A price on the net

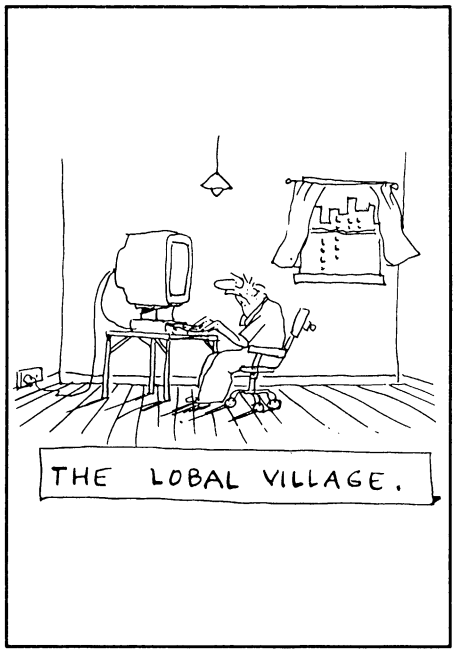
Julian Thomas, Lecturer, National Centre for Australian Studies, Monash University

Cyberspace is still a land of high hopes and distant horizons. Governments envisage accessible broadband networks delivering economic, social and cultural goals in an indefinite near future. But where do we start in describing future information infrastructures, and how does the objective of accessibility relate to the control and regulation of existing infrastructure? This report, prepared in January by Dr Sam Paltridge of the OECD's Directorate for Science, Technology and Industry, and recently released for general distribution, offers a valuable comparative perspective on these questions.

Rather than offering another lengthy tour of the broadband imagination, Paltridge's report examines the historical and contemporary patterns of Internet use in the OECD. As far as the Internet is concerned, the late 1960s is the beginning of time and 1990 is the dawn of the modern era, a tumultuous period during which the academic and military users who created and once dominated the Net saw business take over, government funding for the NSFNET backbone wound down, and Internet applications enter the packaged software mainstream. From 1990 to 1995 the total number of networks connected to the NSFNET backbone grew from 1727 to 50 766, while the percentage of US connected networks shrunk from 75% to 56%.

This growth was made possible by adapting existing telecommunications infrastructure. The dynamism of the Net was patched onto the very different culture of public telephone systems—a culture of intensive regulation, monopolised markets, and highly centralised and controlled software development and adoption industries. The report analyses this disjunction primarily in economic terms, as a complex relationship between the monopoly public telecommunications operators (PTOs) predominating in the OECD and the proliferating commercial operators on the Net.

While Australian Net advocates have often complained about Telstra's high local call charges, especially for



ISDN, Paltridge identifies the pricing structures of PTOs across the OECD as a major obstacle to achieving the goals of information policies. He sees local competition becoming 'the key policy instrument ... to expand affordable access to information infrastructure'. The report correlates the uneven distribution of Internet access across OECD countries with the level of competitiveness of national telephone systems, noting that, of the top eight OECD countries ranked by 'Internet host penetration', only Iceland and Norway are without telecommunications facilities competition.

However, the data used to arrive at this conclusion is troublesome in several ways. The rapidity of change means that information gathered in mid to late 1995 may now be unreliable; while other important information, such as that relating to the distribution of personal computers (PCs), is estimated. There is no real discussion of local factors that have contributed to the slow adoption of the Internet in countries low on the list of Internet access - the effect of Minitel in France, for example, or language difficulties faced by Japanese users. Nevertheless, comparisons drawn between some countries are instructive. For instance, Australia, Switzerland and Denmark, while having similar PC penetration rates (2nd, 3rd and 4th respectively), have notably dissimilar Internet adoption rates (5th, 9th and 12th).

The report presents the enormous range in the price and nature of Internet access throughout the OECD. Faster (2 mbps and above) services are unavailable in much of Europe because of the PTOs' fears of competition from resellers. 56 kbps and 64 kbps services, currently important for small and medium-sized businesses, are cheap in Finland and Canada and expensive in Australia.

