Declaration of Telecommunication Services

Anne Daly and Natalie Stoeckl

The access declaration process, instituted by the *Telecommunications Act 1997*, requires providers of declared telecommunication services to provide competitors with access to those services on fair and equitable terms and conditions. The Act vests the Australian Competition and Consumer Commission (ACCC) with the powers to declare a service in situations where declaration is deemed to promote the long-term interests of end-users. This paper examines the recent declaration of three local telecommunication services — local carriage service, local PSTN originating and terminating service, and unconditioned local loop service.

When considering whether declaration will promote the long-term interests of end-users, s.152AB of the *Trade Practices Act 1974* directs the Commission to consider whether declaration will: promote competition, any-to-any connectivity and 'the economically efficient use of, and economically efficient investment in, the infrastructure ...' (ACCC, 1999:6).

This paper focuses on aspects of that declaration process arguing primarily that the ACCC has been asked to apply an inappropriate set of tests. The discussion notes that parts of the declaration test are exceedingly difficult to apply and that the sequential nature of the test makes it almost impossible to investigate the sensitivity of results to changes in initial assumptions. The conclusion reached in the paper is that the current tests for declaration should be revised. The paper also notes that cost-benefit analysis can, in theory, overcome many of the problems associated with the current declaration tests. This is not to say that cost-benefit analysis is perfect. It too, suffers from its own set of problems. Nevertheless, it may be able to substantially improve current declaration tests and those involved in the up-coming review of Part XIC of the *Trade Practices Act* are urged to give it serious consideration.

The Tests

The ACCC has been given the power to declare infrastructure as essential under two parts of the *Trade Practices Act*. Under part IIIA of the *Trade Practices Act*, the tests for declaring access include that it 'would promote competition in at least one market (whether or not in Australia), other than the market for the service; ... it would be uneconomical for anyone to develop another facility to provide the service; ... the facility is of national significance' (*Trade Practices Act* section 44H). A different test of the public interest is applied to declaration in

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Anne Daly and Natalie Stoeckl respectively are Senior Lecturer and Lecturer in Economics in the School of Economics and Marketing, Division of Management and Technology, University of Canberra.

telecommunications under Part XIC of the *Trade Practices Act*. Under this section of the Act, the ACCC can declare certain services where it is satisfied that declaration will 'promote the long-term interests of end-users' (Section 152AL). The intention was that in the future the test should be the same in telecommunications as elsewhere.

First, the telecommunications test for declaration appears 'easier' to pass than the test applied to other industries. If so, then a perhaps unintended, consequence is that declaration may occur more frequently in telecommunications than in other industries.

Second, the test only focuses on the prospective benefits of declaration without considering costs associated with the process. In particular, this test ignores the costs of regulation for parties involved in the industry and for the taxpayer. It also ignores the costs of the inquiry itself. End-users may face lower prices for local telephony services, but end-users also pay taxes. In considering the future 'with and without' declaration (ACCC, 1999:7), the ACCC should not be directed to focus solely on the implications for price and quality of service. They should also be directed to consider the costs associated with the process and implementation of declaration.

This is not a radical proposal; sixty-four years have passed since the 1936 United States *Flood Control Act* enunciated the principle of cost-benefit analysis. This Act stated that flood control projects were desirable if 'the benefits to whomsoever they may accrue, are in excess of the estimated costs' (Pearce and Nash, 1981:1). Admittedly, there is considerable controversy surrounding the use of cost-benefit analysis, but the underlying principle, namely that policy should endorse potential Pareto improvements, is widely accepted. Why, then, does the test for declaration focus only on benefits? Perhaps there is some valid reason for believing that the costs of declaration are small or irrelevant? If so, then these reasons need to be noted explicitly. If not, then the costs also need to be considered to enhance the credibility of the process.

Third, the long-term interests of end-users will not necessarily be promoted if the 'sub-tests' of the declaration process are satisfied. The Commission's report tests whether declaration will promote the long-term interests of end-users by asking: (a) whether declaration will promote competition; (b) whether declaration will promote any-to-any connectivity; and (c) whether declaration will promote the economically efficient use of, and economically efficient investment in, the infrastructure. It is noted that (a) and (c) do not by themselves, guarantee that the long-term interests of end-users will be promoted. It is a standard result that an improvement in economic efficiency does not necessarily benefit end-users. An extreme theoretical example is that of a perfectly price discriminating monopolist. Such a monopolist is economically efficient but there is no consumer surplus. That is hardly beneficial to consumers!

