Frederick G Hilmer, AO
Chief Executive Officer

Telephone: (61 2) 9282 3815
Facsimile: (61 2) 9282 3959
fhilmer@mail.fairfax.com.au

8 May 1999

Professor Richard Snape
Deputy Chairman
Productivity Commission
LB2 Collins Street East
Melbourne Vic 8003

Dear Professor Snape:

On behalf of John Fairfax Holdings Limited, I am pleased to provide the attached submission in response to the Productivity Commission's inquiry into the regulatory arrangements for Australia's broadcasting services.

Our submission is in three parts:

1. An overview paper, summarising our position on the key regulatory and competition policy issues

2. A paper entitled, "Access and Technology Issues", prepared by Fairfax staff. It reviews the ways digital content can be delivered into homes and businesses, the regulatory, technical and economic hurdles entrants face, and the access issues that should be addressed

3. A paper entitled, "Economic Issues Associated with the Regulation of Broadcasting in Australia", prepared by Associate Professor Joshua Gans of the University of Melbourne. It is an economic analysis of the current regulations on the broadcasting industry in Australia, and discusses convergence issues and the utility of applying competition policy across the converging industries, with particular attention to the monopoly bottlenecks in digital platforms.

In response to the Commission's issues papers, we have responded in a focused way to the key issues affecting our industry rather than responding to each separate question raised.

We hope you find our submission helpful and look forward to the opportunity to provide any elaboration or clarification you may want.

Yours sincerely,

Frederick G. Hilmer

FAIRFAX SUBMISSION

TO PRODUCTIVITY COMMISSION

Executive Summary

John Fairfax Holdings welcomes the opportunity provided by the Productivity Commission to participate in its review of the impact of competition policy and technological change on the Broadcasting Services Act.

The subject is complex, as the Commission's issues paper illustrates. Economics is intertwined with social policies. There are significant technological and market uncertainties. Substantial vested interests are involved.

Fairfax has no issue with - in fact, we have consistently supported - the goals of media policy, namely diversity, access, quality, efficiency, low prices and innovation. In our view, these goals are more likely to be achieved in the future by relying on market forces and competition policy. Consequently, we urge that competition policy:

1. replace the current regulation of ownership;

2. be expanded to better address access to key resources - particularly digital platforms; and

3. replace at least in part current regulation of content.

The driving issue that shapes our view is the digitisation of content and its delivery. "Convergence" means that all communications are or can be digital. Hence, the common platform for all communications - broadcast, narrowcast, telephone, cable, internet, satellite and microwave - is digital, and not analogue. The availability of, and access to, digital broadband platforms and digital receivers are the absolute keys to the 21st century economy for every country seeking to be engaged and integrated in our increasingly globalised world.

At the present time, there are bottlenecks and roadblocks in access to digital networks – television, satellite, cable, telephone. These digital pathways are the pipes that carry content to users. The pipes are limited in number and capacity, in part due to government decisions regarding the

allocation of, and access to, spectrum, in part due to significant economies of scale and in part due to potential technical barriers at each end of the pipe. As a result, competition policy requires that existing players and new entrants have access to the pipes and end-to-end devices on terms and conditions that are not anti-competitive.

As the scope of these issues goes beyond the media industry to embrace the telecommunications and software industries, Fairfax supports the implementation of a uniform competition policy that applies to all of them. This is required to deal with fundamental concentration and monopoly issues that could arise from relaxing media ownership restrictions in the absence of other reforms with respect to access to digital broadband capacity.

In our view, there are three types of regulation affecting the media and related industries in Australia: of ownership, of access to scarce resources, and of content. A proper deregulation that fits within agreed principles of competition policy would involve deregulation on all three dimensions, with particular emphasis on the first two: ownership and access to scarce resources. Accordingly, Fairfax supports removal of the cross media and foreign ownership limits combined with the application of competition policy principles to digital access. This means that these converging industries would operate within a regulatory regime that would promote maximum access by providers of services, and choice for consumers, by minimising emerging bottlenecks in digital terrestrial television, telephone, cable, microwave and satellite.

We believe that media diversity, in an age of technological convergence, can be maintained and enhanced by competition policy and open markets and by the full and proper application of competition policy to these industries - rather than by regulation of media ownership.

We need to add an important cautionary note to our position. Specifically, the “devil is in the detail” as to how these changes are implemented - the timing and the sequencing of reforms, the processes by which changes are made and the resources available for ongoing regulation are critical to a positive outcome. We urge the Commission to give particular and careful attention to these matters. This will require that the ACCC, and the Australian Broadcasting Authority’s technical and planning areas, be appropriately staffed and resourced to carry out their responsibilities.

Addressing the Anti-Competitive Aspects of Digital Delivery

The key to effective reform is to address current and emerging anti-competitive regulation and practices with respect to the delivery in digital form of various types of content to users.

- The convergence issue is primarily one of convergence with respect to the digital delivery of content. Information-based industries can be generally characterised as having a three part value chain: the creation of content, publishing and delivery to customers.
- Convergence occurs in the delivery of content via digitalisation as all content becomes digital.
- This may cause some convergence in earlier stages of production and publication, but the economics in favour of convergence in these areas are not significantly changed from what they are today.

There are significant anti-competitive regulations and practices - current and emerging - in the critical area of delivery of digital content in particular.

- Will there be competitive channels of digital delivery, with multiple ownership, resulting in a competitive market for digital distribution? Because switching costs to consumers are high and rollout of delivery networks is sequential, consumers in practice do not have significant access to multiple channels.
- Will new participants be able to enter this market?
- If there is little or no competitive market, what is the ability of new providers of services to use distribution channels owned by existing incumbents, specifically the conditions regarding the access to, and prices of, digital delivery networks?

In this context, merely reforming the media ownership rules will have little impact on digital delivery issues, and could instead perpetuate an oligopolistic industry structure in the new environment.

This issue is not simply of interest in Australia. In the United States, Internet operators are seeking access to the digital networks operated by the cable industry. This is the pivotal concern in the present battle for takeover of MediaOne that has been waged by AT&T and Comcast (and one that will survive the outcome of the acquisition). A recent account has outlined the matter as follows:

> If AT&T, already the nation's biggest phone company, was to succeed in acquiring MediaOne, it could end up with cable links to as many as 60 percent of the nation's homes. That prospect is especially worrisome to America Online, which has already emerged as a critic of AT&T, if not an "avowed enemy," as one executive close to the web of negotiations put it. The reason is that cable television carriers, unlike local phone companies, are not obligated to open their networks to outsiders (except local broadcast television stations). What this means is that as AT&T begins to deliver high-speed Internet access to millions of homes using cable systems, the company is under no obligation to let America Online offer service to those customers. America Online and other Internet companies are trying to persuade Congress and regulators in Washington to change the rules, but that initiative is not moving quickly. For now, AT&T is winning the battle of influence at the Federal Communications Commission by saying that it will not spend the billions needed to upgrade cable systems to deliver advanced services if it then has to share those systems with others. Moreover, AT&T is promising to use the upgraded cable networks to deliver not just Internet service, but local telephone competition as well. So for America Online, the reasons to help Comcast fight AT&T are clear. If a combined America Online-Comcast succeeds in acquiring MediaOne, America Online will get a guaranteed channel for selling its services to consumers over cable modems. (Even if America Online does not end up participating in a bid for MediaOne, it will still get high-speed links to millions of homes through its deals with local Bell phone companies.) ["Two May Aid Comcast Bid for MediaOne," The New York *Time*s, May 1, 1999, reprinted in the Australian *Financial Review*, May 3, 1999]

The Commission's inquiry is especially timely as it is anticipating these issues at a relatively early stage of the industry's development in Australia.

Shareholder and Community Interests

The interests of Fairfax shareholders require that these anti-competitive rules and practices be dealt with. The removal of bottlenecks in access to digital delivery networks, platforms and receivers will allow Fairfax and other current and emerging content companies to compete aggressively and on equal terms with content providers who are integrated in terms of digital delivery platforms, pipes and receivers.

It is a fundamental objective of Fairfax management to maximise shareholder value. To achieve this objective, the Company seeks to secure greater access to digital broadband capacity, platforms and receivers. Fairfax is not permitted, under the current legislative and regulatory regime, to grow in any significant way in a number of defined sectors where it has considerable skills and content. We want our hands untied, so that we can compete to the best of our ability in a free market. Where our hands have not been tied, and there have been no artificial barriers to competition, as in the internet, Fairfax has become a national leader.

While partial deregulation will work to provide opportunities to expand the Company and realise an increase in shareholder value - through the startup of new ventures, acquisition or merger - the achievement of these goals will be enhanced by the opening of markets in all the industries affected by convergence.

With regard to the larger community interest, the provision of ownership and access opportunities for all potential competitors will optimise delivery of the economic benefits of competition (diversity, access, quality, efficiency, low prices, and innovation) in terms of the producers of media content. More open markets will also work to optimise attainment of the goal of diversity in print, electronic and digital media, by virtue of a dramatic increase in competition - as opposed to concentration - in these converging industries.

Reforming the ownership and content rules before addressing the key digital delivery issues is less attractive for our shareholders and the community. While our shareholders would obtain a benefit from the immediate repeal of the foreign and cross media rules, in terms of removing barriers to potential acquisitions by Fairfax of other media interests (or the potential acquisition of Fairfax by a television network, or foreign interests), we believe greater shareholder value can be created over time by open markets in digital delivery, permitting Fairfax to leverage its leadership in media content.

Implementation and Sequencing of Reforms

Finally, we emphasise that any changes to the media laws must be cognisant of the maxim, “The devil is in the detail.”

The benefits that can be conferred by applying competition policy to the media, telecommunications and software industries are dependent upon the timing of such changes. The ideal is for all potential competitors to be in an equivalently competitive position when a more open regime comes into effect. There are several critical aspects to this issue:

- the sequencing of reforms: which rules are liberalised, in what order, and when;
- the processes that will govern access, access pricing, and spectrum allocation: how these are established, when new rules become effective and how potential abuses are identified and corrected; and

- the resources available to administrative and regulatory bodies in writing the new competition policy framework and overseeing it.

With regard to competition policy, we submit that the further liberalisation and opening of markets for media needs to be preceded by further opening of access to digital broadband capacity. It will defeat the principles of competition policy if, for example, the restrictions on foreign ownership of the media, or the cross media rules, were removed - and we support their removal - before any liberalisation of access to, and pricing of, digital broadband platforms and capacity in other areas.

We therefore believe that the Commission needs to assess, and address, as part of this inquiry and in its final recommendations, this basic issue of digital broadband platform access and pricing. This would include the following areas:

1. Access to digital broadcast spectrum including:

    - an examination of the determination on the number of available free-to-air television licences;

    - the date by which new free-to-air television licences can be granted.

2. Access via the telephone system and cable/optical-fibre networks.

3. Access to microwave and direct-to-home satellite capacity.

4. Regulation of set top box parameters including:

    - technical standards;

    - common connection devices and receivers; and

    - software platforms.

We believe that the Trade Practices Act is the appropriate statutory framework for all these.

We recommend a thorough assessment of the professional staff and financial resources available to the ACCC and the ABA (as noted earlier) to fulfil their statutory responsibilities in the expanded jurisdiction.

Conclusion

Fairfax supports a more fully competitive regime in media ownership and greater access to scarce distribution and transmission resources. This involves opening up all the industries affected by technological convergence - television, telephone, cable, satellite and microwave - to more market forces. Partial deregulation is not consistent with a robust competition policy and will provide only partial success in securing the benefits of reform.

Fairfax believes that key public policy goals, such as diversity, which have previously been protected by narrow technology specific regulation, can be secured in the public interest through market forces and competition policy.

Our proposal is driven by a coherent and consistent view of competition policy. Indeed, the consistency of our proposal - Fairfax is not arguing to be protected from competitive forces operating freely in an open and deregulated market - permits a clearer understanding of the consequences of other proposals.

Papers on Technology/Access Issues and Competition Policy

In support of our submission, we are pleased to provide the Commission with two additional papers, one on digital technology access issues and another on the economic issues of competition policy in the affected industries.

The digital technology paper, prepared by Fairfax staff, reviews the ways digital content can be delivered into homes and businesses, the regulatory, technical and economic hurdles entrants face, and the access issues that should be addressed.

The economic issues paper, prepared by Joshua Gans, Associate Professor in Economics, the University of Melbourne, is an economic analysis of the current regulations on the broadcasting industry in Australia, and discusses convergence issues and the utility of applying competition policy across the converging industries, with particular attention to the monopoly bottlenecks in digital platforms.

We look forward to further debate on all the issues involved.

****

JOHN FAIRFAX HOLDINGS LIMITED
(ACN 008 663 161)

FAIRFAX SUBMISSION

TO

PRODUCTIVITY COMMISSION INQUIRY

INTO

THE BROADCASTING SERVICES ACT

AND RELATED LEGISLATION

MAY, 1999

PRODUCTIVITY COMMISSION INQUIRY INTO BROADCASTING LEGISLATION
Access and technology aspects

Executive summary

There are many ways to deliver digital content into homes and businesses. Driven by the launch of pay TV, the last five years has seen services delivered over two newly constructed cable networks, microwave distribution systems and direct-to-home (DTH) satellite. Set-top boxes have appeared in close to 1 million Australian living rooms. In addition, DSL technology has enabled high bandwidth services to be delivered over widely-deployed copper wire networks.

