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Competition Policy and Convergence – Is there a Need for Industry Specific Regulation?

The recent Productivity Commission inquiry has raised the perennial question in telecommunications: is there a need for industry specific competition regulation? Telstra's Mitchell Landrigan argues the no case.

This paper considers the relationship between convergence and competition policy, with particular reference to the Productivity Commission's current review of the industry specific telecommunications arrangements.

It provides an overview of the state of competition in Australian telecommunications, noting that, while competition is strong in all sectors, there is relatively little competitive investment in critical infrastructure, such as the customer access network.

A number of conventional competition policy justifications for telecommunications specific market conduct regulation are considered; and it is contended that deviation from the Government's original intent to remove industry specific market conduct regulation of telecommunications is not warranted according to any of these criteria. The implications of convergence for competition policy and market conduct regulation are examined. Rather than demonstrating the need for industry-specific regulation, convergence suggests the need for extreme caution in the application of regulatory instruments to the telecommunications industry.

THE CURRENT PRODUCTIVITY COMMISSION INQUIRY

The Productivity Commission is currently inquiring into whether to amend or repeal the provisions of the *Trade Practices Act* 1974 (Cth) ("Act") that apply industry specific competition regulation of the telecommunications industry.

When enacting the industry specific arrangements in 1997, the clear and specific policy intention of the Australian Commonwealth legislature was that industry specific regulation was a transitional measure, with general competition law to apply to telecommunications as soon as possible. In part, this was because the Parliament realised that after a period of transition (almost a decade now) it would no longer be credible to claim that telecommunications was somehow exceptional. Moreover, the process of convergence was widely anticipated and viewed as a mechanism for ameliorating many of the market power concerns in telecommunications.

The effect of convergence is increasingly apparent. Broadcast media are now routinely used to deliver communications services, while telecommunications networks are increasingly seeking to compete in the delivery of broadcast services. As a consequence, erstwhile bottlenecks such as the local loop are increasingly facing competitive constraints from alternative access technologies, particularly in metropolitan areas.

This paper addresses two key questions confronting policy makers and regulators:

- does the merging of market boundaries between telecommunications and other industries benefit in any way from continuation of industry specific market conduct regulation in telecommunications? and
- does this development require deviation from the Government's path of removing industry specific regulation for telecommunications?

In the author's view, the answer to both these questions is simple: there is no benefit whatsoever.[1]

REGULATION AND COMPETITION

It is trite to say that regulation is only necessary where there is demonstrable evidence of market failure. Furthermore, when regulation applies, there is a need to ensure that any potential benefits of regulation outweigh the costs of

INSIDE THIS ISSUE

CONTENTS

regulatory error.[2] In assessing the effectiveness of regulation, any potential benefits from penalising anti-competititive conduct need to be measured against the possibility that regulation may harm the competitive process, by deterring genuine, vigorous conduct, or penalising commercial conduct that brings genuine, long term benefits to consumers.

These warnings apply with considerable force to industry specific regulatory regimes, such as those applying in Australian telecommunications. "Special" laws apply to the telecommunications industry, such as an effects-based test for market conduct regulation; and an access regime which sets a much lower threshold for declaration and subsequent pricing regulation than the generic access regime in Part IIIA of the Act.[3]

STATE OF THE MARKET

The strength of competition in the Australian industry points to the absence of any policy justification for continuation of industry specific regulation. Competition is strong in all sectors of the Australian telecommunications industry. Australia has more than 50 licensed carriers. IDD prices for major streams (eg US,NZ,UK) have fallen to approximately one third of their January 1998 levels; national long distance tariffs have more than halved over a similar period; local call prices have come down from 25c standard price to a maximum price of 22c GST inclusive, with many carriers pricing well below this. Average prices for mobile services have declined in excess of 10% over the past two years, while take up continues to increase to the point that mobile penetration in Australia represents one of the highest rates of take up anywhere in the world.

Further, many of Telstra's competitors are large, vertically integrated players, often with market capitalisation far greater than Telstra itself. For example:

- Vodafone is capitalised at about $430 billion
- Hutchinson Telecommunications: $110 billion
- C&W, parent of Optus: $70 billion
- AAPT/Telecom NZ: $10 billion

This compares to Telstra's capitalised value of around $90 billion.