Also, the ACCC argument that end-users are likely to benefit from increased competition through lower prices and improved customer service (ACCC, 1999:6) is valid in some but not all situations. Standard neo-classical theory suggests a shift from a monopoly to a perfectly competitive industry will almost certainly

benefit consumers, but there is no guarantee that a shift from monopoly to oligopoly will do so. Cartels are an extreme example of this; with price and quantity corresponding to that which would prevail under monopoly.

Since there is no unique model of oligopoly — let alone multi-product oligopoly — there can be no unique conclusion about the effects of deregulation (or re-regulation) in such industries (Waterson, 1984:35). This is complicated by the fact that oligopolies may engage in strategic behaviour and/or adopt complex pricing strategies. Such strategies may be rational and predictable, but can lead to quite different results from those expected in a perfectly competitive industry. For example, in the short run, a subsidy directed at a perfectly competitive industry will raise output, lower consumer price, and raise firms' profits. This will not necessarily occur in a multiproduct oligopoly. Bulow, Geanakoplos and Klemperer (1985), for example, analyse strategic interactions in multimarket oligopolies and provide a numerical example of a situation in which a subsidy actually lowers a firm's total profit.

One possible example of strategic pricing in the telecommunications industry is given by Muir, Jennings and McAnally (1999:124), in their study of 'Price Competition in Australian Telecommunications':

The persistence of inter-operator price disparities of the magnitude observed for many timed services suggests either lack of interest or awareness on the part of consumers of the 'menu' of prices on offer, or the existence of real or perceived disparities in the quality of the services themselves or their supplier. Alternatively, consumers may believe that the effort involved in identifying and evaluating the increasingly complex 'menu' and the complexity of switching service providers or using more than one operator may exceed the benefits.

Admittedly, these 'complex menus' may have evolved accidentally. But they may reflect (rational) strategic behaviour on the part of an oligopolist. Randomised pricing is a widely recognised means of enhancing profits. This strategy works 'by increasing the uncertainty about where the best deal exists, [thereby reducing] consumers' incentive to shop for price information ... it [also] precludes rivals from knowing precisely what price to charge to undercut a given firm's price' (Baye and Beil, 1994:438-9). Clearly, consumers cannot benefit from the existence of lower prices if it is too difficult to decipher complex menus and/or if it is too difficult to switch service providers. Note also, that complex menus allow for two-part pricing and price discrimination,¹ both of which raise profits (frequently) at the expense of consumer surplus.

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¹ Presumably, those with relatively elastic demand will spend time (and energy) seeking the best deals, and therefore pay — on average — lower prices. Those who do not spend time comparing the complex menus presumably have more inelastic demand and may therefore pay higher prices (on average).

Muir, Jennings and McAnally (1999:125) conclude that 'because the generally reduced prices for newly competitive services have not been offset by increased prices for less competitive basic carriage services, there appears to have been unambiguous gain to consumers. The extent of this gain is, however, difficult to estimate'. Time-rich (or lucky) end-users may have benefited from the extra competition. However, the net benefit may be small, particularly if search costs are considered or if the deadweight losses attributable to monopoly are relatively small.

To reiterate: moving from monopoly to perfect competition will almost certainly lower prices and benefit end-users. But this does not necessarily mean that a move from monopoly to oligopoly will do so. One cannot predict price/output combinations without knowing the type of oligopoly.² In the worst case (cartel), there will be no improvement in consumer surplus (compared to that of monopoly). In other cases, prices may fall, but the 'side-effects' of any strategic behaviour must also be considered. The example cited above concerns complex pricing menus. These impose costs on consumers which at least partially offset any benefits attributable to lower prices. Declaration sub-test (a) presumes that more competition necessarily benefits end-users. But, there are cases when this is not so.

Just as strategic behaviour serves to complicate the theory, so too, does regulation and this is particularly important in the telecommunications industry. The ACCC report documents a range of regulations in this industry. Among them are the requirement to supply untimed local calls, universal service provision throughout Australia, the CPI-X rule for pricing a bundle of services, the requirement that average pricing cannot vary between geographical areas, the customer service guarantees required of Telstra, the need for approval by local councils for rollouts and the need to consider the environmental implications of any such proposals. Telstra must even seek approval before it can charge for some services, for example directory assistance calls (Cleary, 1999). The presence of all these regulations and the continued political involvement in Telstra's business decisions, make it difficult to conclude definitively that more competition will necessarily benefit end users. To state this more explicitly, one cannot analyse the declaration of local telecommunications services in a first best world.³ Regulations, economies of scale (discussed in more detail below), and

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² Bulow, Geanakoplos and Klemperer (1985) contend that (in the case of multiproduct oligopolies) one also needs to know whether the products are strategic substitutes or strategic complements, and that this cannot be determined without empirically analysing a market.

