ACA

Australian Consumers' Association
ACN 000 281 925

ID No. 1519

CHOICE Magazine
CHOICE Books
CHOICE Health Reader
CHOICE Travel
Computer CHOICE
Consuming Interest
MoneyCHOICE$

13 May 1999

Dr Julian Thomas
Inquiry Research Manager
Productivity Commission
Telstra Tower
Level 28, 35 Collins Street
Melbourne VIC 3000

Dear Julian

Further to our meeting on Tuesday 11 May 1999, our views are expressed in the attached material.

Thank you.

Yours sincerely,

Mara Bún
Manager, Policy and Public Affairs

57 Carrington Road, Marrickville NSW 2204 • Telephone (02) 9577 3333 • Fax (02) 9577 3377
email ausconsumer@choice.com.au

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2 June 1998

Senator the Hon Kay Patterson
Chairman
Senate Environment, Recreation, Communications and the Arts
Legislation Committee
Parliament House
CANBERRA ACT 2600

Via facsimile: **02 6277 5818**

Dear Senator Patterson,

Thank you for the opportunity to make a submission to the Senate Committee's inquiry into the *Television Broadcasting Services (Digital Conversion)* and *Datacasting Charge (Imposition) Bills 1998*. The Australia Consumers' Association takes an interest in digital conversion through its publications and advocacy work. Digital spectrum allocation, Internet access and performance, and new technologies in financial services have been reviewed in CHOICE Magazine and our home technology magazine, Computer CHOICE. Relevant speeches and articles are attached to this submission.

This submission highlights concerns about allocation of digital spectrum from a consumer point of view. As noted in the attachments provided, the Australian Consumers' Association seeks to maximise both diversity of players and diversity of services through spectrum allocation and broadcasting licensing.

We welcome digital conversion in broadcasting and support certainty for industry investment consistent with the broad objective of diversity. However, we believe the Government's policy delivers too much market power to incumbent free to air broadcasters. This is especially the case given the focus on HDTV as the preferred platform, which we believe to be neither desirable nor sustainable.

The proposed policy is not desirable because in our view many consumers would prefer the choice of multiple free or subscription channels compared to HDTV. The policy is not sustainable because consumers will find HDTV equipment far too expensive for the foreseeable future (see attached articles from the peak US consumer organisation, Consumers' Union). Moreover, if the US experience is any indication, availability of HDTV content will be as much a limitation as low consumer penetration.

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email ausconsumer@choice.com.au

Indeed, reference to US policy development in the Australian context is of limited use. This is because free-to-air broadcasting in the US has declined dramatically (as noted in the attached speech), whereas Internet applications growth and computer hardware take-up is the highest in the world. Market power considerations differ greatly between the US and Australia.

The market power of free-to-air broadcasters under the proposed Australian regime has several important dimensions:

- Excessive market power results from the free allocation of spectrum which serves to minimise cost to income ratios for the beneficiaries – especially if multi channelling is extended once HDTV fails to take off.
- The absence of an open access regime and an open and uniform standard development framework will limit further effective competition.
- Free-to-air broadcasters have massive audiences enabling more highly leveraged entry into data and Internet services compared to other aspiring entrants into converging information markets.
- Participants in a multiplexing environment could range from existing broadcasters to telecommunications companies and financial institutions entering the vast on-line payments system environment.

Sadly, viewers could miss out on their preferred digital future.

- The proposed policy framework entrenches existing broadcasting players for the coming decade, at a time when consumers in other OECD countries are beginning to benefit from new entrants and services (see attachment highlighting the UK Government's digital TV policy framework which encourages the opposite).
- As Australian homes have limited access to broadband technologies, consumers would have benefited more from flexible and diverse digital free-to-air and subscription services in a multiplexing environment.
- Multiple channels could well be the greatest consumer preference for our digital future, but the public has not been asked about its preferences.
- Households in regional areas that currently have only the option of two free channels may prefer more viewing options as opposed to higher definition.

The digital television debate has significant public interest ramifications. A substantial amount of public revenue has been foregone with the Government's decision to give digital spectrum away for free. Yet Australia's public was hardly engaged in the debate.

Indeed, in our view Australian consumers have been misinformed about the affordability of HDTV sets and the existence of other set-top box alternatives. Our attached complaint to the Australian Association of National Advertisers highlights our concerns about the widely viewed advertisement for commercial television read by Bruce Gyngell. We believe the advertisement was misleading and deceptive in claiming that "For all Australians it will be free to air and affordable". The world's largest independent consumer magazine, the US based Consumer Reports, now claims manufacturers say the first HDTV sets will sell for US$6,000 and US$10,000. And if the price demand curve follows Japanese trends, as noted in our complaint to the AANA, HDTV sets will continue to be expensive for years to come, with very limited market penetration.

If HDTV fails to achieve high levels of consumer take-up, then it is vital that Australia's communication policy framework can make the necessary adjustments without exacerbating discrimination against aspiring technologies and market entrants.

If the objective of greater diversity of both services and service providers had been placed at the core of digital spectrum allocation, a very different policy direction would have been adopted. Since preserving the existing oligopoly of free to air broadcasters was instead the driving consideration, crucial safeguards are now required. These include:

- Making sure there is no ambiguity in definitions of services.
- Ensuring an open access regime.
- Defining ubiquitous, universal standards in an open and transparent fashion.
- Consumer involvement in standards development processes.
- A strong "use it or lose it" approach to spectrum allocation.
- Clear and reasonable benchmarks for conversion, with public reporting by regulator.
- New entrants to be given access to spectrum if clear and reasonable benchmarks for conversion are not met.

