business by 1 January 2000 (Standard Telephone Service Review Group 1996).

² However, the Government is currently preparing regulations which will prevent carriers from charging ISPs for receiving local data calls from residential and charity customers.

While the inclusion of a digital data capability in the universal service obligations (USO) may increase the penetration of internet access in Australia and provide increased opportunities for Australian consumers and businesses to participate in internet commerce, there is reason to be cautious about endorsing such a policy.

As discussed by Ergas (1996) in his minority report to the Minister, it is not clear that the benefits of including a digital data capability in the USO outweigh the costs of providing the service. This is not to deny that there may be very strong net benefits from including this capability in areas of relatively high traffic density, and low cost. However, providing the service on a broader geographical basis would necessarily involve cross-subsidisation from high to low density areas and could result in substantial efficiency losses. More specifically, cross-subsidising a digital data service is likely to introduce distortions in consumption patterns, the extent and nature of competition, and in the incentives for efficient investment and operation.

Also important is the distribution of these losses among households and businesses. It is likely that a disproportionate share of the losses would be borne by low income households. This is because the greatest demand for a digital data capability is among businesses and higher income, better-educated households. These groups therefore are likely to be the largest beneficiaries of adopting a USO which includes a digital data service. The cost of implementing the service is likely to fall more broadly on basic telephone services, affecting all users of these services, including lower income households. The result would be low income households subsidising access to a digital data capability for higher-income households and businesses.

5. International internet capacity between Australia and the United States

As Australian internet users rely heavily on information and content from US internet sites, the majority of Australia's internet traffic flows from the United States to Australia. Telstra, Australia's largest provider of internet infrastructure, currently has a capacity of 130 megabits per second (mbps) to the United States, compared with 6 mbps to New Zealand and 2 mbps to both Japan and Korea.

An internet transaction from Australia to the United States, or in the reverse direction, requires the use of international capacity (see figure in Section 1). When this international capacity was first established by Australian access providers, internet traffic was almost all in one direction — from the United States to Australia — as Australians used internet sites in the United States and

down-loaded information and content. Australian access providers pay the full cost of this international capacity.³

Today, however, the traffic patterns between Australia and the United States have changed significantly. Telstra estimates that while 70 per cent of traffic between Australia and the United States is from the United States to Australia, the other 30 per cent is in the opposite direction as US internet users increasingly draw on Australian internet content (including significant traffic to US 'mirror' sites located in Australia, thus avoiding congestion of the US sites) (Telstra 1996). But Australian access providers still pay the full cost of capacity between the two countries. Therefore, they pay not only for internet traffic from US internet sites to Australian internet users, but also for internet traffic from Australian internet sites to US internet users. Telstra argues that for its capacity alone, this arrangement represents a subsidy to US internet access providers of approximately US\$15 million per year (Telstra 1997a).

Telstra estimates that the volume of international capacity required to support the internet will overtake its total capacity for PSTN traffic in 1998. With the demand for new internet capacity growing at 10 mbps per month, and as the proportion of traffic that flows from Australia to the United States increases, the subsidy paid to the United States by Australian access providers, and ultimately Australian internet users, will expand. Furthermore, as the cost of international capacity accounts for around 60 per cent of the total cost of an internet transmission (AUSTEL 1997), the international capacity cost inequality between Australia and the United States is likely to increase substantially the cost of internet commerce in Australia.

Telstra (1997b) has submitted a petition to the US Court of Appeals to review a Report and Order on international settlement rates issued by the Federal Communications Commission (FCC). The FCC Report and Order failed to address internet capacity costs between Australia and the United States, which Telstra claim are:

arbitrary, capricious, in violation of the Communications Act, in excess of statutory authority, unsupported by the record before the FCC, and otherwise contrary to law.

Ideally, the cost of international internet capacity would be shared by Australia and the United States on the basis of traffic flows. The Commission suggests that the JCPA note the cost impost imposed by the current arrangements and their potential impact on the growth of internet commerce in Australia. It may also be

³ This arrangement differs from international telephony where, for Australia-US connections, the Australian carrier pays for half of the cost of the capacity of the international circuit and the US carrier pays the other half (see IC 1997).

useful for the Committee to consider the potential role for government in advancing discussions between Australian and US carriers on this issue.

6. Taxation and internet commerce

In order to assess the tax implications of internet commerce, there needs to be a clear distinction between goods bought over the internet but which are delivered by other means, and goods which are both bought *and* delivered over the internet. The distinction is important because tax issues apply only to goods below a certain threshold if the goods are not delivered over the internet, whereas the nature of the mode of supply means that transactions of any value are not monitored, let alone taxed, if the goods are delivered over the internet.

Goods bought via the internet and delivered by other means

Purchasing goods directly from an overseas supplier is not a new phenomenon, with mail order services via printed (eg. magazines) and electronic (eg. television) media being a well established and accepted form of buying. However, the internet has provided a new and powerful medium through which this type of purchasing may occur.