³ This second best argument, namely that the removal of one restriction in a market where there are many restrictions may not lead to an improvement in consumer welfare, may also be relevant in the decision not to declare line-related services. The decision to declare parts of the local telephone services but not line-related services such as line rental and supplementary services, may distort marginal decisions and promote unexpected substitution between different type of services.

network externalities (Kahn and Shew, 1987:255) serve to complicate the problem.

Fourth, the ACCC has a very difficult task in considering whether a declaration would be in the interests of end-users when the price at which access is granted is not under discussion. Presumably, part of the justification for doing this is that there is a preference for letting the market decide upon a 'fair' access price once (or if) a decision to declare is made. Yet the effects of declaration depend crucially on the price at which firms are offered access. If, for example, the access price is very high (low), then the benefit to end-users may be small (large). It is not possible to assess the benefits of declaration without considering access rules and price. The power of the ACCC to arbitrate on a fair price for access if the parties negotiating on access cannot agree only partially addresses this issue given the complexity of deciding on a fair price. Moreover, the incumbent may have an incentive to delay reaching an agreement on price, so as to keep securing monopoly rents. To the extent that this is possible, it is not clear that declaration brings immediate benefits to consumers.

Finally, the presumption that more competition necessarily benefits end-users may not be valid in the presence of economies of scale or scope. Simplistically, if economies of scope are present, it will be cheaper for one firm to produce two commodities, than for two separate firms to produce one commodity each (Quiggin, 1998). Similarly, economies of scale indicate that it will be cheaper for one firm to produce a large quantity of output than it will for two separate firms to produce a little each. Evidence regarding economies of scale and scope in local telecommunications is largely inconclusive. Spulber (1995) argues that local telecommunications are no longer a natural monopoly. Albon, Hardin and Dee (1997) conclude that there is no firm empirical evidence either supporting or denying the existence of economies of scale in Australian telecommunications. Given the importance of this issue, it is surprising that the ACCC did not consider it in detail.

A related point can be made where there are economies of sequence, a term used by Spulber (1995) to describe the benefits of vertical integration. In the case where a monopoly is operating in two vertically integrated markets, the separation of the monopoly into two parts and the introduction of further competition into one of the markets may actually increase prices to the consumer. The empirical literature on the effects of vertical separation of an integrated firm suggests that it has had mixed results for consumer welfare.

The Productivity Commission's (1999) report on benchmarking of Australian telecommunication services against those of other countries concluded that the costs of domestic calls in Australia were about average for the countries compared, but that the cost of international calls in Australia was higher than in the other countries included in the study. That is, the market with the most competition (the international segment) had relatively higher prices. The results have been subjected to a range of interpretations by different authors. The ACCC uses it to establish that competition helps to lower prices (noting that prices have fallen more rapidly in the international market than in the domestic market).

Quiggin (1996) argues that the reduction in the price of international calls is more closely related to technological change and regulation than to increased competition in the market. Either hypothesis is plausible. Neither has been definitively 'proven'. One cannot conclude that competition necessarily benefits end-users without having a better understanding of the sources of price changes in telecommunications.

Consequently, it is argued that the tests the ACCC has been asked to apply are much too simplistic for this complex problem. In making its decision, the Commission needs to be able to take a wide range of factors into consideration. Many of these are excluded from consideration in a simple pass/fail test. Such a test (with its implicit assumptions) may be appropriate in a world with no regulation and perfect competition in all markets. But the world is not perfect, the telecommunications industry is riddled with regulations, and perfect competition is not present in all markets.

It is likely that at least some of these problems could be resolved by changing the tests which the ACCC is asked to apply and it is suggested that cost-benefit analysis has much to commend itself. As noted earlier, this methodology is not without flaws. Yet the flaws, both theoretical and practical, are widely known and understood. In contrast, the declaration tests discussed here are neither widely known nor widely understood. This, in itself, is a good reason for using cost-benefit analysis (CBA) when considering regulatory reform; it improves the transparency of the decision process.