However, in reality, entrants face numerous hurdles - some regulatory, some technical, some economic (cost, and the incentives of incumbents to preserve the status quo). This paper gives a snapshot of the various existing broadband platforms, and outlines some of the hurdles entrants face in utilising them. In particular, the gateway to the home - the set-top box - may not be accessible for a range of reasons.

Even if hurdles to bandwidth access were removed, providers of content and services must face the incumbent providers of services packages, to seek sufficiently prominent exposure for their services.

In order to enable competition and diversity in new digital and broadband services, access at all levels must be addressed.

A Access to infrastructure platforms and set-top boxes - the barriers

The technologies below represent the main broadband platforms available for widespread deployment today. However, utilising them involves overcoming significant hurdles, elaborated below.

1 Broadcasting band spectrum

The terrestrial broadcasting spectrum comprises the following 7 MHz channels in the VHF and UHF bands:

VHF Band 1: 3 channels
Band 2: 3 channels, now taken over for point-to-point communications
Band 3: 8 channels (one of which is 6 MHz only)
UHF Band 4: 8 channels
Band 5: 34 channels

Within this range, the three commercial and two national TV broadcasters each have a 7 Mhz slot which is used for analog transmission of free-to-air (FTA) television as we know it today. In addition, a further 7 MHz slot of spectrum for digital transmission has been allocated to them under the digital conversion arrangements passed by the government last year. These grants were free of any incremental charge, except for possible datacasting spectrum fees, and they carry obligations to simulcast digital and analog signals from 2001 - 2008, and to broadcast in high definition to an as-yet undetermined degree. The FTA networks are also prohibited from using the spectrum for multi-channelling until after a review to be completed by end 2005.

The barriers and limitations on utilising the broadcasting band include:

Technical: The amount of spectrum in the broadcasting band is necessarily limited. While the above list of available slots may appear long, the limits of analog technology and the legacies of historic allocations mean that today's spectrum plan is fraught with inefficiencies. For example:

- In the Sydney area (Sydney metro, Central Coast, Sydney South and Wollongong) almost every available 7 Mhz channel is used.

- But many of the signals from overlapping services areas carry the same programmes (sometimes with small variations, perhaps only in commercials).

- As a result, of the dozens of slots listed above, only about eight slots x 7 Mhz (or eight analog channels) are available once historical allocations, digital conversion requirements and interference/overlap issues are allowed for. On FACTS'[1] view, even less than eight are available.

In the digital environment, the broadcasting band will yield far more capacity due to digital compression. For example, the spectrum consumed in carrying one analog channel could carry several equivalent digital channels. In the medium term this benefit is limited by the need to duplicate analog and digital transmissions, until analog receivers are replaced by digital ones and the analog spectrum is returned for other uses.

But, beyond merely yielding more capacity the transition to digital also provides a unique opportunity for correcting spectrum usage inefficiencies to overcome rather than perpetuate historical and anachronistic limitations. For example:

[1] Federation of Australian Commercial Television Stations.

- Many UHF frequencies are used for “translators” which reach relatively small populations in “shadow” areas (black spots in the primary transmission area which cannot get clear signal).

- This use of UHF channels may become dramatically more efficient with the advent of digital transmission. Firstly, digital “OFDM” transmission is likely to deliver superior signal propagation, reducing the need for translators to fill shadow areas. Secondly, in a digital environment the same frequency can often be re-used in adjacent areas without interference, enabling “single frequency networks” or “SFNs” to be deployed. This eliminates the waste of using a whole 7 Mhz slot to fill in often small areas.

Ignoring these potential efficiency gains, FACTS’ allocation plan seeks an adjacent 7 Mhz channel alongside every existing analog channel, even though some of these translators only service a small area or population. For example in Cairns, adjacent towns such as Port Douglas have a translator. There are a total of 13 translators for each of six FTA stations (ABC, SBS, 7, 9, 10 and the community channel). Thus, in Cairns the entire UHF spectrum is planned for FTA services, with no spectrum left for other options.

Allocations such as this, especially as we move into a digital environment, clearly ignore efficiency principles. To some extent, the “same coverage” rules give credibility to this process, although they do not justify it. No cost-benefit analysis has been put forward to support such a methodology; and it is difficult to see how a proper analysis would result in such a generous allocation to existing spectrum users.

In any case, there are no sound technical reasons why the number of television licences must be limited to three commercial and two national. On any view, there is scope for at least one more 7 MHz slot, if not more.

Regulatory: The Broadcasting Services Act prevents the allocation of any additional commercial television licences before the end of 2006 (except in licence areas where there is only one current licensee, where an additional licence may be issued to the existing licensee).

Economic: The services supported by this spectrum are broadcast to approximately 6.5 million television households in Australia. It is the virtually ubiquitous penetration of analog television receivers which provides the incumbent FTAs with a key source of competitive advantage. This population of aerials and TV sets, established at consumer expense over 40 years of FTA television history, means that incumbent FTA operators can reach virtually every Australian household without installing and funding consumer devices. New

competitors, such as pay TV operators, datacasters and interactive TV providers, face cost and distribution hurdles in placing reception equipment into customer premises (eg a set-top box and cable lead-in/satellite dish or microwave dish). Digital FTA television will also require some form of set-top box or digital receiver in the home.

However, since the status quo (being ubiquitous analog TVs, only about 15% penetration of pay TV set-top boxes, and no datacasting receivers or digital TV receivers) favours the incumbent FTAs, they have little incentive to co-operate with other players to ensure that low-cost, multi-purpose devices are available to consumers. This is evident from their stance in the receiver standards debate. These incumbents clearly do not want to lower the costs for consumers to access the services of new entrants (eg datacasters) who may attract eyeballs and advertising dollars away from their FTA services.

2 DTH satellite

Geo-stationary satellites are the dominant type of satellite used for broadcasting. They are positioned at the precise distance from the earth such that they rotate at exactly the speed that the earth rotates on its axis, making them stationary relative to us. Broadcast signals can be "uplinked" onto transponders on these satellites, which reflect the signal down onto the earth's surface. These signals can then be received by satellite dishes which are pointed exactly to that satellite.

Optus' B3 satellite is the "hot bird" in Australia today – meaning that most installed dishes are pointed to this satellite. Optus' former monopoly satellite position (including as AUSSAT), aided by legislative requirements on satellite pay TV licensees to use Optus' satellite, have resulted in over 200,000 pay TV dishes across Australia being pointed at B3. These are customers of Austar, a former Australis franchisee, and customers of Foxtel, which acquired digital satellite set-top boxes (including those in customer's homes) from the Australis receiver. They are generally located in regional and remote areas.

In Western Australia PanAmSat 2 carries some television signals into remote areas after Telstra won the Golden West contract, but Optus still carries other signals. Telstra may also offer its Big Pond satellite service over either PAS2 or the recently-launched PAS8. However, pay TV appears to be the main "dish driver" into residential homes

In the wake of Australis' collapse, Optus and Austar agreed a joint venture to offer wholesale satellite transponder capacity and related services, using B3. Austar was obviously the main customer. Since then, Foxtel has also signed. The effect of this is that (broadcasting spectrum aside) Optus' B3 satellite is likely to remain the leading broadband distribution platform outside cabled areas.

Barriers and limitations to utilising DTH satellite distribution include:

Technical: Limited transponder capacity is left on B3. Almost all, if not all, high-performance beams are spoken for. Most of the remaining capacity is on the "national beams" which require larger dishes to receive signals, resulting higher equipment and installation costs, and greater consumer reluctance. Optus may launch a C-series of satellites, but this is some time away. (Other transponder capacity is available, but see below for barriers to utilising it.)

Regulatory: Regulation requires that satellite pay TV be delivered by means of a digital set-top box. These are capable of delivering hundreds of channels, but have been compared to Porches with only first gear, since until July 1997 only three satellite licences were on issue. Even since further licences became available, the digital satellite boxes ironically receive less channels than the analog cable boxes. This has created significant cost burdens, causing providers charge higher connection fees or to limit the rollout of satellite services in order to preserve cashflow. As a result of this regulatory distortion, there is a smaller population of dishes and a less extensive broadband platform than there might have been.

Further, the ACCC's broadcasting access service declaration (see below under HFC cable) does not cover wireless services, although this is currently under review by the ACCC.

Economic: Since limited transponders are available on B3, and other providers (such as the newly-launched PAS8) offer better quality at possibly cheaper rates, new entrants might acquire capacity from other sources. However, this would require dishes to be pointed in a different direction to those which are aimed at B3. Effectively, a customer wishing to receive services from both satellites would require two dishes – something which they are reluctant to do. Or, if they churned from one service to another on a different satellite, their dish would need to be re-pointed. This is a significant barrier since most satellite customers are in outlying areas, making home visits expensive.

A new entrant may also have to negotiate with an existing service provider to access in-place dishes and wiring at customer premises, if the equipment was owned by that service provider. Where the customer had no in-place equipment, the cost of installing it would need to be met (either by the customer, or by the service provider).

Low earth orbit (LEO) and medium earth orbit (MEO) satellites are becoming operational and have been deployed for point-to-point services eg Iridium telephony. It is speculative as to whether they may in future become more important than geo-stationary satellites for broadcast services.

3 Hybrid fibre-coax (HFC) cable

There are two main cable systems in Australia, both laid in a race for coverage between 1994 and 1997.

- Telstra's is the largest, passing 2.5 million homes in Sydney, Melbourne, Brisbane/Gold Coast, Adelaide and Perth. Some 380,000 "live" FOXTEL customers are connected, plus around 10,000 cable modem customers. Due to customer churn over the three years of pay TV to date, there are estimated to be a further ~600,000 idle lead-ins, giving a total of almost one million connected homes.
- Optus' network passes 2.2 million homes in Sydney, Melbourne, Adelaide and Brisbane. It has about 200,000 "live" pay TV customers and ~100,000 HFC telephony customers. Again, due to high customer churn it can be estimated that Optus has about 600,000 lead-ins to homes from its network.

These cables carry, respectively, the Foxtel and Optus Vision pay TV packages. In addition there are a small number of local cable networks in regional areas. Austar, a regional and remote pay TV operator, has a cable network in Darwin, estimated to pass about 35,000 homes with some 5,000-10,000 live customers. Some regional Victorian areas (Ballarat, Geelong) also have existing or planned cable plant, and ACTEW are conducting trials on a small-scale rollout in Canberra.

Because of the higher penetration rates of services on Telstra's cable, it has emerged as the most important cable distribution system in Australia. While Optus' cable system relied on both pay TV and telephony services to drive penetration, both have fallen well short of expectations. Optus Vision is only the third biggest pay TV operator in Australia by subscriber numbers (after Foxtel and Austar); and its difficulties in delivering telephony via HFC are well-known[2]. Foxtel in contrast has enjoyed steady subscriber growth.

Barriers and limitations to utilising HFC cable distribution include:

Regulatory: Access to broadband capacity for other service providers on these cables has not eventuated. Until July 1997, access was virtually impossible under regulation. Since then, the cable infrastructure has been exposed to the telecommunications access regime. The ACCC, under statutory obligation, declared a broadcasting access service on cable. However, there are two main difficulties with utilising this regime.

[2] Optus is now much more successfully reselling Telstra's local call services - anecdotally, it has around 100,000 cable telephony customers and around 200,000 resale customers.

First, there are doubts about the validity of the ACCC's original declaration. The ACCC appears to have acknowledged these doubts[3] and is presently undertaking an inquiry into whether further or replacement declarations should be issued.

Second, the new access regime carved out rights (called "protected contractual rights") which pre-dated the announcement of the regime in September 1996. In other words, new grants of access cannot overturn any person's pre-existing rights. As disclosed in Telstra's prospectus, Foxtel enjoys rights of exclusivity on the Telstra cable for its home video entertainment services (however, Foxtel's services do not include telephony or online services and Telstra independently offers Big Pond Cable, a high-speed internet service using cable modems). Foxtel also has protected contractual rights relating to unbundling: if Telstra provides a broadcasting access service to others, it must include "certain bundled functionality".

(There are no protected contractual rights known to apply to Optus' cable.)

The set-top box is a critical device to which many parties might seek access. If, for example, the future digital cable set-top box was to include functions additional to pay TV (eg a modem, memory chip or a digital TV receiver) it could quite dramatically alter the economics of new services. While legislation contains specific access provisions about "conditional access customer equipment", the telecommunications access regime provisions hinge on an "active declared service" being supplied - hence suffers from the same declaration difficulties outlined above.

Further, enforcement remains complicated by ownership arrangements. For example, the Foxtel's set-top box is not owned by Telstra, which is the main carrier entity to which access obligations attach, although Telstra has some rights to offer other services through the box.

Technical: The lack of cable access precedents for either cable system mean that an access seeker would inevitably be required to face technical issues being solved for the first time. Complex ownership arrangements also mean that a new entrant may have difficulty ensuring end-to-end service.

