Australian
Broadcasting
Authority

Digital Television in Australia

2002 Industry Survey

Prepared for the Australian Broadcasting Authority
by Duane Varan & Tim Morrison
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The Interactive Television Research Institute, based at Murdoch University, is a global leader of independent research associated with study of the emerging interactive television industry. To date, it has completed a wide range of empirical studies associated with consumer motivation in a digital television environment and has produced proof-of-concept iTV solutions for leading global brands including Nike and Pizza Hut. The Institute also engages in policy research and has been an active participant in discussions associated with digital legislation in Australia, working closely with key interest groups including the Advertising Federation of Australia and the Australian Association of National Advertisers. Further information on the Institute is available at www.itri.tv.

Background

Digital television

The digitisation of both broadcast and subscription television has attracted considerable attention globally over the past few years. In a few markets, including Australia, regulators have sought to help stimulate the conversion from analogue to digital free-to-air broadcast infrastructure. While this helps address increasing pressure on regulators to manage spectrum more efficiently, as a model it has yet to be widely adopted by consumers, particularly in the horizontal environment of free-to-air broadcasting. Although targets have been identified for 'digital migration', the quest for effective conversion strategies for television broadcasting continues.

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In contrast, in the subscription television arena, there have been significant advances — most particularly in the rapid adoption of digital services in the UK where digital penetration has now exceeded 40% of the British population making it more widely diffused than the Internet's residential penetration there. Although this has clearly been facilitated through British Sky Broadcasting's (BSkyB) aggressive attempts to expand into the British market, it has reached a stage where it is starting to generate more widespread consumer appeal. Whereas in the initial stages of interactive television (iTV), for example, only 50% of those households equipped with iTV systems actually accessed the interactive services, this has risen to over 76% in the past year, demonstrating rising enthusiasm for the interactive medium (BMRB Digital Viewer Wave 5 — see Curry, 2001). To a large extent this has reflected the increasing availability of interactive content, a trend facilitated by expansion in iTV content production, particularly by the BBC. This trend is poised to gain momentum in the immediate future with the recent launch of 'freeview' — a free-to-air terrestrial multi-channel digital service which has been established by a BBC Crown Castle International and BSkyB consortium.

Even in the UK, however, digital television is not without its challenges. The experience of ITV Digital in the UK, which delivered a subscription-based terrestrial solution, has been less promising, resulting in its fall into receivership. Likewise, the prospects for cable television providers in the UK, including ntl and Telewest, remain largely pessimistic. And BSkyB has yet to recoup the significant investment associated with its ambitious digital push, although there are clear indications that it is starting to generate positive returns associated with its digitisation. Despite these limitations, however, digital television is rapidly becoming a part of the British television landscape.

The US market, like Australia, is struggling through a range of issues which appear to be hampering its industry. In the satellite arena, Direct TV's ownership remains unresolved, a factor which has stalled more aggressive expansion in the satellite arena. The cable market remains highly fragmented, although most systems are now digitising, largely on the basis of business models emphasising the provision of video-on-demand and bundled solutions. In the broadcast domain, the Federal Communications Commission (FCC) continues to work with the free-to-air broadcasters exploring strategies to further stimulate the relatively slow take-up by consumers of digital broadcasting. This has come to a head most prominently in the FCC's recent decision to mandate the inclusion of digital tuners in all consumer television sets.

On a global scale, therefore, the fate of the digital television industry is best characterised as being somewhat restrained, featuring immense, but as yet largely untapped, potential. With the exception of BSkyB, it is difficult to point to successful ventures. To a large extent, the search for successful business models remains elusive, and without clear models for return on investment, the current investing environment does not favour the sector. On the other hand, there are promising trends emerging, particularly as new forms of content come to the fore. British audiences are increasingly engaging with the medium, particularly as more 'enhanced' television content comes into the mix. The key challenge remains one of getting the medium to penetrate critical mass, so that content producers and channels have sufficient incentive to produce compelling digital content.

On a global scale, therefore, the fate of the digital television industry is best characterised as being somewhat restrained, featuring immense, but as yet largely untapped, potential.

Digital television in Australia

Although digital conversion is a national media policy objective in Australia, significant changes have occurred to the digital landscape since 1998 when the original digital conversion legislation was enacted. In 1998, at the peak of the dot com gold rush, prospects for digital convergence generated substantial investor interest in the iTV industry. Likewise, intense speculation associated with allocation of broadcast spectrum which was best demonstrated, perhaps, with the 3G auctions in Europe intensified interest in the potential financial returns to Government which might be associated with the sale of datacasting spectrum and, in time, with the allocation of spectrum savings made possible through digitisation of the broadcast networks. Much of the policy which ensued, reflected in the *Broadcasting Services Amendment (Digital Television and Datacasting) Act 2000*, was formulated during this period of digital euphoria.

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In the past few years, however, many of these assumptions have been challenged. With the dot-com tech wreck, investors have become more conservative and less willing to adopt a 'if we build it they will come' approach to their investments. Instead, there is increasing pressure to demonstrate effective business strategies delivering clear return-on-investment. This in turn requires identification of viable business models for digital television, a quest which has been, as noted earlier, largely elusive in most television markets around the world. Additionally, the formulation of policy in Australia has reflected an extremely polarized debate between key constituencies — this in marked contrast to the 1998 legislation which was met with little public interest. Press coverage associated with the digital television sector is both pervasive and largely negative in sentiment. Furthermore, the financial tribulations of Austar and the recent withdrawal of Optus from its iTV trial have further heightened concerns associated with the financial viability of digital migration.

Australia at the cross-roads

To a large extent, Australia finds itself at a cross-roads in the quest to migrate television to digital.

Although digital transmission is now officially up and running, key issues associated with the technical configuration of digital services remain unresolved.

In the subscription television arena, the recent decision by the Australian Competition and Consumer Commission (ACCC) to allow Foxtel and Optus to share their programming substantially changes the digital television landscape. In the new environment, Foxtel emerges as the new game's dominant player. Austar remains largely burdened by its financial obligations, making further expansion in the digital domain unlikely. By pulling out of its iTV trial and subcontracting out of its own channels, Optus has signalled that it will not be a heavy investor in the new arena. Such investment will apparently come primarily from Foxtel which has announced ambitious plans to digitise its network by October 2003. The exact shape and form of Foxtel's new service will start to surface as its digital launch approaches.

In the free-to-air broadcast arena, although digital transmission is now officially up and running, key issues associated with the technical configuration of digital services remain unresolved. Debate continues on the technical parameters of the set-top-box, with plans in place to incorporate MHP as the middleware but with the possibility still being debated of incorporating DVB-MHP as an interim strategy. Moreover, questions associated with the back channel remain unresolved. The biggest questions for broadcasters, however, probably relate to the business models associated with digital. Not only are there challenges associated with identifying drivers, but experience in the UK, in particular, has highlighted the potential for digital to cannibalise existing market share. In light of these concerns, broadcasters continue

searching for viable models which are workable in a horizontal — rather than vertical — market.

At a political level, the Government is also caught at a critical juncture. The recently completed review of the datacasting regulatory arrangements undertaken by the Department of Communications, Information Technology and the Arts (DCITA) was anticipated to have recommended changes to the datacasting genre restrictions under the *Broadcasting Services Act 1992*. But this was not the case and the review recommended no substantive changes to the datacasting regulatory framework. Likewise, there was strong market speculation concerning possible changes to the multi-channelling restrictions, which also did not materialise. Although recent changes to the HDTV quota have given the conversion scheme greater flexibility, there has been little change to the overall policy environment governing digital television. It remains unclear, at this point in time, how digital conversion will be stimulated and facilitated.

In light of these concerns, broadcasters continue searching for viable models which are workable in a horizontal – rather than vertical – market.

Given this context, the Australian Broadcasting Authority (ABA) and the Interactive Television Research Institute (ITRI) at Murdoch University in Perth, Western Australia, explored the possibility of surveying the views of the digital television industry itself regarding potential drivers and inhibitors for the industry. Subsequently, the ABA commissioned ITRI to undertake such research in advance of the ABA annual policy conference held in May 2002. The findings, as summarised in this report, are based on the survey which ITRI conducted prior to that conference. Given the dynamic pace of change in this industry, much has already changed. As is the nature of such research, there is a need for on-going data collection to monitor developing trends. The reader is advised to keep this temporal context in mind when considering the survey findings.

The study

Why survey the industry

Digitalisation of broadcast media is still in its nascent stages. Speculation concerning its future abounds — both in this country and abroad. Press coverage reflects a chaotic and confusing landscape with a high divergence of views surrounding key issues associated with the industry. At the same time, the issues associated with digital migration are of high significance and will potentially have a profound impact on the futures of both the broadcasting and subscription television industries. Given this context, there seemed to be a need to attempt to gain some clarity, within the industry in particular, both on where the industry was and where it was potentially going in Australia. This 'stock taking' exercise could, ideally, help reflect industry sentiment across time and provide something of a benchmark against which to compare future initiatives and, ideally, other markets.

It is not possible to forecast the future of digital media in Australia with any clear sense of confidence, particularly as any such projections depend heavily upon mediating environmental variables almost impossible to predict and because the inherent character of digital television technologies is continuously changing. Nevertheless the ABA and ITRI felt that a survey of the industry would provide valuable data on the relative sentiment of the industry with regard to digital television. Ideally, this would help identify potential drivers and inhibitors for the industry as a whole, and contribute to the on-going policy debate.

It is not possible to forecast the future of digital media in Australia with any clear sense of confidence, particularly as any such projections depend heavily upon mediating environmental variables almost impossible to predict

It is important to note that the focus of the research was on the views of industry — rather than on those of individual consumers. To a large extent, it is difficult to find consumers with sufficient knowledge and experience to give meaningful answers to questions associated with the digital future. Industry players, on the other hand, make regular decisions which require that they have some sense of their future — hence, their views seemed most appropriate under the circumstances.

Additionally, it was felt that there was a need to collect such views across the digital television value chain. To a large extent, successful migration to a digital environment requires collaboration between a range of industry players. Much of the popular press coverage associated with the industry, however, has tended to converge on the views of a few. By incorporating the full value chain, analysis could help identify those areas where industry views were shared across the value chain and those areas where views diverged. Given the relative complexity of the industry as a whole, such an approach would also help ensure that the views of those closest to the issue at hand were also considered in context (e.g. technology enablers on questions associated with technology, advertisers on questions associated with advertising, etc.).

To a large extent, successful migration to a digital environment requires collaboration between a range of industry players. Much of the popular press coverage associated with the industry, however, has tended to converge on the views of a few.

Delphi retreat

To help contextualise the study and become better sensitised to the needs of the different sectors associated with the iTV value chain, a special Delphi retreat was held on 12 February 2002, at the Quarantine Station in Manly, NSW. Some 35 industry leaders, representing different components of the value chain, were invited to attend the retreat. Twenty-eight such leaders attended the day-long retreat — a list of the organisations represented is included in appendix A. Although much of the focus of the retreat was on the study itself, helping highlight potential drivers and inhibitors for the industry, the retreat provided valuable insight on the strong need to continue such collaborative opportunities in the future. It became clear throughout the deliberations that the issues associated with the industry transcend individual sectors and will require collaborative solutions.