Further, CBA addresses each theoretical concern raised in this section. First, it standardises tests across industries. Second, it forces the explicit consideration of both the costs and the benefits of regulatory reform. Third, it does not require the assumption that more competition is always and unconditionally, better than less. Fourth, the benefits to end-users (via price reductions) will necessarily vary according to assumptions regarding strategic behaviour, access prices and/or changes to the average and marginal costs of production (via changes in scale, scope or regulation). CBA makes it relatively easy for policy makers to test the sensitivity of final estimates to changes in assumptions (for example, one can estimate the net benefits of regulatory reform across a broad range of 'plausible' price reductions).

Furthermore, CBA has some practical appeal. The next section discusses two situations in which the ACCC found it impossible to apply the tests as written. As a result, the Commission was forced into making some fairly questionable assumptions that could have been avoided with the application of CBA.

Practical Advantages of a Shift to Cost-Benefit Analysis

One cannot determine whether or not declaration will promote competition without first defining the market. This is, perhaps, the most important part of the inquiry. Having defined the market, the Commission must consider whether the existing level of competition is 'effective'. The Commission examines concentration levels, barriers to entry, the linkage between supply of the eligible

service and the supply of downstream services, and relevant behaviour features, such as price changes over time and service differentiation (ACCC, 1999:49). If the market is highly concentrated (ineffective competition), then it is easy to establish that declaration cannot do other than promote competition. As discussed in the earlier section, the tests assume that more competition necessarily benefits end-users. The sub-tests also generally assume that competition increases economic efficiency. Hence, if current markets are deemed to be relatively concentrated, it is almost impossible for the Commission to rule against declaration. If current markets are deemed to be relatively competitive, it will be almost impossible for the Commission to rule in favour of declaration. Clearly, market definition is of central importance, and small changes in the definition have the potential to reverse entirely any answer to the declaration test.

The relevant market for local telecommunications services is identified by the ACCC as having four dimensions; product, geography, function and time (ACCC, 1999:27). Formally, the test applied by the ACCC for the identification of a monopoly market is the 'price elevation test': 'The resulting market is the smallest area over which a profit maximising monopolist could impose a small but significant and non-transitory price increase.' (ACCC, 1999:27). Perhaps not surprisingly, the results of this formal test are not reported. Rather, the market is identified in the report in descriptive terms. After much discussion, the Commission identified four relevant markets, all 'national' and all exclusive of wireless communications. As these definitions are unnecessarily restrictive, a less restrictive definition might have changed the ACCC's decision to declare.

First, the exclusion of mobile phones and other wireless services from the market for local telecommunication services seems hard to justify. There is an international debate as to whether the local telecommunications network can still be thought of as a natural monopoly (Spulber, 1995; Albon, Hardin and Dee, 1997). In addition to the traditional local loop, wireless and cable provide viable alternative services which may also be used in conjunction with the local loop. These important technological developments mean that competition in the local communications industry is increasingly important even in the absence of access by competitors to the local loop.

Defining the market to exclude alternative technologies seems unnecessarily restrictive. Mobile phones at the very least offer a cap on the prices that a fixed local service is able to charge. Casual empiricism suggests that for many people mobile phone services are a close (albeit imperfect) substitute for fixed phones. Cutler (1999:104), for example, argued that mobile, wireless and wired facilities providers are increasingly operating in the same market, that distinctions between these technologies are becoming difficult and that it will become increasingly dysfunctional to regulate by technology type. Further change seems inevitable. Technological change in this industry is taking place at such a rapid rate that it is very difficult to imagine what will be available in the 'foreseeable future'. The uncertainty associated with these developments is not an adequate justification for the decision to exclude wireless services from the market for local telecommunications services and to declare the existing network a monopoly.

Second, while recognising that a local phone call in Perth is not a substitute for a local phone call in Melbourne, the ACCC argues that the market for local telephony services is a national one. This seems a difficult claim to substantiate and it seems more appropriate to think of the Australian market as a series of interconnected local markets. The Commission provides substantial evidence of growing competition in particular segments of the national market, notably the CBDs of Sydney, Melbourne and Brisbane (ACCC, 1999:52-4). Those entering these markets have specifically identified segments of the national market where they expect to generate a profit. They are not contemplating providing similar services to rural Australia. That the market for telecommunications services operates quite differently in different parts of Australia, is suggested by the necessity to legislate for a Universal Service Obligation (USO) and to apply the local call pricing parity scheme whereby the average price of untimed local calls cannot differ between metropolitan and non-metropolitan markets.