Competition to date has been provided in a variety of ways - covering the full spectrum of resale, interconnect, use of service providers' own infrastructure, and ULL just became an alternative means of local service provision. Facility-based competition has occurred in certain areas; for example:

- CBD fibre loops.
- Investment by service providers on thick transmission routes, e.g. inter-capital transmission between the major east coast cities and to some large regional centres.
- Investments have been made by some service providers in switching equipment.
- Significant investments have also been made, and are expected to continue, in the provision of mobile telephony.

At the same time, it is of some concern that competition for local services continues to be provided largely on a

resale basis. Apart perhaps from the Cable & Wireless Optus HFC network, competing local loop infrastructure is confined to major CBDs; and investment by other carriers in the critical customer access network is not occurring at all.

POLICY JUSTIFICATION FOR INDUSTRY SPECIFIC REGULATION

Given the nature of competition and the presence of well-established competitors, it is clear that the standard policy justifications for the telecommunications specific market conduct regime do not withstand close scrutiny. A number of potential policy justifications are now considered.

First, it may be contended that the substantial presence of an incumbent warrants industry specific market conduct regulation. Yet, the existence of a large-scale operation or substantial market power in an incumbent is no justification for an industry-specific regime. The general competition laws have been specifically designed to prevent anti-competitive behaviour by entities with substantial market power. Telstra's size, and the relative size of its competitors, should not alter this assessment. In any case, the general competition laws have provided adequate protection for small firms confronting anti-competitive behaviour by very large firms (for example, Queensland Wire Industries successfully took on BHP, and Pont Data successfully took on the Australian Stock Exchange). In addition, Telstra's competitors are not small by the standards of Australian firms generally, and many have substantial global financial backing. As noted, all of Telstra's major competitors are substantially owned by global telecommunications carriers, including some that are much larger than Telstra.

Second, the complexity of telecommunications may be used as a justification for industry specific regulation. Complexity, however, is also no justification for industry-specific competition laws. Many industries are as complex as the telecommunications industry, such as software and biotechnology, and departures from the general competition laws have not been considered necessary for these industries. Indeed, the prosecution of Microsoft Corporation under a 19th century piece of US legislation, demonstrates the effectiveness of general competition policy, or antitrust law, in preventing anti-competitive conduct.

Third, horizontal and vertical integration are said to warrant industry specific regulation, but these are features common to many industries; and indeed characterise the businesses of many of Telstra's competitors. Interestingly, they usually exist due to commercial drivers to increase efficiency, and in this sense are pro-competitive.

Fourth, foreclosure is said to justify (or necessitate) industry specific regulation. Foreclosure is an issue of particular concern in all network industries. It is for this reason that access to essential facilities legislation is a central part of Australian economic regulation. Any deficiency in the supply of access to essential services provided by a vertically integrated firm with substantial market power to competitors in upstream or downstream markets is best addressed through an access regime and certainly does not justify the introduction of telecommunications-specific competition laws dealing with anti-competitive conduct.

Finally, the potential for predatory cross subsidies are said to justify industry specific market conduct regulation. Yet, concerns regarding the scope for predatory cross-subsidies are not particular to the telecommunications industry and are adequately provided for under the general competition law.

IMPACT OF CONVERGENCE

In light of the weakness of these policy justifications, it is instructive to consider convergence as an additional potential policy justification for continuing the industry specific arrangements.

Rather than increasing the need for industry specific regulation, it is submitted that convergence demonstrates the need for a very cautious application of any form of regulation.

Convergence occurs when firms that were previously in different markets begin to compete in the same market, usually by the process of technological and subsequent demand change. This can occur because of the erosion of the boundaries between what were once distinct markets creates a single market, or because new markets emerge that are supplied by firms from different existing markets. As the Productivity Commission detailed in its recent reports on broadcasting, convergence is occurring between:

- Traditional broadcast markets, which delivered content to end-users (essentially a one-way form of transport) via various broadband media, and
- Telecommunications, which allowed end-users to communicate with each other (two-way transport) over voice circuits, a narrowband transport medium.[4]

Convergence between telecommunications, broadcasting and the Internet will reduce the extent to which parts of the access network remain as bottlenecks and increase the scope for regulatory failure.