For example, one of the issues that came out during the retreat was the need for some form of agreement between platforms on interactive style guides. Without such agreement, user attempts to navigate through their interactive systems will be chaotic. On one system viewers might need to press the yellow key to access the interactive enhancements while on another it might require a red button press. If the industry is to succeed, viewers need intuitive interfaces. They shouldn't have to sit and think to work out what button they are required to press — it must come to them naturally. This will be almost impossible without players across both pay and broadcast television agreeing on common user standards.

It became clear throughout the deliberations that the issues associated with the industry transcend individual sectors and will require collaborative solutions …

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The day long retreat was more successful than the organisers originally anticipated. Not only did it provide the contextual background necessary for the study, but new opportunities for collaboration emerged between industry players (apparently, a

number of deals were closed in the aftermath). Feedback from participants was excellent with many requesting follow-up retreats.

The iTV value chain

The emerging iTV medium requires a complex industry that spans across an array of different participants requiring a high degree of coordination throughout its value chain. In many ways, the value chain reflects a transition away from the traditional value chains associated with broadcasting and pay TV — particularly to the degree that it introduces new participants and new skill sets. The creation of effective iTV solutions requires that the full value chain works together in a functional and coordinated fashion. Given the nature of iTV production, the Institute felt it was important that the opinions and views of the full chain be sought as the industry itself is best understood in the context of its holistic environment.

Figure 1 attempts to illustrate this value chain — highlighting potential returns associated with audience engagement with the iTV medium. The figure is provided for illustrative purposes only and does not purport to represent a comprehensive model of the industry's full value chain. It attempts to visualise the value exchange both in terms of consumer and revenue drivers.

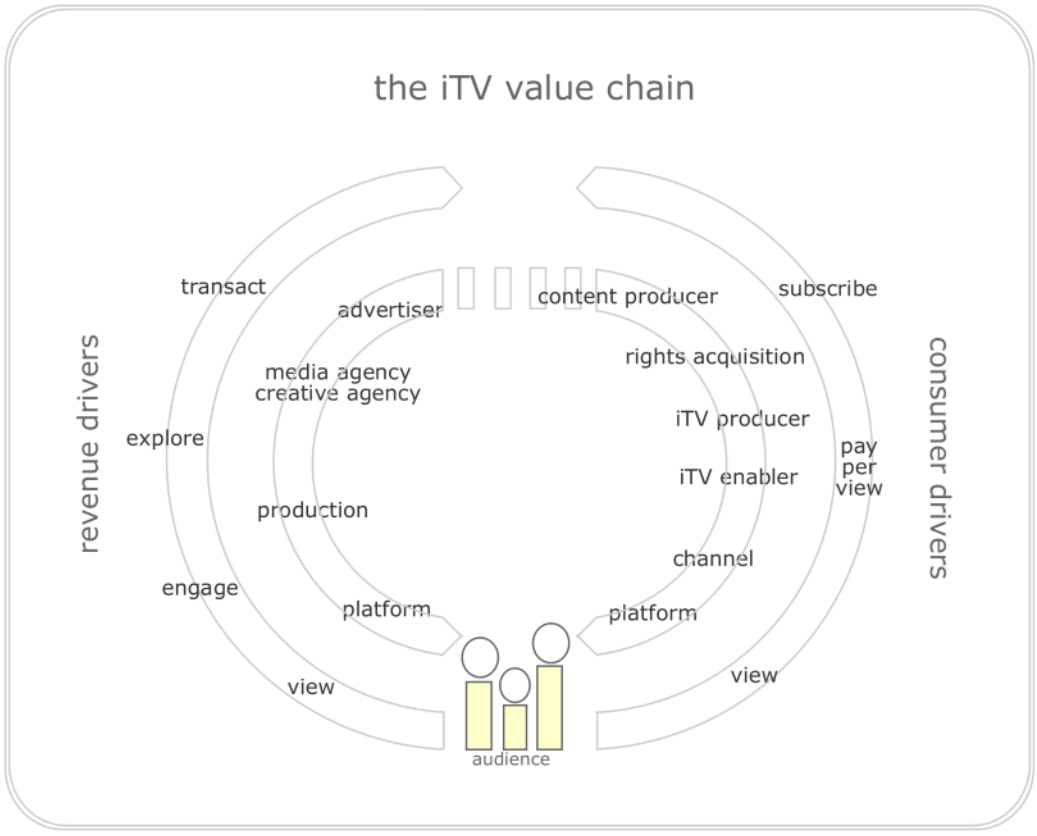

Figure 1: The ITV value chain

In conducting the industry survey, the Institute focused on the following industry segments represented in the new value chain:

The advertising fraternity

Most business models associated with the digitisation of television recognise the advertising fraternity as a key patron in the new landscape. Certainly, any models exploring free-to-air opportunities will have to rely heavily upon advertising as their key revenue earner. All too often, however, advertisers are left out of iTV discussions. In most markets, media platforms have developed advertising solutions and presented these to prospective advertisers — often to be disappointed at the lack of enthusiasm reflected in the advertiser's response. It is important, therefore, to include the advertising fraternity in the development stages of the medium to help ensure that the services on offer resonate with the advertisers' needs and interests. Representation was included from all sectors of the advertising fraternity - the advertiser, creative agency and media planners as each will be challenged by the new opportunities and threats enabled by digital. For the purpose of this study, only those advertising organisations that had already demonstrated engagement with interactive television, either through training courses or by actually executing iTV ads, were included.

Technological enablers

A wide range or players are associated with the various technologies central to digital television solutions. Primarily, the two key categories are hardware manufacturers (those who produce television sets, digital receivers, etc.) and software enablers (middleware providers, authoring solution vendors, etc.).

Clearly, these groups have an interest and significant role to play in the development of iTV solutions. For some of these enablers, iTV represents an additional area of activity outside those associated with their normal day-to-day business. For others, iTV is their core business. Naturally, such enablers have considerable investments in the iTV sector and have strong views associated with the future of their business.

Content producers / developers

There are few traditional television producers whose core business focuses on iTV content production. For the most part, content production is dominated by iTV developers whose business focuses heavily upon application development in the iTV arena. A few traditional television producers have attempted to extend their ambitions into the digital television arena. For the purpose of this study, therefore, content producers and developers included both dedicated iTV developers and those traditional television content producers that had engaged in some way with the iTV medium.

Media platforms

As a general descriptor, the term media platform is used to refer to those who distribute or otherwise deliver digital television content to audiences. Currently, this includes free-to-air broadcasters (both commercial and national) and subscription television providers. In time, this could also include datacasters and telcos. Given that

such players have an immediate investment in the emerging digital television medium, their views are critical.

Analysts/Government

In addition to those directly engaged in the industry, there are a number of key players who also engage with the industry in more indirect ways. This includes a number of consultants and industry analysts as well as a range of government bureaucrats. Again, to qualify for participation in the survey, all such individuals had to have already demonstrated some engagement with the industry either by virtue of the position they held (this was particularly appropriate with government officials) or through a consulting or research track record associated with the industry.

Digital drivers / inhibitors

In attempting to contextualise the industry study, both drivers and inhibitors were incorporated into the survey. Effective solutions ultimately depend upon triangulation between consumer and revenue drivers which can overcome industry inhibitors, as illustrated in figure 2. It is important to note that ideal solutions ultimately deliver on all three counts: That is they resonate with consumers, deliver clear revenue and can overcome the obstacles they encounter.

Effective solutions ultimately depend upon triangulation between consumer and revenue drivers which can overcome industry inhibitors

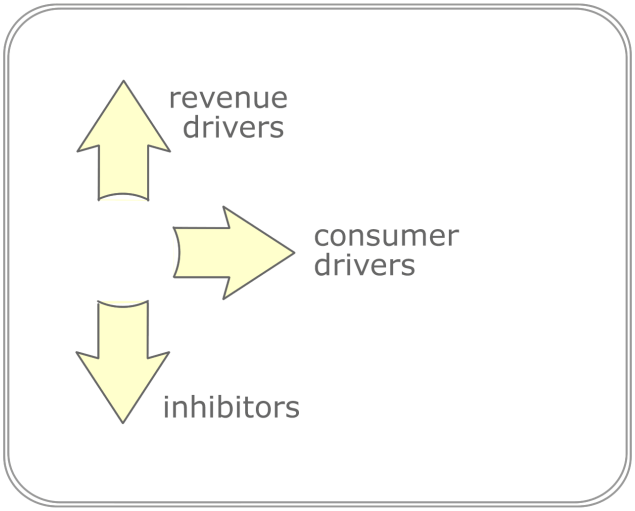

Figure 2: Digital drivers and inhibitors

Consumer drivers

Consumer drivers generally refer to those services, capabilities and applications associated with digital television that will help stimulate consumer adoption. To a large extent, it is difficult to anticipate the full range of potential drivers for consumers as so much of digital television's content and key applications and services have yet to be discovered. Again, however, the survey attempts to evaluate a range of existing consumer drivers in an attempt to evaluate the relative contributions of each.

Revenue drivers

While consumer drivers play a key role in promoting the take up of new digital technologies, an equally important element considers the potential returns-on-investment associated with a service or capability. Without clear opportunities to earn such revenue, most consumer drivers will lack sustainability. The quest for viable business models for digital comprises an important focus for the industry. Hence,

parts of the survey focused on potential revenue drivers with particular regard for the advertising industry.

Inhibitors

Digital broadcasting is an extremely complex industry in the array of both commercial and technical interests which must be addressed. Often, viable solutions face challenges associated with organisational cultures or — as is the case in Australia in particular — government regulations. Effective solutions require a capacity to work through or otherwise avoid such inhibitors.

As so much of the future landscape of digital broadcast is still uncertain, there are numerous factors that the industry must overcome in facilitating the successful uptake of digital television. A few of these will be explored further in the study.

Results

Survey results

Survey administration

The Institute surveyed 90 key individuals working in the iTV industry, representing 63 organisations. These individuals were selected out of a database of almost 200 potential respondents which was constructed using both existing ITRI databases and through telephone solicitation identifying key individuals working for companies engaged in the digital television industry. Leads were also generated throughout the surveying process itself with respondents invited to nominate other potential respondents.

The Institute estimates that the survey respondents represent about one third of those individuals actually employed in the industry in Australia and constitutes a very strong representation of most of the industry's key organisations. Such coverage provides a relatively strong collation of the current attitudes and sentiment of the industry and should provide a good benchmark for further analysis of the Australian industry over the years to come.

… the survey respondents represent about one third of those individuals employed in the industry in Australia and constitutes a very strong representation of most of the industry's key organisations.

The sampling focused on the need to include representatives of each component of the digital television value chain: content producers/developers, technology enablers, platforms, analysts/ government, and the advertising fraternity. Interviews were conducted by phone between 12 and 22 April 2002.

