Public service program genres in the multichannel environment: a study of five East Asian countries

A research report by Network Insight, supported by the Hoso-Bunka Foundation

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Preface

This project, generously supported by the Hoso-Bunka Foundation, examines the future of public service program genres in Japan, Malaysia, Singapore, Australia and New Zealand, each of which has a separate tradition of public service broadcasting. The purpose of this report is to say how program genres will develop in the new multichannel environment, where there are many alternatives to the traditional public service broadcaster, and where the audience has a vastly greater choice of programs.

The purpose of choosing five diverse countries was to look at different approaches and different national contexts. There are major differences between the five countries. The two uniting features are that each of them is in East Asia, and each faces a similar proliferation of choices and channels. Much of the literature about public service broadcasting skims over the differences in cultural contexts. We have tried in this report to bring the discussion down to the real examples of specific countries. We have highlighted the features of each national environment. However, we have attempted to confine the descriptions to the trends which can affect the program genres.

We sincerely thank the Hoso-Bunka Foundation for funding and supporting this project, and for being prepared to encourage a fresh perspective on these issues. Broadcasters and policy-makers in each of the five countries have provided most of the input for this work. We thank them for generously providing their time and valuable practical insights. None of them is responsible for any errors or inaccuracies in this report, since it is an amalgam of many different views and sources.

Several researchers, all associated with the Network Insight Group in Sydney, made a large contribution to this project. Kirsten Harley conducted the interviews in Japan, and co-ordinated all the inputs from the research team. Julianne Schultz wrote the preliminary report which launched the project, and provided the preliminary analysis of Japan, Australia, Singapore and New Zealand. Ian McGarrity conducted the interviews of broadcasters in Malaysia, Singapore, Australia and New Zealand and wrote up the results. Each of those three researchers contributed beyond expectations, and their efforts are much appreciated. Thanks also to Sarah Barns and Cristina Abad, of the Network Insight team, for their assistance with the project.

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1.0 Introduction

The global and national environments in which free-to-air public service broadcasters operate are changing. Public service broadcasters have already developed with, or adjusted to, competition with private free-to-air broadcasters. Increasingly, they must also coexist with a host of new analog and digital, free-to-air and subscription television channels, along with audio-visual content available over the Internet.

This report attempts to provide a feel for the different ways in which public broadcasters in the Asia-Pacific are responding. It focuses on the trends and likely changes in television genres in public service broadcasters' free-to-air schedules, looking at the period 2001 to 2006.

The study compares thinking in five East Asian countries: Japan, Australia, Singapore, New Zealand and Malaysia. These five countries illustrate a range of different public service broadcasting structures and communications and cultural environments. We have ordered the countries in this report to reflect these differences. The first two countries – Japan and Australia – include the two public service broadcasters that do not carry advertising. Australia's second public service broadcaster, SBS, subsidises its public grant with advertising revenue. In Singapore, public funding for public service programs is allocated by the regulator, and some of it is available to the private broadcaster. New Zealand also has an agency that provides funding to the public or a private broadcaster for local public service programs. From 2002-03, the public service broadcaster, TVNZ, will also receive a small direct grant to subsidise charter programming. In Malaysia, RTM is financed entirely by government, but also carries advertising and returns its revenue to government.

Terms used to describe broadcasting vary from country to country, reflecting the different national broadcasting structures. In writing about five different countries, we have had to use terms in ways that might not accord with each country's use.

We have regarded a *public service broadcaster* (or *public broadcaster*, as it is known in some countries), as one which is owned or controlled by government/parliament and/or receives 50 per cent or more of its funds directly from the government or public (e.g. through licence fees); and provides its primary broadcasting services free-to-air for its home country.

In this report, broadcasters which are not public service broadcasters are called *private broadcasters*. In those countries where advertising distinguishes public service and private broadcasters, the private broadcasters are commonly called 'commercial broadcasters'.

In describing television services, we distinguish between the schedule and target audience. Schedules may be *comprehensive* or *general* (simply meaning, in this report, that it includes most or all standard program genres) or *thematic* (focused on one genre or a small number of genres, e.g. a news channel). Of course, two 'comprehensive' schedules may be very different, for example with one dominated by entertainment programs and another including a stronger component of information and educational programs. A schedule can be tailored for a *mass audience* or a *niche* audience (for example, children or minority language groups).

Some television services are described as *free-to-air*, to distinguish them from *subscription* or *pay television* services, where viewers must pay a fee to the operator to have access to the channel.

Audience share refers to the percentage of total television viewing that goes to a particular broadcaster. For example, a station with an audience share of 50 per cent receives one in every two hours of total television viewing.

This report is informed by published sources as well as the interviews with broadcasting experts from the five target countries. A list of organisations represented, and some of the people interviewed, appears at the end of this report, along with some of the source documents and websites. Interviews were conducted, between June and September 2002.

In attempting to think ahead to 2006, this report includes, but necessarily goes beyond, official corporate strategies. Interviewees were invited to speculate about what structural changes might lie ahead and their potential effects on programming. Thought-starter documents were provided before the interviews. These gave examples of possible structural developments that may affect public broadcasting in the next five years; and asked for opinions on their likely effects. The preliminary documents also included questions about the current program genres and scheduling practices, as a starting-point for thinking about future changes.

The report does not include direct quotes or attribute comments to particular individuals. This style was adopted to allow interviewees to be frank when sharing their views about current and future programming trends.

The results are presented in the remaining two sections of this report. Section 2 contains highlights for each of the five countries, beginning with their existing broadcasting environment and then detailing trends and expected public broadcasting programming changes. Section 3 identifies and discusses some of the key strategic themes that emerged from the research project as a whole.

2.0 Highlights of the five countries

2.1 National approaches

Public service broadcasting is characterised by a nationally specific approach. While trends and directions have international momentum, the role and nature of public service broadcasting are closely intertwined in the political fabric of each country. Public broadcasting policy reflects the local political, cultural and industry development imperatives. The national debates about public service broadcasting are shaped by the history of the public broadcasting sector, the influence of the major players in both the private and public media and program production sectors, and the extent to which technological change is linked to political debate.

In those countries where the nation-building role of public service broadcasting is uppermost, that will be the key criterion for success. In countries where media independence is highly valued, the ability of the public service broadcaster to demonstrate independence will be an important measure of its success and influence.

The nation-building role can be characterised in a number of ways: fostering a sense of national identity, building production capacity, providing a forum for news and debate, providing a comprehensive service, and compensating for market failure. Within this framework the broadcaster may operate with considerable autonomy and independence or at the direction of the government of the day. Increasingly government direction is less acceptable and as a result the specific nature of the nation-building role of public service broadcasting is a matter of debate.

The table below provides a simplified snapshot of the public broadcasting models in each country. Apart from the independence/nation building role, the table includes details of whether the public service broadcaster is guided more by charter, which may be legislated or government-proscribed, or commercial considerations; the source of funding to the public service broadcaster; and whether there is a separate production fund that commissions and funds public service broadcasting programs.

Snapshot of public service broadcasting models in five countries

Country	Public service broadcaster/ Agency	Indepenent/ Nation building	Charter/ Commercial priorities	Funding	Production fund for PSB programs?
Japan	NHK	Independent/ Nation Building	Charter	Licence fee	No
Australia	ABC	Independent/ Nation Building	Charter	Grant	No
	SBS	Nation Building /Independent	Charter	Grant & Advertising	No
New Zealand	TVNZ	Independent	Commercial	Advertising, Production fund & Grant	Production fund (grant)
	NZOnAir	Nation Building		Grant	
Singapore	MCS	Independent	Commercial	Advertising & Production Fund	Production fund (licence fee & grant)
	SBA	Nation Building	Charter	Licence fee & Grant	
Malaysia	RTM	Nation Building	Charter	Grant & Advertising	No

2.2 Japan

Japan's broadcasting environment

Japan has a mixed economy of public and commercial/private broadcasting, which it adopted with the introduction of television in 1953. Until 1950 NHK held a monopoly as a radio broadcaster. NHK has always been a major presence in this mixed economy. It stands out as arguably the best-funded public service broadcaster in the world. NHK receives approximately 1.75 times the income of the British Broadcasting Corporation (BBC), and only slightly less than the combined income of the two German public service broadcasters.

Unlike many public service broadcasters, NHK has been able to provide its programs across multiple domestic television channels for several decades. The main terrestrial analog channel, General TV, includes regular news programs plus a mix of information, sport, education, cultural and entertainment programs and some programs produced for specific regional audiences. The second channel, Education TV, commenced in 1959 and started broadcasting 24 hours per day in April 2000. Its schedule is focused on educational programs including those targeted at infants, children, teenagers, older people, women, men and people with disabilities. Adult educational programs cover areas ranging from language and science to practical skills, lifestyle (e.g. cooking, fashion) and hobbies.

NHK has gained additional television channels via satellite and digital broadcasting. Full scale satellite television broadcasting services began in June 1989. With the commencement of satellite digital broadcasting in December 2000, the three channels BS-1, BS-2 and the HDTV Hi-Vision channel are simulcast in analog and digital format. BS-1 and BS-2 have a much higher proportion of overseas content than the terrestrial channels, averaging approximately 31 per cent in 2000, compared to 5.5 per cent for the terrestrial channels. BS-1's programming mix is skewed towards news, sport and international documentaries, whereas BS-2 is focused on cultural and entertainment programs, including live concerts, movies and entertainment programs produced overseas and with participants from different regions in Japan. Hi-Vision, which began broadcasting 24 hours per day in 2000, includes programming designed to attract viewers to the HDTV format. Digital transmission also enabled the commencement of data-broadcasting from December 2000, which includes news, information about emergencies, weather, traffic and sports, and an EPG (electronic program guide).