Convergence and market power

Convergence is bringing dramatic changes to markets that may have once been supplied by firms with market power. Traditionally, copper wire only competed with broadcast media in the delivery of information via the Internet. In all other cases, copper wire was essentially in a separate market from the other media. Broadcast media did not provide two-way communications and could not be said to be in the same market as two-way communications provided over the telephone. Mobile telephony to some extent competed with copper wire, but in this period the two were likely in separate markets given the different pricing and functionality of these services.

As a result of convergence, the delivery medium for broadcasting and telecommunications is increasingly indistinguishable. All the existing electronic and electromagnetic delivery systems – copper pair, HFC, LMDS and satellite, and the next generation of cellular networks – are capable of supplying both broadcast services (one-way content delivery) and telecommunications services (two-way broadband). As such, the market power that may have existed in markets pre-convergence is being eroded.

In addition, two-way broadband over cellular systems is likely to become available in 2002 or 2003, and new sources of two-way broadband can be expected to come on line over the next few years, including delivery from new suppliers via LMDS, geo-stationary and low-earth-orbiting satellites, spread spectrum and other innovative suppliers. All two-way broadband systems can deliver content traditionally broadcast, as well as allow two-way communication.

Furthermore, as market boundaries become blurred and more services become substitutes for others, firms can more quickly obtain minimum efficient scale in different markets by reaping new economies of scale and scope in the converged technologies. Thus, entry into what were once natural monopolies becomes much simpler. For example, CWO could justify investing billions in an HFC cable network because from the same investment it could reap revenues from the provision of Internet access, voice telecommunications services and subscription television services.

In short, convergence increases the number of alternative sources of supply, decreases the degree to which services are bottlenecks and the providers of these services have market power, and thus diminishes the need for regulation.

Convergence and regulatory failure

Conversely, the process of convergence greatly increases the scope for regulatory failure. To begin with, regulators often ignore the new competitive dynamics that convergence brings. Instead they continue to regulate incumbent firms as if they were no longer facing additional competitive constraints. For example, despite the presence of CWO's competing access network and ongoing investment in new access technologies such as LMDS (in metropolitan areas), access continues to be heavily regulated. Indeed, the ACCC has recently extended such regulation through the declaration of the unbundled local loop service.

Convergence can often result in competing firms being subjected to separate regulatory regimes. A fundamental precept of regulatory policy is that regulation should not arbitrarily have a material impact on one competing firm and not on another. To do otherwise is to inefficiently distort choice. The ACCC declaration of analogue cable transmission serves to illustrate. If it is the case, despite the increasing number of actual and possible sources of broadcasting transmission supply, that Australian consumers need protection from market power in multi-channel transmission, then Australian consumers are ill served by rules that are not technologically neutral.

It is indefensible to uniquely apply an access regime only to analogue HFC cable, which is neither unique nor dominant among transmission modes.[5] To regulate a single technology in this manner will inefficiently distort investment and consumption choices in a number of ways. It is likely to delay an efficient shift to digital transmission (because the regulator, having declared analogue access, which downstream firms rely on, may find it difficult to allow the analogue access provider to withdraw that service), biased investment and consumption decisions between the various technologies, and distort the volume of investment undertaken in the industry.

Finally, regulation is not a perfect science. As a result, regulation always carries with it unintended consequences. These are likely to be particularly pronounced in markets characterised by uncertainty. For example, recent work has demonstrated that in a very simple environment open access can be harmful or efficiency-enhancing depending on two parameters: the degree to which fixed costs per subscriber are higher in closed as compared with an open access market, and the relative competitiveness in the access market under the two regimes.[6] The paper's author concludes:

> *The SP [service provider] industry is changing rapidly... This makes it very difficult to determine exactly what the future market structure of a stand-alone SP industry will be. Since the success or failure of open access regulation depends on that hypothetical market structure, the FCC's "wait and see" policy seems entirely justified.*

In such circumstances, regulatory caution and even forbearance seems to have significant merit.