Spectrum is a valuable public resource. Australians trust their governments to manage public resources in the public interest. The proposed framework for digital spectrum allocation unfortunately appears designed to confer a private benefit to the detriment of open competition, innovation, and diversity of information services. Because the impact of the *Television Broadcasting Services (Digital Conversion) and Datacasting Charge (Imposition) Bills 1998* will be felt for decades to come, specific safeguards to minimise anti-competitive and restrictive practices must be developed and appropriately entrenched in legal instruments to make the best of a poor public policy decision.

We are also concerned with the provision for a review of convergence by the year 2000 without an understanding of the intention and scope of such a review. Does the review, for example, foreshadow changes to cross media ownership rules? These rules are of particular sensitivity to the Australian public and any changes must be the subject of legitimate and widespread public debate.

Concentration of market power in any industry is detrimental to consumers and the public interest. As Australia finds its preferred course in the information age, with rapidly changing consumer demand for video, data, and interactive services, restricted competition in information services hurts consumers especially hard. To deliver the best possible technologies and range of services to Australian consumers, controls must be introduced that minimise the damage from a poor decision and that deliver a more robust, consumer and innovation friendly, longer term opportunity.

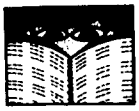
Thank you for the opportunity to provide this submission on behalf of the Australian Consumers' Association.

Yours faithfully,
AUSTRALIAN CONSUMERS ASSOCIATION

Mara Bún
Policy and Public Affairs Manager

mbun@choice.com.au

To have your say on digital television go to > www.choice.com.au



BEHIND THE NEWS

Digital TV: What's the real story?

With digital TV you can have a great picture on one channel, or a bigger choice of TV stations on the same single channel with essentially the same picture quality as you get now. Why didn't anyone bother to ask us which we'd prefer?

IN BRIEF

- **A digital TV signal can contain more information than current analogue signals, so there's the potential to broadcast much more information.**
- **The Federal Government has decided to go with a form of digital broadcasting that doesn't use its power in the best interests of consumers.**

YOU MAY HAVE SEEN THE FUTURISTIC TV ads announcing the advent of digital television in Australia, and heard that the Federal Government has effectively given free use of the spectrum exclusively to the current TV networks for at least a decade.

The ads weren't promoting digital TV in all its potential forms, but just HDTV (high-definition television), which is a new wide-screen format that transmits high-quality images and sound in the digital format, and is the form of digital TV that will be developed by the networks here. It's been compared to having a cinema in your lounge room, and if movies, sport, documentaries and current affairs are transformed into this format, you should get a great picture.

However, it comes at a price. For broadcasters the cost of converting their equipment will be high. Some experts estimate that the cost to Australia's free-to-air TV stations (including the ABC and SBS, which are government-funded) could reach several hundred million dollars each, though others claim this is exaggerated.

High costs for consumers

The cost for consumers will also be high, especially until the technology becomes more mature.

The US consumer market is useful as a reference point, as it's slightly ahead of our debate and has such a massive market size. Our sister organisation in the US, Consumers Union, estimates that the first large wide-screen HDTV sets are likely to cost well over A$3000 (as does the Federal Government).

Will consumers be willing to pay this kind of money for new TV sets when they can still receive programs on their analogue models? (In Australia the networks have to simulcast in both digital and analogue format for at least eight years.) Consumers Union concluded that "it might take a decade or more before HDTV sets become as affordable as today's TV sets". If American consumers don't start buying HDTVs soon, our prices will also remain high.

There's another way to receive digital programs — on an analogue TV with a so-called 'set-top box' that converts the signal. However, this doesn't give you the high-quality picture and sound you'd get with an HDTV set (although it should eliminate 'ghosting').

There's more to it than a great picture

What the TV ads haven't been telling you is that there are alternatives for using digital television beyond HDTV. Instead of giving you just one channel with great picture and sound quality, one digital TV channel could be divided into as many as six TV stations (called 'multi-channelling'), each of which would give you at least the same picture quality as the current analogue TV system.

This is because HDTV takes up most of the new digital broadcasting signal, whereas if we used digital resources to produce conventional-quality broadcasting we'd get more channels than under the current system.

Some people might be more interested in having more channels and programs to choose from than in having higher-quality pictures and sound. You might prefer greater selection and variety without having to buy an expensive new TV. You'd just need your existing TV and a set-top box to let you receive the new channels.

Another advantage of multi-channelling is that the six stations could be operated by different broadcasters, which would provide greater diversity. Under the current set-up, each network will have to broadcast a minimum level (still to be decided) of HDTV programs, and won't be able to use the digital spectrum for multi-channelling. So there'll be little diversity of either ownership or programming.

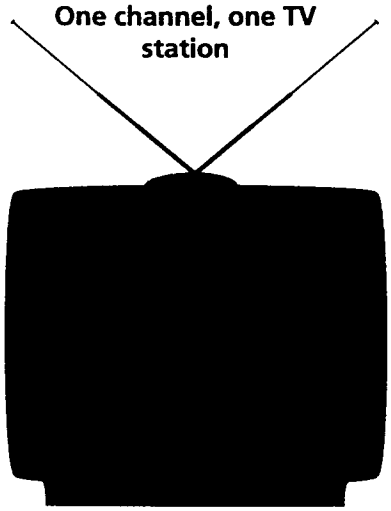
More than just TV

Digital broadcasting is not only powerful, it's flexible enough to combine broadcasting images with Internet access.

If you're interested in using the Internet but don't have a computer, digital broadcasting means you could get access to it using your current TV set and the same set-top box, which can deliver data as well as programs. If you want 'interactive' ability — to

Now: analogue

One channel, one TV station



send data back as well as receive it — you'll use your phone line.

All of this combined with a greater variety of TV programming makes the potential of digital TV apparent:

- In the future our children could use interactive digital services for educational purposes.
- We could do our banking through our televisions.
- Electronic shopping, which once required a computer, might arrive in our lounge rooms through our TV.
- In years to come even the newspaper might arrive on the TV for many households.

