

**SUPPLEMENTARY SUBMISSION TO THE  
PRODUCTIVITY COMMISSION INQUIRY INTO  
BROADCASTING**

**AUSTRALIAN KEY CENTRE  
FOR  
CULTURAL AND MEDIA POLICY**

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This submission supplements that submitted by the Key Centre in December 1999, in particular section 4, “Ownership and Control”. It is submitted as a result of discussion at the hearing of the Productivity Commission on 17 December 1999 in Brisbane. It seeks to clarify arguments made in that submission and in the hearing about (a) the market structure of commercial free-to-air (FTA) television broadcasting under digitalisation, (b) advertising revenue and programming costs, and (c) multichannelling and program diversity.

### **Market structure of FTA television under digitalisation**

Recommendation 8.4 of the Commission’s Draft Report is:

That only after the following conditions have been met:

- removal of regulatory barriers to entry in broadcasting ... together with the availability of spectrum for new broadcasters; and
  - abolition of restrictions on foreign investment, ownership and control in the BSA; and
  - amendment to the *Trade Practices Act* to provide for a media-specific public interest test to apply to mergers and acquisitions;
- the cross-media rules should be removed.

We argued in our December submission that while the removal of entry barriers and foreign ownership restrictions and the availability of spectrum are *necessary* conditions for permitting a significant increase in the number of commercial FTA television broadcasters, they may not be *sufficient* conditions. In other words, as explained by Professor Cunningham at our December hearing, “8.4 is about increasing contestability, but it doesn’t guarantee new players” (trans., p.1696).

Another way of considering this point is to pose the question: with no regulatory or spectrum restrictions is the commercial FTA television market competitive or oligopolistic? If it is competitive and the removal of restrictions encourages a significant number of new players the case for relaxing or removing the cross-media rules is strengthened; if on the other hand an unrestricted FTA television broadcasting market tends towards oligopoly with only a small number of competitors the case supporting retention or tightening of the cross-media regulations is strengthened.

One of the outstanding features of the digitalisation of broadcasting signals is that it makes it technically possible for there to be, not an infinite number, but a very large number of television and radio channels in the one market area. Because digitalisation is a relatively new development we are not able at this stage to test empirically the number of competing FTA commercial channels that any broadcasting market can support. However, simply because the number of commercial channels is currently restricted both by technology and regulation, it should not be assumed that the removal of these

restrictions will necessarily result in a large number of new competitors entering the market. As a result of their economic characteristics, certain industries – supermarkets, newspapers, airlines, cigarette, pharmaceutical, paint and motor vehicle manufacturing etc. – generally have only a small number of competing firms even though there are very low or no artificial barriers to entry to those markets.

Our submissions argue that FTA commercial television broadcasting may also be naturally oligopolistic. One of the economic characteristics of highly concentrated industries is *economies of scale*. While the creation and editing of television programs is labour intensive with limited opportunities for scale economies, there are substantial economies of scale in the *transmission* of programs.

Once a program is produced or purchased by a commercial TV channel the “first copy costs” are unaffected by the size of the audience for that program. The larger the audience, the lower the pro rata (average) first copy costs. Television and radio programs are close to being pure *public goods*. One person’s reception of a FTA television signal does not restrict another person in the same broadcasting market from also receiving the signal. The marginal cost of transmission to an additional viewer is virtually zero (Owen, 1975, pp.16-18).

In our December submission we also drew attention to the studies of Graham and Davies (1997) and Goodwin (1998) which consider the effects of digitalisation on economies of scale and scope in broadcasting, and which both conclude that digitalisation is likely to be conducive to *concentration* of broadcasting markets.

### **Advertising revenue and programming costs**

Our first submission addresses the issue of the fragmentation of the FTA television audience, which is likely to take place in a multichannel TV environment made possible by digitalisation. We argue that one of the likely economic consequences of audience fragmentation is that the average per channel profit of FTA television will decline, which will in turn reduce the attractiveness of commercial FTA television to potential entrants. In the December hearing the Associate Commissioner interpreted our analysis as “... strongly endorsing the position of ... FACTS’s argument against deregulation ... the fixed [advertising] cake argument” (trans., p.1698). In this submission we examine this issue more closely.