The genre mix of the existing NHK television channels is shown in the table below, taken from data in NHK's 2001 annual report.

Weekly Program Mix (as at June 2001)

	News (incl. sport) (%)	Education (%)	Culture (%)	Entertainment (%)
General TV	41.6	10.6	26.0	21.8
Educational TV	2.6	80.2	17.2	
BS-1	59.2	13.7	20.0	7.1
BS-2	14.6	30.3	23.6	31.5
Digital Hi-Vision	32.3	11.1	31.4	25.2

There are now more than 130 private television broadcasters operating across Japan, most of them associated with five major networks. Eighty-nine per cent of Japanese households receive four or more private channels. Entertainment programs comprise the most significant proportion of private broadcasters' schedules, which are also required to contain at least 10 per cent educational programs and 20 per cent cultural programs. These tend to be 'light', such as travel, fashion and cooking.

New broadcasting services and channels have become available since the early 1990s. Japan Satellite Broadcasting Inc. (WOWOW) started subscription-based satellite television in April 1991 using a broadcasting satellite (BS) and commenced digital broadcasting in 2000. Communications satellite (CS) television broadcasting commenced in April 1992, with the two operators, JskyB and PerfecTV! merging to become SkyPerfecTV! in 1998. As at the end of February 2001, SkyPerfecTV! had 192 TV channels, plus radio and data channels. Genres include movies, sports, music, drama, animation, entertainment and leisure, documentaries, news and weather, business and economy, shopping, foreign language broadcasting, education and qualifications, racing and adult entertainment.

Take-up levels of these services have been relatively low. As at December 2001, WOWOW and SkyPerfecTV! each had less than three million households (less than seven per cent of households). However, SkyPerfecTV! subscription levels were boosted by record numbers of new subscribers during the 2002 FIFA World Cup, giving it 2.8 million direct to home (DTH) and 3.2 million total subscribers[1] by the end of June 2002.

Japan also has more than 600 cable TV operators offering original programs. The number of households subscribing has more than doubled from 5 million to 10.5 million in the five years to March 2001. This includes homes where cable operates as an alternative television delivery system, because buildings or other constructions prevent broadcast reception.

[1] Also includes provisional subscribers before executing pay-subscription agreement, institutional subscribers including retailers exhibition and registrations for technical development.

Trends

The digital revolution and increasingly multichannel environment are accelerating commercialisation of broadcasting, with most of the new content alternatives designed primarily to boost ratings and profits. To date, the availability of new channels does not appear to have seriously affected public use or support of the public service broadcaster; and NHK does not expect this to change in the next five years. In this environment, NHK does not intend to reduce the scope of its services or dramatically change their focus within that timeframe. On the contrary, the following three themes can be seen in NHK's strategic response, which is, as far as possible, to:

- lead the way with new technology;
- expand onto new channels and platforms in an expanding universe; and
- continue to provide traditional public service broadcasting programs, responsive to audience needs.

While these strategies do not entail introduction or abandonment of particular program genres, there are some programming implications. There are also various external pressures which may affect NHK programming in the future. These are outlined in the discussion below.

1. New technology

NHK has traditionally focused on technology, rather than programming, as its primary site for innovation. In fiscal year 2001 it spent ¥19.76 billion/US$150m on program surveys and technical research.

An example is NHK's high definition television format, Hi Vision, which it began developing in 1964. Hi Vision is central to NHK's current and future digital broadcasting plans, with the main program genre implication being an emphasis on programs that will help to promote the format. The schedule consists of both programs that are generally popular and will attract viewers, and spectacular programs that are designed to showcase the cinematic visual and aural qualities of the technology. They include live coverage of major sports events, such as Major League Baseball and World Cup Soccer; main news programs; programs about travel, culture, history and natural history; popular Japanese drama series (the soap opera *Sakura* and a costume drama set in the Samurai period); the arts; classical music concerts and opera; and programs about the century and global social changes. Some remarkable examples of showcase programs include footage taken by Hi-Vision cameras in space, and footage from the Arctic planned for programs commemorating 50 years of NHK television. Programs produced in Hi-Vision are generally designed for multiple use, including repeat broadcasts on Hi-Vision, broadcast of whole programs or re-edited versions on other channels, and sale to other broadcasters.

Another area where NHK is proactively adopting new technology is 'home servers', equivalent to personal video recorders (PVRs), which it intends to introduce with digital terrestrial broadcasting. These will make it much easier for viewers to choose their own personal television schedules (similar to, but more effective than, VCRs). As well as including home server functionality to make its digital broadcasting more attractive to viewers, NHK will place more emphasis on live programs. It is worth noting that availability of VCRs was a factor in extending the Educational TV schedule to 24 hours per day: some of the educational programs that were previously broadcast at times when students and teachers could watch are now scheduled at other times when they can be recorded for later viewing. Scheduling patterns are also modified in accordance with changes in viewing patterns. For example, NHK has found that women aged 30 to 50 years are watching television late into the night, so in April 2002 it introduced a popular drama into the 11.00 p.m. timeslot.

PVRs are more controversial in the free-to-air commercial broadcasting world, since they can be used to skip advertisements, potentially jeopardising the free-to-air commercial funding model. In fact, commercial broadcasters in Japan asked manufacturers not to include 'commercial skip' functionality, and there is debate about whether typical viewers will be able to use that facility. It is too early to know what will happen. However, if there is substantial take-up and use of PVRs to skip advertisements, a possible future scenario could involve commercial broadcasters shifting from the free-to-air advertising model to subscription funding. This could increase competition against NHK, which has a similar funding mechanism.

In summary, NHK's focus on technology will mean emphasis on 'big' and 'live' programs, both of which can be relatively expensive. Programs originally produced for Hi-Vision will be re-used, increasing the relative proportion of such content available across the NHK schedules.

2. Programming across multiple platforms

To maintain audiences in a converging communications environment, NHK would like to make its content available across all platforms and multiple channels. However, political, regulatory and financial limitations will affect its ability to achieve this.

NHK and private broadcasters are subject to regulation by the Ministry of Pubic Management, Home Affairs, Post and Telecommunications (MPHPT), whose policies will determine whether NHK may be involved in any new services. Commercial broadcasters and the newspaper league play an active lobbying role in MPHPT's policy development. Thus, the newspaper league campaigned against NHK involvement in Internet services, assisted by the fact that Japanese broadcasting law defines broadcasting as 'wireless'. MPHPT eventually decided that NHK could provide Internet services provided that they were associated with its broadcasting and programs, and subject to specific guidelines. As a result, NHK's Internet content includes news, program schedule and program publicity/information. Similarly, MPHPT policy specifies that NHK may use data-transmission with a public service broadcasting focus, but may not use it for things like booking train seats, commercial specialised information, electronic newspapers or gambling.

Terrestrial digital television is currently scheduled to commence in major metropolitan areas by the end of 2003, and in other areas by the end of 2006, with analog simulcasting to end by 2011, provided that 85 per cent of households have digital receivers.

NHK's digital television plans will be affected by decisions by the MPHPT, which are expected in the second half of 2002. In the short term, major programming changes are unlikely; however, there may be some changes further down the track. Hi-Vision is likely to remain central, with continued focus on using spectrum for fewer, high-quality channels rather than more, lower-quality channels. This choice should be seen in the context of NHK already having the relative luxury of five television channels. NHK would like capacity to use spectrum flexibly, for example, allowing it to multichannel to broadcast the end of sporting events that go beyond the scheduled finishing time. While the digital terrestrial television channels must be accompanied by new features, it is likely that they will use many programs from the existing analog terrestrial channels: General TV and Educational TV. NHK intends to increase emphasis on local and regional programs, including news, sports, events and audience-participation programs, as part of its future terrestrial digital services. The local news hour has already been extended, and local games in the high school baseball national championships are covered locally. Additional resources have already been allocated to the eight Japanese regions, and this will be extended to the 47 prefectures.

NHK's current experience of multiple television channels is that each channel must have a clear separate identity, with a different focus. One popular suggestion within NHK, which may be realised in the future, is to extend its domestic and overseas news capabilities by introducing a 24-hour news channel. Transmission of content to mobile devices, including cars and PDAs (personal digital assistants), is also expected. This would involve news and practical up-to-date information (weather, traffic, etc), similar to the content of data-transmission.

While current thinking about new services is framed by the existing policy context, it is possible that future services may head in different directions, particularly if commercial affiliates are involved. One of the affiliates is currently providing theme songs from NHK programs for download as mobile dial tones.

3. Traditional public service broadcasting and receiver fee funding

As with all the broadcasters in this study, both the mechanism and level of NHK funding inevitably have an effect on its programming. Japan's broadcast law requires anyone with a television set to pay receiving fees; and there is an additional amount payable by those who access BS services. There is no provision for penalising anyone who does not pay these fees. There is an inherent link between NHK's reliance on direct funding from viewers and its program philosophy. To justify the licence fee, NHK must ensure that there is a clear distinction between its own programs and those of the private broadcasters; and it must also provide programs that viewers want to watch, so that fee-payers believe they are getting something for their money. This approach is central to NHK's commitment to continue providing traditional public service broadcasting programs into the future, which it is confident viewers will continue to fund.