Economic: A new cable lead-in (from the street to the wall-plate inside the customer's living room) must be physically installed each time a customer in new premises subscribes, incurring an incremental cost (upwards of $400). This plant cannot be economically re-deployed if the customer moves or cancels their service. Where lead-ins are

[3] In its Notice of Inquiry issued in December 1998, the ACCC noted that the wording of its current declaration allows access seekers to choose which services are covered by the declaration, noting that "this may be inappropriate".

already installed, both Telstra and Optus have contractual rights of ownership ie the customer does not own it, a new service provider would need to negotiate for the use of it even though the cost is sunk. There are no access precedents for lead-ins: even Telstra and Optus do not share them when a pay TV customer churns from one network to the other, presumably because each has ambitions to deliver other services into the home via its own lead-in.

Similar issues apply in relation to set-top boxes as apply in satellite (except that digital boxes are not mandated by regulation). At some point – estimated in two to three years – cable TV operators will begin to change out their population of analog boxes to digital boxes which are capable of receiving hundreds rather than tens of channels. Existing operators will have the opportunity to shift the cost of the box – which they have largely borne until now – onto the consumer if a sufficiently compelling value proposition can be offered. This might involve a multi-function box that can support – say – datacasting and internet services as well as FTA and pay TV. This interoperability is critical to the viability and uptake of digital services.

4 MDS

Microwave distribution of broadband services is utilised by Austar in some areas of regional Australia. It was also used by Australis prior to its collapse, in capital cities.

When Australis went into receivership, its former landlord Mike Boulos acquired the MDS licenses and infrastructure, and the set-top boxes in former Australis customers' homes (estimated 60,000-100,000 MDS boxes). Boulos then announced plans to broadcast ethnic and adult programming, and in parallel sought ACCC intervention to gain access to the Telstra cable. (The ACCC's access inquiry appears to be partly a response to this.) No services have yet been launched although in early May Boulos' company was issued with seven pay TV licences by the ABA.

Barriers and limitations to utilising MDS include:

Technical: In the analog world, it is considered a second-rate technology, used mostly in "monopoly" areas or where cable was yet to be commissioned. It is a line-of-sight technology eg in Sydney, the customer had to be able to see Centrepoint Tower. Anecdotally, up to half of Sydney could not receive an adequate signal. The digital environment may breathe new life into MDS technology, however, as OFDM may deliver dramatically improved coverage and overcome many of the line-of-sight problems.

MDS licenses are limited in availability due to limited spectrum. This also limits the number of channels which can be broadcast by this

means, and MDS services generally offer less channels than cable and DTH offerings.

Regulatory: The ACCC broadcasting access service declaration does not cover wireless services.

Licences are issued only for limited periods

LMDS (local MDS) spectrum has been auctioned, but it is unclear whether it will be utilised for broadcasting.

5 Copper wire

Technology developments have dramatically improved the bandwidth which is possible on Telstra's copper wire network. Once seen as only a vehicle for low-bandwidth voice traffic, copper wire now widely carries ISDN services (64 kbps). Most dramatically, digital subscriber line ("DSL"[4]) technology enables 2 Mbps or more - sufficient to carry video - to be delivered to a customer's set-top box.

In a draft ruling last December, the ACCC proposed declaring an unconditioned local loop services upon which DSL services could be built by service providers deploying their own equipment and thus managing the creation of their own bandwidth. Since then, Telstra has launched an "HDSL" (high-bitrate DSL) which is only available in defined areas of major cities - essentially a managed wholesale product for data delivered in CBDs. It is still being debated whether unconditioned (or unbundled) local loop services should be declared.

DSL trials were conducted by Telstra in the mid-90s as a possible technology for delivering video into homes. However, DSL has not been deployed in scale to mass markets. Significant capital is required, revenues from new broadband services are uncertain, and DSL has not been deployed in sufficient volumes overseas to lower set-top box costs. However, as the baby Bells in the US meet the challenges of revamped cable companies (some with long-distance or technology company ownership) the Bells will be incented to pursue DSL options vigorously. This may make the technology more attractive for scale deployment here.

Barriers and limitations include:

Technical: DSL technology is most effective when utilised into homes within a few kilometres of the telephone exchange. A significant proportion of homes may fall outside this radius. It therefore may not be a ubiquitous technology, even if other hurdles could be overcome.

Regulatory: The ACCC inquiry into declaration of an unconditioned local loop service is note complete, and hence no such service is yet available.

[4] The term "DSL" covers ADSL technology, which is the subject of proprietary claims. Generically, it is sometimes known as "xDSL".

Economic: Telstra and Optus have little incentive to duplicate (or to see duplicated) the broadband capacity already available to 2.5 million homes via their cables, since DSL is a broadband technology that may bypass their infrastructure.

Further, until widespread deployment occurs in the US, equipment costs (eg set-top boxes) will not fall to levels which seriously challenge the economics of other broadband systems.

Summary

In summary, this table shows the access infrastructure/set-top box barriers discussed above:

Barriers & limitations	***Broadcasting band spectrum***	***DTH satellite***	***HFC cable***	***MDS***	***DSL***
Regulatory and legal	Limited number of licences	Digital box mandated by regulation; Wireless services not covered by ACCC declaration	Protected contractual rights; Declaration doubts; Complex ownership	Licences for a limited period; Wireless services not covered by ACCC declaration	No unconditioned local loop access
Technical	Historically inefficient allocations of spectrum; Lack of plans to captures new efficiencies of digital	Limited capacity on Optus B3 satellite	Lack of access precedents	Line of sight only (but digital may deliver dramatic improvements).	Reach limits
Economic	Digital box; FTA incumbents/ status quo	Digital box; One dish; Access to wiring; Pay TV incumbents	Customer lead-in; Digital box.		Telstra and Optus already have substantial HFC; Need OS scale deployment to lower costs

B Access to service packages – barriers

Aside from obtaining capacity and box access, a new entrant must also obtain exposure to the consumer. This is somewhat akin to getting shelf space in the supermarket.

For example, a vertically integrated pay TV provider such as Foxtel (which itself owns equity in many of its upstream channel providers, and has shareholders with more extensive interests in the content it carries) demonstrates the degree to which related party content is displayed on its service package. Its most prominent sixteen channels are as follows:

1. TV1
2. Re-transmitted FTA channel 2
3. Showtime
4. Nickelodeon
5. UKTV
6. Discovery
7. Re-transmitted FTA channel 7
8. Fox 8
9. Re-transmitted FTA channel 9
10. Re-transmitted FTA channel 10
11. Fox Sports
12. National Geographic
13. Channel V
14. Arena
15. Encore
16. Sky News

Leaving aside the retransmitted FTA channels, all but one of the channels listed above are provided to Foxtel by a party in which Foxtel or News owns equity. New channel providers face great difficulty in obtaining a favourable position in the channel line-up, if they can obtain a contract at all - especially if the competitive forces on Foxtel diminish as Optus Vision grows relatively weaker.

The Microsoft/PBL ninemsn partnership also demonstrates preference for PBL content (Ralph, Dolly, Getaway) and MS applications (hotmail, Carpoint). The new Windows 98 operating system has inbuilt shortcuts to hotmail; and the recently-released Internet Explorer 5 contains favourites and search defaults which point to ninemsn properties. This leveraging of market power from one level to another creates very real impediments for competing content providers - especially in an environment where the number of hits is not only an advertising revenue driver but is also seen as a critical indicator of future value and success.

Fairfax's experience in its AIM joint venture with the ABC demonstrates the difficulty of obtaining a position in service packages controlled by competitors with related party interests. Similar issues will arise acutely in the digital television environment as electronic program guides provide the launch-pad or home-page for interactive TV services, featuring the channels to watch, the shops to browse, the ISP to use, the web sites to see, the casinos to visit etc.

As ownership increasingly traverses traditional media, internet companies, pay TV providers, channel providers, content providers (including entities not traditionally considered to be media such as sports teams and casinos), dominance or influence at one layer can be leveraged to favour related operations in another. This creates tangible access issues for players without market power across multiple layers.

****

JOHN FAIRFAX HOLDINGS LIMITED
(ACN 008 663 161)

ACCESS AND TECHNOLOGY ASPECTS PAPER

for

FAIRFAX SUBMISSION

TO

PRODUCTIVITY COMMISSION INQUIRY

INTO

THE BROADCASTING SERVICES ACT

AND RELATED LEGISLATION

MAY, 1999

Economic Issues Associated with the Regulation of Broadcasting in Australia

A Report for John Fairfax Holdings Ltd.

by

Joshua Gans

University of Melbourne

Produced with the assistance of London Economics, Australia

4th May 1999

Executive Summary

This report is an economic analysis of current regulations on the broadcasting industry in Australia. It was prepared to assist John Fairfax Holdings Ltd with its submission to the upcoming Productivity Commission Inquiry.

In light of the technological developments and uncertainty surrounding convergence in information industries, it is concluded that:

- Current ownership restrictions may unduly constrain Australian media organisations from investing in new forms of information delivery and production and realising future economies of scale and scope made possible by technological developments.

- A relaxation of ownership restrictions without accompanying clarification and strengthening of competition policy to deal with potential monopoly bottlenecks arising in the broadcasting value chain may lead to lower efficiency than would otherwise be socially desirable.

- Existing competition policy provisions could be fruitfully amended to apply to media and broadcasting to address these competitive concerns.

- Technological change is likely to make content regulation more difficult and to put Australian media proprietors at a competitive disadvantage in securing the attention of Australian residents. The use of direct regulation of content is, therefore, likely to prove increasingly ineffective and costly but it may be possible, through the use of taxes and subsidies to restore some of the outcomes achieved by such regulation.

The general conclusion reached is that using a single policy instrument – such as ownership restrictions – to achieve multiple objectives should be abandoned in favour of targeted policy instruments for each objective.

These conclusions are reached through an examination of current technological developments, a review of the economics of ownership and by application to broadcasting in Australia.

Contents

Page

Contents

Page

Tables

Page

Figures

Page

1 Introduction

On 4 March 1999 the Federal Treasurer asked the Productivity Commission to review Australia's broadcasting legislation with a view to "improv[ing] competition, efficiency and the interests of consumers in broadcasting services."[1] It was also to "have due regard to the phenomenon of technological convergence to the extent that it may impact upon broadcasting markets."[2] Submissions to the inquiry are due on 12th May 1999 and will be followed by Public Hearings. The Final Report is due in March 2000.

John Fairfax Holdings Ltd has requested some economic advice in relation to its submission to the inquiry. This report deals only with the economics of the broadcasting regulatory environment. That environment comprises the following Acts, which are the subject of the review:

- *Broadcasting Services Act* 1992
- *Broadcasting Services (Transitional Provisions and Consequential Amendments) Act* 1992
- *Broadcasting Services Amendment Act* 1995
- *Radio Licence Fees Act* 1964
- *Television Licence Fees Act* 1964

In comparison with other industries the broadcasting industry could be described as heavily regulated. Indeed, as the Productivity Commission has written:

> Broadcasting has been one of the most intensely regulated industries in Australia. Heavy regulation has applied to the industry and company structures, products, production processes, location and distribution.[3]

This regulation is due to widespread perceptions of the uniqueness of this industry from a political and cultural point of view. It is achieved through conditions attached to media licenses.

---

[1] *Broadcasting Issues Paper*, Productivity Commission, March 1999, p.2.

[2] *ibid*., p.2.

[3] *ibid*., p.14.

There are three broad classes of regulation of broadcasting in Australia:

1. *Ownership*: there are currently restrictions on cross-media ownership, the market share coverage of free-to-air television (the 75% rule), and restrictions on foreign ownership (in general and specifically for media). These restrictions potentially limit the ability of media (and other information) organisations in Australia in exploiting emerging complementarities in broadcasting services.

2. *Allocation of scarce resources*: various choices in telecommunications and competition policy have led to a variety of schemes in the past for allocating scarce public goods that are important inputs into broadcasting services. This includes license allocation for spectrum and the regulation of access to key (backbone) telecommunications infrastructure. These choices have important implications for the ability of content providers to utilise the most efficient (i.e., cost effective) means of distribution of information and media services.

3. *Content regulation*: there are rules governing what content is allowed to be provided by various means of distribution (i.e., censorship) and restrictions on the sources of content provided by certain distribution channels (e.g., local content provisions on free-to-air television). Each of these affect the ability of certain broadcasting service providers to compete either with other distribution forms (e.g., pay TV) or overseas providers (e.g., over the internet).

The purpose of this report is to examine the economic implications and options associated with each of these classes of regulation. It is noted, however, that as a matter of economics these regulations are interrelated and changes in one dimension have important consequences with respect to the benefits and costs of changes to others.

Broadly speaking, economic analyses of regulation look to how various regulations achieve goals of promoting efficiency subject to public policy goals (e.g., promoting content diversity, favouring local production and the like). While it is not the place of an economist to evaluate non-economic goals, it is possible to inform policy-makers of the potential economic costs associated with realising those goals. In this respect, we identify three key questions that must be addressed in any analysis of the above regulatory dimensions:

1. What is the role of ownership in promoting economic efficiency? In particular, when does integration (laterally or vertically) lead to lower cost, higher quality and more content diversity?

2. How does one best promote competition in segments of the industry that use key inputs that are themselves monopolised or scarce? This involves

an analysis of competition and public good policy; in particular, the role of access regulation and the establishment and distribution of property rights over scarce resources.