Please refer to Table 1 which models a hypothetical FTA commercial television market. The first column of figures relates to the market with 3 competing channels (the current situation), with the other columns representing an increasing number of channels – 4, 5, 6, 9, 12, 15 and 20 - made possible by liberalised regulation and digitalisation of transmissions (row A). The total potential audience in the hypothetical market is 1.5 million (row B) which is assumed constant for all number of channels. The average audience per program is calculated by dividing the size of the total audience by the number of channels (row C). In practice with multiple channels the audience for some niche channels may be smaller than channels programming for ‘mass’ audiences, but for

convenience it is assumed here that the audience divides evenly among whatever the number of commercial channels. It is assumed that each channel charges advertisers 2 cents per hour per audience member (row D). In practice this may vary with multiple channels (see below). Advertising revenue per channel per hour is calculated by multiplying the average audience size per channel by revenue per audience member per hour (row E). Total hourly advertising revenue for all channels is the product of the advertising revenue per channel and the number of channels (row F). It is assumed that each hour of programming costs each channel \$5000 (row G). Hourly program cost per audience member is calculated by dividing per channel hourly program cost by average audience per program (row H). Profit or loss per hour for each channel is calculated by subtracting per hour program cost from per hour revenues (row I), while total profit or loss for all channels is the per channel profit/loss multiplied by the number of channels (row J).

The actual numbers used in the table are immaterial, and the model is not intended to estimate the actual number of channels any particular FTA market can support. However, the trends revealed in the table with an increasing number of channels do indicate some important implications for a multiple channel commercial FTA television market, namely:

- The average audience per program (row C) *declines* with an increase in the number of channels. (A greater number of channels may encourage existing television viewers to spend more time watching television, but this is likely to be minimal.)
- Because of the decline in the average audience per program, advertising revenue per channel per hour (row E) also *declines*. In Table 1 hourly advertising revenues per channel decline from \$10,000 (with 3 channels) to \$1500 (with 20 channels).
- Because per hour program cost remains constant (at \$5000 in the table) program cost per audience member *increases* with declining audience for each channel (row H). This is highly significant and results from the scale economies associated with broadcasting programmes. With declining audience numbers scale economies operate in reverse.
- With constant revenues per audience member (row D) and increasing program costs per audience member per channel (row H), profits are squeezed. In the table hourly per channel profits (row I) are reduced to zero with 6 channels, with further channels resulting in increasing losses for each channel. In practice, competition among channels will result, in time, in each market determining the number of channels it can support with some channels incurring losses and ceasing operations and/or declining profits deterring further entry. The number of channels each market can support in practice will depend on a number of factors including market size, programming costs and the distribution of the audience among channels programming for mass and niche audiences.
- In Table 1 total per hour advertising revenues for all channels remains constant (at \$30,000) from 3 to 20 channels (row F). This results from the assumptions of constant audience size and constant advertising rates. Under these assumptions the table accords with FACTS's 'fixed advertising cake' argument. Note that this is a static model and does not allow for population growth.

Table 1 assumes advertising rates per audience member will remain constant with increasing number of channels. However, as the Presiding Commissioner commented at the hearing on 17 December (trans., p.1700) advertisers may be prepared to pay a premium to current advertising rates for better targeted audiences. In fact, the effect of multiple channels on advertising rates is uncertain. It could also be argued that increased competition among channels may have the effect of *reducing* the price they charge for advertising.

Table 2 is based on the Presiding Commissioner's suggestion of advertising rates *increasing* as additional new channels come into operation. (For convenience, in Table 2 it is assumed that advertising rates increase for *all* channels, although in practice rates may decline for some and increase for others.) In Table 2 hourly advertising revenue per audience member (row N) increases disproportionately: from 2 cents to 2.25 cents (by 12.5 %) when a fourth channel is added to the market; to 2.5 cents (25%) with a fifth channel; and finally to 3.75 cents (87.5% increase on the original 2 cents) when there are 20 channels in the market. Because total audience size is constant, total advertising revenues for all stations increase by the same proportion as per audience advertising rates.

What is significant is that in this hypothetical market even greatly increased advertising rates and total advertising revenues does not overcome the effect of per audience program costs (row R) which increase at a greater pace than advertising rates. In Table 2 total industry profits are reduced to zero when the ninth channel enters the market (compared with the sixth channel in Table 1). The ability to raise advertising rates thus increases the number of commercially viable channels any market can support, but is likely to be overtaken by an even faster increase in per audience program costs.