Survey instrument

The survey instrument consisted of 58 items structured around 15 sets of questions (information associated with the respondent's personal details were already recorded in the database — but where such information was lacking, additional questions associated with their contact details were also included). Sixteen of these items were open-ended, with the remaining being closed questions usually structured around Likert scales.

Survey limitations

… the survey – taken as a whole – makes strong contributions, addressing a critical void in the industry's discourse to date.

As the first attempt at a study of this nature, there were a number of areas which could have been improved upon. Perhaps the most glaring oversight was associated with the section on potential industry inhibitors where the impact and significance of the regulatory environment as an inhibitor was accidentally omitted from among the closed-ended questions identified. Additionally, another key limitation was associated with the survey's failure to distinguish between free-to-air and pay digital penetration. Fortunately, however, the inclusion of open-ended questions helped highlight those areas which were neglected and which can be included in the next survey round. Despite such limitations, the survey – taken as a whole – makes strong contributions, addressing a critical void in the industry's discourse to date.

Organisations represented

A list of the 63 organisations represented in the survey is provided in appendix B. Individual respondents have not been identified by name — nor have any results been tabulated by personal identification. All responses have been aggregated either collectively as a whole, or by industry sector, ensuring that no identification of the views of either individuals or the organisations they represent are possible.

Digital penetration

Background

Respondents were asked to project penetration rates for digital television (inclusive of both pay and free-to-air) over the next six years. Although this question was somewhat ambiguous, particularly as the survey did not distinguish between free-to-air and pay penetration (as noted earlier) or between digital and interactive penetration rates, responses did paint a picture reflecting their overall general sentiment.

It is important to note that these penetration rates are highly dependent upon environmental factors and should not be taken as lasting predictions for future adoption. The digital television industry remains highly volatile and is heavily influenced by unpredictable environmental factors. Changes to the existing legislation, for example, could have a dramatic impact on potential adoption rates. Likewise, the Foxtel-Optus content sharing agreement, reached following the survey, has probably shifted market sentiment. It is important to note, therefore, that survey responses reflect market conditions as of April 2002. Hence, rather than view such projections as a prediction of the future, it is better understood as an index of market sentiment.

Forecasts

The following figure shows the relative penetration rates which respondents, in aggregate, anticipate for both digital and personal video recorder (PVR) penetration over the next two, four and six years.

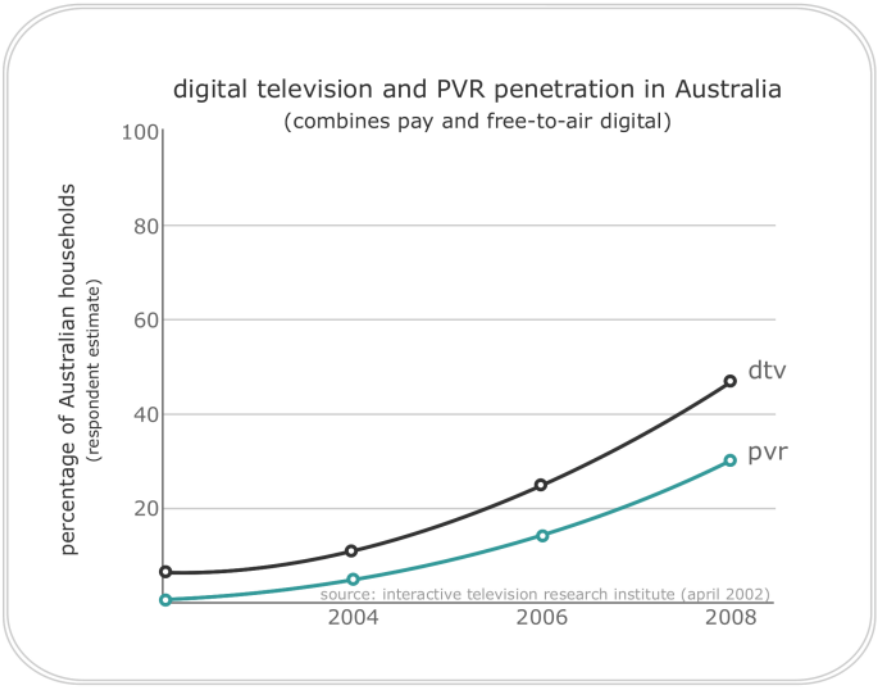

Figure 3: DTV and PVR penetration

On the basis of the forecasts provided by respondents, digital television penetration is collectively (across both free and pay TV) anticipated to reach approximately 46% of Australian households by 2008. It is not possible to delineate between free and pay TV in these figures, at this stage, as such clarification was not obtained from respondents. It is interesting to explore what the potential ramifications of such penetration might be in the Australian context.

… industry itself questions whether the Government's current approach will deliver digital conversion within the desired time frame.

On one hand, the '98 legislation sets a target for digital conversion by 2008. Although this is not a mandatory switch off date for analogue, one would assume that Parliamentary intent reflects a desire for considerable penetration by then — something approaching switch off. On this basis, the survey results reflect a significant policy/sentiment gap — falling considerably short of the target particularly when one factors in that the legislation is associated with free-to-air digital television penetration alone — well below even the 46% aggregation reported in this survey. This suggests that, others things being equal, the industry itself questions whether the Government's current approach will deliver digital conversion within the desired time frame.

On the other hand, some might question whether the Government's time frame is realistic in the first place. A 46% penetration within six years, despite a range of strong inhibitors in Australia (restrictive Government policy, the lack of economies of scale, etc.), might be seen as highly laudable. Furthermore, some might question the underlying rationale for such rapid conversion in the first place, particularly in the absence of the type of spectrum shortage that has driven US digital policy, for example. To a large extent, therefore, the study highlights the absence of a meaningful benchmark against which the digital conversion process can be evaluated. In the absence of more meaningful measures or target objectives, it would appear that the survey itself provides the closest such benchmark.

To a large extent, therefore, the study highlights the absence of a meaningful benchmark against which the digital conversion process can be evaluated.

Forecast by industry sector

By tabulating forecast projections by industry sector, it is possible to compare the relative views of different components of the digital television value chain. Figure 4 compares these forecasts across the five sectors identified in this study. In analysing responses, the Institute constructed a relative optimism index. The optimism index is a measure of the respondents optimism in terms of the short to medium term take-up of digital television. This index is a relative measure of the respondent's attitude to the technology's take-up measured relative to the industry broadly. The index is individually constructed by aggregating projections measured relative to overall forecasts.

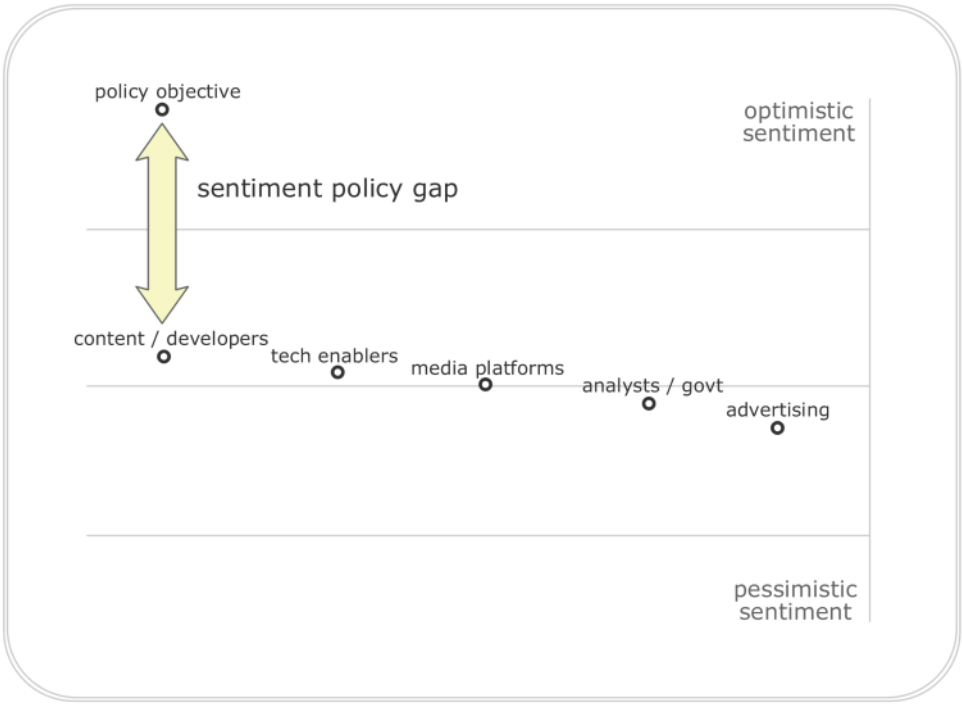

Figure 4: Optimism index across DTV value chain

As an indicative measure, the Government policy objective for digital take up has been approximated into the index scale and gives a relative measure of where this policy goal sits in relation to industry forecasts. The illustration helps highlight the previously noted 'policy/sentiment gap'— a reflection of the difference between industry forecasts and the assumed policy objectives set by the '98 legislation.

It is also interesting to compare industry sectors in terms of their relative optimism associated with digital take up. This positions content producers and developers (aggregated) and technology enablers as being among the most optimistic concerning the future adoption of digital television. In contrast, analysts and Government bureaucrats (aggregated) and those associated with the advertising fraternity were among the less optimistic. Media platforms were relatively close to overall market sentiment.

Personal video recorders

The results of these forecasts anticipate PVR take-up of approximately 32% by 2008.

Although it was not a central feature of the study, the survey also asked respondents to provide forecasts associated with the adoption of PVRs. The results of these forecasts are reflected in figure 3, provided earlier, anticipating take-up of approximately 32% by 2008. These findings need to be treated with particular caution, however, as PVRs are not yet available in the Australian market and any such projections involve speculation concerning its future distribution models and are not based on current market conditions.

Perhaps the PVR penetration is best understood in the context of wider digital adoption. Here it is interesting to note that respondents saw increasing presence of PVRs within the digital landscape. Figure 5 illustrates the relative penetration of PVR and digital in the next two, four and six years. Though the data is somewhat speculative, as noted earlier, it is interesting to note that PVR is predicted to gain an increasing place in the market to the point that in 2008 it will represent 41% of the digital marketplace. Even if these figures fail to provide a clear prediction of the future, they probably do reflect sentiment associated with wider trends concerning PVR adoption.

Moreover, recent announcements by Foxtel, suggesting its service may include a PVR option, may significantly influence market sentiment concerning PVR take-up in the near future.