Compared to the other public service broadcasters included in this study, NHK has been extremely well funded, with total operating income in fiscal 2001 (April 2001 – March 2002) of ¥663.01 billion/US$5b (note that this figure is for the whole organisation, not just its television services). As at the end of April 2001, approximately 37.3 million households (or 82 per cent) pay receiver fees, with 10.7 million of these receiving BS broadcasting. Concern about funding constraints is nonetheless a factor. The standard NHK licence fee has not increased since 1990, and the NHK President has publicly stated that there are no plans to increase it in the foreseeable future (which would, in any case, require approval by the Diet). Over the past twelve years, the additional licence fee for BS services has been the main source of additional revenue. However, the growth rate of subscriptions has slowed in the face of competition from other broadcasters and the poor state of the economy, and takeup may be close to saturation point. There is also considerable extra expenditure required for digitalisation and new services. The current policy is to fund them through assumed additional revenue of ¥10 billion/US$75m per year, plus budgetary savings of ¥10 billion per year. It may be that efficiencies such as multiple use of programs produced for HDTV will need to be taken further, with increased amounts of repetition and multiple use and lower-cost programming in the schedules.

Trends in attitudes to payment of receiver fees are also relevant. A survey conducted in January 2001[2] found that younger people are less likely to watch or be satisfied with NHK than commercial TV; and much less likely than older people to agree that it is worth paying to main-

[2] Makita, Tetsuo and Ida, Mieko 2002, 'Evaluation of public broadcasting by country: Results of an international comparative survey by Japan, Britain and the United States', *NHK Broadcasting Culture Institute Bulletin*, no. 19, pp. 5-11.

tain public service broadcasting. For example, only 44 per cent of respondents in their 20s agreed that it was worth paying, compared with 76 per cent of respondents aged 70 years and over. This trend was visible even in the 1980s, when there was evidence that individuals' support increased as they got older. However, it has been suggested that some of the younger people are now not returning to NHK as they get older. There is an expectation that licence fee payment levels will not decrease, given the current high level of compliance and the fact that more than 80 per cent of licence-fee payers pay via direct debit. However, aware of this lower level of support, NHK tries to make programs to attract younger viewers. For example, General TV broadcasts popular music, song and entertainment programs on weekend evenings, and US dramas targeted at young people; the education channel's 9-11pm timeslot is mostly targeted to younger women (programs include 'Home Handicrafts' and 'World of Hobbies'). There are also special discussion and magazine programs focused on issues of interest to young people. While targeting programs at young people, NHK would not broadcast quiz shows or *Survivor*-style reality TV programs, which it does not consider to be appropriate for the public service broadcaster.

NHK will also continue to broadcast programs for other minorities, which is seen as part of its public service broadcaster role. These include programs for blind and deaf people (with audio descriptions and closed captions and/or signing); programs such as the bilingual evening news for foreigners visiting Japan; and local programs for rural viewers.

Another aspect of its traditional broadcasting role that will remain important is that of trusted news and information-provider during emergencies and at other significant times. During emergencies, NHK suspends normal programming to present emergency broadcasts on all channels. There are two opposite trends in the scheduling of news: one is for inclusion of short, regular news bulletins (similar to a radio format), which provide an incentive for audiences to keep watching. The other is for inclusion of longer, one hour bulletins, such as NHK's 10.00 p.m. news program.

One of the traditional public service broadcasting roles threatened by reduced funding in some countries is the production and broadcast of local content. However, market forces that may encourage broadcasters to reduce local content in many countries are less relevant in Japan, where the language barrier and audience taste mean that local content has always dominated schedules. For example, some commercial stations tried to broadcast American soap opera during prime time, but the ratings were so poor that they stopped within several weeks. In addition, NHK has a history of being the major producer of domestic television programs within Japan.

NHK's television channels, particularly the terrestrial ones, have schedules that are dominated by domestic programming, as shown by the table below.

NHK share of domestic and foreign programming (2000)

	Domestic (%)	**Foreign (%)**
General TV	96.4	3.6
Educational TV	92.6	7.4
BS-1	64.8	35.2
BS-2	73.5	26.5
Digital Hi-Vision	91.0	9.0

NHK is also the leading free-to-air broadcaster of overseas content in Japan. This includes carefully targeted US drama programs (*90210*, *Only My Love* and *ER*) scheduled outside of prime time; films from countries around the world; children's programs, including *Sesame Street* on the education channel; high quality documentaries on BS-1; overseas sports programs; and news programs from more than 20 international broadcasters on BS-1. They are either subtitled or dubbed in Japanese. It is expected that there may be a gradual increase in the amount of overseas content, but that the popularity of Japanese programs will mean they remain dominant.

The channels provided by Japan's private pay TV operator, SkyPerfecTV!, include niche channels in genres such as news, education and documentaries. This could pose a threat to NHK, by competing for audiences and hence subscriber fees. However, NHK considers that the relatively low take-up of CS broadcasting to date suggests that niche overseas channels will not significantly affect NHK audience levels (or programming) in the next five years. NHK may be protected by viewer preference for Japanese content and the language barrier, although this cannot be seen as a permanent barrier, with increasing English language skills amongst young people. In addition, the NHK satellite channels already carry some of the most attractive overseas content.

NHK does not expect the existing private free-to-air broadcasters to directly compete in traditional public service broadcasting areas. For example, the commercial networks started out as educational providers, and are unlikely to shift back to providing specialist educational channels. There has been an increase in the amount of private commercial television programming in 'hard' genres, such as news and education; however, this is still 'softer' than that provided by NHK.

In an environment where funding levels are unlikely to keep growing to match the costs of digitalisation and content demands of new platforms, expensive forms of programming like major sports could be threatened. Some key advantages have contributed to NHK's longstanding ability to procure television rights to major sports events as well as including minority and local sports in the schedules. For example, in a week including broadcasts of 2002 FIFA World Cup soccer matches and highlights (co-hosted by Japan and Korea), NHK television schedules also included coverage of major league baseball, national swimming championships, pro baseball, national track and field championships, NBA basketball, PGA golf, world cup bicycle racing, NHL hockey, extreme sports, around the world yacht race, horse racing, and motorcycle and car racing.[3]

Its ability to schedule sports events across a number of channels currently gives NHK a considerable advantage over private broadcasters in bidding for, and broadcasting, major sports events. This channel flexibility, and hence ability to schedule more games for audiences, was the key factor in NHK winning broadcast rights for Wimbledon tennis. This advantage may vanish if more channels are made available to private free-to-air broadcasters. NHK's high level of funding, compared with other public service broadcasters, has obviously been a reason for its ability to procure rights to major sports. In addition, NHK and the private broadcasters have formed a consortium to negotiate broadcasting rights for some major international sports events, including the FIFA World Cup and Sydney Olympics. Nonetheless, the costs of broadcast rights have risen dramatically, in line with worldwide trends. For instance, the broadcasting rights for 40 soccer games cost ¥6 billion/US$45m, which is 20 times more than rights for the previous World Cup.

NHK is confident of its continuing ability to broadcast major sports events for which it has had rights for a long time (since the 1960s in the case of World Cup Soccer). There is currently only a limited selection of sport available on pay TV. However, it is likely to become more competitive in negotiating rights as subscription levels increase, which could in turn affect NHK's ability to keep securing rights.

2.3 Australia

Australia's broadcasting environment

The vast majority of Australian television households have access to a multichannel television environment, which includes free-to-air television networks and either satellite or cable distributed pay TV services. Approximately 95 per cent of households have five free-to-air analog television channels available, and all have access to at least two channels. Pay television is available to more than 95 per cent of television households, with so far 21 per cent actually subscribing. Significant developments towards the multichannel television environment have included the extension of private free-to-air television from capital cities to most regional areas in the mid 1980s, licensing of pay television services in the mid 1990s and commencement of digital terrestrial television broadcasting in 2001.

Australia is unusual in that it has two separate national public service broadcasters, the Australian Broadcasting Corporation (ABC) and the Special Broadcasting Service (SBS). These are both independent public agencies. Both organisations have charters, which are enshrined in their governing legislation, the ABC Act and SBS Act.

[3] Based on daily television guides for NHK's General, Educational, BS-1 and BS-2 channels from the *Asahi Shimbun* newspapers of Friday 7 June to Thursday 13 June 2002.

The ABC Charter gives it broad responsibilities in providing a mix of programs for the whole Australian community. The ABC has substantial production resources and makes approximately half of all local content that it transmits. Around 58 per cent of its total transmission between 6.00 a.m. and midnight is local content.

On the other hand, the SBS was established as a specifically multicultural broadcaster, reflecting the multicultural nature of the Australian population, where a substantial proportion of people were born in countries where English was not the first language. About 55 per cent of the program schedule of SBS Television is in languages other than English, although English subtitles are provided for most of these programs. The remaining 45 per cent of programs are in English, but relate to topics that are relevant to multicultural Australia. Apart from English, the five languages occupying most of the SBS schedule are, in order, French, Italian, Spanish, Greek and German. Only about 25 per cent of programs in the SBS television schedule are made in Australia, with the remaining 75 per cent sourced from overseas.

The ABC is almost entirely funded by the federal parliament, with an estimated AU$350 million/US$185m going towards television, whereas SBS Television receives an appropriation of approximately AU$100 million/US$53m and raises approximately AU$22 million/US$12m from advertising each year. The ABC is prohibited from running advertisements by the ABC Act.

Australia is a Commonwealth of eight states and territories, each with its own parliament. In some cases even the major sports played differ. While ABC Television operates a single national network, it has state 'windows' for the insertion of state (provincial) material, particularly news, current affairs and sport. SBS Television also runs a single national service, but does not have specific state windows for the insertion of local program material.