In summary:

- the tables are not intended to reflect real market conditions or results, but to indicate likely trends in commercial FTA television markets with increasing channels;
- the crucial finding is that with an increased number of channels programming costs per audience member is likely to increase significantly;
- with either constant or increasing advertising rates, per channel profits will be squeezed and the number of commercially viable channels will be constrained.

There is of course a limit to the number of economically viable firms in the market for any product. The distinguishing characteristic of commercial broadcasting however is that, unlike most products, average costs increase significantly and continuously with an increased number of competing firms. As Graham and Davies (1997, p.17) note:

... more channels fragment audiences. The inevitable consequence is that the audience per channel or per programme falls and, given economies of scale, the average cost rises. This is *not* true for most goods and services that are allocated via the market place.... The difference between these goods and services and broadcasting is that the former have much smaller fixed costs and variable costs are also significant.

It is difficult to estimate the number of competing, separately owned channels that any market can support. The number will depend upon a number of variables including population size of the market, distribution of the audience among competing channels, programming costs and rates channels can charge advertisers in a multichannel environment. If potential viewers of minority programs are also correlated with lower-than-average income or wealth, advertisers may be disinclined to support programs directed to them, especially at premium advertising rates.

Another factor that will influence the number of commercial FTA channels is the types of programming available on pay TV and the proportion of viewers that subscribe to this medium. It may be more suitable and profitable to package some types of niche programming as a pay TV rather than FTA channel. Wildman and Karamanis (1996, p.5) argue that the incentive to search for programs attractive to minority groups would be greater for programs presented on pay TV. To the extent that niche programs are presented on pay TV this will further constrain new entry into commercial FTA television.

The nature of TV programming is also relevant in the sense that, whereas radio is primarily a *localised* medium transmitting mainly local programming and advertising, television tends to be national (or even international) in character. One implication of this is that the incumbent television networks enjoy scale economies from transmitting the same programming over their commonly owned and affiliated channels. Unless new entrants into commercial FTA television can establish similar scale economies by national distribution of their programming, they will be commercially disadvantaged *vis-à-vis* the existing networks. For this reason commercial radio may not provide a helpful indication of the possible number of commercially viable television channels. As well of course per hour program costs for television are much higher than for radio.

### **Multichannelling and program diversity**

In its Draft Report the Commission recommends that multichannelling be permitted (Draft Recommendation 6.2). However, it makes this recommendation without explicitly considering its implications for ownership and control. As pointed out in our December submission, multichannelling is central to the ownership and control issue: if the existing networks are permitted to multichannel it is less likely that there will be new entrants into commercial television; if, however, multichannelling continues to be prohibited and the present incumbents are restricted to transmit on only one channel, there will be greater potential for entry by new players.

If the existing networks are permitted to transmit on more than one channel, they will select the range of program types that maximises their profits. There is nothing to prevent them including one or more channels of 'niche' programming in their offerings. In the same way that large magazine publishers produce a wide range of magazines catering to different tastes and interests, so also could television networks, if unrestrained by regulation, produce a wide range of special interest FTA television channels. In fact there

are likely to be scale economies available to the owner of multiple channels not available to smaller operators. These competitive difficulties for a potential new entrant would be exacerbated if the one station rule for commercial television was removed.

In the December hearing the Presiding Commissioner suggested that one of the benefits of multichannelling is that it may result in greater programming diversity than separate ownership of channels: "... with one network having more than one channel ... it's likely that there would be greater diversity of programming – not necessarily diversity of ideas, but diversity of programming – just as it is occurring on the radio where radio stations are under multiple ownership" (trans., p.1701).

There is an extensive literature on 'models of program choice' which are essentially the application of the classic article on product competition by Hotelling (1929) to commercial broadcast programming. Steiner (1952) introduced the first programming choice model and numerous economists have elaborated it on since, most notably Beebe (1977). A survey of the program choice models is set out in chapters 3 and 4 of Owen and Wildman (1992) where the Beebe model is referred to as "the capstone of the Steiner line of inquiry" (p.99).

Beebe uses three different patterns to depict programming preferences by viewers. In the first pattern each viewer group has a unique first choice and will watch only that program; if offered any other program the group will not view. The second pattern is more general in that each group of viewers still has the same unique first choice, but it will view an alternative, closely related program type if its first choice is not available; if neither of these two programs is available, the group will not view. The third pattern represents viewing habits whereby each group of viewers has a unique first choice and a closely related second choice, but in addition it will always view some 'common denominator' program rather than turn off its sets; there is a program that every group prefers to nonviewing. Beebe takes account of program costs by specifying different levels of break-even audience size as proxies for higher and lower program costs on the basis that all programs transmitted by commercial broadcasters must be economically viable. For minority-taste (niche) programs to be available on commercial FTA television with adequate channel capacity, there must be an audience subset greater than the break-even audience size that ranks the program as its first choice.