NETWORK EFFECTS, TIPPING AND POLICY

In association with the claim that convergence demands the need for industry specific laws, the concepts of network effects and tipping are said to raise special issues that cannot adequately be dealt with under general competition law principles.

Network goods and network effects are relatively new terms in economics,[7] and while there is no doubt that networks deserve special attention in economic analysis it remains the case that network effects are due to phenomena long discussed in undergraduate textbooks—network externalities and economies of scale and scope (the latter was once called joint production).

Unfortunately, a lack of understanding of these effects has led to unjustified claims of possible market failure, originally based around ideas of externalities, augmented by discussions of tipping and path dependency.[8] This section of the paper addresses similar concerns, including claims about an additional reason for fear—the possible leverage of market power by an incumbent in a network market to emerging network markets. This section outlines what network effects and tipping are, and then debunks these as likely sources of market failure in the context of the leverage argument.

Network effects

A network good increases the value gained by purchasers as the number of purchasers of the good rises. This network effect can arise in two ways and while only one of these effects is necessary for a network good, both often occur at the same time:

- On the demand-side, value to consumers can rise with additional purchasers even holding prices constant. For example, if a family member or friend purchases telephone access then I get an immediate benefit, even though I played no part in this transaction. This effect, called a network externality, involves a positive spillover or externality.[9] Consumption by one party benefits a third party without any contractual relationship existing between them.

- On the supply-side of the market, value to consumers can rise with additional purchasers if these result in economies of scale and scope that are expected to be passed on to consumers. Such economies may be industry-wide, as can occur with open standards, or firm-specific, but if they are reaped, then even a monopolist can find it profit-maximising to lower prices. Of course, if firms in the industry face competitive pressures, then the likelihood of substantial prices falling as costs drop is even higher.

Network effects cause potential purchasers and suppliers of a good or service to be concerned about whether other potential purchasers have made or are likely to make a similar purchase. When there is a network externality, purchasers are directly interested in how many other network participants there are. The network becomes more valuable

as network participants rise. Again for example, the number of people on a telephone network matters. If I can call just about anyone I know, then the network is more valuable to me than one that can only be used to reach a small fraction of these people. This can have an important impact on decisions to supply and to join such networks.

Even in the absence of a network externality, a similar effect can occur due to economies of scale and scope. In such a case, a potential purchaser does not directly gain any benefit from a third party joining the network, but the potential purchaser knows that if many people use the network prices are likely to fall. Indeed sometimes network providers signal this by charging earlier users below cost prices knowing that as usage increases costs will fall below this level. In any case, the presence of scale and scope mean both suppliers' and potential customers' decisions will be strongly influenced by beliefs about network participation, that is, about how many customers are likely to join.

Tipping

When market participants are concerned about participation rates, a phenomenon called tipping can take place. Tipping occurs when the number of customers purchasing a network good reach a critical mass. At this point demand begins to strongly favour this network good, often at the expense of competitors. A classic example of tipping was the competition which occurred between the VHS and Betamax formats. Despite Betamax's 2 year head start, within 5 years of its US launch VHS became the dominant consumer-market taped video standard.[10]

Tipping need not occur and if it does it may not raise regulatory concerns

It is important to realise that tipping is not an all powerful force, nor is it necessarily rapid or a particularly powerful dynamic, and even when market dominance occurs this may not imply any market power on the part of supplying firms. Network goods do not necessarily result in tipping, and even when tipping occurs, tipping typically does not create policy concerns.

Tipping need not occur simply because a product is a network good. There are several reasons for this:

- Competing networks can exist side-by-side. Phillips and flat-head screw drivers are competing network products, but one shows no sign of displacing the other.
- Many networks have an optimal size that is quite small relative to the market. As a result, tipping simply cannot occur.
- Tipping is often constrained by niche demands. Audio cassettes and the vinyl record co-existed side-by-side, in part probably because in certain niches each met different consumer needs. CDs largely displaced records and sapped the cassette tape market—a tipping phenomenon—but cassette tapes still managed to find a profitable niche in portable devices and in cars and also because they were recordable. Note also, the supply of cassettes and cassette players would have placed a constraint on the price of CDs and CD players if these were to be monopolised (though they were not as is seen shortly).