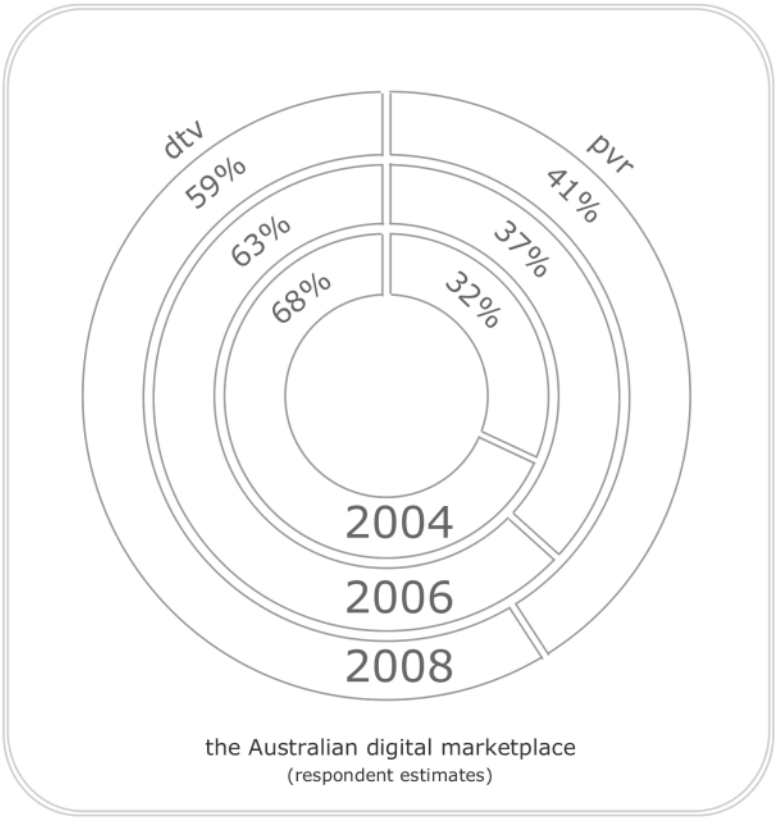

Figure 5: Relative penetration of PVR vs. digital television

Digital drivers

A number of questions in the survey were designed to help identify the relative values of a wide range of potential consumer and revenue drivers. This occurred in both the open and closed ended portions of the survey instrument. In many ways, responses associated with open and closed questions yield results which are complementary — but often divergent in view. Open-ended questions tend to reflect top-of-mind sentiment — those items which first come to mind. Such answers are coded to enable aggregation. Given the open-ended nature of the process, however, it is difficult to compare responses, particularly because not all survey participants may have considered a particular option.

Closed-ended questions, in contrast, help weigh particular options across all respondents. This is most useful in measuring the overall relative sentiment associated with very particular variables. Its main limitation is that it requires identification of key drivers and inhibitors in advance of survey responses. As both open and closed-ended questions make meaningful contributions to issues at hand, both were included in the survey design.

Open-ended responses

Respondents were asked to identify the most important opportunities or benefits which are made possible with digital television. As noted earlier, this question was designed as a measure of top-of-mind awareness and was consequently situated as the first question in the survey. Responses help identify the issues that industry was most aware of.

As illustrated in figure 6, the three most important benefits were identified as: interactivity, advertising benefits and improved audio and video quality (each of these attracted more than 15% of all unsolicited responses). Surprisingly, however, there is a strong discrepancy between results in the open-ended question and closed-ended measures of key video quality enhancement (such as wide screen and high definition) which tended to score relatively weaker. This suggests, perhaps, that the industry is well aware of digital's potential benefits in enhancing the viewing environment but is less certain about its relative contributions as a consumer benefit.

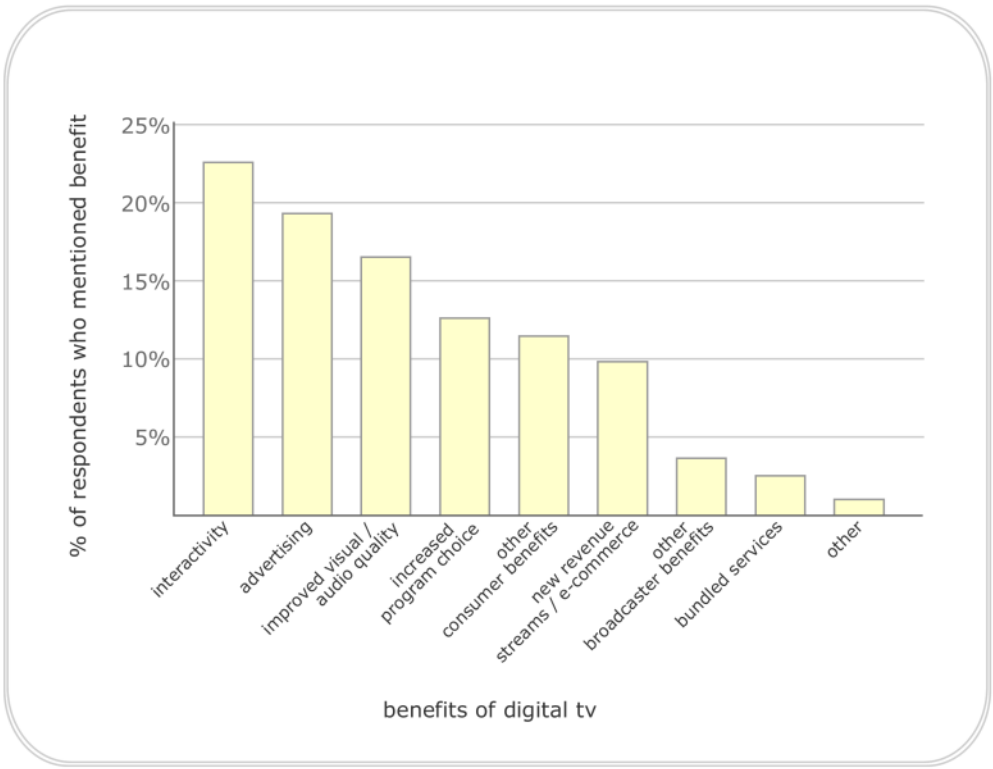

Figure 6: Digital benefits (open-ended)

Relative consumer benefits

Respondents were asked to assess the relative potential benefits to consumers associated with a range of possible drivers. Although not specifically labelled as such, these drivers were distinguished as capability and content drivers. Capability generally summarises benefits enabled through technical enhancement to the viewing experience. In contrast, content drivers referred to interactive enhancements to specific genres of existing television program content. Classification of the 22 questions associated with these items into two categories is made to help facilitate discussion of key findings. Those participating in the survey were simply asked to respond to the 22 items individually.

Questions associated with interactive content drivers were separated from the capability drivers in the survey because it was felt that simply stating ‘interactive content’ was overly broad as a survey item. By teasing through different forms of interactive content, more meaningful comparisons could be made of the relative opportunities associated with existing television genres while comparing these against other benefits associated with digital television.

In terms of capability drivers, the top benefits to consumers as identified by survey respondents were 'multi-channelling' and 'electronic program guides'

In terms of capability drivers, the top benefits to consumers as identified by survey respondents were 'multi-channelling' and 'electronic program guides', as illustrated in figure 7. In contrast, the least compelling benefits to consumers were HDTV and the Australian variant of datacasting (datacasting subject to the current so-called 'genre' restrictions). It is difficult to explain these findings, particularly as it is unclear why respondents scored HDTV so low in light of earlier identification of digital's potential to enhance picture and sound, as identified in the open-ended portion of the survey. It is possible that respondents did not see it as a particularly strong benefit because they felt most viewers would not have access to the technology. Alternatively, it is also possible that they saw the benefits associated with HDTV, even for those who might access it, as marginal.

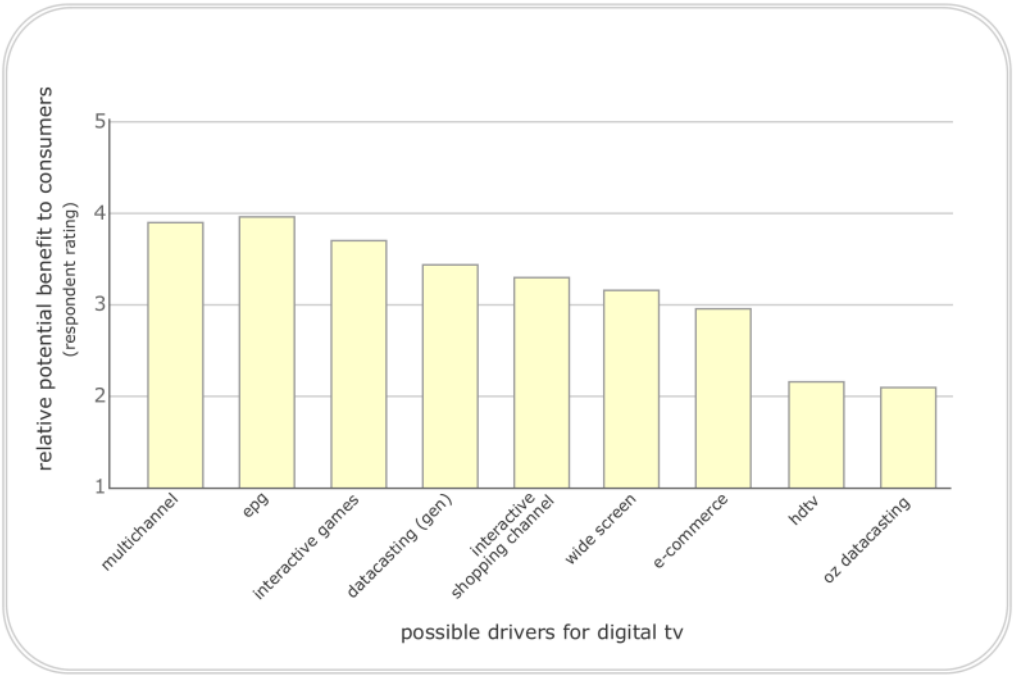

Figure 7: Interactive capability drivers

The different responses of different sectors of the value chain are outlined in the radar graph featured below. On the whole, the pattern was consistent across most industry sectors. This further reinforces scepticism concerning HDTV and Australian datacasting — particularly to the extent that this pattern is replicated across industry sectors.

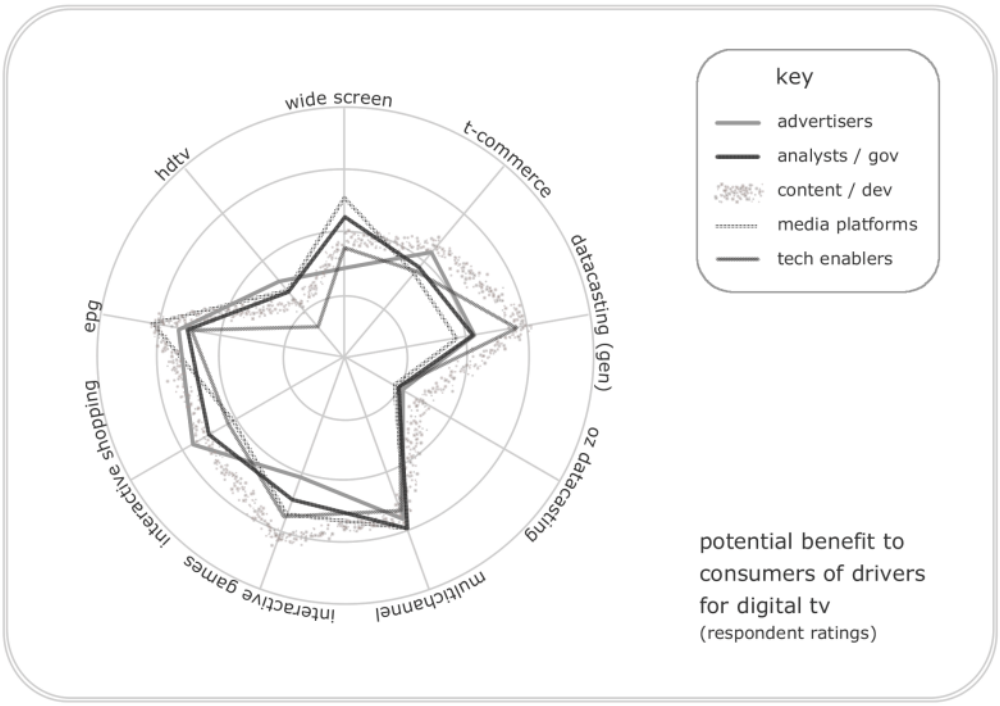

Figure 8: Interactive capability drivers (sector radar)

As noted earlier, the survey also tested the attitudes of the industry toward 17 different television genres to see which the industry felt might present viewers with the strongest potential benefits. The top five were interactive sport, interactive game shows, interactive children's television, interactive reality shows and interactive music. The weakest two content types were interactive drama and interactive comedy.