Beebe produces results for both monopoly and competitive channel ownership. He finds that with unlimited channels, competitive ownership of channels always results in at least as many program types, and where viewers accept lesser choices, more program types, as does monopolistic ownership. Owen and Wildman note (p.87) that "[t]his does not necessarily mean that competition always offers the same program types as monopoly plus additional types. Rather, it implies that the total number of different program types being offered under competition will exceed that under monopoly". *Competition never satisfies fewer choices than does monopoly*. Where viewers will watch lesser choices, competition always satisfies more first choices. Where viewers will watch only their first choices, the two ownership structures satisfy exactly the same number of viewers. Competitors under unlimited channels will always satisfy economically viable preferred

choices. This is not true of the monopolist under unlimited channels. A competitive television industry will generally provide more programs than will a monopolist because the monopolist will count viewers and advertising revenue diverted from other programs as a *cost* of a new program while competitive firms will not (Owen and Wildman, 1992, p.100).

These findings are significant and relate directly to the issue raised by the Presiding Commissioner at the December hearing. The models of program choice compare only ‘monopoly’ and ‘competitive’ market structures and do not compare competitive channel ownership with common ownership of multiple channels by oligopoly firms. Nevertheless, the Beebe analysis provides support for a policy of competitive, *separate* ownership of television channels under digitalisation, rather than multichannelling (as recommended in the Draft Report) or removal of the one station rule for television.

### **Implications for recommendations**

The case for amending the *Broadcasting Services Act* to remove the cross-media restrictions is premised on there being a prior, significant increase in the number of commercial FTA television channels and new owners of those channels. If the Commission is to recommend the removal of the cross-media rules the onus is upon it to explain how a significant number of new television broadcasters will find it commercially feasible to enter the FTA television market. The Commission has not provided this explanation in its Draft Report. Instead, it has recommended the removal of entry barriers and foreign ownership restrictions, and the availability of spectrum, and has made the implicit assumption that these policy decisions alone will result in “a significant number of new players” in metropolitan markets (Draft Report, p.137).

The future of commercial broadcasting with digitalisation of signals is difficult to predict. What we have endeavoured to do in this and our December submission, in the current author’s August submission, and at the December hearing, is to caution that the availability of spectrum and the removal of entry barriers and the foreign ownership restrictions may not of themselves be sufficient to bring about a sizeable increase in the number of new industry players. We have also argued that the potential for new entry will be further reduced if the Commission’s recommendation of permitting multichannelling by the incumbent broadcasters is permitted.

We agree that the Commission’s recommendations regarding digital television, freeing up the spectrum, the removal of regulatory barriers to entry in broadcasting (including the ‘financial viability’ test), and the abolition of the foreign ownership restrictions are all conducive to wider media ownership. We support and applaud the Commission for these recommendations. However, its recommendations (a) to replace the cross-media rules with a public interest test without specifically ensuring significant new entry into commercial FTA television broadcasting, (b) to allow multichannelling, and (c) to repeal the two-station rule for commercial radio are conducive to *further* concentration of media ownership. So also are its contemplation of recommending extension of the audience

reach for television to 100 per cent, and repeal of the one-station rule for commercial television.

Both economic analysis and history have shown that, unless restrained by legislation, the media tend towards concentrated ownership. When radio was introduced to Australia in the 1920s the major stations were licensed to the existing newspaper companies. Similarly, when television was introduced in the 1950s the major media groups – Fairfax, Herald & Weekly Times, Consolidated Press (Packer) and News Corporation – acquired control of the capital city stations and formed the major networks. By the mid-1980s there were several regional areas where two or, in some cases, three of the major media were commonly owned. The Packer and Murdoch groups now control 50 per cent of Foxtel, the main pay TV operator.

It was the cross-media provisions introduced in 1987 that led to new owners of the Seven and Ten television networks, allowed the formation of major radio networks independent of the press and television networks, prevents the Packer group from acquiring full ownership and control of Fairfax, (together with the foreign ownership restrictions) prevents News Corporation from acquiring control of one of the three commercial television networks, and allows separate ownership of the major media in regional areas.