On the other hand, Net access can be very cheap in Australia. Indeed, the Australian dial-up access provider Netspace wins the prize for the cheapest in the OECD as of October 1995. In this area, Paltridge draws his sharpest distinction between competitive telecommunications markets, which fall below OECD average dial-up costs, and non-competitive markets, which are generally above them. Even so, low Australian prices are not entirely attributable to competition, with the report noting the contribution of

Some of the main findings of the OECD Report

- The penetration of Internet hosts is five times greater in competitive than monopoly markets, and if allowance is made for the date of service commencement, Internet access in countries with telecommunication infrastructure competition has grown six times faster than in monopoly markets.
- The average price for leased line access to the Internet in countries with monopoly telecommunication infrastructure provision in 1995 was 44 per cent more expensive than countries with competitive provision of infrastructure.
- In most OECD countries there are restrictions on who can supply telecommunication infrastructure for Internet access, because of monopoly or duopoly policies. As an increasing number of these PTOs enter the Internet access business policy makers will need to exercise vigilance against potential abuses of bottleneck control of infrastructure.
- A major reason for the poor availability of local content in some countries is inefficient network access for domestic producers and users. Such countries will not develop a market attractive to national suppliers.
- Different charging practices for local calls in OECD countries results in differences in user costs for on-line services of up to ten times for 20 hours per month and twenty times for 40 hours per month. The normal difference between the most and least expensive countries for an OECD basket of residential services is between two to three times the cost.
- The current trend of rebalancing call tariffs by lowering long distance charges and raising local charges is increasing the cost of a basket of on-line services, with users in monopoly markets being the worst affected. The average additional price paid by users in monopoly countries, although already far exceeding the average for competitive markets, is growing.
- There is a danger that monopoly PTOs, by maintaining high underlying charges for capacity, could restrict the growth of 'dial-up' and leased line Internet access services until they are ready to enter the market or because they view some new Internet services as threats to traditional sources of revenue.
- Initiatives to lift restrictions on the provision of infrastructure for services which have been liberalised in the EU area (July 1996), such as data services, are very positive for Internet access expansion and will be complemented by the liberalisation of voice services. ❑

untimed local calls to reduced access costs.

The OECD figures will be used by both sides of the current debate over Telstra's future ownership. The final section of the report, devoted to the Internet's capacity to converge telecommunications, publishing and broadcasting, is relevant to a further aspect of that argument, namely the question of Telstra's current strategies and future value. The author notes the speed of development in Internet based voice telephony and expresses little confidence in the ability of carriers or regulators to curb it, other than by the crudest possible means (limiting bandwidth). US carriers are currently testing this proposition, however, having asked the FCC to prohibit the sale of unregulated Internet telephony software. Although Internet telephony is currently adopted by a tiny user base in comparison with the PSTN, the report predicts it to be a powerful influence on the process of reform of international pricing structures. OECD PTOs see their future in content and leveraging customer access, but their manoeuvrability may be seriously limited by competition law and industry-specific regulation.

These questions are now urgent in Australia. There are signs of a far-reaching restructuring of the service provider market: recent events include the demise of OpenNet as a service provider, and Stewart Fist's recent reporting in *The Australian* of the 'TelstraNet' strategy, which apparently envisages turning most Internet service providers into 'TelstraNet dealers'. As the OECD report demonstrates, that market has so far delivered competition and low prices. 'TelstraNet' appears to be targeted at home users and small businesses. In the higher capacity market, AUSTEL has just made its first adverse finding in the field of data services, ruling Telstra's National Frame Relay service anti-competitive.

We can end by returning to the compelling figure of Internet wizard Vinton Cerf, who in the 1960s helped develop the Arpanet, the forerunner of today's Internet. Cerf now works for MCI; his career and others like it make up a significant chapter in the long story of the relations between computing and telecommunications. Cerf is fairly optimistic about the future of the carriers: 'In the long run all those bits fall through a great many of the circuits that the carriers offer and sell. So we will get revenue from that traffic. We might make less revenue from it ... but I am often fond of pointing out that if someone else if going to eat your lunch, it might as well be you!' ❑

Information Infrastructure Convergence and Pricing: the Internet, OECD, Paris 1996, 96pp. It is available on the Internet at http://www.oecd.org/dsti/sti_ict.html

Julian Thomas teaches cultural policy at the National Centre for Australian Studies, Monash University