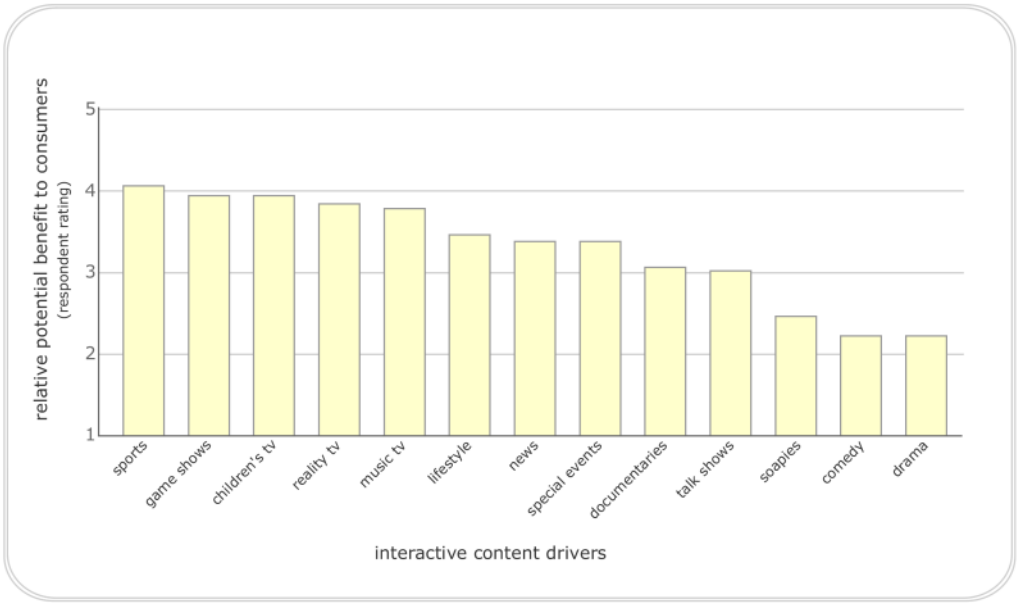

Figure 9: Interactive content drivers

The relative contributions of each of these genres is, perhaps, better understood when they are viewed within a continuum reflecting the relative position of each response on its associated scale. This is illustrated in figure 10 (relative weights are reflections of above categories with the top six genres circled).

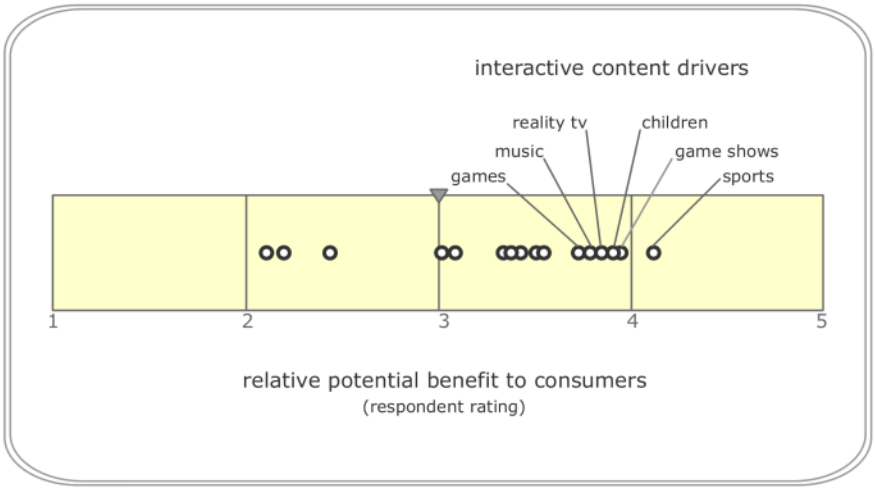

Figure 10: Interactive content driver continuum

It is also somewhat useful to compare responses across industry sectors, as illustrated in Figure 11. Again, respondents across all sectors reflected roughly similar patterns in terms of their responses, further highlighting the relative strength of industry

sentiment associated with each of these genres. The most significant variation across the value chain is found in responses associated with interactive music programs where tech enablers and advertisers diverge as to the degree which this content type will deliver consumer benefits.

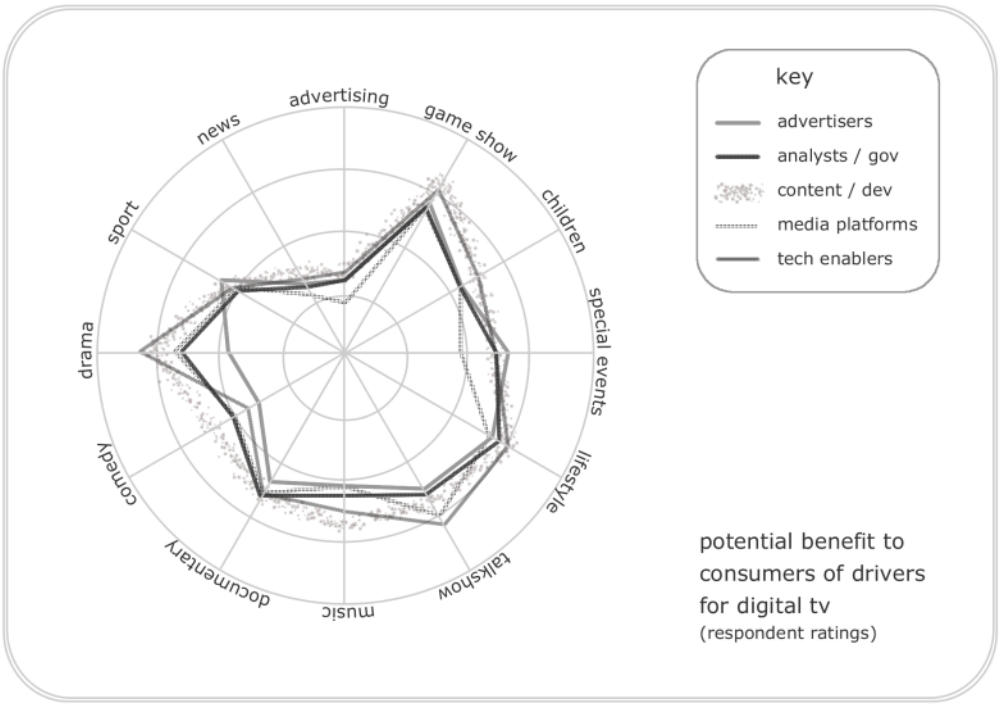

Figure 11: Interactive content driver (sector radar)

The strong positive response toward children's television, which ranked third overall, is of particular interest. Each of the remaining top five genres has been the focus on considerable attention within the industry to date. Given the strong perceived value associated with children's interactive program content, it is surprising that it hasn't been given greater attention to date.

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Figure 12 aggregates both capability and content drivers to help illustrate their relative contributions. This helps highlight the relatively strong contributions which content, in particular, might play in helping stimulate digital adoption.

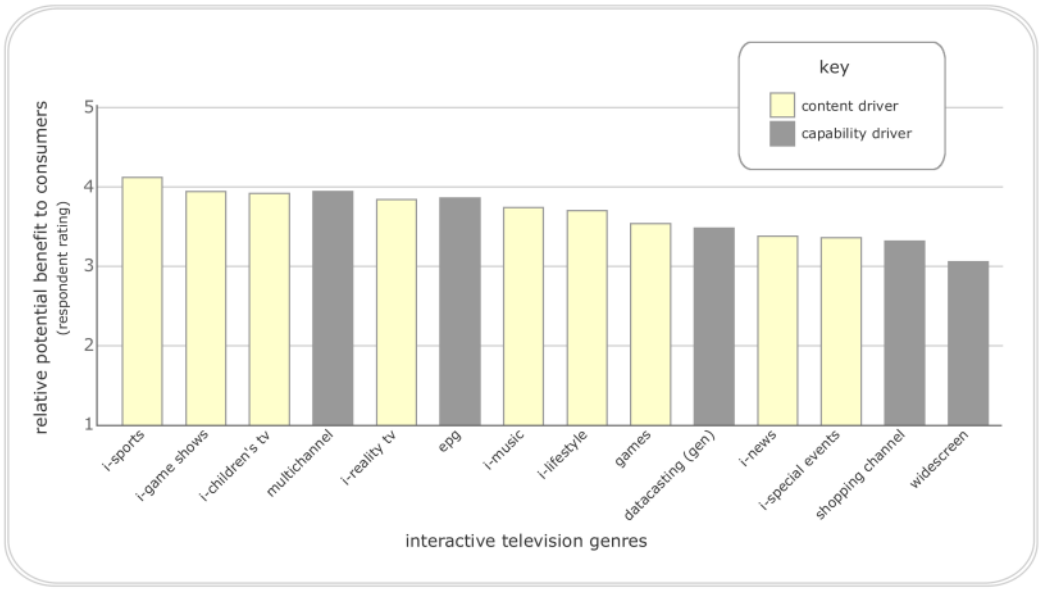

Figure 12: Interactive content vs. capability driver comparison

Inhibitors

A series of questions were also designed to help identify potential inhibitors for the industry. Again, both open and closed-ended questions were incorporated reflecting a rationale similar to that associated with driver measures. With this series of questions, in particular, the range of options identified for closed-ended response was clearly inadequate. Respondents had strong views associated with inhibitors and were quick to identify a wide range of problems plaguing the industry.

Open-ended inhibitors

In many ways, responses to the open-ended question asking respondents to identify obstacles and inhibitors to the industry provided more meaningful results than the closed-ended responses. This process identified a strong list of possible inhibitors, dominated by concern over excessive government regulation. Coded categorised results are illustrated in figure 13.