Digitalisation has the potential to greatly expand the number of channels available for commercial FTA (and pay) broadcasting. It also has the potential however to strengthen those economic characteristics – especially economies of scale and scope – that are primarily responsible for the tendency towards concentration of media ownership. The eventual impact of digitalisation on media ownership is unclear. However, we believe that it is misguided to base policy recommendations regarding the cross-media rules on the assumption that it will inevitably bring about reduced concentration of media ownership. If anything, there has been a steady increase in media concentration in Australia over the past decade or so in spite of the cross-media restrictions. The multimillion, and multibillion, dollar media mergers that are announced in the US and Europe almost weekly also suggest that digitalisation and the internet are bringing about further concentration of the media rather than diversification of ownership.

In its Draft Report the Commission implicitly assumes that deregulation and the operation of market forces will adequately address the problem of media ownership. We disagree, and argue that there is no free market solution to the problems of concentrated media ownership.

The analysis in this and the December submission of the Centre, and my August 1999 submission have the following implications for the Commission's Draft Recommendations:

### 6.2: *Multichannelling*

- The current prohibition on multichannelling by commercial FTA television broadcasters should be retained until such time as there is a significant number of new players in the industry.

### 8.3: *Two station rule for radio*

- Repeal of the two station rule for radio should not be considered until such time as there is a significant number of new players in the commercial radio industry.

### *One station rule for television*

- Repeal of the one station rule for television should not be considered until such time as there is a significant number of new players in the commercial FTA television industry.

### *Audience reach for television*

- Increase of the allowable audience reach for television should not be considered until such time as there is a significant number of new players in the commercial FTA television industry.

### 8.4: *Cross media rules*

- Removal of the cross media rules should not be considered until such time as there is a significant number of new players in both the commercial radio and television industries.
- Because of the possible long time period until there is a significant number of new players in the commercial radio and television industries, the *strengthening* of the cross media rules should be considered, especially in relation to reducing the limit of allowable cross-holdings by any company from 15 to 5 per cent.
- Because of potential anti-competitive conduct which could result from common ownership of FTA and pay TV, the *extension* of the cross media rules should be considered, especially in relation to including ownership of pay TV.

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**Table 1: Economic effects of multiple channels with constant advertising revenue**

	3	4	5	6	9	12	15	20
A Number of channels in market								
B Total audience number	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
C Average audience/program (B/A)	500,000	375,000	300,000	250,000	166,667	125,000	100,000	75,000
D Advertising revenue/audience member/hour	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02	\$0.02
E Advertising revenue/hour/channel (\$) (C.D)	\$10,000	\$7,500	\$6,000	\$5,000	\$3,333	\$2,500	\$2,000	\$1,500
F Advertising revenue/hour all channels (A.E)	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000	\$30,000
G Program cost/hour/channel (\$)	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
H Program cost/audience member (G/C)	\$0.01	\$0.01	\$0.02	\$0.02	\$0.03	\$0.04	\$0.05	\$0.07
I Profit/hour/channel (\$) (E-G)	\$5,000	\$2,500	\$1,000	\$0	-\$1,667	-\$2,500	-\$3,000	-\$3,500
J Total profit/loss all channels (A.I)	15000	10000	5000	0	-15000	-30000	-45000	-70000

**Source: hypothetical****Table 2: Economic effects of multiple channels with increasing advertising revenue**

	3	4	5	6	9	12	15	20
K Number of channels in market								
L Total audience number	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000	1,500,000
M Average audience/program (L/K)	500000	375000	300000	250000	166667	125000	100000	75000
N Advertising revenue/audience member/hour	0.02	0.0225	0.025	0.0275	0.03	0.0325	0.035	0.0375
O Advertising revenue/hour/channel (\$) (M.N)	10000	8437.5	7500	6875	5000	4062.5	3500	2812.5
P Advertising revenue/hour all channels (K.O)	30000	33750	37500	41250	45000	48750	52500	56250
Q Program cost/hour/channel (\$)	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000
R Program cost/audience member (Q/M)	\$0.01	\$0.01	\$0.02	\$0.02	\$0.03	\$0.04	\$0.05	\$0.07
S Profit/hour/channel (\$) (O-Q)	\$5,000	\$3,438	\$2,500	\$1,875	-\$0	-\$938	-\$1,500	-\$2,188
T Total profit/loss all channels (K.S)	15000	13750	12500	11250	0	-11250	-22500	-43750

**Source: hypothetical**