But there's great uncertainty about the cost of delivering these services, as well as whether consumers actually want them.

The diversity of services that could be available through this technology — from HDTV to multiple channels and Internet services — is matched by the diversity of Australian consumers' needs. Our emerging and varied demands for new services need to be met by a growing variety of suppliers — which is not the situation the Federal Government has created with its effective handover of the digital spectrum to the current TV networks in its crucial early years.

Consumers should choose

The commercial broadcasters' argument for getting exclusive access to digital broadcasting was that conversion and simulcasting are expensive, so they should get exclusive rights for at least 10 years.

Taking the opposing view, CHOICE supports a wide diversity of digital television services, and we'd like to see as many new providers of these services as possible. As Australia experiences rapid technological evolution, it's more important than ever to maintain truly competitive markets.

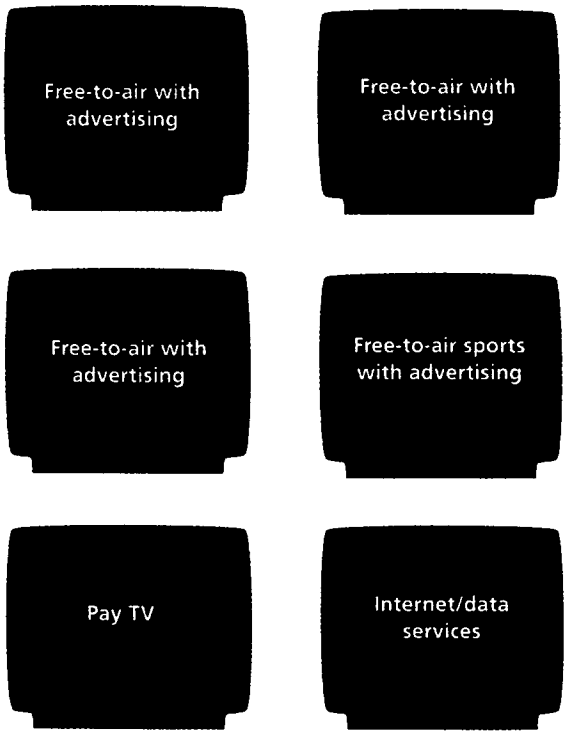
The approach taken by the Federal Government doesn't make for sound public policy and doesn't deliver the maximum consumer benefit. It might provide strong incentives for the production of HDTV, but if you're the kind of consumer who would prefer other digital services or more channels without the cost of an expensive new high-tech TV, it's not necessarily a good deal for you.

We think the government should have asked for your views before making its decision. ❑

The future: digital

EITHER: One channel, one TV station (commercial, pay or public), very high-quality picture and sound

OR: One channel, up to six TV stations. For example:



Each broadcast has similar picture quality to now.

What about the ABC and SBS?

Our public broadcasters, the ABC and SBS, are an especially important case when it comes to digital TV opportunities. CHOICE thinks they should be funded so they can develop and deliver the maximum possible range of services, including HDTV, multiple channels and Internet services. The Government is currently examining their requirements.

The ABC has world-class radio, TV and Internet material, and to balance powerful commercial media interests its presence is needed throughout our digital TV future.

CHOICE

MEDIA RELEASE

EMBARGOED UNTIL TUESDAY, MAY 19, 1998

DIGITAL TV DECISION IGNORES CONSUMERS, SAYS CHOICE

Instead of asking consumers what they wanted, the Federal Government has decided on a digital TV format that could prove costly for consumers and isn't in their best interest, according to the May issue of CHOICE magazine.

"The approach taken by the Federal Government doesn't make for sound public policy and doesn't deliver the maximum consumer benefit," says CHOICE.

Digital TV could use a digital signal to produce high-definition television (HDTV) with very high-quality picture and sound onjust one channel, or 'multi-channelling' to provide up to six TV stations, giving a greater range of viewing choices at the current level of picture quality. Each of these channels could be operated by different broadcasters for greater diversity of programming.

HDTV will be expensive for consumers: the first large wide-screen HDTV sets are likely to cost well over $3000, according to overseas estimates (and the Federal Government). There's another way to receive digital programs — on an existing TV set with a 'set-top box' that ocnverts the signal. While this doesn't give you the high-quality picture and sound you'd get with an HDTV set, set-top boxes are likely to cost only a few hundred dollars.

Digital broadcasting is flexible enough to allow Internet access as well as TV broadcasts, and can be obtained using current TV sets and the same set-top box.

This diversity of alternative formats for digital TV services is matched by the diversity of Australian consumers' needs, says CHOICE. The Government's decision to hand over the digital spectrum to the existing commercial networks for several years effectively locks out competitors, denying consumers access to a wide range of programming. "Our emerging and varied demands for new services need to be met by a growing variety of suppliers which is not the situation the Federal Government has created with its effective handover of the digital spectrum to the current TV networks in its crucial early years," says CHOICE.

If you're a consumer who would prefer other digital services, such as Internet access or more channels, without the cost of an expensive new high definition TV, it's not necessarily a good deal for you, adds CHOICE.

CHOICE also calls for a commitment to long-term funding for the public broadcasters, the ABC and SBS, so they can deliver the maximum possible range of services including HDTV, multiple channels and Internet services.

May CHOICE also looks at how people can slip between the cracks in the American-style two-tiered health system that some fear is coming to Australia, and asks whether life insurance companies should be able to see how risky a prospect you are by checking your genetic tests.

SUPPLEMENT TO MAY 1998 ISSUE OF CHOICE, EMBARGOED UNTIL TUESDAY, MAY 19, 1998

If you would like a personal interview or further information, please phone our switchboard on (02) 9577 3333.

30 March 1998

Ms Mara Bun
Policy and Public Affairs Manager
Australian Consumers' Association
57 Carrington Road
Marrickville NSW 2204

Dear Ms Bun

We refer to your letter dated 26 March 1998 to the Advertising Claims Board regarding an advertisement for high definition television.