The ABC's share of free-to-air television viewing is around 15 per cent, while SBS receives around 5 per cent of viewing. On a weekly basis, more than 70 per cent of Australians watch ABC TV at some time and more than half of Australian households tune in to SBS.

The Australian broadcasting system has developed with coexistence of different broadcasting sectors. It includes three free-to-air sectors: the 'national broadcasters' (the ABC and SBS, called public service broadcasters for the purpose of this report); the 'commercial broadcasters', which receive their revenue from advertising sales (called private broadcasters here); and the community broadcasters (a small sector of non-profit special-interest broadcasters, including a television channel in major cities and a number of local radio stations. This report does not cover the Australian community television sector and its operations, as they are extremely small, although public radio is a significant part of the Australian radio scene).

The private TV sector in Australia consists of three national networks, the Nine, Seven and Ten television networks. These networks are based in the major capital cities and have affiliate private TV stations in the regional (i.e. non-metropolitan) areas.

The Australian Broadcasting Authority oversees the private sector's self-regulation. The commercial television broadcasters are required to meet quotas of local content in three genre areas: drama, children's, and documentary, with points awarded on a differential basis within the drama genre. The private networks are also required to meet local content levels of at least 55 per cent of programming between 6.00 a.m. and midnight. Thus, regardless of the fact that they are very commercial in their outlook and highly competitive, the three Australian private national TV networks transmit some public service program material (e.g. children's drama). Conversely, some of the programs that ABC and SBS Television transmit might not be regarded as public service programming.

Since the mid-1990s, the pay or subscription television sector has emerged. Currently there are three major players, Foxtel, Optus and Austar. Around 21 per cent of Australian television households now subscribe to pay television with up to 40 channels being available. Roughly half of these subscribers receive their signals direct from satellite (DTH), and the other half from cable which was laid only in the major mainland capital cities.

In addition to these mainstream subscription TV operators, there are a number of smaller thematic pay TV operations, which operate from within Australia and from overseas. For example, from within Australia, TARBS runs non-English language pay television services, providing 52 channels in 20 different languages and has around 130,000 subscribers. TVB from Hong Kong is estimated to have 12,000 subscribers in Australia for what are predominantly Mandarin and Cantonese language programs.

The Australian multichannel environment also includes high levels of domestic PC ownership and use. About 50 per cent of all households own and use computers, and around 40 per cent of all households are connected to and use the Internet. Broadband Internet connections are still low: around 300,000 households (4.5 per cent of the total).

Apart from the direct government funding of the ABC and SBS, the national and state governments provide funds and support for the development of Australian content. Sometimes this is via direct grant or production funds and sometimes through income tax concession regimes. As the ABC and SBS are often involved in co-production and co-financing activities relating to content produced with this government assistance, one could see these funds as significantly assisting in the development of public service program content.

Trends

The potential for the future multichannel market to alter programming genres is different for the two public service broadcasters in Australia. However the two major determinants for any changes in program genres are the same: the amount and type of funding available; and the level to which particular niche audiences might be serviced through the private free-to-air television networks and the growing subscription television and broadband sectors.

As mentioned previously, approximately 55 per cent of the current SBS program schedule is in languages other than English. More than 70 different languages are represented.

When SBS Television began in the early 1980s, there were no other television transmissions in languages other than English. Today, through cable and satellite subscription services and a limited number of free-to-air DTH satellite services, there are around 65 channels of non-English language programming available. This clearly represents a challenge for a free-to-air public service broadcaster which specialises in non-English language programming and has only one analog TV channel. However, new digital channel capacity may reduce the schedule pressure.

For example, only about 6 per cent, or one hour in 16, of the SBS Television schedule is devoted to programs in Cantonese or Mandarin. It is not likely that this content will be at the most convenient time for the Chinese audience or include a full range of program genres. On the other hand, there are several Cantonese and Mandarin subscription channels available which provide a full range of program genres in Cantonese and Mandarin across the entire day.

The comparison is more acute when looking at other major world languages, such as Arabic, which constitute a lower proportion of SBS Television's single analog channel.

Further, wherever there are pockets of population where particular non-English languages are widely spoken, the local video hire stores have significant numbers of films and sometimes TV drama serials in the relevant language available for hire on video.

As the level of penetration of the non-English language subscription channels into a particular language community increases, there must be some consideration of the amount and positioning of that language group's programming on the SBS Television schedule. This may be accentuated if and when video-on-demand (VOD) content in non-English languages becomes available and affordable through broadband connections.

These factors may explain why news programs constitute such a high proportion of non-English programming on SBS. Around one hour in every three of SBS Television transmission is made up of retransmissions of non-English language news services. Perhaps over time there will be an increase in non-English language programs in time-sensitive genres on SBS Television, and a decrease in non-English language drama, features and film programs which do not attract a significant English speaking audience through the English language subtitles provided.

While the addition of advertising revenue has boosted SBS's budget, it could also pose a future danger. There is no current evidence of political will to introduce budget cuts to SBS. However, a future government could point to the extent to which subscription television provides non-English language programming and urge the SBS to earn more money through air-time sales, and reduce its public funding. If this were to happen, the SBS would need to decide which approach to take. Should it attempt to make its programs more popular, and hence lift its audience share and advertising revenue; or maintain all the current flavours of its public service programming schedule, while cutting back on the more expensive local productions in order to make ends meet?

The ABC charter requires it to provide programs for both general and specialist audiences throughout the Australian community. It is therefore hard to see the multichannel television environment affecting ABC program schedules until pay television subscription levels are significantly higher than they are today. For example, while only one in five Australian TV households subscribes to pay television, it would be difficult for the government or ABC schedulers to argue that availability of particular genres on subscription channels made them no longer relevant for ABC Television.

Expansion of the multichannel environment may rekindle debates about how ABC TV's schedule should take account of private broadcasters' programming. For example, some argue that the ABC must compete with the private free-to-air operators by running overtly popular programs at peak audience periods in order to provide audience flow to, and awareness of, the minority audience programs in the ABC schedule.

Some suggest that the ABC should schedule in a counter-cyclical way to the private free-to-air operators. For example, if the private free-to-air channels are all running films or major television drama series at 8.30 p.m. on a Sunday night, the ABC should schedule arts or something completely different at the same time, in order to provide diversity for the audience. Taken to its ultimate extension, this argument might question continued public expenditure on, for example, ABC lifestyle programs if sufficient lifestyle programs were being shown on private free-to-air and subscription television.

The mainstream subscription television operators in Australia all run specialist channels, in genres such as documentary, natural history, performing arts, children's and sport. These genres have been a traditional part of the public service programming that the ABC has included in its schedule. For example, in the children's genre, there are at least four specific subscription television channels: Cartoon Network, Fox Kids, the Disney Channel and Nickelodeon. All provide children's programs for much of the day. By comparison, the ABC can only provide children's programs in a limited portion of its one analog TV schedule. Within five years, the ABC's new digital channels may create more opportunities.

Major international children's subscription channel providers such as Nickelodeon are able to commission and acquire expensive programs with high production values, by amortising costs across their subscription channels in many countries. There is no way that domestic Australian children's television productions can compete regularly with the production values exhibited by these international children's program offerings.

In the early days of subscription television, organisations like Nickelodeon still provided most of their significant programs to the ABC for a first run in Australia. However, as the number of pay television subscribers in Australia increases, these international distributors will increasingly provide the ABC with only secondary runs of their branded children's programs.

In response to children's needs, the ABC has established an ABC children's television channel, which is distributed on its own digital terrestrial television platform (DTTB) and on two of the mainstream subscription television broadcasters' platforms. This channel provides programming for children during the day (ABC Kids) and programs for young people from 6.00 p.m. (Fly TV). The ABC believes that this kids' channel will help insulate it from being marginalised in the marketplace for children's television product as subscription television penetration grows and as there is an increase in the number of DTTB-delivered private free-to-air channels.

The greatest impact on the ABC's program schedules of the multichannel environment has occurred with sport coverage. First, private free-to-air television operators began purchasing most major sporting rights after colour television began in Australia in 1975. The ABC retained primary rights to only a small number of major local sports and most 'minor' sports.

In the 1990s, three sports channels were developed for subscription television. These required some levels of local Australian content, and even minority local sport was required to fill the schedules of these sports channels. Legislated anti-siphoning provisions have restricted the ability of pay TV channels to broadcast major sports without an opportunity for them to be broadcast on free-to-air television. Despite this, today the ABC is left with very little television sports coverage programming; and sometimes this is only available on a deferred telecast basis, as pay television sports channels have the first run.

One apparent result is that the ABC has moved into sports/variety and discussion programs. While these have sporting events as their background, their appeal lies in intelligent discussion by regular and invited guests, rather than live or recorded sport action footage.

News, current affairs and information programming has always been a basic ingredient of ABC Television. Currently there are numerous 24-hour news and information channels available on subscription television. Whenever there is an event that is important, some of the viewers who subscribe to pay television have become used to tuning to one of the pay television news channels for continuous or substantial coverage. Only very major events, such as the Gulf War in 1991 and September 11 2001, result in substantial portions of the day being devoted to real time event coverage on ABC Television.

The availability of these all-day pay television news services and the video-on-demand news services available through broadband and Internet connections is expected to change the way in which news and current affairs are transmitted on ABC Television. It is likely that a feature showcase of the day's news events will still occur at one or other fixed times in the normal schedule. However audiences will increasingly seek – and the ABC will have to provide – news as it happens and when it can be consumed by audiences.

The ABC has already developed Internet access on demand to its major television news coverage. It may in future develop a rolling 24-hour news channel for display on its DTTB platform, as well as the mainstream pay TV providers. This would cater for the news and information addicts and all those whose lifestyle prevents them from watching ABC Television's flagship news and current affairs television bulletins at fixed schedule times.