3. How serious are the potential impacts of competitive non-neutrality in the face of content regulation and changing technological environment?

Each of these questions has to be evaluated in an environment characterised by sizeable technological uncertainty regarding the cost effectiveness of alternative means of content distribution and changes in customer valuation of certain classes of content.

2 Economic Characteristics of Information Industries

Much of the broadcasting industry, like other information-intensive industries, is characterised by large sunk costs but small or zero marginal costs of production. A very rough analytical framework for the broadcasting industry would divide it into the spheres of information production and distribution.

Information production has the characteristic that the cost of producing information is independent of the amount of use or the value that information may provide. In competitive markets this means that if there are several different producers of the same information, competition is likely to be so intense as to not allow recovery of the sunk costs that generated the information itself. This has led many economists to suggest that a competitive model is not appropriate for the production of information.[4] It is simply unsustainable.

Increasingly, the distribution of information shares the characteristics involved in information production. There are many different means of distribution. These include both physical versus electronic, and cabled versus wireless. While physical means of distribution often mirrors production characteristics in other industries, electronic means have special qualities. Cabled distribution involves the creation of networks that themselves have large sunk costs and relatively low marginal costs. Wireless has similar qualities except it is limited by a scarce resource: spectrum. Without clearly defined property rights the use of spectrum may be inefficient. Too many broadcasters would degrade its quality in much the same way as too many campers might damage a national park. Hence, the government has opted to define private property rights over that spectrum and allocate licenses to potential users.

In either case, for electronic means of distribution, there is a tendency towards monopoly.[5] For cabled distribution, with its falling long-run average cost of production, it is socially efficient to have a single provider and often this is the market outcome as well. For wireless distribution, the scarcity of spectrum confers monopoly power on its owners. So as is the case with information

---

[4] For a classic statement see Kenneth J. Arrow, "Economic Welfare and the Allocation of Resources for Invention," in *The Rate and Direction of Inventive Activity*, Princeton University Press: Princeton, 1962, pp.609-625.

[5] For a recent discussion of these issues see Carl Shapiro and Hal Varian, *Information Rules: A Strategic Guide to the Network Economy*, Harvard Business School Press: Cambridge (MA), 1998.

production, increasingly, one cannot expect the competitive benchmark to be the appropriate predictive outcome for markets in information-intensive industries such as broadcasting. This, of course, does not mean that such outcomes should not be a desirable regulatory goal. It does suggest that blind de-regulation is, on the face of it, unlikely to achieve a socially optimal situation.

3 Convergence

The current pressure for regulatory reform, in particular, the relaxation of ownership restrictions comes from new technological developments. While the precise form of those developments remains uncertain, as does the appropriate methods of organisation to deliver them, there appears to be a consensus that convergence will require some industry restructuring. As such, to begin it is appropriate to review this phenomenon and its potential impact on the structure of the media and broadcasting industries.

Convergence, loosely defined, is the growing interaction and interrelationship, between the media, information technology and telecommunications industries. It has been recognised as a potential trend since the 1970s. The early focus was on the links between information technology and communications, reflecting the emerging links between computers and telecommunications. Starting in the USA in the mid-1960s, the telephone companies had begun the switch to electronics with Bell's ESS 1 – the initials standing for Electronic Switching System. Later, optical fibre was introduced in the mid-1970s.[6] This is what commentators[7] have called primary convergence – the convergence of information technology and telecommunications.

Nevertheless, even in the 1970s some commentators did envisage that a wide range of products and services for the consumer based on the further convergence of all three industries – media, information technology and telecommunications – would become available.[8] This has been called secondary convergence.[9]

---

6 A landmark being the General Telephone Company of California's use of telephone optical fibre link in 1977.

7 P. Bennett, M. Adamson, *Convergence in Europe: The New Information Infrastructure*, London, FT Management Report, 1995.

8 For example, J. Martin, *The Wired Society*, Englewood Cliffs, Prentice Hall, 1978.

9 P. Bennett, M. Adamson, op cit. Over the last twenty years many more aspects of convergence have been examined, for example on the structure, strategies and organisation of firms operating in this environment, see, S.P. Bradley, J.A. Hausman, R.L. Nolan (eds), *Globalisation, Technology and Competition: The Fusion of Computers and Telecommunications in the 1990s*, Boston, Harvard Business School Press, 1993. Indeed some economists have even begun to argue that there is a broader convergence between manufacturing and services (see A. Wyckoff, The Growing Strength of Services, *OECD Observer* No. 200, June 1996, discussed in *The Economist*, "The World Economy", 28 September 1996, p.44).

3.1 The definition of convergence

It is perhaps best to define convergence in terms of specific technological developments, the main ones of which are digitalisation, increasing processing power, increasing network capacity and the development of conditional access technologies. Thus convergence is defined as the:

- increasing homogeneity of the inputs used for producing and distributing information based products and services and communication services.

This definition of convergence focuses on developments on the supply side. These supply side changes mean, for example, that the same cable network is capable of delivering both television programmes, an information based product, and voice telephony services, a communication based product, and may be used for a range of new products and services, such as interactive services, in the future. Utilising a common network allows these services to realise gains from economies of scale in information delivery.

Moreover, the technological developments that underlie convergence can also impact on information industries further upstream. Whereas previously they had self-provided their own content, a newspaper and television news service may share information sources and realise gains from economies of scope.

As a result of convergence, it may be observed that:

- established ways of distributing information based products (which traditionally define different media) lose importance as new ways of delivery open up; and

- new information based products and communication services will emerge that may substitute for or complement existing ones.

Two other terms are used in this definition. Information based products are those products that are valued primarily because of their information content (e.g. books, newspapers, films). In contrast communication services are valued because they allow the exchange of information (e.g. voice telephony, fax, data communication). This is an important distinction that is emphasised below.

The increasing homogeneity of inputs does not mean that the outputs (products and services, be they information or communication based) will become more alike. In contrast the range of output may become much wider.[10]

[10] Certainly the potential menu of future consumer products and services is very large, ranging from interactive and multimedia communications through virtual reality applications.

Nor, as already noted, does this mean that existing products will disappear. Traditional products, such as books, newspapers and viewing films in cinemas, seem likely to continue into the 21st century. This suggests an increase in product diversity; an important ingredient in economic growth.[11]

The development of new products and services and improvement in the quality of established ones will stimulate an increase in demand for both information-based products and communication services. However, some of the demand for new or better products is likely to involve switching from established ones. The extent to which demand for new products comes at the expense of demand for established ones and, hence, the extent to which established products and services will be replaced with new ones, will depend on how close both old and new products are in product space, i.e. how they fit the purposes of consumers. The hazards of forecasting consumer take-up patterns are well known.

The development of the video market provides a useful illustration of this. VCRs were initially envisaged as offering mainly a time shift facility for consumers to watch TV programmes. However, video rental shops emerged as a new, commercially attractive way of delivering feature films after their earlier release in cinemas. This opened up a new window of exploitation (video rental and, to an increasing extent, video sell-through). Soon video rental income became an important extra source of revenue for producers and distributors of films. Providing a similar but not identical service, video rental may have competed with, but did not replace cinema going.[12]

Now the technological development of conditional access systems is permitting the introduction of pay-per-view television.[13] Combined with near video on demand or true video on demand, this may become another major way of distributing feature films and another source of revenue for film producers and distributors. Again, there may be some net increase in demand, but also some switching of demand away from video rental. Whether video rental will survive the introduction of these new services or will be largely replaced is unclear.

---

[11] Paul Romer, "New Goods, Old Goods and the Welfare Costs of Trade Restrictions," *Journal of Development Economics*, 43, 1994, pp.5-38.

[12] For a discussion see Shapiro and Varian, *op.cit.*

[13] Conditional access systems allow a consumer access to programming only upon payment and, thus, enable a service provider to exclude non-paying customers. A conditional access system is a necessary precondition for the provision of pay TV services using a point-to-multipoint network (e.g. satellite broadcasting or a tree-and-branch cable network). See Annex 1.

3.2 The Impact of Convergence on the Value chain

Information-based industries can be generally characterised as having a three part value chain. These three parts are:

- the creation of content;
- publishing; and
- delivery to customers.

With traditional products and services, these stages in the production and distribution chain are familiar. Books are written by authors (content), published by publishers and delivered to customers through book shops. Newspapers are written by journalists (content), published by newspaper publishers and delivered to customers through various retail outlets. Some products have a rather longer chain. Television programmes can be made by independent companies (as well as vertically integrated broadcasters), published by channel operators and delivered to customers via various transmission mechanisms (terrestrial, satellite, cable) to television receivers.

What is critical to understanding technological changes such as convergence is that its key supply side elements – digitalisation, increasing processing power, increasing network capacity and conditional access technologies – are changing the delivery phase of the chain. Digitalisation means that the distinction between text, images, sound and data disappears as they are all reduced to binary code. The increasing processing power means that manipulation and transmission of this code becomes quicker, easier and more secure. The increasing network capacity allows mass market applications while conditional access creates new payment mechanisms.

The expansion of network capacity, the capability of new delivery mechanisms to carry a range of different products and services, and the ability to control individual access all affect the delivery of information based products to customers. Moreover, the same physical delivery mechanism may be able to provide both information-based products and communication services.

These effects at the delivery stage may induce convergence with respect to other activities higher up the supply chain (e.g., content and publishing), and may eventually affect the organisation of the industry,[14] but it is the

[14] For example, convergence at the delivery stage creates economies of scope that may result in joint ventures between telecommunications service providers operating a network and media companies who want to deliver information based products using this network. These effects are not inevitable though. Where contractual arrangements allow trade in intermediate products and services to occur in the market place, integration (vertical, horizontal or conglomerate) is not necessary for exploiting these economies of scope. See David Teece, "Economies of Scope

development of networks capable of delivering a wide range of products and services which is the driving force of convergence. Figure 1 illustrates this view of convergence.[15]

Figure 1: Convergence

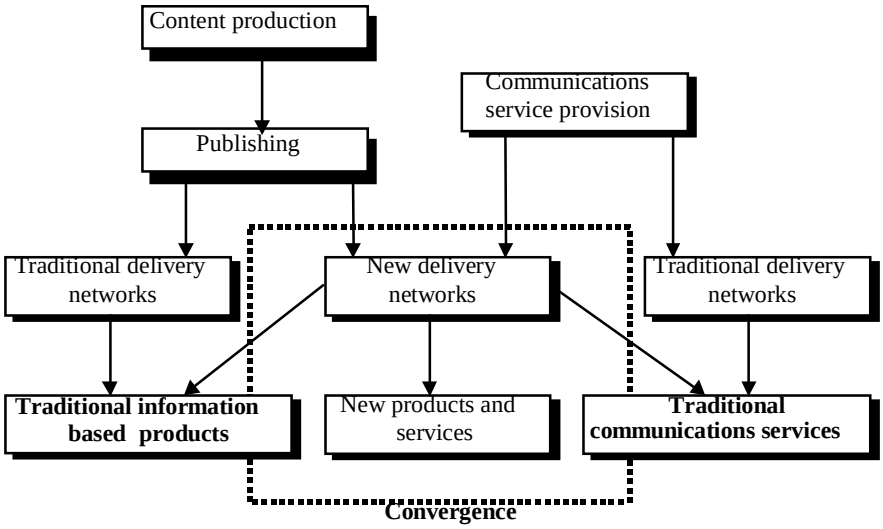


Figure 2 illustrates convergence in another way. It shows how previous dedicated channels of distribution and delivery mechanisms for various media products and communication services might face competition from an all purpose network such as an upgraded version of the Internet.

Figure 2: Convergence and new ways of delivery

and the Scope of the Enterprise," *Journal of Economic Behavior and Organization*, 1, 1980, pp.223-247.

[15] It is important to note that "new delivery networks" refer to any delivery mechanism that previously has not been used to deliver a particular information based product or a communication service. Therefore, even if the Internet, for example, is physically built on old and well established telephone networks, it is a new delivery mechanism for both electronic newspapers (information based product) and Internet telephone services (communication service).

3.3 Changing Economic Roles as Result of Convergence

It is inherently difficult to predict the economic consequences of the convergence of the media, information technology and telecommunications industries, some predictions are less speculative than others. Although digital coding increases the quality of sound and pictures and the capacity of storage facilities, it is in terms of the transmission of digital signals that digital technology is likely to have the most effect. The fact that digital signals can be compressed and transmitted very efficiently by a number of substitutable delivery networks greatly increases their capacity, permitting 6-10 times as many channels as with analogue technology. The relative cost and supply characteristics of the information and telecommunication industries are therefore fundamentally changed which will lead to a number of implications in terms of convergence. We describe these in turn.

3.3.1 The potential for new products and services

There will be market potential for new products and services that exploit the characteristics of new delivery networks. But the expansion in demand will not be limitless, as some players seem to believe; some demand may simply switch from traditional products and services to new ones.[16] Established producers may lose their market position if they cannot supply the new products and services themselves, or prevent others from developing new products and services. As such, it is likely to be critical for the evolution of information industries that certain new products are not prevented from entry because they require the use of say, distributional channels, owned for historical reasons by existing incumbents. That said, some established producers in one market area may equally be foreclosed from new means of distribution and new content opportunities if they are unable to access other parts of the value chain.