The attractiveness of purchasing items over the internet or through other media is that, up to a certain value, the purchase is free of Australian sales tax and import duty. Currently in Australia, sales tax and import duty are collected for goods imported by post with a value greater than \$1000⁴ and for goods landed by sea or air with a value exceeding \$250. Sales tax and duty are also collected below these thresholds if the combined value of the taxes exceeds \$50.

From an efficiency perspective, avoiding import duty becomes less of a problem in an environment where import duty rates for most goods are being reduced more generally, and where removal of restrictions on parallel imports is being contemplated.

In principle, avoiding sales tax revenue poses a more serious threat to the revenue base, as well as leading to a potentially inefficient diversion of spending power away from Australia and requiring alternative means of raising revenue. The incentive for such diversion is greatest for goods currently subject to high rates of tax — non-essential goods subject to 22 per cent and 32 per cent sales tax.

One option may be to lower the tax-free thresholds to reduce tax avoidance. However, the administrative and compliance costs involved are likely to

⁴ The tax-free limit on items landed by post is to be reduced to \$250 as of 1 April 1998.

outweigh the increase in revenue from doing so.⁵ A better remedy may be delivered through tax reform which introduced more uniformity into indirect tax rates, while broadening the tax base. In practice, the current low tax-free thresholds for goods entering Australia suggest that internet commerce is as unlikely as mail order sales to become a major mode of commerce for goods delivered physically. Therefore, provided that adequate enforcement procedures are in place, it is unlikely that goods purchased over the internet and delivered by other means will have a significant impact on the competitiveness of Australian producers or retailers or the revenue base.

Goods purchased and delivered via the internet

Some goods may be delivered, as well as purchased, over the internet. For instance, goods which were once purchased as tangible items such as books, magazines, music and software can now be delivered electronically over the internet as intangible digital items. Books can be downloaded and printed, magazines can be read, music and video can be downloaded and even stored on disc, and software can be downloaded and installed. Importantly, the sales tax regime, as it currently stands, does not extend to intangible items. Changes to the legislation would be required for the ATO to be able to tax digital goods on the same basis as their physical counterparts.

Before considering the benefits and costs associated with taxing goods both purchased and delivered via the internet, the feasibility of monitoring these transactions — in terms of both cost and technology — must be considered. Such purchases are difficult to detect, especially when made from an overseas website. The CSIRO (1997) found three main problems with detecting an electronic internet transaction.

- There are jurisdiction issues which arise from the distributed nature of the internet. Websites may locate in a foreign jurisdiction for cost or tax avoidance reasons, or a website may span several jurisdictions.
- Identifying individuals who trade electronically on the internet is problematic, as internet account names are not a reliable way of identifying people on the internet. Also, numbers are often obscured when passing through a website, and it is comparatively easy to fool the system if an individual is determined to do so.

⁵ The Australian Customs Service (1997) claims that the current costs of processing import documentation and collecting revenue on a cost recovery basis are \$22.80 plus \$0.20 per line after ten lines for an electronic entry and \$44.55 plus \$1.00 per line after the first line for a manual entry.

- Even if individuals trading on the internet can be identified, it is difficult, if not impossible, to find out the content of their transactions. Information sent over the internet will commonly be encrypted and can be understood only by the communicating parties at either end. This problem extends beyond the internet because data will commonly remain encrypted on discs, and hence may be impossible for any third party to read.

The ATO (1997) makes a number of recommendations for overcoming some of these technical obstacles. For example, it recommends that details of all webshops should be registered with the ATO, all organisations which operate or host webshops should be licensed, methods for monitoring internet traffic should be developed and a record of internet numbers of Australian-based computers should be maintained. In some cases the ATO acknowledges that there would be administration and compliance costs, but does not attempt to quantify them. In other cases, it does not consider costs at all. In total, however, the ATO's recommendations would imply significant regulatory imposition on ISP facilities in order to conduct widespread and potentially intrusive surveillance of internet transactions. Telstra (1997c) claims that the compliance costs associated with the ATO's recommendations would be 'unreasonable'.

The range of difficulties involved in monitoring this type of internet transaction mean that, at current relatively modest levels of internet commerce, the cost of monitoring and enforcing taxation of these transactions could easily outweigh the benefits. The benefits would come from the small increase in tax revenue, the improvement in efficiency from taxing these goods in a similar manner to close substitutes and in enhancing the integrity of the tax system. However, the internet is a dynamic environment and if rapid growth in internet commerce were to occur, this could alter the situation at some time in the future.

The Commission recommends that a proper regulatory cost-benefit analysis, including preparation of a Regulation Impact Statement, be undertaken before introducing taxation measures which could potentially stifle internet commerce.

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