AANA has focussed its resources on establishing the Advertising Standards Board first because most complaints from the public concern issues of taste and decency of advertisements and this is the body which deals with those complaints.

The Advertising Standards Board has been receiving complaints since early January. The Board has held two meetings to consider complaints and plans to hold further meetings approximately monthly throughout the year.

AANA plans to establish the Advertising Claims Board within the next few months.

Any complaints which are received about the truth or accuracy of advertisements, are referred to the advertiser and if appropriate, to the publisher or broadcaster. The complainant is also notified of relevant government bodies from whom she or he may wish to seek further assistance.

Please let us know if you wish us to refer your complaint in this way.

Yours sincerely

Helen Fraser
Executive Administrator
Advertising Standards

AANA
Australian Association of National Advertisers
Suite 2, Level 5
99 Elizabeth Street
Sydney, NSW 2000
Telephone (02) 9221 8088
Facsimile (02) 9221 8077
A.C.N. 003 179 673

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26 March 1998

The Chair
Advertising Claims Board

via facsimile: ***02 9233 8868***

Dear Sir/Madam,

HDTV Advertisement

We would like to lodge a complaint in the public interest against commercial broadcasters, Channels 7, 9, and 10, with respect to the widely distributed advertisement for high definition television. This advertisement was broadcast before any formal decision was taken by the government, and appears to be a lobbying effort rather than a truthful promotion of HDTV to consumers.

Background

The advertisement which is subject of this complaint has been shown to Australian viewers during March 1998, preceding the Commonwealth Governments decision about allocation of digital spectrum. The segment was published in a substantial section of Australia and draws the attention of the public to high definition television in a manner calculated to promote that product.

There has been substantial public debate about digital television in OECD countries, but until recently the Australian debate has been limited. It is a complex topic, with many aspects which are relevant to Australian consumers, and the potential to mislead is therefore significant.

The advertising misleads consumers by implying that the major development around the world in television is high definition television. In reality the major development is the gradual introduction of digital broadcasting which offers a range of services, of which HDTV is simply one alternative which has shown signs of weak take-up in some markets.

The advertisement fundamentally misleads consumers about the affordability of HDTV units.

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email ausconsumer@choice.com.au

In our view, the advertisement has not been "prepared with a sense of obligation to the consumer and society", in that it presents HDTV as the only future alternative for digital broadcasting. Also the advertisement lacks "a fair sense of responsibility to competitors", by misleading consumers about the nature of HDTV and the fact that there are alternatives.

HDTV is not happening *right now all around the world* - many other alternatives are being explored. For each HDTV channel consumers could otherwise have the options of up to six free to air stations ("multi-channelling"); pay TV stations; or "datacasting". These services could be combined and accessed through the use of a set top converter box, a response to available digital spectrum which competes with HDTV.

In the UK, for example, the HDTV option has not been emphasised, and an emphasis has instead been placed on other new technologies and services, as outlined in the Fairfax submission on digital television (available on Http://www.fairfax.com.au/submission/5.html#33).

For further context, please see on-line papers from a seminar dedicated to the digital spectrum debate, hosted by Professor Mark Armstrong through RMIT on 9 February 1998. This seminar presented the views of broadcasters, internet service providers, academics, regulators as well as the Australian Consumers' Association. Full transcripts are available on the internet at:
http://www.mtpg.rmit.edu.au/public/publications/digtv/frpag.html

The advertisement does not comply with the AANA Advertiser Code of Ethics in our view. Our complaint is pursuant to the following introductory comments and elements of the Code.

"The object of this Code is to ensure that advertisements are legal, decent, honest and truthful, and that they have been prepared with a sense of obligation to the consumer and society and a fair sense of responsibility to competitors."

"In this Code, the term 'advertisement' shall mean matter which is published in all of Australia or in a substantial section of Australia for payment or other valuable consideration and which draws the attention of the public, or a segment of it, to a product, service, person, organisation or line of conduct in a manner calculated to promote or oppose directly or indirectly that product, service, person, organisation or line of conduct."

"1.2 Advertisements shall not be misleading or deceptive or be likely to mislead or deceive."

"1.3 Advertisements shall not contain a misrepresentation which is likely to cause damage to the business or goodwill of a competitor."

/.....

The text of the advertisement is as follows:

Gyngell:	Good evening and welcome to television. Over 40 years ago I had the pleasure of launching Australian television. Since then we've seen some amazing advances, but the most remarkable change is happening right now all around the world. Wide screen cinema quality high definition television. The clearest, sharpest picture and sound I've ever experienced.
Voiceover:	Now is the time for Australia to decide to take the next big step ..... from black and white, to the revolution of colour, to the astounding brilliance of digital high definition television.
Gyngell:	And for Australians it will be free to air and affordable.
Voiceover:	You deserve the best as we start a new century. Digital high definition television.

We wish to complain about the following statement.

"And for Australians it will be free to air and affordable."

This statement is misleading in that it does not disclose the need for consumers to purchase special digital televisions in order to receive HDTV broadcast signals in their homes. This is a matter of great debate in the US, where the prices of new HDTV sets are likely to be considerably higher than conventional wide screen televisions.

The US consumer market is useful as a reference point, since they are slightly ahead of our debate and have such a massive market size. Our sister organisation in the US, Consumers Union, the world's largest and oldest consumer association with a subscriber base of more than 5 million, estimates that the first televisions are likely to cost over A$3,300[1].

[1] Consumer Reports 3/97, p. 52 - "the first HDTV sets are likely to be big-screen models that cost about $1,500 more than sets of comparable size cost today." and p. 52 "the [big screen] models we rate in this report range in price from $550 to $1,000." So - US$775 average current price plus US$1,500 = US$2,275 @ $0.68 exchange rate = $3346.