Third, the ACCC argues that there are substantial barriers to entry in this market as further evidence to support their argument that there is a monopoly in local telecommunications (ACCC, 1999:50). Barriers to entry might be important in the sparsely populated rural areas but the evidence of competing rollouts in the CBDs suggests that these barriers to entry may not be so important in metropolitan areas. This issue is crucially linked to that of the definition of the market. If the market is a national one, it is difficult to do other than conclude that barriers to entry exist. However, if each local market is considered separately, then barriers to entry may not be so important, particularly in some central business districts.

The definition of the local telecommunications market to cover the whole of Australia, the exclusion of wireless services and the emphasis on barriers to entry enable the ACCC to consider the market for local telephony services as a monopoly and therefore a prime candidate for declaration. However, the decision is highly dependent on the ACCC's definition of the market. If alternatively, the ACCC had conducted its inquiry in a cost-benefit framework, it would have been possible to subject the decision in favour of declaration to a range of sensitivity tests regarding the possible effects of declaration on the price of local phone calls. The need to make contentious assumptions about the definition of the market would be avoided.

Finally, there are some reservations about the way in which the ACCC deals with the test of whether declaration will promote economic efficiency, which it links closely with the existence of competition. The ACCC should be required to consider not only whether declaration increases competition but also any additional costs imposed by the regulatory regime. For example, the report notes that 'to supply the unconditioned local loop service to its competitors, Telstra will ... need to undertake changes to its internal systems and processes. These changes will involve costs and thus have implications for technical feasibility' (p. 81). They also note that 'in addition to the costs involved in supply and charging for the eligible service, there may be spillover costs in terms of network integrity' (p. 83).

Rather than considering the costs of regulation, the report states that:

Where the Commission determines that it is 'technically feasible' to supply and charge for the eligible service, and it is of the view that declaration will promote competition, it will generally consider that declaration is likely to encourage the efficient use of the infrastructure used to supply the service unless this would discourage efficient investment' (p. 79).

The Commission, therefore, considers only one part, albeit an important one, of the efficiency problem.

It seems likely that declaration will affect investment. This is a major issue and would have benefited from a fuller discussion. For example, Telstra is only required to provide access to its local network as long as it does not prevent the company from meeting its contractual obligations. This may reduce their incentive to expand capacity to accommodate other providers. Similarly, declaration may alter incentives for research and development in newer wireless technology.

The Commission asserts that declaration 'will not have an impact on the initial investment in the infrastructure ... but may distort the access provider's maintenance, improvement and expansion decisions leading to inefficient investment that harms the long-term interests of end-users' (p. 89). The report is of the opinion that these problems can be overcome by including terms and conditions in the access contracts. Again, the ACCC fails to acknowledge one of the costs of declaration — that of drawing up complex contracts — and it is possible that at least some of these costs will be passed on to end-users. A fuller treatment of investment issues, allowing greater testing of assumptions, would be possible using CBA.

In summary, the fact that declaration can promote competition is not disputed. There are, however, concerns with the way this was established, namely by defining the existing market as one of monopoly. It could be argued that technological developments have by themselves created additional competition in the market for local calls and that the declaration of the local loop is unnecessary for the promotion of competition. The benefits of declaration may outweigh the costs, indicating that declaration is in the long-term interests of end-users but this needs to be formally established, rather than simply assumed.

CBA is not without its problems. As pointed out by one of our referees: 'If it is difficult to evaluate the long term effect on end users of a proposed declaration, how much more difficult is it likely to be to identify and estimate the much broader sweep of its costs and benefits? If the current declaration processes are lengthy and costly, how much more so might be a cost-benefit based approach which is likely to be even more information hungry and subject to even more uncertainty?' These are important questions that highlight the complexity of policy making in this area. However, just because the costs are hard to measure

does not imply that they are trivial and should be ignored. There is considerable experience in the application of CBA that may help in answering these questions.