[16] Attempts to maintain simultaneously a position in an established market and to introduce new convergence products often may create tension. For example, the co-operation between Bertelsmann and Canal Plus in Europe "has come under strain as Bertelsmann rethinks its strategy in free television and pay TV.... 'We want to know where we stand with Bertelsmann,' Canal Plus said yesterday. 'It is no longer clear in which direction Bertelsmann is going. Is it going to concentrate on free television or pay TV?.…' [Bertelsmann] is the majority shareholder of RTL, Germany's most successful commercial (free) television channel." ("Canal Plus seeks to clarify Bertelsmann link", *Financial Times*, 2 August 1996).

3.3.2 Network operator competition

As with other products and services, if network capacity becomes less scarce and different networks (cable, the traditional telephone network, cellular networks, satellite and terrestrial broadcasting etc.) become increasingly substitutable, ownership of any one delivery network may cease to confer market power. However, the different delivery mechanisms may not be equally capable of carrying all information-based products and communication services (see Table 1 for a comparison). Traditional terrestrial broadcasting networks, for example, are of limited capacity and lack a return path necessary for interactive services, whereas cable networks do not have any of these limitations. Equally the end user equipment, which may be simply an extension of the particular network technology, will not be capable of receiving all information based and communication products and services. In addition, the telecommunications industry is still dominated in Australia by Telstra, and even, with telecommunications liberalisation, it is not clear much network competition will be feasible or sustainable.

If network competition does not develop and the optical fibre telecommunications link becomes the dominant network mode for delivering services to consumers, then access pricing issues, already a telecommunications problem, will loom even larger. However, it is impossible to predict the emergence of a dominant delivery system at this stage. There is certainly no unanimity of views on any decisive trends toward monopolisation of the delivery level through an all-purpose network.[17]

One factor that will affect competition for some time to come are the sunk costs that characterise all networks. These huge sunk costs mean that competition between networks could be fierce, but also that exit is unlikely. Because most costs are already sunk, consolidation within or between these network industries is more likely to happen through mergers and takeovers rather than through exit of individual firms.

---

[17] Stephen P. King and Rodney Maddock, *Unlocking the Infrastructure*, Allen & Unwin: Sydney, 1996.

Table 1: A comparison of different delivery mechanisms

System	Cost structure	Weaknesses and strengths
Telephone network	Large fixed and sunk cost; incremental cost per user may be quite high if upgrading to digital technology is done on a per user basis; incremental cost for additional channels has to be borne only at the server and backbone level because of switched architecture.	Not very suitable for broadcast transmission; very good for personalised services and interactive services that require a return path; capacity limitations in terms of channels are irrelevant.
Cable network	Large fixed and sunk cost; incremental cost per user in homes passed is relatively low; incremental cost per channel depends on the currently available capacity and on the choice of technology for upgrading capacity; step function with potentially small steps.	Suitable for both broadcasting services and providing personalised and interactive services.
Satellite transmission	Large fixed and sunk cost; incremental cost per user (within a given footprint) is determined by the cost of receivers and dishes; incremental cost per channel depends on the currently available capacity and on the cost of launching new satellites; step function with relatively large steps.	Suitable for broadcasting services; lacking a return path, satellite transmission has to be combined with other networks for interactive services.
Wireless cable	Significant fixed and sunk cost; incremental cost per user is determined by the cost of receivers and dishes; incremental cost per channel depends on the currently available capacity and on the cost of building new transmitters.	Suitable for broadcasting services; lacking a return path, wireless cable has to be combined with other networks for interactive services.
Terrestrial broadcast	Significant fixed and sunk cost; with current technology, almost no incremental cost per user; incremental cost per channel almost irrelevant due to strict capacity limitations.	Suitable for broadcasting services; capacity limitations make personalised and interactive services impossible.

3.3.3 Standards and access issues

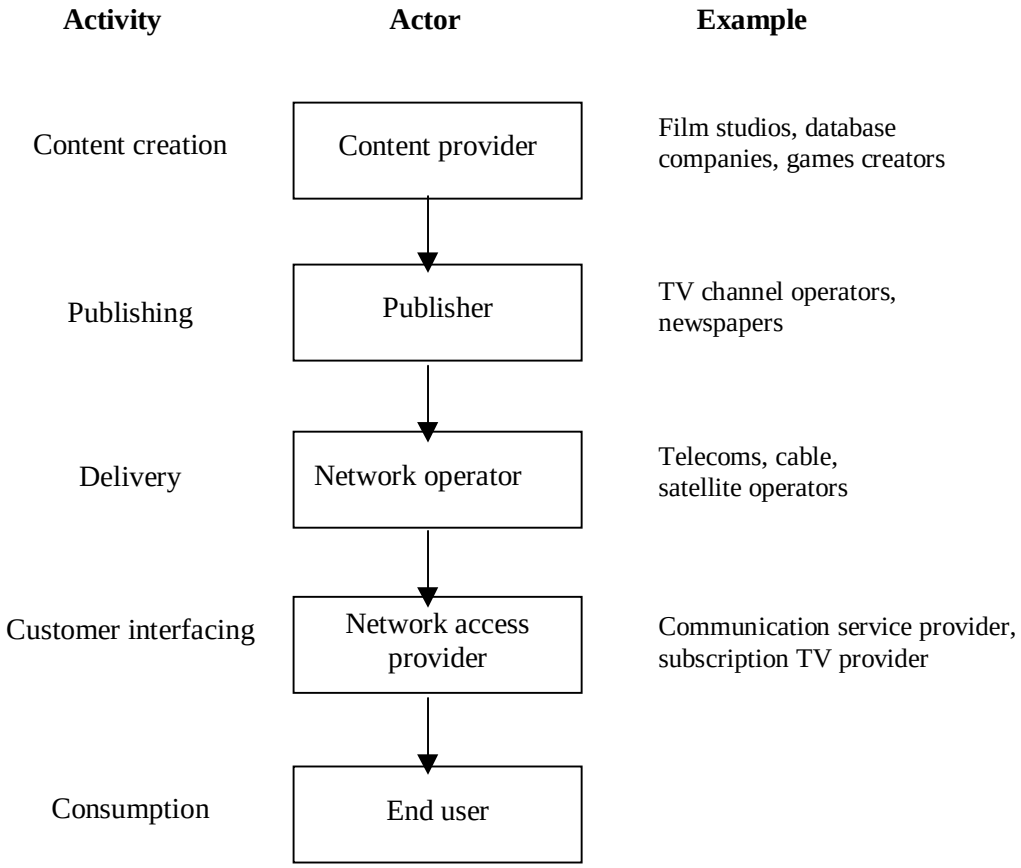
The establishment of technical standards, whilst still allowing suppliers to exploit economies of scale and network effects, will also be vital for the successful development of new products and services. However, proprietary standards may create specific competition problems.

One area where standardisation issues can be expected to become pertinent is the control of access. Conditional access systems are most likely to become standardised, either explicitly or through the operation of the market process. If those systems are based on proprietary technology, the emergence of one single standard might lead to a situation where one player completely controls access to the consumers.

However, convergence is likely to lead to a situation where most information based products and most communication services can be delivered in more than one way. One single delivery mechanism may provide access to a particular range of products and services. So, while the value of controlling

traditional means of delivery will be diminished, economies of scale and scope offered by new delivery networks may make the control of access to these new networks extremely valuable. Any such gatekeeper role carries with it possible competition problems. Figure 3 illustrates this problem.

Figure 3: Idealised future industry structure



Control of access to such networks may depend on the ownership of a standard for conditional access systems, and this may therefore confer market power on the owner of the standard. This effect may be limited only by competition between different delivery networks or through effective regulation.[18]

[18] Shapiro and Varian, *op.cit.*, Chapters 8 and 9.

3.4 Conclusion

The technological developments that form the basis for convergence appear to be driving substantial changes in the nature of broadcasting. Traditional market lines between alternative means of information provision and distribution are become blurred. Those lines are no competing with one another for the attention of consumers and are also motivating potential gains from economies of scale and scope at both the content provision and information distribution levels.[19]

However, while change appears certain, the precise nature of that change is uncertain. This is a challenge to policy-makers to consider policies that allow the most socially desirable change to be implemented while continuing to manage other policy goals. From the point of view of the economics of regulation, this suggests that the process of policy will be as important as the policies themselves in managing expectations and incentives in the future. The purpose of this report is to outline this point in more detail.

[19] For a discussion of these in relation to Australian broadcasting and media see Robert Albon and Franco Papandrea, *Media Regulation in Australia and the Public Interest*, Institute for Public Affairs, 1998.

4 The Economics of Ownership

4.1 Introduction

The main regulations on broadcasting that we are reviewing in this report concern the various ownership restrictions that are placed in media entities in Australia. These restrictions include limitations on:

- *geographic coverage*:[20] one owner cannot cover more than 75% of the population, nor can an owner own more than one television licence or two radio licences in any one region.

- *foreign ownership*:[21] foreigners cannot control Australian media outlets.

- *cross-media ownership*:[22] one owner cannot simultaneously own television, radio or newspaper companies in the same area.

In order to assess the economic rationale or effects of such regulations it is critical to first understand the implications of ownership itself from an economics point of view. This will allow us to better understand the sources of efficiency effects arising from current and potential future ownership restrictions.

Broadly speaking, a benchmark result in economics is that ownership does not in fact matter where economic efficiency is concerned. The **Coase Theorem** demonstrates that so long as there are no restrictions on contracting and ownership (i.e., property rights) is clearly defined, an efficient outcome will result regardless of which agent owns a particular asset. The immediate implication of this result is that while ownership can influence distribution (i.e., who gets what share of the pie), it does not influence overall value created (i.e., how large the pie is). As a first pass this suggests that there would be no economic costs or benefits associated with ownership restrictions or their relaxation. This result is explained in section 4.2 below.

---

[20] Sections 55 and 56 of the BSA.

[21] Sections 57 and 58 of the BSA.

[22] Sections 59 to 61 of the BSA.

Nonetheless, as with all benchmarks, the idealised assumptions upon which it rests are rarely satisfied in the real world. In particular, contracting possibilities are not unrestricted and can be limited on some very important dimensions. There are so-called 'transaction costs' associated with reaching efficiency-enhancing agreements. Secondly, because of this, the efficiency outcome is narrow, potentially maximising the gains only for small groups in the economy. Specifically, ownership can influence the degree of competition in a market and hence, may result in losses to consumers and losses in overall value as firms exercise market power.

We discuss each of these qualifications below. We note that in a world where contracts are incomplete, the conferral of ownership of an asset can raise the incentives of the owner to undertake certain efficiency-enhancing investments or innovations that improve productivity in the economy. This suggests that some restrictions on ownership may cause a reduction in the potential to realise such efficiencies. On the other hand, to the extent that they limit market power, ownership restrictions can have the effect of improving competitive outcomes and reducing associated efficiency losses.

As such, in assessing the economic impact of ownership restrictions we must look at *both* the constraints they place on incentives for certain types of investments *and* the constraints they place on the exercise of market power. This is especially important, as we will argue below, because ownership restrictions are not the only means by which the exercise of market power can be controlled. This suggests the importance of considering ownership restrictions in combination with other potential regulatory instruments in any policy review.

4.2 A Benchmark: The Coase Theorem

In the absence of transaction costs and when complete contracts can be executed, patterns of ownership (i.e., whether assets are jointly or separately owned) do not matter for efficiency (though they do matter from a distributional perspective). This is the well-known Coase Theorem.[23] Any external effects the use or consumption of an asset may impose on others can potentially be measured, bargaining over and hence, priced. When the external effect is a negative one, non-owners will pay owners to limit an asset's use. When the external effect is positive, the payment from non-owners to owners will be designed to encourage greater use. Such compensation or inducement will only be paid if there exists gains from trade (i.e., if the costs imposed on the asset owner are less than the benefit from encouraging or discouraging the

[23] See Ronald Coase, "The Problem of Social Cost," *Journal of Law and Economics*, 1, 1960.

external effect). Hence, bargaining over asset use or consumption will lead to outcomes that redistribute resources to their most efficient allocation.

A classic example concerns two neighbouring farm properties where one farmer grows wheat and the other raises cattle. Without a fence the cattle continually stray onto the wheat farmer's field, causing damage. This is a production externality. If the two farmers are able to close a complete contract, the result will be the same regardless of whether the wheat farmer is given a right of unimpeded property use or the cattle farmer is given that right. In the words of Coase,

> It is always possible to modify by transactions on the market the initial legal delimitation of rights. And, of course, if such market transactions are costless, such a rearrangement of rights will always take place if it would lead to an increase in the value of production.[24]

In the context of broadcasting, this observation suggests that current restrictions on ownership do not necessarily result in economic losses in efficiency. Hence, to the extent that restrictions satisfy non-economic ends, those restrictions are innocuous.