/.....

A comparative evaluation of big screen (32 inch) conventional televisions was conducted in Consumer Reports Magazine, published by Consumers Union, in March 1997. This article also advises US consumers on HDTV. Consumer Reports concludes, "it may be a decade or more before HDTV sets become as affordable as today's TV sets in sizes up to 32 inches."[2]

The headline of the "technology watch" page of Consumer Reports in October of 1997 reads **"HDTV: DON'T CHANGE YOUR TV-BUYING PLANS"**[3]. The story states that:

- Price estimates for HDTV are rising.
- Early on, the first HDTV sets were expected to sell at US$1,000 to US$2,000 more than top-of-line 30- to 32-inch sets, which currently sell for about US$1,600.
- Now, manufacturers say the first HDTV sets, due out next year, will sell for US$6,000 to US$10,000.[4]

To put the affordability of HDTV into perspective, consumer organisations are anticipating the cost to consumers in the US to be as high as AU$14,925.

Elaborating on the poor value for money of HDTV, Consumers Union comments that "Programming plans are fuzzy" and "Converter boxes are coming." Using a converter box which can cost as little as US$200 will allow US consumers to receiver digital broadcasting signals without buying an expensive HDTV set.

Other experts agree the price looks to be very high. A Channel 10 news story on 13 March 1998 about digital television put the price as high as A$10,000. According to a Wall Street Journal article published on 12 September 1997, "it is likely that HDTV sets will cost $3,000 and $7,000 more than a conventional set"[5] (figures quoted in US dollars - Australian dollar equivalent range is between $4,478 and $10,448).

In Japan, the average cost of an HDTV set is $AUS6,000[6]. Out of the 11.5 million TV sets sold in Japan last year, only 210,000 were HDTV.[7] Most Japanese consumers have clearly decided that HDTV is *not* affordable - and many Australian consumers will also discover in the next two years that HDTV is out of reach.

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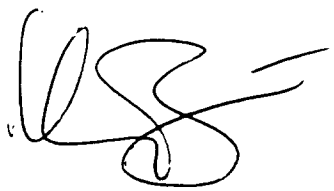
[2] Consumer Reports, March 1997, p.52.
[3] Consumer Reports, October 1997, p.6.
[4] Ibid.
[5] Fairfax Digital Television Submission - available at http://www.fairfax.com.au/submission/5.html#33.
[6] EMC Technology Forecast 1998, Price Waterhouse p 50.
[7] The Australian p2 26 March 1998.

In 1996, 85% of Australia's 6,858,500 households owned at least one television set.[8] Before the current analogue service is cut off in 2008 (depending on future review, of course), every one of these households will face an important decision on how to upgrade to digital television. Some may choose to purchase a set-top converter and continue to watch television on their analogue sets, taking advantage of non HDTV services, but not enjoy the picture quality benefits of HDTV. Others may wait and hope that prices come down on HDTV equipment. Those who are optimistic about HDTV services and can spare $7,000 or more on an HDTV set may purchase early. If every household in Australia that already has TV were to purchase an HDTV set at, say an average price over the ten year transitional period of $4,000, then the total cost to consumers would be $23,318,900,000. Whatever the final figure implied by the level of HDTV market penetration, this multi-billion dollar capital investment expected of consumers cannot be described as "affordable".

Some argue price drops will occur as consumers purchase HDTV sets in greater volumes. The US market could initiate this demand pull given its size, in theory. However "a Price Waterhouse study of [US] TV buyers said they would be willing to spend only $150 more for a HD set."[9] No matter how you estimate the cost, it will be big, and unless consumers are willing to pay it, the transition towards high definition won't happen easily or cheaply.

The advertisement nonetheless states that, "for Australians it will be free to air and affordable". We ask the Board to consider in the public interest our complaint that the advertisement is misleading.

Yours faithfully,



Mara Bún
Policy and Public Affairs Manager
AUSTRALIAN CONSUMERS' ASSOCIATION

[8] Australian Bureau of Statistics, Statsite, Australia in Brief, http://www.abs.gov.au/websitedbs/...
[9] Fairfax Digital Television Submission - available at http://www.fairfax.com.au/submission/5.html#33.

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Australian Consumers' Association
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A Consumer Perspective on Managing the Transition

RMIT Seminar on Digital Television
February 1998

Ms Mara Bún
Manager
Policy and Public Affairs

MEDIA MONITORS

THE WEST AUSTRALIAN
Tuesday, 31 March 1998 Page: 44

Decision on digital TV based on narrow band

☐ This week's Guest@The West, STEVE HORROCKS, senior policy officer with the Australian Consumers' Association, asks "What is the price of digital television?"

Steve Horrocks: Review on digital TV was needed.

Guest @ the West

Steve Horrocks

THE Federal Government's decision on digital TV is a turning point in the history of Australian media policy.

Digital TV offers a rare opportunity to reshape the television industry to suit the needs of the 21st century.

But will the decision be seen as visionary or will we end up lumping it with a number of communications policy "fiascos" such as satellite, MDS (microwave) and pay-TV?

Already questions are being asked about the cost to consumers of the high definition TV (HDTV) sets. Despite the glitzy television ads claiming HDTV will be "affordable", the first HDTV sets could cost upwards of $3000.

Because of this high cost, most consumers are likely to choose the cheaper option of a set-top converter which could start from around $350. The converter will allow consumers to watch the digital transmission on their old analogue sets, although they will miss out on the superior quality of HDTV.

A full and open review into the issues facing Australian consumers, the industry and regulators would have provided a more informed basis for a decision. But this path was not chosen by the Federal Government. Instead, the Government relied on advice from the Australian Broadcasting Authority and informal lobbying from the television and communications industries.

There was plenty of time for a full review of our digital-TV options. Digital television is only starting to come on to the market overseas and we have no idea which of the competing systems will end up offering the best deal for consumers.