Conclusion

The current test for declaration requires the Commission to determine whether there are long-term benefits for end-users. The primary concern here is that the test fails to consider any of the costs associated with the declaration process. When considering whether declaration will promote the long-term interests of end users, the Commission was directed to consider the likely impact of declaration on competition, any-to-any connectivity and economic efficiency. There are two major concerns with these sub-tests. First, competition and economic efficiency do not necessarily benefit end-users. Second, these tests are difficult to apply and sequential in nature. The sequential nature of the tests makes final conclusions extremely sensitive to changes in assumptions.

The choice of regulatory regime and its manner of operation are crucial factors determining the economic performance of the telecommunications industry. Rather than the simplistic tests focused on the benefits of declaration, which the Commission has been asked to apply, it would have been better to undertake a full assessment of both the costs and the benefits of declaration. Current tests do not allow for such comparisons, whereas cost-benefit analysis does.

While the practical problems associated with cost-benefit analysis are openly acknowledged, it is also noted that there are hundreds (perhaps thousands?) of experienced practitioners whose help could be sought when conducting inquiries. Could the same be said of declaration-test practitioners? It has been argued above that the *Trade Practices Act* should consider both the benefits and the costs of competition reform. But consideration should also be given to both the benefits and the costs of changing the current tests for declaration. This year's planned review of the operation of part XIC of the *Trade Practices Act* provides an opportunity to do just that.

Not only does cost-benefit analysis provide policy makers with useful information when evaluating one-off decisions (such as whether or not to declare the local network), but it also allows one to compare regulatory regimes. In the context of telecommunications, it is noted that declaration is not the only way available to promote the long term interests of end-users. A full privatisation of Telstra (currently under consideration) is but one option. 'Doing nothing' is another: technological developments in the industry may, by themselves, promote competition and the interests of the end-users without the need to privatise and/or incur the costs of declaration and negotiation of access. Quiggin (1998) considers the option of returning to monopoly. Yet another option is to adopt the US model, where the national monopoly has been split into local units. Cost benefit analysis would allow one to evaluate a range of different regulatory reforms, selecting the one likely to generate the largest net benefits. While vitally important, benefits alone are but half the story.

References

- Albon, R., A. Hardin, and P. Dee (1997), *Telecommunications Economics and Policy Issues*, Staff Information Paper, Industry Commission, AGPS, Canberra.
- Australian Competition and Consumer Commission (1999), *Declaration of Local Telecommunication Services*, available on the web at www.accc.gov.au (also available in hard copy under the title *Local Telecommunications Services*).
- Baye, M. and R. Beil (1994), *Managerial Economics and Business Strategy*, Irwin, Illinois.
- Bulow, J., J. Geanakoplos and P. Klemperer (1985), 'Multimarket Oligopoly: Strategic Substitutes and Complements', *Journal of Political Economy* 93:488-511.
- Bureau of Transport and Communications Economics (1999), *Telecommunications in Australia*, Report 87, AGPS, Canberra.
- Carlton, D. (1979), 'Valuing Market Benefits and Costs in Related Output and Input Markets', *American Economic Review* 69(4):688-696.
- Carter, M. and J. Wright (1999), 'Bargaining Over Interconnection: The Clear-Telecom Dispute', *The Economic Record* 75(3):241-255.
- Cleary, P. (1999), 'Telstra's request for 013 charges granted', *Australian Financial Review*, 25 August, p. 5.
- Cutler, T. (1999), 'Avoiding Conflict Between Communication Policy and Convergence', *Agenda* 6(2):99-109.
- Kahn, A. and W. Shew (1987), 'Current Issues in Telecommunications Regulation: Pricing', *Yale Journal on Regulation* 4(2):191-256.
- Muir, J., B. Jennings and F. McAnally (1999), 'Price Competition in Australian Telecommunications', *Agenda* 6(2):111-126.
- Pearce, D. and C. Nash (1981), *The Social Appraisal of Projects: A Text in Cost-Benefit Analysis*, Macmillan, London.
- Productivity Commission (1999), *International Benchmarking of Australian Telecommunication Services*, Research Report, AusInfo, Melbourne.
- Quiggin, J. (1996), 'Micro Gains for Micro Reform', *Australian Financial Review* 17 September, p. 14.
- Quiggin, J. (1998), 'The Premature Burial of Natural Monopoly: Telecommunications Reform in Australia', *Agenda* 5(4):427-440.
- Spulber, D. (1995), 'Deregulating Telecommunications', *Yale Journal on Regulation* 12(1):25-67.

Waterson, M. (1984), *Economic Theory of the Industry*, Cambridge University Press, Cambridge.

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