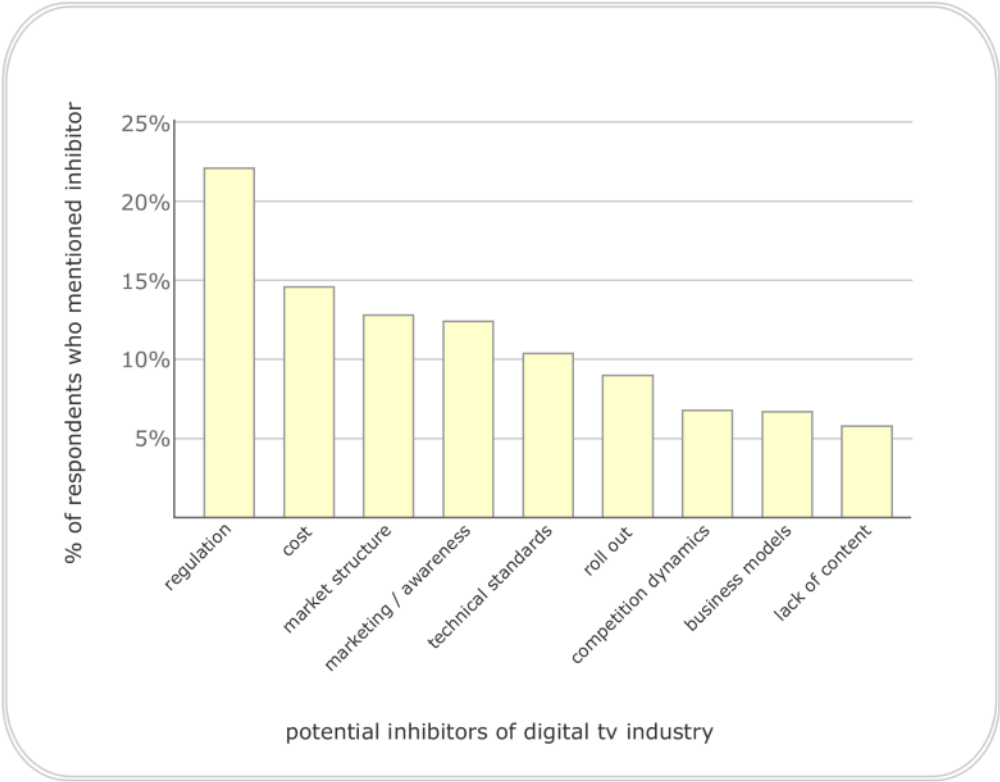

Figure 13: Key inhibitors to digital television (open-ended)

It is also interesting to note that the lack of content did not emerge as a strong inhibitor in this top-of-mind measure despite featuring prominently in prompted responses throughout the survey and in identification of possible assistance in stimulating the industry. Again, although it is difficult to interpret the findings in the

absence of specific responses by survey participants, it would appear that the issue of a lack of content was not one of which the industry was generally aware. However, with prompting, lack of content rapidly emerges as a key inhibitor.

Cost was identified both in the open questions and in the closed questions section of the survey as a key inhibitor to digital television. Cost is obviously one of the fundamental concerns for this industry as the industry struggles to find revenue models that will support the high costs associated with digital television. Closely related, market structure broadly refers to the many issues that face the structure of Australian industry — particularly its lack of economies of scale.

Relative inhibitors

Unfortunately, specific closed-end questions associated with digital inhibitors was limited to only five variables: Cost, lack of content, complexity, bad press and lack of technical standards. Of these, cost and lack of content emerged as the primary inhibitors as illustrated in figure 14. Across the different industry sectors associated with the digital television value chain, these two inhibitors consistently dominated the list.

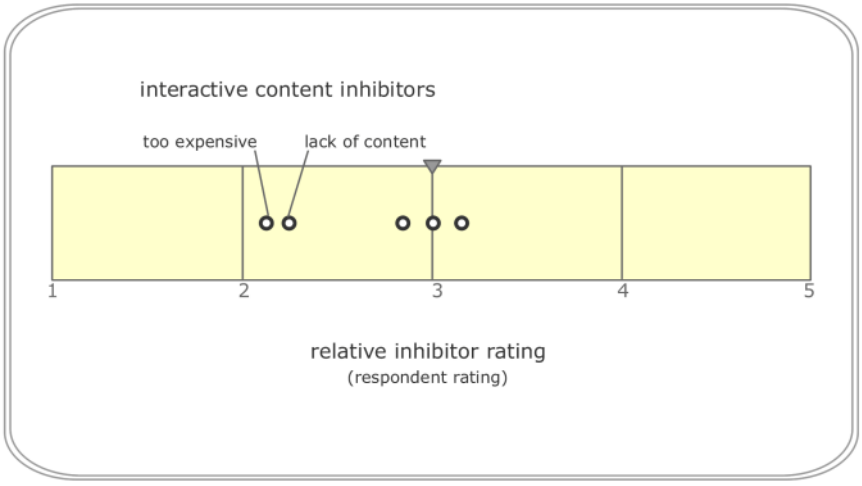

Figure 14: Relative inhibitor continuum (selective)*

Advertising drivers

It is important to note that there is a strong gap between the promise which digital television potentially delivers for advertising and the current technical reality.

Although digital television technologies enable a variety of new revenue streams, potential revenue drivers were assessed more fully in the context of identifying potential advertising drivers. It is important to note that there is a strong gap between the promise which digital television potentially delivers for advertising and the current technical reality. Many of the potential benefits surveyed are possible in theory, but few systems globally have incorporated all of them in their commercial deployments. To a large extent, therefore, advertising drivers must be contextualised as identifying both promised and current capacity. In itself, however, such measures can help platforms prioritise the technical configurations of their digital solutions.

Relative advertising drivers

Results associated with potential advertising drivers were generally high across the board. Four variables, in particular, had particularly strong scores: improvements associated with audience measurement; targeting of ads (as a media planning opportunity); the capacity to generate and qualify leads; and better response opportunities associated with interactivity. These findings are illustrated in figure 15.

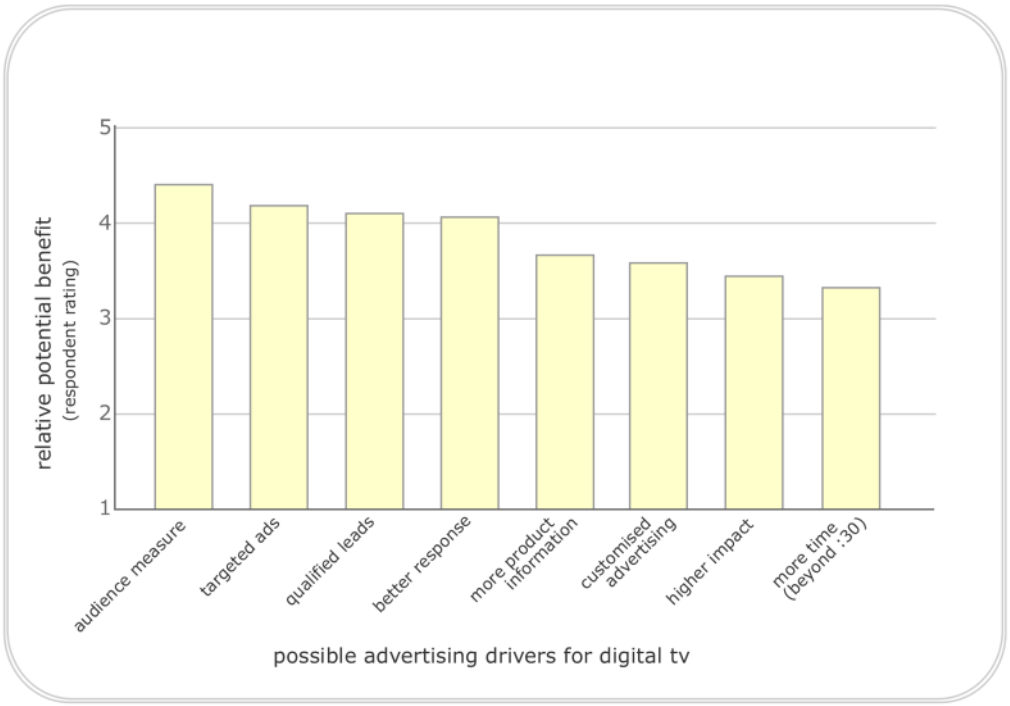

Figure 15: Advertising drivers

All sectors of the value chain other than the advertisers identified better audience measurement as the primary driver.

It is interesting to note that there was some variation across industry sectors in terms of the perceived benefits associated with the various options. All sectors of the value chain other than the advertisers identified better audience measurement as the primary driver. The advertising sector, however, identified better targeting of advertisements and the ability to produce more qualified leads as the two primary drivers of digital technology for the industry. This variation highlights a need to consult more closely with advertisers to get a better sense of their perceived value in digital television services.

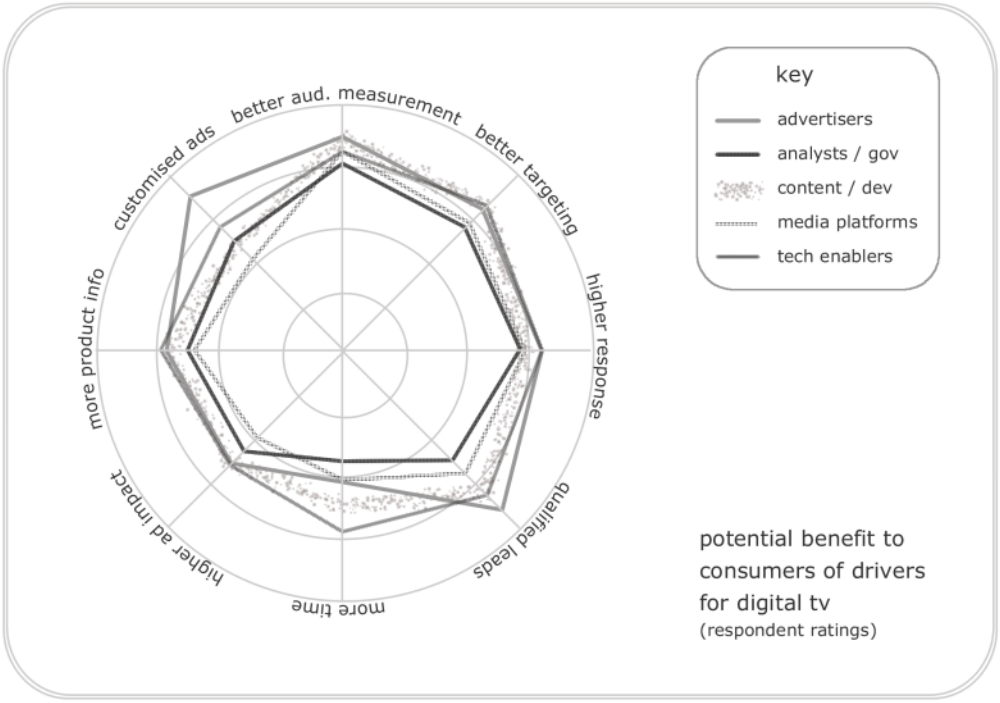

Figure 16: Advertising drivers (sector radar)

Although advertisers remain sceptical concerning the pace of adoption … those engaged with the medium believe in its potential and see strong opportunity in the migration to digital.