Such a review would have properly examined alternatives to HDTV such as a "multi-channelling" format which would have provided up to six channels for each HDTV channel. There has also been criticism over granting the current free-to-air broadcasters (FTAs) free access to the valuable broadcasting spectrum.

The FTAs argued they needed free spectrum because of the high cost of providing HDTV transmission infrastructure.

This line is similar to arguing that a developer should be given Kings Park to build a shopping centre — and the land should be free because shopping centres are very expensive to build.

There is a clear inconsistency in Government policy here. In another spectrum neighbourhood, the mobile telephone operators are expected to bid hundreds of millions of dollars in an auction for mobile spectrum. This money will go into the public purse to benefit all Australians.

But the icing on the cake for the FTAs is that they will not face competition from other channel operators until at least eight years after HDTV is introduced. The Government argues that the Australian television industry could be threatened if the existing networks had to battle a new competitor at the same time as investing in the transfer to digital broadcasting. So the FTAs win free spectrum and a ban on competition — why?

Apparently because the whole thing could send the FTA operators broke. But, if the technology is so expensive to introduce that commercial television networks need a leg-up, then we must question whether it is the right choice.

While the Government has ruled out digital TV being used for multi-channelling or pay-TV, the FTAs will be able to provide "datacasting" services. A datacasting service would be one where, for instance, *The West Australian* is downloaded into your TV set overnight so that you can read it on TV in the morning.

The datacasting services provided through the HDTV channels will be in a very strong market position. Other datacasters will not be able to integrate their services with the marketing power of television programming.

The Government's cross-media ownership rules will also be under pressure as services such as datacasting and television converge.

We hope future governments do not allow convergence of technologies to justify weakening the media ownership rules. They need to be strengthened to take account of convergence.

But the pressure will be great as the dominant players increase their stranglehold on the media through digital TV.

Digital television is a huge debate.

This is not just a debate about the difference between HDTV and multi channels, or about incumbents and new entrants. This is the beginning of many debates about market power in the information age: who actually controls it, from the point of view of both standards and content.

The problem is we so often begin the debate by looking at it from the wrong direction. We start by looking at the television set, and the computer, and asking ourselves:

- what is it capable of doing?
- how much money can I make from it?
- is it capable of generating a different kind of free-to-air advertising?
- has it opened the scope for greater subscription television?
- is it how we introduce online commerce and advertising?

We grapple with the problem from the point of view of *what's in it for us?* On the other hand, the interesting questions from the consumer's perspective are:

- what's in it for me?
- what do I currently do with this equipment?
- how much have I invested in existing appliances?
- are there longer term costs or risks?
- how might I like the services to change?
- what benefits are on offer?
- what kinds of price points would offer interesting openings for me to change my purchasing behaviour?
- what kinds of opportunity would make me change my behaviour?

Because America is a bit ahead of us in terms of this debate, I will read from the journal of our sister organisation, Consumers Union (CU). It is reasonably significant because it has a subscription base of over 5 million and they do, literally, influence markets because CU subscribers tend to be opinion leaders. Last year CU reviewed large screen TVs and devoted a section to HDTV: *Is it worthwhile waiting for HDTV or should you buy a 32" TV today? What should you consider?*

Here are some of the things our American colleagues are beginning to say.

> "Ignoring some other whiz-bang promises, the criteria for reviewing 32" analogue sets are all about key features. Not very sexy stuff, but basics like improved performance, the flesh-tone accuracy, the video noise reduction, the video input jack and how it works, what the versatility is in terms of opening screens, how things are made easier through remote control devices and so forth."

> "32" analogue sets got the 'big tick' because 'even the worst pictures on the tested sets were quite good'[1], and with prices as low as US$550, that's good value."

Should American consumers wait to buy a HDTV or buy a large screen set now?

> "The prospect of HDTV probably shouldn't deter you from buying now. It may be a decade or more before HDTV sets become as affordable as today's TV sets in sizes up to 32 inches. By that time, you'll probably have got your money's worth from a basic set you bought today."

For the market for HDTV to drive end-user prices down significantly, volume purchasing is needed in the near future. CU at least – America's biggest consumer organisation and the largest in the world – isn't counting on it.

In the UK which has emphasised the importance of data services, important questions are now being asked about the impact on consumers of design standards of set top boxes. Our sister UK organisation and publishers of Which? Magazine, the Consumers Association just completed research for the Dutch Agency for Energy and Environment (Novem).

CA found that set-top box receivers may have to be left on 24 hours so they can update control software, which means they would consume 16 times the energy requirement of a passive standby receiver. It may not sound like much, but they estimate that as a result:

> "When Britain switches to digital television this autumn, it will trigger a surge in power consumption that will eventually rise to 500 megawatts – the output of a new gas turbine power station."[2]

UK Household electricity bills will rise by an average of 15 pounds each year, or A$36.50, it is estimated, and since the consumer appears to have no control over how the set top box works or whether it must be left switched on, choice is likely to be limited. Consumers should be involved in standards setting.

The difference between size and high resolution performance needs closer evaluation in terms of the value placed on either by consumers. Obviously some people might be interested in size and others might be interested in resolution, and where you have to sit to get that benefit is a significant trade-off. HDTV will allow viewers to sit closer but is that the key factor, especially when home theatre sound can supplement a large screen analogue set at relatively low cost?

Manufacturers hope to use better picture quality to persuade more people to make the transition. It will however be some years before HDTV is available at mass-market prices. The first models are likely to cost US$1,500 more than the comparably sized sets on the market today[3] – which makes the transition at current prices a US$2,000 plus proposition, bearing in mind the value of the massive installed base of television in the US.

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1 Consumer Reports March 1997, p.51

2 "Wasted Watts - digital television will have hidden costs", New Scientist, 14/2/98.