Both broadcasters have taken the view that it is essential to have a presence on all major audio-visual content platforms that are capable of carrying television-like material into the home. Each of the public service broadcasters has a sophisticated online service and is well positioned for the video-on-demand broadband market as it further develops.

The SBS has a major interest in a non-English language movie channel called World Movies and has begun a non-English language news channel on its free-to-air DTTB platform. As mentioned above the ABC has established a new kids/youth service on a separate channel on its DTTB free-to-air platform. This channel is also currently available to half of Australia's pay television subscribers.

Both broadcasters face the prospect of having to argue with government for maintenance, let alone an increase, in the level of public funding. As the multichannel marketplace grows, and along with it the number of traditional public service programming genre channels available, there is bound to be discussion within government about why the same amount of public money is required by the SBS and the ABC to create, acquire and transmit such programming.

On the other hand there is the opportunity for the ABC, in particular, to argue that as audiences are being fragmented and traditional advertising revenue to private free-to-air broadcasters decreases, the ABC requires more funding to ensure that traditional high quality Australian productions are in evidence on free-to-air television.

In pay television households, television viewing time is divided almost equally between free-to-air and pay television channels. However, it is the ABC's share of overall viewing that suffers most in these homes. It is estimated that the ABC's share of overall viewing in households with pay television is only about 5 or 6 per cent, compared with a share of 15 per cent in households which do not have pay television. In other words, the ABC loses around two thirds of its total viewing in homes which have subscribed to pay television. If this trend continues as pay television take-up grows towards 50 per cent, it may fuel the government funding argument outlined above.

2.4 Singapore

Singapore's broadcasting environment

Singapore's structural approach to public service broadcasting is closer to New Zealand's one that those of Japan, Australia and Malaysia. The model was introduced in 1994 and entailed two structural changes. The first was creation of the Singapore Broadcasting Authority (SBA), which both regulates the broadcasting sector and provides direct funding for public service programs. The second was corporatisation of the public service broadcaster, previously the Singapore Broadcasting Corporation. The public broadcaster channels are now operated by MediaCorp Singapore (MCS), which is also involved in provision of radio, news, press and publishing.

All the free-to-air television channels in Singapore are commercial and sell advertising. In addition, the SBA programming committees allocate annual funding to MCS for production and broadcast of programming in defined public service genres, including current affairs, information/education, children's, culture, local sports, drama and minority languages. This public funding comes from licence fees for each television and vehicular radio receiver, plus a government grant equivalent to approximately 15 per cent of licence fee revenue. In 2001/02, SBA allocated around SG$80 million/US$43m to MCS, of which an estimated SG$50 million/US$27m is for its three thematic channels and SG$30 million/US$16m for its two comprehensive channels.

The SBA also established a commissioning fund in 1998 to encourage the production of programs identified by its programming committees. Tenders are called for the production of these programs. The SBA reports that it commissions approximately 200 hours of programming per year. In the 2002 financial year, SBA funding of SG$10 million/US$5.4m will be used to commission programs in areas of information-education, drama, arts and culture, children's and local sports. The SBA also expects broadcasters to broadcast a certain number of hours of public service programs at their own expense.

Singapore already has a very multichannel television environment. There are seven local analog free-to-air television services, each of which is available over the air and through the cable system. In addition, between three and five free-to-air services from nearby countries are available fortuitously over the air, depending on the weather conditions in Singapore. They are RTM1, RTM2 and TV3 from Malaysia and two Indonesian services.

Of MCS's local free-to-air services, three are thematic, with a focus on public service program genres, and targeted at niche audiences. These are Central, Suria and Channel NewsAsia. Central includes three programming belts. Kids Central provides educational, information and entertainment programs for children aged 4 to 12 years. Vasantham Central provides information and entertainment programming in Tamil for the Indian community. Arts Central is focused on arts, drama and culture programs and also includes wildlife documentaries. Suria provides information and entertainment programming in the Bahasa Malay language. Channel NewsAsia was established in 1999. It provides English-language, regionally-focused news about politics, business and social issues, as well as lifestyle programs. MCS receives an estimated SG$50 million/US$27m a year from the SBA to subsidise the operation of these three channels.

The remaining four local free-to-air services have broadly comprehensive television schedules distinguished primarily by their languages. Channels 5 and 8 are provided by MCS. Channel 5 is in Mandarin and Channel 8 in English. Channels U and i, launched in May 2000, are provided by SPH MediaWorks (MediaWorks), a subsidiary of Singapore Press Holdings. MediaWorks' English channel is U and the Mandarin channel is i. The MCS channels 5 and 8 include more public service programs in genres such as current affairs, culture, children's, information/education, local sports and drama, than the MediaWorks channels, partly because of the financial assistance MCS receives from the SBA for these channels.

It can be seen from the above description that all of the programs available on free-to-air domestic channels are in one of the four official languages: Bahasa Malay, Mandarin, Tamil and English. Cantonese programming, which mostly comes from the popular Hong Kong company TVB, is available only through Singapore Cable Vision, the pay television service.

MCS, MediaWorks and SingTel, the telecommunications carrier, are the joint owners of Singapore Cable Vision (SCV). SCV's exclusive licence to provide subscription television services in Singapore expired in June 2002. At the time of writing, no decisions had been made about the possibility of new entrants. SCV provides approximately 40 channels of subscription television, including news, sport, movies, entertainment and children's programs. Approximately 30 per cent of households subscribe.

MCS has established a mobile digital terrestrial television broadcasting (DTTB) service and has a licence for a fixed DTTB service multiplex. Given the extensive analog TV offerings available in Singapore, they are not expected to have a major impact in the foreseeable future.

Trends

Since Singapore already has an established multichannel environment, it is not expected that new channels will produce radical changes to MCS programs. However, the MCS channels' programming would be affected if funding decreases. Decreased funding for MCS could come about through a reduction in:

- direct SBA funding to MCS; and/or
- advertising revenue earned by MCS (caused by a loss of audience share or decreased advertising revenue across the whole television sector).

A reduction in SBA funding is possible. Currently, MCS Channels 5 and 8 receive funding from SBA for providing public service programs; but MediaWorks indicated that its Channels U and i receive no such funding. It is common knowledge that MediaWorks considers itself entitled to a share of the estimated SG$30 million/US$16m per annum that Channels 5 and 8 currently receive. MediaWorks would also like to receive a greater share of the SG$10 million/US$5.4m provided each year by the SBA for specially commissioned programs.

If MediaWorks is successful, it is likely that the current level of high cost local productions on MCS Channels 5 and 8 would diminish and that there would be an increase in the amount of cheaper local content, repeat programming and/or imported material. However, there might be a consequent increase in high-cost local programming on MediaWorks, if SBA requires it to provide increased amounts of public service programming for any share of this funding it receives.

Perhaps the biggest potential threat facing MCS programming is the likelihood that some of the current MCS advertising revenue will be lost to MediaWorks. After 16 months of operation, MediaWorks claims that its Chinese-language Channel U has a similar audience share to the MCS Chinese Channel 5. On the other hand, MediaWorks believes that the audience share of its English language service, Channel i, is only about one third that of the equivalent MCS Channel 8.

Loss of market share must lead to decreased revenue for MCS, unless there is a significant increase in overall television advertising revenue, perhaps as a result of MediaWorks being in the market. Any further change is most likely to affect the revenue of MCS's Chinese language Channel 5, which is its most lucrative one. It is likely that this would lead to fewer expensive programs, more overseas content and more use of repeats. The thematic channels are less likely to be affected, because MediaWorks does not compete directly with them and they receive significant amounts of SBA funding.

Sport is another area where the existence of multiple channels has already resulted in change. As in other countries, the major overseas sporting rights are increasingly being picked up by the subscription operator, which may be able to attract more subscription revenue for these events than the amount of revenue that free-to-air broadcasters could attract from pure advertising. In the case of Singapore, the subscription broadcaster is SCV, which is part-owned by the free-to-air broadcasters, MCS and MediaWorks.

The 2002 Soccer World Cup provides a good example. SCV had all broadcast rights. It kept most of the games for exclusive broadcast on pay TV, and had a commercial arrangement to share games with MCS from the quarter-finals onwards. The peculiarities of the Singapore broadcasting environment were reflected in the fact that approximately 10 per cent of viewing of the early rounds of the World Cup in Singapore went to the Malaysian-based TV3, which is available free-to-air in most parts of Singapore. It is likely that MCS will retain a significant role in broadcasting local sports, which often require subsidy from SBA funding.

Some other minor programming dialect and format changes may occur. For example, it has been noted that Japanese programs, dubbed into Mandarin, have become less popular. Some of these are now being replaced by Korean programs, which are also dubbed into Mandarin.

Given Singapore's desire to be at the forefront of technology, there is bound to be experimentation with interactive programming. It is anticipated that this may affect the average duration of programs, with interactivity going hand in hand with shorter programs. For the reasons mentioned earlier, those interviewed did not expect any of the other significant technology developments to affect the genres and scheduling of MCS. Broadband was not seen as a threat. Similarly, Singapore Cable Vision has been a competitor now for some time and its effect is not expected to change significantly. It was noted however that young people in Singapore spend a considerable amount of time browsing the Internet. This activity will compete for their leisure time and may diminish the chances of television's share of the overall advertising cake growing as much as is required to offset the market diluting impact of MediaWorks.