It is interesting — and somewhat surprising — to note that the advertisers were generally more positive concerning potential advertising benefits, as reflected in figure 17 which compares overall responses with those associated with the advertising sector. In most markets, media platforms tend to suffer from an inability to excite advertisers. The survey data suggests that although advertisers remain sceptical concerning the pace of adoption (as noted earlier), those engaged with the medium believe in its potential and see strong opportunity in the migration to digital.

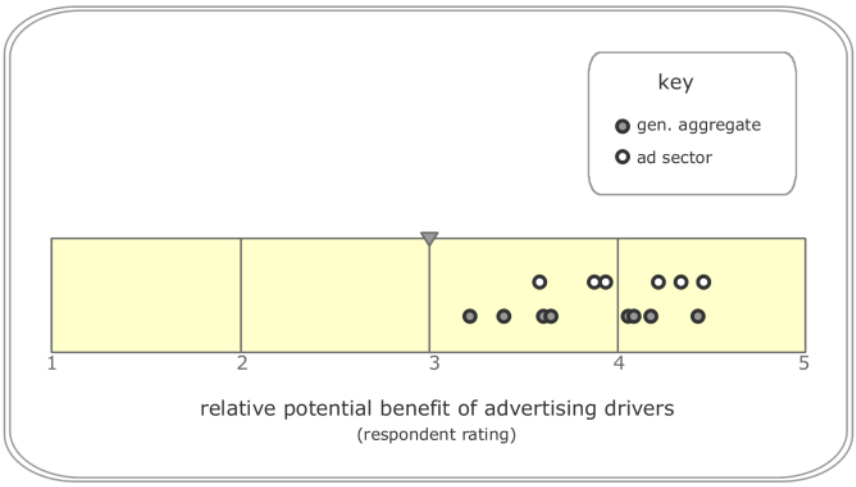

Figure 17: Advertising driver continuum (ad sector vs. general aggregate)

Drivers and inhibitors compared

The relative values of the different drivers and inhibitors have been aggregated in figure 18. This highlights the contributions of each relative to each other.

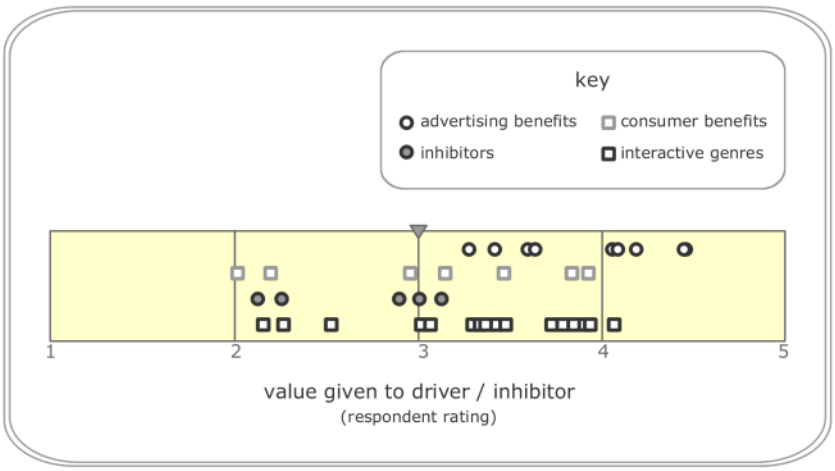

Figure 18: Driver and inhibitor comparison by continuum

These results can be reduced to three key indices: content, capability and advertising. A comparison of these three indices is provided in figure 19.

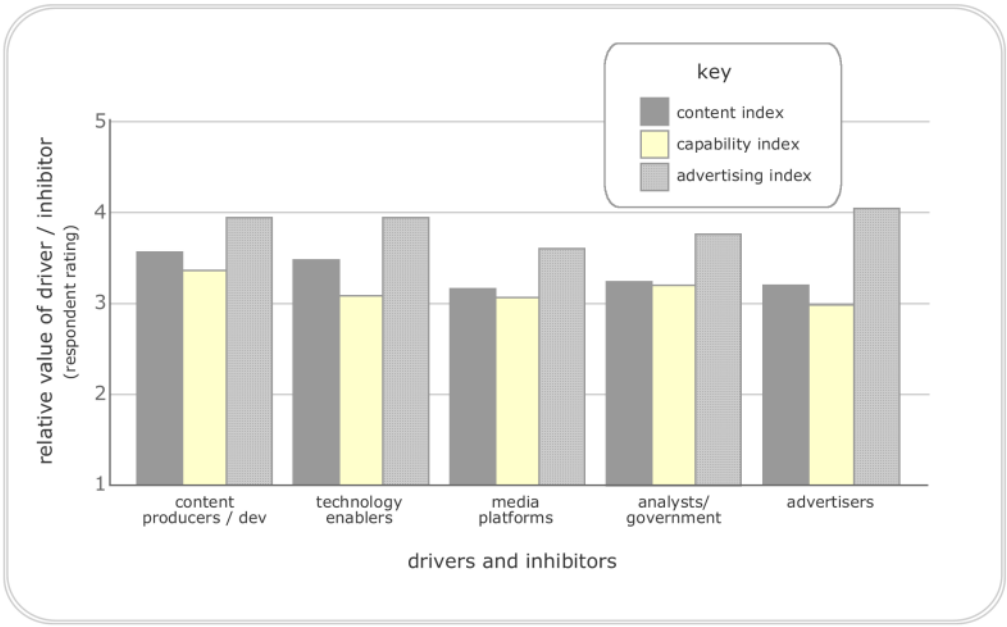

Figure 19: Comparative driver Indices (by sector)

As is evident across both illustrations, in relative terms, the opportunities associated with enhancing advertising present some of the strongest potential drivers for digitisation across the value chain. In terms of consumer benefits, interactive enhanced content — particularly among those genres identified earlier — provide the strongest benefits while multi-channelling and electronic program guides appear to be the strongest capability drivers.

Government assistance

An open-ended question towards the end of the survey asked respondents to identify areas where they would welcome government assistance. Responses have been coded into a series of categories, illustrated in figure 20.

It is particularly interesting to note although the strongest responses converge on a desire to see the government liberalise its existing rules, there is some support welcoming government policy in other areas. This suggests that respondents are not opposed to all forms of regulation — but rather highlights the degree to which survey participants see a need to focus such regulation on competition management and technical standards. Likewise, there is strong support for measures by the Government to help stimulate content production and research associated with the digital television industry.

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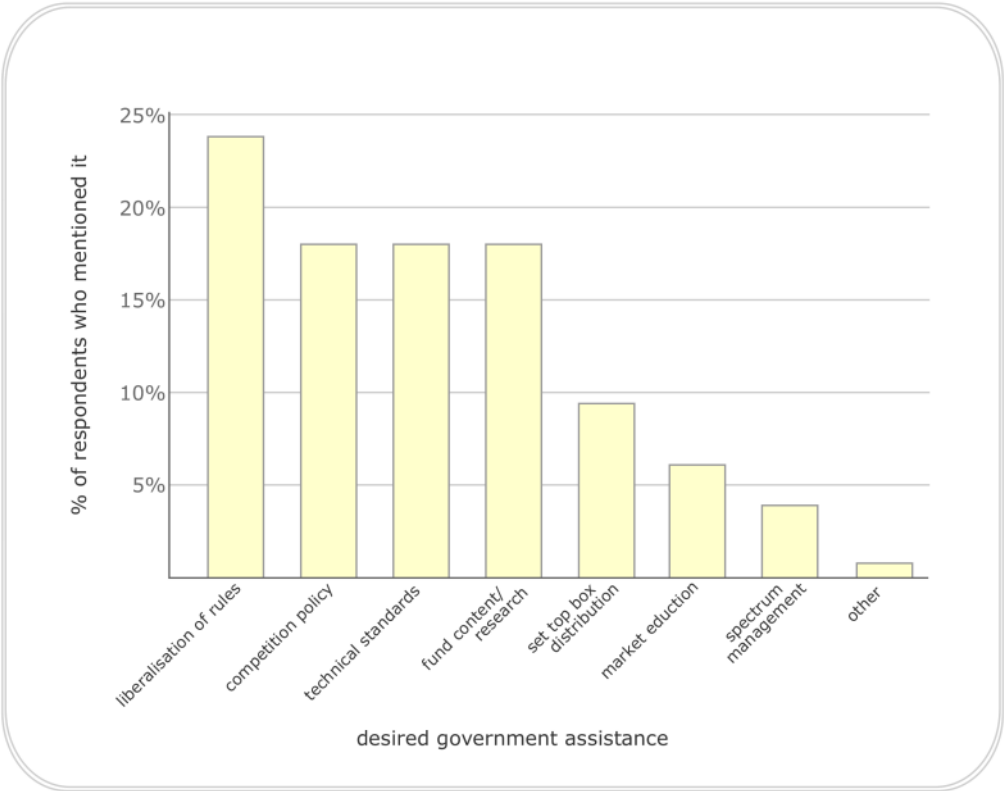

Figure 20: Desired Government assistance (open-ended)

Information needs

Respondents were also asked if there were areas in which they would welcome learning more — particularly through industry conferences. Figure 21 highlights the key subject areas identified by participants, as categorised by the Institute's research team. This information may be of particular use to the ABA in planning future policy conferences.

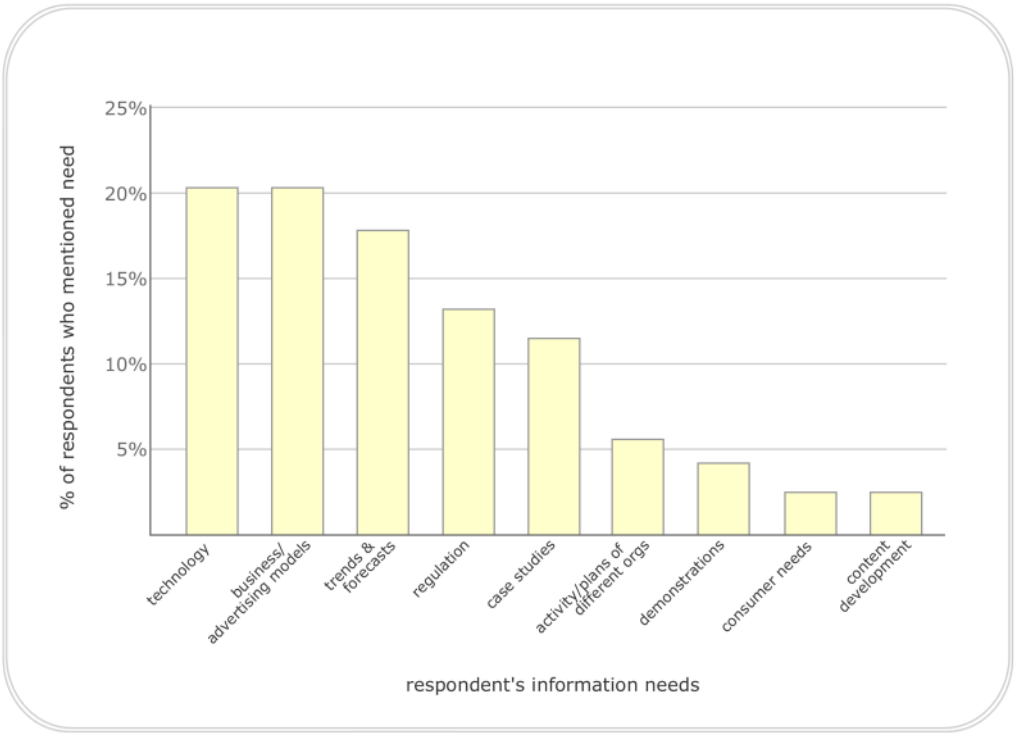

Figure 21: Respondent's information needs

Implications

Survey implications

Current Government target unrealistic

… there is a significant sentiment/policy gap between the legislative intent roughly associated with the Digital Conversion Act and current approaches.