Indeed, as a pure matter of economic theory, this logic would extend to efficiency consequences of anti-competitive behaviour. Relaxing ownership restrictions may well increase concentration and vertical integration in broadcasting.[25] However, so long as the conditions of the Coase Theorem continue to hold, efficiency losses from any change in prices charged to consumers will be neutral. To the extent that prices rise, this merely reflects a shift in allocation of the overall surplus generated from consumers to producers. Economics, as a matter of course, does not focus on such purely distributional shifts, as any policy goals here are non-economic in nature. For instance, there may be a general desire for diversity of ownership above and beyond any efficiency rationales for these. We note here that these distributional changes do not reduce overall productivity and, as such, outcomes would be efficient from a purely economic perspective.

Of course, the very idealised conclusion here belies the very restrictive assumptions underpinning this efficiency result. In particular, an efficient outcome for the entire economy will only result if:

- Property rights are well defined

---

[24] See Coase *op.cit.*, p.15.

[25] Joseph Farrell, "Information and the Coase Theorem," *Journal of Economic Perspectives*, 1 (2), 1987, pp.113-129.

- It is possible to write complete long-term contracts
- There are no transactions costs that inhibit efficient bargaining outcomes from being realised
- There is an absence of government regulation on certain types of contractual arrangements

The first assumption is important because it defines and clarifies the parameters of bargaining making an efficient outcome more likely. The second is important because it allows all relevant issues to be bargained over. If some key issues cannot be contracted, then some important external effects may not be considered in bargaining, leading to inefficient outcomes. The third assumption is important because it assumes that all gains from trade are realised. Transaction costs impede this from occurring and, as such, when they are significant, purely market-based outcomes are unlikely to be efficient. Finally, this analysis assumes that there are no regulatory impediments to certain contracts that may be written.

4.3 When Ownership Matters for Efficiency

4.3.1 Introduction

We now to turn to take a closer look at the complete contracting and no transaction costs assumptions and analyse how, when they do not hold, ownership can have economic consequences. This will allow us to provide a clearer picture of how precisely ownership restrictions may influence the efficiency of outcomes in broadcasting.

4.3.2 Incomplete Contracts

In a world of perfect foresight and fully rational agents all future contingencies would be foreseen. Two agents bargaining over the use of an asset say a firm wanting to hire (rather than buy) a photocopier, would be able to write extraordinarily detailed provisions governing all possible eventualities. This is unlikely to be the case for several reasons:

- *uncertainty and imperfect information*: the number of possible events that could impact upon any given transaction can be very large. When there is uncertainty or imperfect information regarding the consequences of these, parties may be unable to write a contract that specifies an outcome (i.e., price) for every conceivable contingency. This leaves the contract open to later dispute and

renegotiation with bargaining to be resolved after rather than before the event.[26]

- *bounded rationality*: parties may not be mentally able to account for every contingency. This may simply take too much time.[27]

- *difficulty of third party verification*: even when parties themselves can observe the outcome of a transaction (i.e., whether a service of a particular quality has been provided), this may be difficult for a third party (i.e., court) to verify. The result is that the contract may be open to subsequent reneging.[28]

- *imperfect commitment and renegotiation*: sometimes parties themselves may find it costly to continue with the provisions of a contract when certain events have been realised. They will find it mutually beneficial to renegotiate outcomes after rather than before the fact. If a term is likely to be renegotiated, it does not constitute a very effective agreement.[29]

- *limited liability and wealth*: some penalties or inducements may not be feasible because of the limited wealth of one or both parties to a transaction. Hence, it may not be able to put in place a contract that prices all external effects.[30]

Each of these possibilities means that two parties may not be able to agree upon important terms regarding pricing and quality before certain actions must be taken. While in perfectly competitive markets, parties may have good substitution possibilities that would constrain such contractual outcomes anyway, in many situations this market discipline is not available.[31] This is because the actions being taken are specific to the asset or relationship that

---

[26] See Paul Milgrom and John Roberts, *Economics, Organization and Management*, Prentice-Hall, 1992, Chapter 5; Oliver Hart, *Firms, Contracts and Financial Structure*, Oxford University Press, 1997.

[27] Milgrom and Roberts, *op.cit.*; Eric Maskin and Jean Tirole, "Unforeseen Contingencies and Incomplete Contracts," *Review of Economic Studies*, 66 (1), 1999, pp.39-57.

[28] L. Anderlini and L. Felli, "Incomplete Written Contracts: Undescribable States of Nature," *Quarterly Journal of Economics*, 109, 1994, pp.1085-1124.

[29] Hart, *op.cit.*; Oliver Hart and John Moore, "Foundations of Incomplete Contracts," *Review of Economic Studies*, 66 (1), 1999, pp.115-139.

[30] Philippe Aghion and Jean Tirole, "The Management of Innovation," *Quarterly Journal of Economics*, 109, 1994, pp.1185-1210.

[31] Oliver Williamson, *The Economic Institutions of Capitalism*, Free Press: New York, 1985.

underlies the transaction. Hence, the parties have limited substitution possibilities after the fact and, as such, will look to bargaining outcomes ex post to consider whether a non-contractible action is worthwhile ex ante.

A canonical example of such non-contractible actions is investments or innovations that improve product quality.[32] As quality is both difficult to specify ex ante and difficult to verify ex post, it is difficult to write contracts ex ante that specify the outcomes that would result upon the realisation of a product of given quality. This means that even if a seller was to improve product quality, a buyer may claim that it is insufficient and hence, demand a lower price. Alternatively, a seller may not actually improve product quality but claim that they would not deliver the product unless the buyer paid a higher price. With limited substitution possibilities, the buyer is effectively held to ransom.

In such a world, the key to determining whether efficient investments take place is to consider the role of ownership. Ownership confers default rights on a party. That is, in any ex post negotiations, an owner can threaten to either restrict access to the asset or use it in an alternative fashion. This threat will, if credible, harm non-owners more than it would an owner. Hence, asset owners will be able to guarantee for themselves greater bargaining power and a share of the surplus from ex post bargaining.[33] From an incentive perspective, you are more likely to realise a higher return on non-contractible investments if you own the asset at the heart of the transaction than if you do not. As such, owners are more likely to provide an efficient investment level.

From an efficiency perspective, this suggests that those agents who are in a position to make the most important non-contractible investments should own assets. Joint, third party or sole ownership by the other agent will dilute these incentives. Hence, these forms of ownership will be less efficient than one that respects the role of non-contractible investments.

As asset markets will tend to ensure that those who would generate the most value from them own assets, ownership restrictions are likely to generate inefficiencies. This is because such restrictions prevent collections of assets being owned by those agents who might make the most important non-contractible investments in relation to them.

---

[32] Sandford Grossman and Oliver Hart, "The Costs and Benefits of Ownership: A Theory of Lateral and Vertical Integration," *Journal of Political Economy*, 94, 1986, pp.691-719; Aghion and Tirole, *op.cit*.

[33] For the classic statement of this see Oliver Hart and John Moore, "Property Rights and the Nature of the Firm," *Journal of Political Economy*, 98, 1990, pp.1119-1158.

4.3.3 Transaction Costs

There are many forms of transaction costs that can impede the ability of parties to reach desirable agreements. The most prevalent are the result of asymmetries in information between the parties.[34] That is, one party has relevant information that the other does not have. That party also has an incentive to act strategically to conceal that information. This generates the possibility that bargaining may breakdown without an agreement being reached. As such, the end result of transaction costs is a reduction in the number of desirable trades and an efficiency loss for the economy.

Transaction costs are a general problem that might arise in market or firm-level transactions. What concerns us here is the role that ownership restrictions might play in either reducing or mitigating the adverse consequences of transaction costs. Much research has suggested that ownership can potentially mitigate transaction costs by moving some transactions within firms rather than in the market. Coase, himself, was a proponent of the view the patterns of firm boundaries (themselves a reflection of different clusters of ownership) could be accounted for by looking at the costs associated with transacting within rather than between firms.[35] Like the consequences of contractual incompleteness, the minimisation of transaction costs is another reason favouring few restrictions on ownership. This would allow some transactions that are today mandated to take place only in markets to be brought within firms.

4.4 Transaction Costs and Competition

While the presence of transaction costs may favour fewer restrictions on ownership, this presumes a perfect competitive market. As we demonstrate here, transaction costs lie at the heart of the ability of firms to exercise market power to the detriment of economic efficiency. Consequently, without competitive checks on such market power, one might be concerned that fewer restrictions on ownership may result in less competition and lower efficiency.

4.4.1 Transaction Costs in Mass Markets

It is well known that if a monopolist can perfectly price discriminate, then monopoly, in of itself, generate socially efficient outcomes.[36] This is because

---

[34] Milgrom and Roberts, *op.cit.*, Chapters 5 and 6.

[35] Ronald Coase, "The Nature of the Firm," *Economica*, 1937.

[36] See, for example, Joshua Gans, Stephen King and Gregory Mankiw, *Principles of Microeconomics*, Australasian Edition, Harcourt-Brace: Sydney, 1999, Chapter 15.

such price discrimination only arises if the monopolist can bargain with each customer individually and give each a tailored price so as to encourage socially efficient trade.

Transaction costs can make price discrimination impossible. In mass markets, with a large number of consumers it is not possible for firms to bargain with each consumer individually and work out the best price for them. On the one hand, firms may fear that a consumer may bargain for a low price simply to compete with the firm in re-selling to a consumer who might only be able to negotiate a high price. On the other, firms do not know the characteristics of consumers they are dealing with. Consumers in such negotiations always have an incentive to claim they value a product little. Because firms cannot distinguish between consumers with higher versus lower valuations for their product, they must charge the same price to each. In this respect, transaction costs impede the realisation of a socially efficient outcome akin to perfect price discrimination.

The result of these two forces – the potential for re-selling and information asymmetries – is that firms must charge a *single price* to all consumers of their product and cannot tailor a deal to each individually. If firms were to choose a price that reflected their costs (i.e., marginal cost) of servicing a given consumer, they are unlikely to earn as much profit as if they charge a higher price and sacrifice some trades that might otherwise have been desirable. This is because they care about the average price they receive from all their consumers rather than the marginal price from the marginal customers. Essentially, this type of posted price selling – familiar in most mass markets in the economy – reflects a potential inefficiency: too few trades than would be socially desirable. This is sometimes given the name of a 'dead-weight loss,' familiar to trade and taxation economics.[37]

Of course, there is an important exception to this: perfect competition. High levels of price competition drive prices to their marginal cost. Hence, firms are constrained by competition – rather than transaction costs – to charge the same price to all of their customers. Moreover, the price they must charge is driven downwards by competition to a level that promotes efficiency. In this light, the role of competition is one of mitigating the adverse consequences that might otherwise arise from transaction costs in the market.

4.4.2 Market Power and Ownership

The above logic is a traditional one in economics. It demonstrates the important role of competition in generating efficient outcomes. It also demonstrates how the efficiency role of competition is related to the presence

[37] Gans, King and Mankiw, *op.cit.*, Chapters 8 and 9.

of transaction costs. Without such costs, competition is not as critical in bringing about an efficient outcome as these would be likely to arise for Coasian reasons.

This is where the role of ownership comes to play. When such 'mass market' transaction costs are present, a concentration of ownership of assets among a few sellers in a market can undermine competitive forces. In addition, each seller would have an incentive to restrict the number of trades (i.e., output) in order to maximise their own profits. The primary reason economists are generally, in favour of low ownership concentration is that this will result in more competition and a reduced incentive for any single seller to restrict the number of trades inefficiently.

In contrast to the incompleteness of contracts that might lead us to want to relax ownership restrictions, competitive concerns push us in the opposite direction. We are concerned both with the horizontal concentration of ownership (among a few sellers at the same level of production) and vertical integration (as firms with market power in one segment integrate into others). Each of these can have the effect of increasing the ability of sellers to exercise market power in one or more markets. The exercise of market power in a mass market will most likely reduce the number of trades (i.e., quantity produced) below socially desirable levels. Hence, policy-makers should be wary of changes in regulation that might enhance market power.

4.5 Conclusion

It is important to remember that sometimes concentration of ownership is an efficient outcome. This could be for technological reasons (e.g., our earlier discussion of natural monopoly) or because of incomplete contracts and the incentive benefits of ownership. The appropriate policy response with regard to ownership will, therefore, likely involve a balancing of direct efficiency effects against the adverse effects of concentration on competition. However, as is discussed in Section 6the , ownership is not the only policy instrument available to control the exercise of market power. Competition policy and, specifically, access regulation, can mitigate the adverse consequences here and allow a policy of unrestricted ownership to generate its full efficiency benefits.

5 Important Investments in Broadcasting

5.1 Introduction

We now turn to consider these two economic effects of ownership – efficiency benefits associated with encouraging investments and competition issues – in light of the changing nature of broadcasting. In particular, technological changes imply two things:

- *Convergence*: there is increasing scope for traditionally disjoint industry players to benefit from co-operation. The complementarities in production and distribution that lie at the heart of convergence may not be fully exploited if complete contracting is not possible. This would favour a reduction in some ownership restrictions in order to allow integration across different broadcasting stages and paths so as to provide greater incentives for efficient investments.

- *Monopoly*: electronic means of distribution tend to favour intrinsically monopolistic outcomes. This could be because cabled networks have natural monopoly characteristics or because wireless ones have limited key resources. In either case, while this might favour concentration in distribution, the concern would be how less restricted ownership, vertically, might translate into an extension of market power to content provision and publishing, thereby reducing the scope for competitive outcomes.