2.5 New Zealand

New Zealand's broadcasting environment

New Zealand's multichannel television environment is well developed for a country with so few television households (1.3 million). Until 1989, New Zealand had a state-run monopoly public service broadcaster operating just two channels across the country. Following deregulation of the broadcasting sector in 1989, the number of free-to-air and subscription television channels has burgeoned like no other country of comparable size.

The public service broadcaster in New Zealand, according to this report's definition, is TV New Zealand (TVNZ). Almost from its inception in 1960, TVNZ has been commercial. That is, it has broadcast advertisements and received the bulk of its funding from this commercial source. Its two channels are TV1 and TV2.

The first major development in the multichannel market in New Zealand occurred in the late 1980s with the establishment of TV3 (now owned by CanWest), the first free-to-air private competitor to TVNZ. Since then another two free-to-air television networks, CanWest's TV4 and Prime, have developed. Thus, there are five channels of free-to-air television available across New Zealand.

In addition, there are some local and regional private broadcasters operating in parts of New Zealand. At their peak, there were 17 of these, and they claimed to jointly cover 70 per cent of New Zealand households. At one time, Christchurch – a relatively small city by international standards – had seven free-to-air services, all relying on commercial revenue.

The second wave of development occurred with commencement of the Sky pay television service in 1990. Originally this provided just three channels on UHF frequencies. Gradually it gravitated to analog satellite in 1997 and then digital satellite services began in 1998. Today, Sky's UHF subscribers receive seven pay TV channels, while digital satellite customers have approximately 40 channels available to them.

The five national (or near-national) free-to-air services are also carried on the universally available Sky digital satellite service. People living in areas unable to receive the terrestrial transmission of the free-to-air networks can rent satellite decoders to receive them, without having to subscribe to the Sky pay TV channels.

Thus, there are potentially five free-to-air channels and approximately 40 channels of pay television available to all New Zealanders. Such fragmentation of an audience of just 1.3 million households means that only the two dominant broadcasters, namely TVNZ and Sky, have the revenue to broadcast large-scale and expensive local content. Even so, only one free-to-air network and one pay TV channel achieve more than 20 per cent local content. The public service broadcaster's TV1 channel broadcasts 54.5 per cent local content during 6.00 a.m. to midnight. Comparable figures for the other networks are: 17.4 per cent for TV2; just under twenty per cent for TV3 and Prime; and approximately 7 per cent for TV4. Of the Sky channels, the highest level of local content is on the Discovery channel, which achieves its figure of 22 per cent local content largely through extensive coverage of local horse racing. Sky's main sports channel attains just under 20 per cent local content.

Even these low levels of local content are only achieved with the assistance of subsidisation from New Zealand On Air (NZOnAir), which was established at the time of deregulation. It was charged with attempting to maximise local public service programs on the deregulated TV channels. There are no regulatory or legislative local content requirements placed on any New Zealand free-to-air broadcaster.

Initially, NZOnAir distributed funding obtained from the 'public broadcasting fee' – a domestic home licence fee. In 2000, the public broadcasting fee was abolished. Since then NZOnAir's funding has come directly from government. Today, approximately NZ$60 million/US$26m is provided by NZOnAir to aid in the production of local public service television programs for transmission on the national networks: TVNZ's TV1 and TV2, and TV3. The main genres of programs subsidised by NZOnAir are drama, comedy, children's, documentaries and programs aimed at the Maori population.

While the majority of television viewing goes to TVNZ, the arrival of Sky TV has made a significant difference. Currently TVNZ's two national free-to-air channels command about 73 per cent share of total free-to-air television viewing. When pay TV is taken into account, TVNZ has 62 per cent of all viewing, while TVNZ's share of total viewing in households subscribing to Sky TV is only approximately 45 per cent.

In total, Sky has 500,000 subscribers (36 per cent of households). More than half of these are on the satellite platform, around one third are still on UHF and about 75,000 receive Sky programs retransmitted by cable operators such as Telecom and Telstra Saturn.

Following passage of new laws (likely to be late 2002), TVNZ will convert from a state-owned enterprise into a charter-driven crown owned company. The charter proposed for TVNZ is quite similar to that of the Australian Broadcasting Corporation (ABC) in Australia. In effect, it requires TVNZ, through its TV1 and TV2 channels, to be all things to all people in all regions for at least some of the time. However TVNZ is still required to maintain 'commercial performance'. That is, it must at least break even and normally produce a profit, which the company is allowed to retain.

Apart from the advertising revenue TVNZ earns via its dominant audience share, TVNZ also benefits from an estimated NZ$40 million/US$18m that NZOnAir contributes to TVNZ programs. In addition, the government has granted TVNZ an extra NZ$12 million/US$5.3m (NZ$10.5 million/US$4.6m after GST) in 2002-03 for charter activities. TVNZ's total expenditure is approximately NZ$325 million/US$143m per annum.

Trends

Given the current state of development of the multichannel market in New Zealand, it seems unlikely that TVNZ scheduling will be influenced by the establishment of new channels. Indeed, in recent months several of the local and regional private operators have closed down.

Further, since annual government funding for all television in New Zealand is only about NZ$70 million/US$31m, or less than 7 per cent of total television sector costs, the possibility of reduced government funding to TVNZ represents less of a threat than it does to any of the other public service broadcasters covered in this report.

It appears that the two factors most likely to challenge or threaten existing TVNZ schedules are:

- changes to viewing habits between the channels of TVNZ, other free-to-air operators and the Sky pay TV service; and/or
- downturns in the overall advertising levels within the country.

Any reduction in TVNZ's current 73 per cent share of free-to-air viewing would lead to lower advertising revenue.

Similarly, any increase in Sky television's subscription levels, and hence share of overall viewing, would enable Sky to increase its advertising revenue above the current level of NZ$16.5 million/US$7.3m per annum. Given the significantly lower share of viewing allocated to TVNZ in households that have subscribed to Sky, even a small increase in Sky subscribers (say, from 36 to 40 per cent) would have a significant impact on TVNZ's advertising revenue.

In the face of open competition, the public service broadcaster in New Zealand has been very successful in maintaining its share of viewing and revenue to date. It is hard to believe that it could become any more successful than it is right now. This is particularly so if there is pressure under the new charter to broadcast less popular, and therefore less commercially viable, public service programs in or near prime time. In addition, any downturn in the New Zealand economy leading to an overall softening in the advertising market will hit TVNZ hardest.

Currently both the TV1 and TV2 channels of TVNZ have comprehensive program schedules.

TV1 is primarily targeted at older audiences, with an emphasis on news, current affairs, sport, documentary, drama and comedy. It is the primary vehicle for local content on New Zealand television, accounting for about 50 per cent of all first-run (i.e. not counting repeat programming) local free-to-air content in New Zealand. It is also the main vehicle for transmission of programs purchased by TVNZ from the UK. TV2 focuses on entertainment for young and family audiences. Over 80 per cent of its programming between 6.00 a.m. and midnight comes from overseas, with much of it from the US.

TVNZ has announced that the new charter funding for TVNZ is expected to increase the number of drama, documentary and children's programs, and the range and depth of news and current affairs programs, broadcast by its two channels. However, the additional charter funding of NZ$10.5 million/US$4.6m (net of GST) is unlikely to have a very obvious impact on schedules. For example, if it was used to produce programs with an average cost of NZ$100,000/US$44,000 per hour, it could only generate an additional 105 hours of local first-run content, equivalent to less than 0.6 per cent of total hours broadcast by TV1 and TV2 annually.

A decrease in TVNZ's advertising revenue would have a direct effect on programming unless it were offset by increased government funding, whether provided indirectly through NZOnAir, or directly through charter funding. The effect would be a decrease in the amount of the more expensive local first-run content broadcast by TV1, and an increase in the amount of repeat programming on TV1 and TV2. Trends over the past six years probably provide the best indication of what would happen to the levels of first-run local content by genre.

On TV1, since 1995 there has been a halving of hours of first-run local content in the genres of entertainment, sport, drama and comedy; news and current affairs programming has doubled; information programming has increased fourfold; and children's programs have virtually disappeared.

First-run local news, current affairs and sport programs have virtually disappeared from TV2 in the last six years, whereas there has been an increase in the number of hours of entertainment, documentaries, information, drama and Maori programs. Children's first-run local content hours have remained fairly static.

As with other countries, the advent of the multichannel market in New Zealand has changed the role of the public service broadcaster in relation to major sport coverage. TVNZ has fared better than most in this respect. Nonetheless, the major Rugby Union, Cricket and Rugby League games are now the province of Sky. TVNZ's dominance of the local free-to-air television market has allowed it to successfully bid for most other national sports and it has retained rights to the Olympic and Commonwealth Games because of International Olympic Committee (IOC) and Commonwealth Games Federation policies.

TVNZ has always maintained an aggressive policy of either partly owning or being present on all broadcast delivery platforms in New Zealand. It originally owned a significant share of Sky television, but relinquished this over time. Now its two free-to-air channels are available through the Sky digital satellite pay television service and it has joint venture and co-operative agreements with Sky and one of the cable operators, Telstra Saturn, to develop interactive applications for digital television. TVNZ also has the ability to extend its presence on the Sky digital satellite platform through the development of new TVNZ channels.

TVNZ has a number of strengths that make it well-placed to take advantage of new technology and service delivery methods. These include its commercial focus, terrestrial television transmission and satellite infrastructure subsidiary companies in New Zealand and Australia; dominant position in the New Zealand free-to-air market; and joint ventures with major subscription television, online and telephony service providers.

The extent of changes to its current program schedules over the next five years will be determined more by the current debates concerning how to give effect to its new charter (and any consequences that this has on its advertising revenue) than any further additions to the New Zealand multichannel television market.