The forecasts provided in this study do not provide a definitive prediction of the pace associated with digital conversion, but they do reflect general industry sentiment based on the digital trajectory in April 2002. As noted earlier in this report, there is a significant sentiment/policy gap between the legislative intent roughly associated with the *Television Broadcasting Services (Digital Conversion) Act of 1998* and current approaches. This suggests that the Government should either adopt a target which is more realistic or consider the types of changes necessary to the digital regime capable of accelerating digital migration. Certainly, there is little evidence in this report supporting the Government's earlier assumptions associated with digital drivers as both Australian datacasting and high definition television ranked among the weakest perceived consumer benefits. As a side note, should the Minister opt to alter the Digital Conversion time scheme, this will probably require some public consultation as stipulated in the Digital Conversion Act itself.

Need for regular industry-wide forum

The Australian media environment is dominated by a culture of suspicion

The hosting of a Delphi retreat as part of the initial stages of this study highlighted the critical need for regular forums where all components of the digital television value chain can come together to work through issues of mutual concern. The Australian media environment is dominated by a culture of suspicion with conspiracy theories spinning off from almost every initiative. The sheer complexity of the digital arena, however, cannot progress without significant regular collaboration between the industry's key players. Although there are forums where digital issues are addressed, such as Digital Broadcasting Australia and within Commercial Television Australia (CTVA), these tend to focus on particular sectors in the value chain and are not open to all players. Accordingly, there is a high need for a regular industry forum bringing together all sectors of the value chain. The Institute is eager to assist in this regard and is currently exploring financing options associated with continuing such activity.

Benefits to advertising fraternity

Although a number of platforms have provided response-based advertising solutions, much of the remaining potential associated with the medium remains largely untapped and under-developed.

It was somewhat surprising to note the extent to which potential benefits to advertisers was perceived as the strongest prospects associated with digital television. Although a number of platforms have provided response-based advertising solutions, much of the remaining potential associated with the medium remains largely untapped and under-developed. It was particularly interesting to note the sentiments of advertisers themselves were generally more positive than other sectors regarding digital television's potential, but generally considerably more sceptical concerning its penetration. This highlights the degree to which advertisers see this as a promising medium which will take some time to diffuse in Australia.

Capability drivers

… the key drivers introduced by Government to help stimulate digital conversion in Australia were among the weakest perceived consumer benefits

The study suggests that the key drivers introduced by Government to help stimulate digital conversion in Australia — namely high definition and the Australian variant on datacasting were among the weakest capabilities in terms of perceived consumer benefit despite strong recognition of the potential for digital to improve picture and sound quality. In contrast, key areas banned under the legislation, such as multi-channelling, fared significantly better as a consumer driver. The issues associated with multi-channelling are complex and transcend the confines of this survey. Such issues highlight the tension which often exists between revenue and consumer drivers. It is fair to conclude that in principle, industry respondents saw multi-channelling as delivering strong consumer benefits. But much debate continues about whether such multi-channelling provides an appropriate business model for commercial free-to-air broadcasters. The long term viability of any such solutions, therefore, will ultimately depend upon the extent to which broadcasters can identify effective business models for such services (or at least models which will not cannibalise their existing market share).

Content drivers

Perhaps the single most interesting implication associated with the survey is the need to focus greater attention on delivering compelling digital content.

Perhaps the single most interesting implication associated with the survey is the need to focus greater attention on delivering compelling digital content. The international experience to date is demonstrating that without such content, digital television cannot move — even with high penetration (recall that half of British interactive television users didn't use their interactive services until this past year when

compelling content finally arrived). Throughout the survey the need for compelling content continued to arise. A range of interactive enhanced television genres were identified as representing among the strongest consumer drivers for digital. At least three of these genres (interactive sports, game shows and children's television) scored better than either multi-channelling or the EPG. Clearly, the industry sees strong potential in at least some form of interactive content.

The lack of content also emerged as one of the two major inhibitors from among the specific inhibitors identified in the survey instrument. Providing funding and support for digital television content production ranked equal second in unprompted responses identifying areas for Government assistance. It is also interesting to note the extent to which content issues did not register high on initial unprompted identification of potential drivers — reflecting the extent to which, perhaps, the industry has not fully internalised its relative importance.

As BSkyB has delivered critical mass in the UK, a noticeable shift in content production has occurred away from platform and toward partner channels. Channels are better positioned to produce compelling enhanced television content. Furthermore, the multiplication associated with channels adopting such production greatly increases the overall availability of interactive content features. Without compelling content, digital cannot effectively grow because consumers adopt technologies because of what they enable — not for the sake of the technology itself.

Herein lies a dilemma for Australia. Without critical mass, channels and traditional television content producers have no incentive to invest in producing enhanced television programming. On the other hand, without such content, the medium cannot achieve critical mass. Hence, it is highly unlikely the such content will materialise of its own accord — something or someone has to stimulate it. The challenge is in getting the industry to the critical mass stage after which the industry can effectively start taking care of itself. Without a BSkyB to underwrite set-top-box distribution, how will critical mass arrive?

Herein lies a dilemma for Australia. Without critical mass, channels and traditional television content producers have no incentive to invest in producing enhanced television programming. On the other hand, without such content, the medium cannot achieve critical mass.

This highlights what is perhaps the Government's greatest opportunity to help stimulate the digital television industry in Australia. Government measures should focus on helping to stimulate content production — and the associated research which must accompany such production particularly as so little is known about the new medium and how to produce compelling content that resonates with viewers. By helping stimulate content production, the Government will not only help kick start the industry within Australia, by providing consumers with a clear and compelling reason to migrate to digital, but such endeavours will also help position Australian cultural industries for future export opportunities.

Although direct funding through grants provides one way in which the Government can help address such ambitions, there are a wide range of indirect measures which it can also explore. These might include, for example, the incorporation of digital television content in the Australian television content requirements or identifying digital television as a priority research area under existing national R&D initiatives as is currently feasible given the identification of frontier technologies as an Australian research priority.

Future research

The work initiated in this survey marks the beginning of a process that will hopefully be continued through future research. If measured across time, such measures can provide a regular barometer of industry sentiment and of the degree to which Australian digital conversion appears to be on track. Ideally, the scope of the study could also be expanded, providing international comparisons designed to help isolate issues inherent in the medium as opposed to those reflecting market structure or cultural influence. Despite its limitations, the study is a good start to future research in this arena. The long-term viability associated with continuing such research, however, depends heavily on whether future funding opportunities will enable the research to continue.

Conclusion

The digital migration of television in Australia stands at a critical juncture. Despite optimistic aspirations for conversion by 2008, industry sentiment suggests digital migration in Australia has a long way to go. This process can be accelerated, however, by focusing policy and strategic business objectives on both capability and content drivers which balance the interests of both consumers and industry. Some of these opportunities, such as multi-channelling, reflect conflicting interests between revenue and consumer drivers. There are other areas, such as stimulating new content production for example, which appear to deliver on both fronts. Clearly, however, this is an industry faced with a wide range of inhibiting factors - not the least of which has been Australia's fickle digital media policy. Despite current anxieties, however, it is reassuring to see promising horizons for the future. The survey respondent's saw clear potential in new advertising benefits, for example, enabled through the advent of digital television. It was particularly encouraging to note the degree to which the advertising fraternity itself saw greater potential for iTV ad applications that the rest of the sectors surveyed. This suggests that the advertising sector will most probably respond well to the digital future, once the medium delivers sufficient mass.

In the digital euphoria of the past, practical challenges associated with conversion were overlooked. Unrealistic expectations for the overnight transformation of the industry shaped the prevailing order of the day. Current sentiment better reflects the inherent birth pangs associated with the emergence of so nascent a medium. The industry is also now more patient, recognising that change will be evolutionary rather than revolutionary in pace. Despite such obstacles, the 63 organisations surveyed saw great promise in a digital future and seemed confident regarding its longer term prospects. For those who continue to engage with the sector, the immediate journey ahead offers little security. For the bold still willing to face their fears, however, the future is theirs to be written. We hope on-going surveys of this nature can help provide a forum for those engaged in the odyssey.

Appendix A

Organisations represented at Delphi retreat

ABC
Austar
Australian Broadcasting Authority (ABA)
Channel V
Digital Broadcasting Australia
Euro RSCG Advertising
Commercial Television Australia (CTVA)
Holotype
Massive Television
Ice Interactive
ITV World
Leo Burnett
Loose Canon
Multi Channel Network
Murdoch University
News Interactive
Nickelodeon
Nine Digital
Ntl Australia
Open TV
Optus Television
Sun Microsystems
Telstra
The Weather Channel
Whybin Lawrence TBWA
XYX Entertainment

Appendix B

Organisations represented in industry survey

Advertising fraternity

Batey Kazo
Bellamyhayden
Euro RSCG Partnership
FCB
Leo Burnett
Max Interactive
Multi Channel Network
Singleton Ogilvy & Mather
Starcom
Whybin Lawrence TBWA

Analysts / Government agencies

AC Nielsen
Accenture
Australian Broadcasting Authority
Australian Communications Authority
Australian Democrats
Broadcast Papers.Com
Department of Communications, Information Technology and the Arts
Digital Broadcasting Australia
freelancer.com
Gilbert Tobin Consultants
Interactive Answers
Internet.Com
Kazdan Market Share
KPMG Consulting Australia
Paul Budde
Strategies and Solutions
The University of Western Australia
Webb Consulting
Western Australian State Government

Content producers / developers

Emax Entertainment
FairFax Interactive
Holotype
Hoodlum Entertainment
ICE Interactive
itv world
Massive Interactive
NetHead
News Interactive
Southern Star Endemol
TV Interactive
TwoWay TV
victoriaReel

Platforms/channels

ABC
Austar
CTVA
Foxtel
Network Ten
Nine Network Australia
NTL
Optus
SBS
Seven Network Limited
The Weather Channel
WIN

Technology enablers

ADB
Ericsson
Fujitsu
Hewlett - Packard
JacobsRimell
Liberate
Matsushita
Microsoft
NDS
NDS
Open TV
Pisces Communication