3 Ibid, p52

Australian consumers are likely to experience pricing benefits here only as US consumer demand drives down prices in a mass market. There has been some talk in this seminar around DVD players and whether their popularity might speed up this transition, but bear in mind that current DVDs do not even support HDTV[4].

HDTV broadcasts and cable signals are not expected to become widespread until 2003.

Even after HDTVs' broadcasts are established, a television set you buy or own now will not become obsolete. Broadcasters will be required to run analogue programs for a long time. None of this is really new. It's provided as a bit of a reality check. This is a debate which will last several years into the future.

However, I think it's probably a good idea to ask ourselves what is the scope in terms of this new technology. What could it potentially offer? As we have heard today from so many different speakers, these technologies:

- could offer a lot,
- we are not quite sure how much of it is viable, and
- we're not sure how much of it is viable from an advertising point of view either.

The challenge is to look at current and future needs with the understanding that not all consumers are the same.

How different are consumers?

Well, we're beginning to learn a lot about this. We spun off our first technology magazine about a year and a half ago. It's called *Computer Choice*. It's getting on for 20,000 subscribers now and it targets home technology, so we're discovering who these buyers actually are. They have varied needs and relate to technology from entirely different perspectives. This is what Web-TV discovered pre Gates' investment; that is, if you advertise very heavily with the wrong message, targeted at the big markets, not many people will buy. This is the problem of taking the couch potatoes and trying to convince them that the Internet is really exciting.

New research is being conducted about home technology buyers, like the Forrester Research Group which tries to really understand how these customers stack up. They look at career buyers, family buyers and entertainment buyers. They segment them in terms of optimists and pessimists and, within each of these categories, they seek to understand how people with more disposable income will behave compared to those with less disposable income.

A range of diverse needs emerge from this analysis, and some needs must be met in terms of public goods. From this perspective, we have no difficulty whatsoever taking on board the UK perspective on digital television regulation to the extent that they actually took a deep breath and defined their policy objectives before they moved on to structure.

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[4] Ibid

The UK government approaches this issue with the following wider objectives:

- To provide the right climate for investment in new digital services including a clear, stable and effective regulatory structure.
- To promote choice for the viewer.
- To encourage the development of effective competition in all parts of the market in both services and infrastructure.
- To provide a framework which supports innovation in technology and services, including program services.
- To provide a framework which supports the government's objectives of ensuring plurality and diversity of ownership and control in the media.

So I think that here in Australia, that deep breath is probably worthwhile taking in the beginning of a debate that's this big.

There is a lot of talk about killer applications. It tends to revolve around sports and who has control of sports and how we get more of it, which people are willing to pay more, and how this changes our advertising demographic. Other questions might be: what are the killer applications of the future, and how might people be using technology in their homes in five or ten years' time, as opposed to five years ago and even today?

Everyone argues from the point of view of public interest and of course the public interest is a very powerful basis to start from. But at the end of the day we are arguing about the power of incumbents in times of changing and converging technologies.

We can look at media, broadcasting, computer software, telephones and the Internet. All of those are beginning to converge and there will be big winners. They have big names and of course they want to control two critical points: the access points, where the content is funnelled in to the receiver; and, the content itself.

How big is the HDTV market? Well, purely on the hardware side you can see how excited some American industries are because there are 220 million analogue television sets. If even 40% of these convert by the year 2000 at $US1,000 each, we're talking a $100 billion market. So this is very interesting stuff, especially when you throw in the potential market size for set-top boxes. Of course, this means we get thrilling advice from places like *Appliance Retailer* such as "The arrival of digital television can't come too soon for some CTV suppliers poised to make significant gains from this new technology."[5]

On the other hand *FamilyPC*, which is trying to pitch the opposite side of the equation from a convergence point of view, believes computer makers will have an easier time turning their hardware into televisions than television makers will have turning theirs into computers[6]. These are the stakes and they are quite big.

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5 Appliance Retailer, 10/97,p.62

6 FamilyPC Australia, 9/97, p.13

But it's the perspective of the big players that is of most interest. The *Harvard Business Review*, in an issue from the end of 1996, gathered 80 people together to talk about the future of information and technology. One of them was the Director for Sponsored Programming from Microsoft . This is what he says about Microsoft's vision of interactive marketing – Martin Levin, talking about how a corporate Web site is different to a marketing Web site[7]:

> A corporate Web site is different from a marketing Web site.
>
> Unlike a corporate Web site, the marketing site essentially is communication initiated by the marketer.
>
> Companies that want to keep up with the marketing-driven site have to put as much effort forward as a major daily newspaper. Frankly, most of them are unable to do it.
>
> For pure marketing, start thinking about where likely customers are already congregating on the Internet. They should ask themselves, 'Who is succeeding in building a network of content driven properties?' And then they should ask, 'How can we affiliate with that content?' One way – perhaps the best way for larger advertisers – is old-fashioned sponsorship.

This is very interesting in terms of Malcolm Long's comment earlier today about the guys who are sitting around, picking the cost per 1,000 viewers of TV advertising. It's also interesting in terms of how advertising might begin to converge.

Perhaps old-fashioned television advertising might be the best way for that affiliation to occur. "Think back to Mutual of Omaha's wild kingdom", suggests Martin Levin. "It is going to make sense in this new medium for advertisers to have direct equity investment in *show* content on the Internet, content that complements the advertisers' or sponsors' missions, products, or services."[8] The obvious reference to integrated data and broadcasting has major long term implications for online commerce, in terms of plurality of content and potential anti-trust problems, depending on market incentive structures.

Now in the context of that very complex debate, who should get a leg up?

I think that really is the question we are talking about here. What has happened in Australia makes an interesting comparison with the US. Clearly their cable television has been much more successful, and is much more entrenched – connected not just at the level of pay TV, but also at the level of local telephony.