Even when tipping occurs it typically presents no competition law concerns, for at least two reasons:

- The process of tipping can also take so long it becomes irrelevant.
- Tipping, even when it occurs rapidly, does not imply the emergence of monopolist or even market power. Instead standards can emerge. For example, CDs and CD players are produced by a plethora of manufacturers. VHS cassette tapes and players provide a similar example in recorded video. GSM is the major mobile telephony standard in most countries in the world, and in many places has virtually replaced analogue service. However, competition in GSM equipment manufacturing has flourished as it has where it was allowed in the supply of mobile service. Indeed in all cases it is arguable that it was exactly the willingness of the relevant patent owners to commit to an open standard and reasonable licensing terms that allowed the tipping to take place.[11] A similar story can be told about computer platforms,[12] and the CBS/RCA colour television standards war in the 1950s where such a war is repeating itself today between digital television standards.[13]

In short, therefore, network effects do not automatically imply tipping, and tipping does not imply the emergence of a dominant firm-indeed the opposite is not uncommon.

CONCLUSION

This paper has considered whether deviation from the Government's intent of removal continuation of industry specific market conduct regulation is justifiable in view of convergence. The answer this paper provides is that convergence demands a very cautious application of regulatory instruments; and that convergence itself provides no justification for the continuation of the industry specific market conduct provisions in the Act.

Moreover, rather than fostering the natural evolution of potentially competitive convergence between telecommunications and other industries, there seems to be every likelihood that such instruments will perpetuate artificial industry distinctions between industries and ultimately inhibit the benefits to consumers that convergence may otherwise bring. Since convergence, by definition, both blurs the boundaries between industries and strengthens the competition between them, it is vital that regulation not inhibit the competitive benefits that convergence can achieve.

This paper has identified two further important principles of general application.

First, convergence narrows the scope of the current regulatory regime, if applied correctly. The effect of convergence on reducing market power in the telecommunications industry, coupled with the increased scope for regulatory failure, strongly suggests that regulation should be tightly constrained. Reductions in the number of sources of market power and the uncertainties associated with any intervention necessitate regulatory forbearance.

Second, the uncertainties associated with the process of convergence necessitate the maintenance of a high degree of flexibility in the services that are subject to the telecommunications regime. Detailing in legislation the specific services that are to fall within the regime runs the risk of locking in regulation of services that are increasingly subject to competitive disciplines.

1 In considering these issues, it is assumed that there is a legitimate role for access regulation of essential telecommunications services, such as PSTN and the local loop. That is, it is *not*

contended that there should only be general market conduct regulation (say, under section 46 of the Trade Practices Act) to regulate the terms and conditions of supply of access to essential services. The central contention of this paper is that, with such regulation in place, convergence does not provide a convincing policy justification for the application of any additional industry specific laws.

2 The costs of regulatory error include the potential deterrent effect of regulation on competitive conduct. See generally Landrigan M. & Warren T., *Administrative costs and error costs in market conduct regulation: two case studies*, 7(3) (2000) *Competition and Consumer Law Journal* 224-239.

3 For a discussion of the ACCC's application of the access regime in Part XIC of the Act to telecommunications, see generally Warren T. & Landrigan M. (2000), *The Long Term Interests of End Users or Competitors?*, paper presented to Industry Economics Conference, UNSW Graduate School of Economics and Management, 7 July 2000.

4 For more detail on these technologies and their commercial supply see Little, Ralph and Wong *Regulation and convergence of the telecommunication and content industries* NECG Papers, November 1999, pp. 3 and beyond, which has an Australian perspective, and Speta, J. *Handicapping the Race for the Last Mile?: A Critique of Open Access Rules for Broadband Platforms* Yale Journal of Regulation Vol. 17 (1) Winter 2000.

5Satellite coverage dominates the reach of HFC cable in Australia. Cable is also sharply less flexible than both satellite and fixed wireless, having very few alternative uses. It has an advantage over both in that it does not need a line of sight.

6 Hogendorn, C. *Broadband Internet: Open Access* TPRC, 24-25 September 2000.

7 Katz, ML and Shapiro, C (1985) *Network externalities, competition and compatibility American Economic Review*, 7, June, 424-40, provides an early discussion of network goods; for an overview from these proponents see Katz, ML and Shapiro, C (1994) Systems competition and network affect, *Journal of Economic Perspectives*, 8 (2) Spring, 93-115.