2.6 Malaysia

Malaysia's broadcasting environment

Malaysia's public service broadcaster, Radio Television Malaysia (RTM), was a monopoly from its establishment in 1963 until the establishment of a private commercial free-to-air competitor, TV3, in the 1980s. A second private free-to-air competitor, NTV7 (TV7), began operating in the 1990s, and ASTRO, a satellite based subscription television operator, commenced operations in 1996. That means that RTM now has to contend with two free-to-air television competitors and a satellite subscription operator with approximately 40 channels.

RTM is entirely financed by the government and is a part of a government department. However, it also sells advertising, and its commercial airtime sales revenue is returned directly to the government. It is estimated that this airtime sales revenue offsets around 16 per cent of the cost of running RTM; leaving 84 per cent of the cost to be found from other government revenue sources.

RTM provides two national channels: RTM 1 (or TV1) and RTM 2 (or TV2). Both have broadly comprehensive schedules.

RTM1 is a Bahasa Malay language channel. RTM2's schedule contains 25 per cent Chinese language programming, 17 per cent Tamil, 10 per cent Bahasa Malay and 48 per cent English language programming.

Currently RTM's major public service program role is evident in the areas of religious programming, local news, special events and local content generally. It is the only broadcaster with a local content quota requirement. It is also the only free-to-air broadcaster that provides a complete channel directed to the ethnic Malay community.

The government requires RTM to aim for 80 per cent local content. However at this stage only RTM1 achieves this objective, with RTM2 achieving approximately 50 per cent local content. The private channels, TV7 and TV3, do not have similar local content requirements.

RTM's two national services include programming, such as cultural material, from different regions of Malaysia. However, there is little regional autonomy for replacing parts of either national schedule with regionally specific material. For example Sabah and Sarawak in Eastern Malaysia carry exactly the same programming as is broadcast in Kuala Lumpur and elsewhere in peninsular Malaysia.

RTM's two private free-to-air competitors, TV3 and TV7, both have broadly comprehensive schedules, although they leave much of the news, religious, special events and less popular programming to RTM. It is estimated that RTM lost half of its audience after TV3 was established. Currently, TV3 and TV7 command an estimated 70 per cent share of free-to-air television viewing, while the remaining 30 per cent goes to the two RTM channels, RTM1 and RTM2.

The satellite subscription operator, ASTRO, currently has around 800,000 subscribers. Its market will probably be completely saturated when it gets to 1.5 million subscribers, equivalent to approximately 28 per cent of Malaysian television households. ASTRO offers channels with entertainment, movies, overseas news, education, documentaries, children's, variety and sports programs. Four of the channels are scheduled by ASTRO: RIA (Bahasa Malay), WAI LAI TOI (Cantonese), AEI (Mandarin) and VAANAVIL (Tamil). ASTRO produces around 750 hours of local programs per year for its channels.

Trends

RTM's transition into being part of a multichannel broadcast environment has already resulted in some program and schedule changes.

For example, school curriculum education programming moved from RTM to an ASTRO channel specially developed for this purpose. Across Malaysia, 8,500 schools were equipped with dishes and satellite decoders to pick up the ASTRO education channel. The government paid for this equipment and ASTRO provided its services at cost.

A second example involved language-programming. It is estimated that over 50 per cent of all viewing in households subscribing to ASTRO is taken up by the ASTRO Cantonese channel and the VAANAVIL Tamil language channel. Hence it is Chinese and Tamil language services which have significantly driven the take-up of ASTRO subscriptions. This is because RTM2 only broadcasts in these languages some of the time (25 per cent Chinese; 17 per cent Tamil), which is less satisfactory to Chinese and Tamil speaking Malaysians. This is a factor in RTM's motivation to establish additional channels (see later), so that it can better serve these audiences.

Sport programs have also been affected. As has occurred elsewhere, the subscription broadcaster has purchased the most important sporting rights. It has then entered into negotiations with free-to-air broadcasters regarding ancillary broadcasting of such material.

Generally news, special events and religious programs have been left as the domain of RTM. Indeed, ASTRO provides local business and finance information, rather than general local news coverage.

Looking forward, any change in the level or mechanism of government funding would be likely to have programming effects. As stated earlier, the estimated current balance of government funding of RTM is: 16 per cent obtained from RTM advertising; and 84 per cent obtained from general revenue. No major changes in scheduling or program genres for RTM1 or RTM2 are expected if the current balance and total amount of real funding are retained. However, changes would be expected if:

1. total government funding to RTM were reduced; or
2. government required RTM to increase the percentage of its costs to be covered by advertising revenue above the current level of 16 per cent.

In the first scenario, the higher-cost local productions would be reduced and repeat programming would become more prevalent across all genres. If the government required an increase in advertising revenue, then the schedule would change to include more popular programming, particularly in prime time, in an attempt to lift RTM's current 30 per cent free-to-air audience share. That is, some non-commercial public service programs may be moved from prime or near prime time. This pressure could be felt by lower rating programming such as religious material and certain worthy local content. Conversely, there would be an increase in the prime time representation of popular overseas material.

The factor that could produce the biggest change in the public service broadcaster's genres and scheduling relates to RTM's request for one and possibly two new channels, 'RTM3' and 'RTM4'.

These two channels could have different programming emphases. For example, it is suggested that RTM3 could concentrate on sport and programming for different regions of Malaysia, while RTM4 could concentrate on education, minorities, and religious programming.

In the current environment, it would be difficult for an RTM sports channel to obtain rights to major overseas sports, as they are all bought by the subscription operator, ASTRO. For example, even programming such as the English Premier Soccer League, which was once broadcast by ASTRO and RTM, is now only broadcast on ASTRO. If RTM's new sports channel is to draw consistent audiences, it will probably need to seek a restriction on the subscription operator purchasing all important sport rights. Otherwise the sport channel would be confined to the lower-rating overseas sports, local sport and repeats of material that has first been shown on ASTRO channels.

The funding mechanism for the proposed RTM3 and RTM4's rollout and programming is not yet known. If it is funded by government, RTM1, in particular, could become more commercial in its scheduling. This would probably increase the amount of popular overseas material on this channel around prime time.

Given the early state of development of program policies and schedules for the proposed RTM3 and RTM4, it is uncertain what local content obligations these channels might have, or what their emergence might mean for the existing 80 per cent local content requirements for RTM1 and RTM2.

It is possible that the proposed channels will not see the light of day until digital terrestrial television broadcasting is rolled out in Malaysia. This would enable the four RTM channels to all be transmitted from a single transmitter using one multiplex. 'RTM3' and 'RTM4' would then become digital-only services.

The development of the digital terrestrial television platform could also provide government with opportunities for gradually changing the model of funding public service programming. For example, the government could select a new or existing private operator to run the platform and require the operator to broadcast various RTM-produced programs. ASTRO already retransmits all four of the current free-to-air television channels in Malaysia. In high rise areas, such as parts of Kuala Lumpur, poor reception of terrestrially transmitted free-to-air services has meant that ASTRO and the digital satellite platform has become a de facto carrier for RTM.

Broadband and Internet are not expected to affect public service programming or schedules during the next five years, due to low take up.

In summary, little change in program genres is expected on RTM1 and RTM2 in the next five years, unless total government funding for RTM falls or it is required to raise significantly greater advertising revenue. Major changes in overall RTM programming will occur if the proposed two new RTM channels are established. The subscription operator ASTRO, which is expecting to reach 28 per cent of all households, will continue to be a significant carrier of public service broadcasting material to the upper socio-economic group, the Tamil and Chinese speaking community and sub groups such as school children through subsidised school services.

3.0 Future Prospects

3.1 We already live in a multichannel environment

It would be a mistake to assume that 'the multichannel environment' is a future phenomenon dependent on digital TV or new broadband channels. During the last decade, the number of TV channels has increased significantly in all the five countries. In each country, a different balance of delivery technologies has produced the increase. In some, cable has been the main avenue; in others, satellite-to-home (DTH) has led the way; and in most countries there has been an increase in the number of traditional terrestrially radiated channels. In all, the effect has been similar. The audience now sees public service programs as part of a wider range. This is a radical change from 20 years ago, when the national public service broadcaster was the dominant provider in most of the countries. Now, each public service broadcaster operates in a competitive environment, alongside private free-to-air television and subscription television.

The future will see a rapid acceleration in channel numbers. Digital technology, applied to satellite, cable and terrestrial delivery platforms, will produce the most radical change. Digital terrestrial television has just started, or there are plans to start, in four of the five countries. In Japan and Australia, digital terrestrial broadcasting is being rolled out in major cities, with expansion to other areas as the service grows. Given time, it could multiply the number of terrestrially radiated channels by five. As the country summaries above have shown, the growth in channel numbers will not be matched by similar growth in the sources of revenue or the funds available to produce programs. The significance of that for public service programs is mentioned later.

The other main area for channel proliferation is subscription television. Where cable systems are yet to be digitised (e.g. Australia), there is potential for considerable growth. In countries where satellite is the major delivery method for subscription television, digital technology is already being used. Less spectacular expansion of the multichannel environment may result from the incremental audience take-up of subscription television. In the five countries, subscription TV penetration rates range from around 14 per cent in Malaysia to around 36 per cent in New Zealand. The number of homes subscribing is likely to increase every year, perhaps to the point where most of the audience in all five countries will have an alternative to free-to-air.