This section deals with the first of these points while the second is reserved for the following section. We discuss them both in the light of the current review of broadcasting regulations.

5.2 Investments to Facilitate Convergence

In Section 3, it was argued that convergence was a force generated by technological changes that altered the potential to realise economies of scale and scope in broadcasting and media. These changes are taking place in a dynamic environment in the face of considerable uncertainty. As such, it is unclear to practitioners and especially to policy-makers what forms of organisation will be most suitable to take advantage of current and on-going technological developments.

In such an environment, ownership (and other) restrictions can have the effect of denying industry participants the means of optimally exploiting newly created opportunities for cost reduction or product development. In the context

of the economics of ownership discussed in the previous section, when important investments – such as those developing and implementing new technologies – cannot be contracted upon ex ante, ownership changes may be required so that participants can realise sufficient returns on those investments to make them worthwhile. In this case, it is the dynamic environment associated with convergence that makes the precise form and value generated from these investments uncertain. When this occurs, it is difficult for one participant to guarantee contractual outcomes ex ante when forced to deal at arms-length with other industry players. Without this assurance, such investments are less likely to be undertaken.

These issues are best illustrated using examples. We consider the merger that has taken place between Disney and Capital Cities-ABC and issues associated with marketing Pay TV in turn.

5.2.1 The Disney/Capital Cities-ABC Merger

Take, for example, the case of the Disney/Capital Cities-ABC merger. This merger, between two large U.S. media and broadcasting firms, represented vertical integration and the bringing together of content sources previously operated from different 'sides' of the media spectrum. Convergence, which involves the increasing homogenisation of inputs in the production and distribution of information based products and communication services, in and of itself does not explain this merger. It has no direct effect on the economic incentives pointing towards or away from vertical integration. There are no immediately obvious natural synergies between content production and delivery. It could be argued that there were no present economies of scope or scale between content production and broadcasting resulting from technological change. The alleged ability to "cross-sell" and "cross-promote" Disney merchandise by airing Disney productions on the ABC network could have been achieved by simple output deals.

On the contrary, there may be important forces reducing even these potential gains from integration. It could be argued that technological development should allow a loosening in the relationship between stages of production. Information content can now be transferred quickly, cheaply and accurately by electronic means. For example, newspaper publishers traditionally were vertically integrated, running their own printing presses, usually in the same building, in order to achieve speed of production of the latest news. Today it is possible for the stages of production to be vertically and geographically separated because the content of a newspaper printed hundreds of miles away can be transmitted electronically, reducing the need for the newspaper publisher to operate, and ultimately to own its presses. This has aided the development of international editions of newspapers.

How then do we explain the motivation behind the Disney/Capital Cities-ABC case and other US media mergers?

- One factor to be remembered is that they followed a relaxation in the rules governing media ownership, following the expansion of the number of channels. The Syndication Rule and the Prime Time Access Rule acted as an inhibition on network involvement in content production. We still, however, need to examine the reasons why the removal of these barriers should have led to a wave of mergers.

- One argument commonly advanced is that vertical integration is needed to guarantee access to other stages in the vertical chain: the merger between a content producer (e.g. Disney) and a company mainly active in delivery (e.g. Capital Cities-ABC) will give both Capital Cities-ABC access to content[38] and Disney access to a delivery network. This argument, however, begs the question as to why firms are not happily relying on being able to purchase content or delivery capacity on the open market. This may be the case because they feel at risk of a refusal to supply, or because they believe that control over successive stages of the production process will enable them to exert power through vertical foreclosure. These issues are dealt with in more detail in Section 5 below.

- A further motivation for vertical integration could be a desire to spread risk in a highly dynamic environment, when it is not certain at which level of production it will be possible to appropriate rents in the future. By being involved at all levels of the vertical chain firms guarantee that they will be involved at the level which does make money. Again, however, it is unclear why spreading risk requires integration, as shareholders should be able to spread risk more cheaply by just diversifying their portfolios. In this context, vertical integration would have an insurance value only for managers, and vertical integration strategies may reflect more the preferences of the management than those of shareholders. In other words, vertical integration would occur because it is in the interest of managers, not because it maximises the value of the companies involved. Indeed, the large literature[39] suggesting that mergers do not achieve the expectations of

---

[38] A recurrent theme in the media literature is that "content is king" (see, for example, Patrick King, *Media Business File*, Autumn 1995, p. 23), and that the increase in the variety of ways in which information can be transferred to consumers will strengthen this. For example, the expansion of the number of TV channels will increase the demand for content, increasing the value of high quality content, necessary to attract viewers and advertisers. One common interpretation of media mergers is therefore that firms are attempting to guarantee themselves access to content.

[39] For a consideration of UK evidence see, A. Hughes, "Mergers and Economic Performance in the UK: A Survey of the Empirical Evidence", University of Cambridge Department of Applied Economics Working Paper, 1991, and more internationally, D.C. Mueller, "Mergers: Theory and Evidence", in G. Mussaki (ed.), *Mergers, Markets and Public Policy*, Kluwer Academic, 1995, Chapter 1.

the participants and indeed may actually depress post-merger economic performance should perhaps similarly caution shareholders against many of these merger deals.

This suggests that the gains from the merger were likely to be future ones. That is, the parties could well have intended to undertake certain investments whose returns would be best realised through joint ownership, i.e., integration.

5.2.2 Marketing Pay TV

One such investment may be the promotion and stimulation of demand for pay TV services. Because any investment in the stimulation of demand will benefit players at all levels of the vertical supply chain (content creators, publishers and deliverers), there may be an insufficient incentive for each individual player to incur the investment cost in the first place. In some instances, the investment is sunk and making it will adversely affect the bargaining power of the investor. In order to spell out these effects, we look at the incentives for players at different levels of the vertical chain.

In order to maximise their rents, content creators are interested in stimulating the demand for their product in terms of both the amount demanded and the willingness to pay. Content creators earn revenues by exploiting their products over a variety of windows of exploitation. For content creators, pay TV and free-to-air TV are two different windows, but they have to take into account how the existence of one affects the attractiveness of the other. Being able to define these windows, content creators can be expected to be interested in the promotion of demand for pay TV because this may increase demand for their product, and thus the rents they receive.

At the same time, each content creator should be interested in attracting demand for its particular product rather than for content in general. Hence, content creators will have a strong incentive to promote their particular content, which will not necessarily imply focusing on the pay TV window.

By the same token, publishers (in the pay TV industry the packagers or content into channels) only have an incentive to promote their particular channels, even though they would benefit from an increased overall demand for pay TV services. Unless publishers can build up a strong reputation for their channels, there may be little incentive for investment in any promotional activity.

Deliverers only have an incentive to promote their particular system and drive penetration (i.e. cable operators advertise for cable), owing to the large size of fixed costs and the existence of consumer switching costs which both reinforce advantages from having a large market share. Specific content or specific channels are of interest only to the extent that they can be used to

drive penetration.[40] Penetration-driving effects require that the particular content/channel be strongly demanded by viewers so that non-availability on one particular delivery mechanism would be a severe disadvantage. Clearly, penetration-driving effects are strongest in cases where channels are available exclusively to one or some, but not other deliverers. Access at discriminatory terms would be a weaker form, but still create advantages for those deliverers who can obtain the channel at favourable terms.

Overall, there may be significant free rider problems, and the combined efforts of all levels to promote pay TV services may be less than optimal. This is particularly true in the introductory phase where customers have to be persuaded to invest in a new technology (the purchase of receiving equipment or set-top boxes). For example, deliverers may be willing to subsidise set-top boxes, but only if they can recover this cost by charging higher subscription fees in the future. This, in turn, may require that some channels are available exclusively through this delivery mechanism, because otherwise deliverers would compete on too similar a package of content to maintain prices above marginal cost.

5.3 Conclusion

The analysis of Section 4 indicates that there are considerable efficiency costs associated with the current regulatory regime covering the broadcasting industry. The preceding analysis of the role of ownership in ensuring optimal investment decisions highlights the main economic concern about Part 5 of the BSA, which shows a strong preference for property rights restrictions in order to achieve its regulatory goals.

Increasing supply-side convergence in broadcasting combined with the impossibility of complete contracting suggests that there may be (and possibly already are) strong incentives in the future for a rearrangement of industry structure. The Disney/Capital Cities – ABC merger in the US was a prominent example. Such rearrangement is necessary if the incentives for risky investment in a technologically fast changing industry are to provide the proper signals. Current heavy restrictions on the control of broadcasting licences act as an obstacle to the development and introduction of converged technologies in Australia. An example is the future possibility of consumers being able to access the World Wide Web on their televisions.

Economists view restrictions on ownership with suspicion at the best of times. The rapid technological change, the undoubted phenomenon of convergence

---

[40] Of course, a deliverer selling directly to subscribers can extract more money for attractive channels. It is the channel, however, that attracts the viewers and the higher revenue will have to be passed on to publishers, i.e. more attractive channels command a higher price.

and the importance of broadcasting to national growth as an industry of the future suggest that when it comes to the broadcasting industry such restrictions are likely to involve even greater efficiency costs than usual.

6 Regulation and Market Power

The discussion of the previous section confirms that concerns about the efficiency effects of ownership restrictions are potentially valid in any environment of convergence in broadcasting. However, as was discussed in Section 4, economic analysis suggests that relieving ownership restrictions could lead to increased market power and, as such, lead to socially sub-optimal outcomes. One condition underlying this potential negative side to relaxing ownership restrictions was the presence of transaction costs in the market relationship between firms and consumers. Given the mass market nature of broadcasting and media, these costs are likely to be present in many important segments of that industry. Hence, there is a prima facie case to be concerned about potential anti-competitive outcomes arising from relaxed ownership restrictions.

These anti-competitive concerns are exacerbated by the trends towards convergence:

- Electronic means of distribution *generate both economies of scale in cabled networks and scarcity in spectrum resources* and with them a tendency towards monopoly in distribution. While, at least for networks, this monopoly can be efficient in terms of minimising distribution costs, it does, however, come with the potential ability of owners of those assets to extend this monopoly power into other related vertical segments of the value chain. Their ability to do this could be enhanced by allowing them to vertically integrate or vesting ownership rights with existing vertically integrated participants.

- There are *economies of scope* to be realised from joint operation of diverse forms of content and publishing channels. However, despite their differentiation these forms of content compete with each other; at least for the attention of consumers. As a result, joint operation may reduce competition within a segment leading to higher prices and less usage than would be socially desirable.

In this section, these anti-competitive concerns will be discussed. It will be suggested that relaxing ownership restrictions could potentially lead to anti-competitive outcomes. However, there are existing mechanisms in competition policy that could be fruitfully applied to mitigate these concerns; as is done in other industries. This would potentially allow the efficiency gains from

relaxed ownership restrictions to be realised only when those gains outweigh potential social losses (if any) from anti-competitive behaviour. Alternatively, such competition regulation may directly mitigate those losses and allow the direct efficiency gains to be maximised.

6.1 Foreclosure issues and convergence

While the anti-competitive concerns of horizontal mergers are well known, the issues surrounding vertical integration are subtler. However, it is these that are of increasing relevance in broadcasting and media as the Disney/Capital Cities-ABC case demonstrates. There, a major content provider acquired the downstream operation of a television network (a publisher). In the US, such mergers are familiar. In cable television following deregulation, there have been many mergers between channel providers and distributors (local cable networks). In Australia, both Telstra and C&W Optus have integrated into channel provision and internet service provision using their own telecommunications networks as a backbone. Telstra itself has extended this into publishing with its BigPond set of web services. PBL has formed an alliance with Microsoft to provide internet content and publishing in the form of ninemsn.com.au. All of these are examples of vertical integration motivated by technological developments associated with convergence. But all of these involve entities with market power in their traditional businesses. Herein lies the competitive concern.

The precise competitive concern is one of foreclosure of further competition in those traditional or new segments. For example, firms may attempt to discourage entry by pre-emptive expansion through the acquisition of important sources of raw material supply (in our case content), or distribution channels, enter into long term contracts to purchase inputs or capacity and engage in exclusive dealing or other practices. These practices may foreclose the market to others.

If vertical integration leads to foreclosure, i.e. attempts to use strength at one stage of the production process to deter entry or force exit of other firms at another stage, then there clearly will be anti-competitive effects. However, it is not obvious that a given merger, such as those discussed above, are motivated by foreclosure intent; especially, given potential benefits from convergence.

To consider the potential for anti-competitive vertical integration, we need to ask two distinct questions: whether a firm *is able to foreclose*, dependent on how competitive and contestable the market is, and whether it *would want to foreclose*.