8 Liebowitz, SJ and Margolis, SE (1994) *Network externality: an uncommon tragedy, Journal of Economic Perspectives*, 8 (2), Spring, 133-50.

9 Liebowitz and Margolis use slightly different language. For them a network externality is a network effect that leads to market failure. I use the term to mean a standard externality, but one that arises due to joining a network. As is well known, but often forgotten (see Liebowitz and Margolis, 1994), the mere presence of an externality does not lead to market failure. Most externalities are infra-marginal, that is, they do not effect choice at the margin, and hence do not lead to inefficient outcomes. For example, the network externality associated with telephone subscription can only cause market failure if it is optimal for someone to subscribe to the network but they do *not*. While an externality exists when a person makes a choice to subscribe (since third parties benefit from the decision) no market failure occurs because the optimal decision – subscribe - is made.

10 Liebowitz, SJ and Margolis, SE (1995) *Path dependence, locked-in and history, Journal of Law, Economics and Organization*, 11 (1) 205-226, at 221. This paper also notes the visual and audio quality of the Betamax tapes were only marginally better than the VHS format, but that the longer recording length of the VHS format, and JVC's ability to partner with large VHS recorder manufacturers, were key in the success of the VHS standard. See also Sutton, J (1998) *Technology and Market Structure: Theory and History*, MIT Press, at 103.

11 See, for example, Sutton (1998, at 412, note 5) on VHS; Garrard, GA (1998) *Cellular Communications: Worldwide market Development*, Artech House Publishers, 164 ff, on GSM; and Bresnahan and Greenstein, 1999, on computer platforms.

12 Bresnahan, TF and Greenstein, S (1999) *Technological competition an the structure of the computer industry*, Journal of Industrial Economics, 47 (1) March 1-40, at 3 and *passim*.

13 Shapiro, C. and Varian, H. (1999) *Information Rules*, Harvard Business School Press: Boston, Massachusetts, at 214 and *passim*.

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Competition in Converging Markets

In our second article dealing with telecommunications competition regulation, Dan Lloyd and Peter Waters examine the phenomenon of convergence in shaping regulatory policy.

The hype generated in the capital markets and the press over "convergence" seems to be infecting regulators and policymakers. Policy decisions are increasingly based on the promises of this phenomenon.

It is undeniable that convergence of electronic communications industries is not only proceeding, but delivering very real outcomes and benefits for consumers. The digitisation of communications technologies has, for example, enabled greater inter-operability and intelligence of networks and end-user devices. This has allowed consumers to receive email via their mobile phone, to listen to the radio on their PC, or run broadband data systems over their ordinary copper telephone line.

However, when dealing with "converging markets", analysts and policy-makers can mistakenly assume that convergence is a coherent, uniform process; overestimate its pace; or assume that it is an inherently pro-competitive process. This overly simplified view of convergence can lead policymakers:

- To abandon sector-specific regulation in favour of generic "lowest common denominator" schemes covering telecommunications, media, broadcasting and information technology;
- To employ increasingly wide market definitions, and thus underestimating incumbents' market power;
- To confuse the convergence of technologies, industries and networks with the convergence of markets; or
- To ignore the very real potential for anti-competitive conduct that some forms of convergence exhibit – particularly the expanded scope for cross-market leverage.

These misplaced assumptions have potentially serious consequences for competition in converging markets, especially for continuing effective regulation of vertically-integrated incumbents. It is surprising, therefore, that this fundamental policy shift has not been preceded by a comprehensive examination of the fundamentals of convergence: What exactly is it? How fast is it proceeding in different markets? What are the actual regulatory implications of different forms of convergence, and at different times?

DEFINING AND "UNPACKING" CONVERGENCE

Much of the confusion surrounding convergence arises from the fact that the term "convergence" is not used to describe a single homogenous process, but a range of processes operating at a variety of levels. In making recommendations about how to regulate converging markets, policymakers often rely on generic definitions of convergence which amount to little more than "we know it when we see it". A recent expert report prepared for the New Zealand