Looking further ahead, non-broadcast systems will compete for the viewer's time, and increase the range of choices. The rate of DVD takeup is spectacular in all five countries. DVDs are becoming a major platform for movies. Broadband Internet is another alternative for audiovisual entertainment, news and information. Games consoles are yet another. Even if a national government attempted to restrict the number of broadcast channels, these non-broadcast alternatives would still be able, for better or worse, to offer viewers more choices and more specialisation in what they interact with and watch.

3.2 Competition for eyeballs and revenue

More channels offer some advantages to public service broadcasters, but they also raise a challenge: more competition for audiences. Competition may not be the policy goal of all national broadcasting systems, but it is the inevitable result of these trends. If there are 50 channels available to a household, each channel has less chance of being watched than in a household with access to only 5 channels. Just to be noticed, let alone watched, is more difficult when there are so many alternatives.

Increased competition for audiences means that there is increased competition for revenue from sources such as public funding, licence fees, subscriptions and advertising. Even if no new channels were added, loss of audience share to private free-to-air competitors, or the subscription television operators, would reduce the revenue of advertising-dependent public service broadcasters. Also, availability of alternative sources of public service programs on subscription TV may erode the argument for funding public service broadcasters.

Increased competition also affects the supply of programs, which can drive up the price. In the worst case, this means that each channel provider has less funds, but is required to bid more for the rights to programs. Rights to major sports events provide the obvious example. The prices have increased many times over. Bidders must have large cash reserves, or the prospect of sufficient returns through advertising, general subscription fees or pay-per-view fees. With a few exceptions, public service broadcasters are less likely to win the bidding war.

Channel proliferation also offers opportunities to present public service programs in a more effective way. In the 1980s, most of the public service broadcasters were forced to squeeze all program formats into a single, monolithic channel. This may have increased the audience for the single channel, but it also reduced the opportunities for people interested in different formats. Some examples included: childrens' programs, which were rarely offered during peak times targeting the majority, adult, audience; lengthy programs such as operas and concerts, which could not find enough time in the schedule; and sport. Sometimes, the most popular sporting event was broadcast, at the expense of all the other codes; and at other times the coverage of different events was reduced to highlights, so as to squeeze into the schedule. A number of documentaries and cultural programs without a mass audience appeal were confined to unpopular timeslots, difficult to access by most of the audience.

The situation has already improved. All of the public service broadcasters in this study now have more than one channel, and for some there will be a number of extra channels through digital platforms. To take just one of the examples above, it is now possible to offer children's programs in prime time. In a more sophisticated example, NHK already schedules major sports events across multiple channels; and is hoping that digital television policies will allow it to use spectrum to continue broadcasting sports events which run over time, without disrupting scheduled programs. RTM and MCS both use their channels to provide different language mixes. The MCS television service includes three niche channels and two broader channels. NHK has an educational channel, and may in future develop a news channel, as SBS has done with its digital terrestrial multichannel capacity. The ABC's second digital channel broadcasts programs to children during the day and to young people in the evening.

Cost, in conjunction with limited new revenue, is the main limit on these multichannel opportunities. Where significant amounts of new program material are involved, much of the cost of a broadcast is in the productions: actors, directors, sets, locations, camera crew being some major components. Three channels may be almost three times as expensive to provide as one channel. There are economies of scale in shared technical and management infrastructure, but these are more useful where the same content is being transmitted on different channels: for example, a drama being repeated on an extra channel for the benefit of shiftworkers, or the same news bulletin being used across different channels. But if taken too far, this strategy can make the different channels of a broadcaster look too similar, thus defeating the purpose of multichanneling. Where the service is dependent upon advertising revenue, multichanneling may mean that advertising revenue is shared across more outlets, and not increased at all. Repeating and simulcasting become more creative when the same program is distributed in different formats on different platforms, as in the NHK example of HDTV programs being broadcast in conventional resolution on another channel.

3.3 Funding

Extra channel capacity is necessary for public service broadcasting to flourish in the new communications environment. However, the level of public service programming will depend on adequate funding. No matter how many channels are allocated, or how good the skills of program-makers, they cannot fill the new channels without funding. In some cases, public service broadcasters have received additional funding to help cover the costs of programming extra channels. In Japan, people accessing BS services pay an additional licence fee, but it is not likely that there will be extra funding for digital terrestrial conversion. In Australia, the ABC received some additional funding for digital conversion. Overall, it seems unlikely in any of the five countries that funding for public service programs will be increased in proportion to the extra cost of creative multichanneling. This means that all public service channels are likely to be spreading their existing budgets more thinly, across more channels.

Likely effects of spreading the funding more thinly include: a reduction in the most expensive types of programs, such as large budget dramas; less expenditure on local content; and an increase in the percentage of repeat programming in a schedule. The actual combination of these factors and detailed program implications will vary from country to country. For example, costs may be reduced without changing the hours of programming within a particular genre, but by including more repeats, or more overseas content, or by changing the nature of the programs (e.g. replacing telemovies with serials, or children's drama with children's quiz shows).

Any shift in the funding mix for public service broadcasters from public to private funding will also affect programs. For example, if a broadcaster such as RTM has to rely more on advertising revenue, it is likely to increase the amount of high-rating programs, particularly during prime time. Lower-rating programs, including those aimed at specialist audiences, may be relegated to outside of prime time or removed from the schedule altogether. New Zealand is going against this trend, due to a change of national policy. TVNZ has recently received new funding to supplement its advertising revenue and funding from NZOnAir. However, this represents less than 4 per cent of all TVNZ revenue.

3.4 Public service broadcasters or public service broadcasting?

A trend discovered during this project is that the link between public service programs and public service broadcasters is becoming more fragile. In other words, the traditional public service broadcaster is no longer the only potential source of public service programs. In looking at the five countries, we have found it necessary to look beyond the schedules of individual public service broadcasters to understand the trends for public service programming in each country.

The Council of Europe said over a decade ago that public service broadcasting could be undertaken by a public or private entity. This can be seen in the five countries under review.

For example, in Japan it is argued that the licence fee and lack of advertising is evidence of commercial independence. NHK hopes to justify its direct funding from viewers by providing programs for both mainstream and niche audiences, but remain distinct in character from the style of private commercial programming. In New Zealand, the requirement that TVNZ maximise its profits was considered inimical to the production and transmission of traditional public service programming. After a change of government a charter requiring certain genres of production, even at the cost of reduced profitability and audience appeal, has recently been introduced. In Singapore, the public service broadcaster is commercial, but also receives discrete funding for public service programs. In Malaysia, the public service broadcaster runs advertisements to offset the costs of government funding.

Provision of public service program programs in such genres as children's, programs for particular language groups, local and national news, education, forums for national discussions and local programs, has traditionally been part of the *raison d'être* of public service broadcasters. The new channels mentioned earlier have changed this. Private free-to-air broadcasting, then subscription broadcasting and now broadband and Internet, offer alternative delivery platforms for traditional public service programs. For example, the production fund models in Singapore and New Zealand potentially allow publicly-funded public service programs to be produced and/or broadcast by private broadcasters. The Malaysian government provided infrastructure funding to assist the move of school educational programming from RTM to the subscription operator, ASTRO. Pay television channels have also developed multi-national business plans to derive adequate returns from thematic services in genres such as documentary, news and current affairs, education, arts/culture and children's.

With the exception of SBS and some of the MCS channels, the public service broadcasters in the five countries consider themselves to be full-service broadcasters, operating across genres including those of interest to private broadcasters. In Singapore and New Zealand, governments accepted the need for direct funding to ensure public service programs continued to be produced following introduction of competition for the public service broadcasters.

Given the potential and actual expansion of private broadcasting, there are few, if any, genres that can be guaranteed to remain the sole province of public service broadcasters. The effectiveness of public service programming being delivered by private broadcasters will be viewed differently depending on the national policy environment. The best channel for delivering public service programming may depend on the content involved. For example, where emergency information must be delivered to as many people as possible, it may be quite sensible to co-opt private broadcasters to maximise audience reach.

Alternative delivery mechanisms for public service genre programming may increase the amount and diversity of such content available, and in turn expose it to a wider potential audience. For example, subscription television provides an alternative source of documentaries in many countries. The availability of such content on alternative channels may also lead, immediately or gradually, to a decrease in the amount of specialised or in-depth content on public service broadcasters. For example, if public funding for public service programming is allocated to the private sector, there is likely to be less public funding available to public service broadcasters.

The very existence of alternative sources of public service programs may raise questions in the minds of governments and lawmakers about the need for public service broadcasters to keep providing them. It would be a mistake to think that the policy discussion of these issues can be restricted to the level of individual programs. In some countries, there is a longstanding expectation that the qualities that define the public service broadcaster, such as independence and a continuity of shared community values, apply to the network or broadcaster as a whole. The scale, shape and complexity of the public service broadcaster may be as highly valued as individual programs.

This picture is complicated by the fact that public service programs are not defined purely by genres. Depending on the country, the offerings of public service broadcasters are determined by factors such as these: language and culture, comprehensiveness, commercial independence, independence from government, levels of government control, production values, innovation, support for the local industry, universal availability, popularity, diversity and wholesomeness. It is relevant to consider not only whether public service broadcasters are providing programs in genres that are available elsewhere, but whether they are distinctive in valued ways from those available elsewhere. The answer may well vary from genre to genre and country to country, and will be important in determining the future for public service broadcasters.

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ASTRO

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Media Corporation of Singapore (MCS)

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NHK (Nippon Hoso Kyokai)

ntl Asia

Prime

Radio Television Malaysia (RTM)

Singapore Broadcasting Authority (SBA)

Special Broadcasting Service (SBS)

SPH MediaWorks

TVNZ

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