The simplest argument concerning vertical foreclosure, attributable to the Chicago school is that if complete contracting is possible, it cannot be profit-maximising for a firm to restrict output either by refusing to supply

downstream or refusing to buy from upstream firms. If a firm has market power at one level of the vertical chain, it can do no more than exploit this market power at that level. No form of vertical behaviour will allow the firm to increase the rent it can appropriate from having market power.[41]

If we discard the assumption that contracts among firms in the vertical value chain are complete, as was suggested in Section 5, foreclosure becomes a possibility.[42] A firm with monopoly power in one market segment may indeed leverage its power by integrating forward (downstream) or backward (upstream). In the absence of integration, monopoly firms may increase competition among suppliers or intermediate input buyers in order to reduce the bargaining power of any one. The result, however, is over-capitalisation from the point of view of exercising market power. Of course, it is this over-capitalisation that is socially desirable. By integrating, the monopolist can assure itself of demand or supply and hence, reduce their own need for encouraging competition in related segments. The end result is reduced investment, entry and high overall prices.[43]

In the Disney/Capital Cities-ABC merger case, it is difficult to identify foreclosure motivations as an economic justification for the vertical combination of assets and activities in content production, publishing and delivery of TV broadcasts, since established competition in content production and delivery already existed. A refusal by ABC, for example, to show non-Disney content is more likely to harm ABC by loss of market share, and hence advertising revenue, than to remove other content providers from the market. Similarly, refusing to supply Disney content is unlikely to force ABC's competitors to exit the market.

In Australia, however, the concerns about vertical foreclosure are greater because there is less competition in electronic distribution than in the US. Large telecommunications companies dominate cabled distribution, while they and existing free-to-air broadcasters dominate wireless. As such, the removal of ownership restrictions may allow vertical integration that is, in part, motivated by anti-competitive forces. While this integration may overall be socially desirable because it is outweighed by efficiencies of the type discussed in Section 5, it is likely that these efficiency gains will be socially sub-optimal given their association with increased market power.

---

41 The clearest statement of this view comes from Robert Bork, *The Antitrust Paradox: A Policy at War with Itself*, Basic Books: New York, 1978.

42 For an analysis of these effects see M.D. Whinston: "Tying, Foreclosure and Exclusion", *American Economic Review*, Vol. 80, 1990.

43 See Catherine de Fontenay and Joshua Gans, "Extending Market Power Through Vertical Integration," *Working Paper*, No.9903, Melbourne Business School.

6.2 Access Regulation

Nonetheless, ownership restrictions are only one policy means of controlling anti-competitive outcomes that may result from integration. The Hilmer report recognised these concerns when it favoured vertical separation of vertically integrated public utilities. Nonetheless, it also recognised the potential efficiencies from integration and thus, suggested price and access regulation as a means of allowing vertical integration while controlling for anti-competitive effects.

Access regulation has been codified in Part IIIA (and the Telecommunications provisions) of the *Trade Practices Act*. This type of regulation is a means of controlling the monopoly power of owners of bottleneck or essential facilities who may be vertically integrated into related market segments. Access regulation identifies those facilities that may form the basis for market power and guaranteeing access to the use of those facilities by independent firms. Moreover, such regulation controls the ability of owners of essential facilities to price the use of those facilities in a monopolistic fashion or to otherwise control the quality of the service provided to its competitors.

Access regimes exist throughout many important sectors of the Australian economy. In energy, the transmission networks for electricity and gas are regulated by the Australian Competition and Consumer Commission (ACCC) and state regulators. This allows producers to gain access to customers at non-monopolistic prices and for retailers to gain access to supplies of energy at those prices. In rail, potential users can utilise rail networks at competitive rates and compete with existing users. In telecommunications, access regimes are being formulated to allow for use of local call networks and long distance carriage systems by many participants including competing networks, resellers, mobile phone operators and internet service providers. The end result is increased competition in these industries and lower prices downstream.[44]

The issues in these sectors are very similar to those in broadcasting and media. This suggests that where a potential bottleneck in distribution arises, the existing provisions of the *Trade Practices Act* (overseen by the ACCC and National Competition Council) could be fruitfully employed to ensure that content providers and publishers are not foreclosed from access to customers in the wake of new technological developments associated with convergence. Of course, such regulation would need to be applied carefully so as to ensure distribution owners had adequate incentives to invest but this is a generic issue in access regulation and not specific to broadcasting.[45]

---

[44] For a review of access regulation and associated issues see King and Maddock, *op.cit*.

[45] See Joshua Gans and Philip Williams, "Efficient Investment Pricing Rules and Access Regulation," *Australian Business Law Review*, 1999 (forthcoming)

6.3 Spectrum Allocation and Competition

The potential monopoly problem in distribution is only in part related to cabled means of electronic transmission. In wireless, there is a fundamental resource constraint: limited spectrum. This means that, for a given range of spectrum, only a few operators can utilise it at any one time. Those operators may have some monopoly power. Specifically, if existing incumbents utilising one range of spectrum are owners of newer ranges of spectrum, this reduces the potential for competition and may lead to foreclosure issues associated with access to wireless distribution.

Access regulation is not designed to cope with this type of monopoly problem. It is used to control monopoly as a result of a natural monopoly technology, where it is feasible but not efficient to have more than one operator or network. In that case, allowing more firms access to a network does not necessarily crowd out other users. Networks of sufficient capacity are non-rival.

Spectrum use, however, is rival. If one operator utilises it, quality could be seriously compromised if access is mandated for other users. As such, access regulation, in and of itself, cannot control monopoly power in spectrum. There are, however, other policy instruments that could be employed to control the adverse competitive consequences of vertical and horizontal integration by spectrum owners. These include existing competitive remedies and allocation mechanisms. Each is discussed in turn.

6.3.1 Existing Competition Provisions

The concern with spectrum arises because an owner of property rights to it may have some monopoly power that could be extended into related market segments. This concern arises in other industries where one or more firms have market power. It is here, however, that the provisions of the *Trade Practices Act* may be applied.

Two sections of the *Trade Practice Act* appear to be relevant in this regard.

- Section 45: this section controls collusive behaviour and anti-competitive mergers. It allows both the regulator (the ACCC) and private participants to take court action to remedy such behaviour. With regard to spectrum, this might include concerns about a single firm controlling multiple units of spectrum across a range of frequencies.

- Section 46: this section makes illegal the exercise of market power that for anti-competitive purpose (and in the case of telecommunications simply effect) in a market or markets. It is this section that initially formed the basis for access regulation and continues to provide options for firms and

the regulator in controlling anti-competitive behaviour where essential facilities have not been declared.

With regard to spectrum, these provisions could be utilised, at least in spirit, to provide assurances and remedies for those participants and users harmed by the exercise of monopoly power over spectrum use. Of course, there may be special concerns in broadcasting that may require special provisions in the *Trade Practices Act*. This is not unprecedented and, in telecommunications – the industry most closely related to broadcasting – these special characteristics have already been recognised in the 1996 amendments to the *Trade Practices Act*.

6.3.2 Spectrum Allocation

Spectrum is licensed by the Federal government (through the Australian Communications Authority) who grants participants property rights over a given range of spectrum in a particular geographic area. Traditionally, these licenses were allocated but in wireless telecommunications, in Australia and around the world, governments have turned to market-based approaches to spectrum allocation.[46]

Market-based approaches have two benefits:

- *Revenue*: the government can ensure that taxpayers share some of the value private firms will realise from spectrum;

- *Efficiency*: the spectrum can be allocated to those private firms who will generate the most value from their ownership.

However, when market participants have some existing market power, they may be inclined to bid more for this spectrum to preserve that power rather than for purely socially beneficial goals.[47] Nonetheless, there do exist ways of designing auctions that can mitigate such anti-competitive forces.[48]

In digital television, the government has chosen to allocate spectrum licenses, preferentially, to incumbent free-to-air operators. In so doing, it misses out on the revenue and efficiency benefits of market-based forms of allocation while

---

[46] Albon and Papandrea, *op.cit.*, Chapter 5 provides an excellent discussion of how licenses have been allocated in Australia.

[47] Richard Gilbert and David Newbery, "Preemptive Patenting and the Persistence of Monopoly," *American Economic Review*, 72 (3), 1982, pp.514-426.

[48] See Paul Milgrom, "Procuring Universal Telephone Service," *Proceedings of the 1997 Industry Economics Conference,* Industry Commission: Melbourne, 1997, pp.137-168.

preserving existing market power. This method of allocation, therefore, appears to be an example of the worst rather than the best of both worlds that would normally be the socially desirable economic outcome.

By moving to better methods of spectrum allocation, the government could ensure that the efficiency benefits of convergence are realised without exacerbating anti-competitive concerns associated with a relaxation of ownership restrictions.

6.4 Conclusion

From an economic point of view, if property rights are clearly defined and entry and exit are easy and free the only efficiency concern revolves around the issue of market power. As forecast in Section 5, the removal of the current BSA restrictions on ownership control would likely lead to some future restructuring of the industry. Much of this will be socially desirable but there could be anti-competitive concerns. One of these, particularly with respect to any trend towards vertical mergers, or more specifically, the combining of distribution and production, involves the increased market power which an owner of cables who was also a player in content production and provision would be able to exert against other players downstream. This is a classic natural monopoly bottleneck problem.

Australia already has an established regime for solving access issues in natural monopoly/bottleneck distribution problems. Part IIIA of the *Trade Practices Act* was enacted in 1995 to overcome such access problems with regard to 'essential facilities' such as gas pipelines and cables. This regime mandates that the owner of an essential facility must bargain an access price or else submit the issue for arbitration in the event of a failure to agree.

If it is thought that such concerns pertain to the broadcasting industry once current restrictions are removed, then such concerns could be adequately handled by the ACCC under existing, uniformly applicable competition regulation. This would allow the efficiency benefits of relaxed ownership restrictions to be realised without the potential anti-competitive side effects.

7 Content Regulation

In Australia there are three broad classes of regulation of content:

- *Local content rules*: in television there are requirements for both the type and quantity of Australian content. This extends to advertising and children's programming.

- *Censorship*: there are rules regarding the type of content that may be broadcast and prohibitions on explicit sexual material, violence and racial vilification.

- *Diversity*: ownership restrictions are motivated in part by a concern to ensure diversity of opinion in Australian media.

Each of these regulations is based on a belief that market outcomes will not ensure socially desirable levels or exclusion of certain content. While these may be associated with traditional economic reasons for market failure including increasing returns and externalities, there are also political underpinnings to these regulations.

Given this, the analysis of the appropriateness of these goals is not the domain of economics. Economics is concerned with whether these goals are achieved in a least common manner and not whether they ought to be achieved at all.

Content regulation is akin to product standards. It is designed to ensure that the Australian public receives a certain quality or type of content. However, these rules are imposed on local providers. They are not a requirement of foreign providers. Hence, when an Australia reads a foreign newspaper on the Internet or may view television programs in the same way in the future, those foreign broadcasters face lower costs than their Australian counterparts. As such, content regulation means that Australian broadcasters are not on an equal competitive footing with foreign broadcasters in pursuing the attention of Australian residents.

One solution to this is to restrict the access of Australians to overseas sources of information. This, however, even if technically feasible would circumvent many of the underpinnings of democratic society. As such, the regulation of regulating explicit material or ensuring diversity of opinion will become increasingly difficult over time.

Local content regulation is another matter. To encourage local content one need not regulate demand – by forcing Australian broadcasters to purchase a given quantity of it. One could alternatively encourage supply through explicit

subsidies or tax breaks. This would have the same effect but without specific distortions to the competitive position of Australian broadcasters.

This suggests that the use of other policy instruments, such as taxes and subsidies, may be more efficient and effective means of achieving content regulation in today's world. Direct regulation is simply difficult to enforce and may impose too many costs on the continuing development of media and broadcasting in Australia.

8 Conclusion

The purpose of this paper was to review the likely impact of current regulations in the broadcasting industry in light of on-going changes in technology that are influencing the structure of information-intensive industries. The main observed force is that of convergence that is homogenising the inputs of previously distinct media. While the main effect of this is on a linking of distributional channels there also exist potential economies of scope that may be realised between content providers and publishers in the production of information.

These on-going and highly uncertain technological changes mean that the process of policy reform is critical. The regulatory environment can impact on incentives to invest in new technologies and also on the ability of different incumbent participants to exploit those technologies. This leads one to several economic conclusions about current regulations on broadcasting.

First, current ownership restrictions may unduly constrain Australian media organisations from investing in new forms of information delivery and production and realising future economies of scale and scope made possible by technological developments. This is because ownership changes may be critical in encouraging industry players to make important investments in infrastructure and organisations to exploit the benefits of new technologies.

Second, a relaxation of ownership restrictions without accompanying clarification and strengthening of competition policy to deal with potential monopoly bottlenecks arising in the broadcasting value chain may lead to lower efficiency than would otherwise be socially desirable.

Third, existing competition policy provisions could be fruitfully amended to apply to media and broadcasting to address these competitive concerns. This, however, will require further development and thought; in particular, regarding the precise role of existing institutions such as the ACCC and ABA in handling these issues and potential disputes.

Finally, technological change is likely to make content regulation more difficult and to put Australian media proprietors at a competitive disadvantage in securing the attention of Australian residents. The use of direct regulation of content is, therefore, likely to prove increasingly ineffective and costly. It may be possible, however, through the use of taxes and subsidies to restore some of the outcomes achieved by such regulation.

The general conclusion reached is that using a single policy instrument – such as ownership restrictions – to achieve multiple objectives should be abandoned in favour of targeted policy instruments for each objective. That is, one should

use competition policy to address concerns about access and the allocation of scarce resources and taxes or subsidies to encourage the development or restriction of certain types of content.