We have difficulty looking at an analysis which says incumbent free-to-air broadcasters have a very difficult position to maintain.

In the US, in contrast to here, "the larger three American networks ..... have passed another milestone in their retreat from popularity", according to the Australian Broadcasting Authority[9].

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7 Harvard Business Review, 11–12/96, p.154
8 Ibid
9 Innovations, ABBA magazine, 9/97, p.19

There has been a severe drop in the US free-to-air market share over the last 15 years from 80% to 50%[10]. The US situation cannot be compared with the limited success that we have seen in pay television in Australia – which has only achieved a household penetration of 4.7%[11]. They are starting from a very, very different competitive environment and it is not hard to see why that might be the case. It's been quite difficult in terms of getting a return on that massive investment in technology on the pay television side.

So, the questions that ordinary consumers might like to see this kind of group asking, at this stage in the debate are:

- What will these new services look like?
- If we don't exactly know, then what are the possibilities for these new services?
- How do they compare with existing services in terms of price, distribution, and availability of content?
- How will they be delivered and what kind of impact would that have on an ordinary household?
- What are the risks that take-up will be slow, and the price therefore high, for people who do make the switch?
- What are the implications from a social policy point of view?
- Is there a risk that foreign ownership might grow as a result of back door entrance?

If, as others have suggested, Nine MSN goes into Web TV, will Microsoft be stopped by the foreign ownership rules? Equally, if as suggested the service is mostly text, will Nine be caught by cross media rules?[12] How should we pose those questions, given this convergent technology, and what is the best social return on a public asset? It is not just the financial return, which is potentially massive, it's a social return, that needs to be considered.

In terms of questions for regulatory process the questions are about the rules of the game and how flexible they can really be. Mark Armstrong has been asking the right questions. Today we have had a general debate about flexibility which touched on questions like shared access or slightly flexible bidding systems or joint ventures. Should we be a little more specific? Should we focus on a kind of environment that has a regular access regime in which you buy a certain amount of spectrum? You pay fairly for using a proportion of that, the rest you have to sell in a free market way. There are possible conditions governing that. What is so special about this spectrum that makes it different from others? Is it possible to split licences? Is this something we should be considering?

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10 Ibid

11 The Communications Environment, Australia 1998, Media and Telecommunications Policy Group@RMIT, 12/97 p.20.

12 See "Murdoch flexes his muscle", Australian Financial Review, 5/2/98, p.12.

Is it possible to have a diversity of service providers that are assured through some sort of a tendering system? Can the spectrum be combined? Are there going to be rules against that? Should we split the content from the infrastructure, creating a competitive access regime?

These are the obvious debating points and when you think about the impact of having an enormous amount of converging market power with this existing, and limited, resource then I think the question of the ABC, in particular, is just as big. Because to preserve an independent voice in the middle of all that, in a tightening budget environment, is going to cost a fortune. How is that actually going to happen or are they going to be left behind once all the hype is actually discussed?

In terms of a steady conversion I would argue that we need to start by defining the objectives. We need to say up front what the public policy objectives that should govern this debate are. Really they are ones that have to look through very, very far in to the future, so they have to be carefully balanced. We then need to have a very carefully organised and very balanced stakeholder discussion that brings all the parties together to the technical, financial, political, and cultural implications. I know that sounds very pie in the sky, but we have done that in Australia many times – in fact we did it for the post-1997 telecommunications regulations. Having been one of Senator Alston's experts who sat around with three others, with the department, with regulators and chewed through competition and consumer protection issues, I can say that it was very healthy. It may not have worked entirely right, but I think it was a step in the right direction.

Honest, public communication is required. We have had some pretty flippant discussions about this in the media, and that has been very hard to deal with. This is not an obscure technical debate. It is difficult to have this conversation, in the context of television, because it almost trivialises the nature of the debate, but consider it from this point of view. I have just come back from a discussion with the United Nations in Brazil where the discussion was about extending the consumer protection guidelines adopted by the UN in 1965, so that they would incorporate some modern comments.

All of the guidelines *call on governments* to do "x". And of course, we consumer advocates sit around saying, *What a silly thing!* We (meaning civil society broadly) cannot call just on a government in a globalising economy, when we know who actually controls power and resources. We have to manoeuvre so that the private sector engages in a debate. We have to inform the public so that it can push that debate forward. We need effective underpinning regulations but we can no longer call only on governments. And we need to influence both government and industry. In which case this discussion about digital television and who controls it is also about who has, in the longer term, the ability to really galvanise public opinion.

Let me finally say that this debate would be very different if we could all leave our bonuses behind and simply think about it from the point of view of our grandchildren. As they are sitting around in our living rooms, what do we want them to see? How do we want them to interact? How do we want them to learn? How do we want them to experience shopping? These are really the broad implications of something that is so much more complex than changing from black and white to colour.

Front Lines

TECHNOLOGY WATCH

HDTV: Don't change your TV-buying plans

If you've been holding your breath waiting for high-definition television sets, exhale. HDTV will replace today's sets with models offering wider, sharper images. But HDTV will arrive more slowly, cost much more, and may offer less programming than initially expected. In the market for a TV now? Don't be afraid to buy. Only people looking for a TV costing more than $2000 should consider delaying their plans. Here's why:

• **Price estimates for HDTV are rising.** Early on, the first HDTV sets were expected to sell at $1000 to $2000 more than top-of-the-line 30- to 32-inch sets, which currently sell for about $1600. Now, manufacturers say the first HDTV sets, due out next year, will sell for $6000 to $10,000.

• **Programming plans are fuzzy.** It's unclear how many HDTV signals will be available when the first sets hit the market. The federal government lent each television station, without charge, a second channel for digital broadcasts, of which HDTV is the highest-quality format. Consumers Union and other groups criticized this giveaway of publicly owned broadcast space, potentially worth billions of dollars. Broadcasters have been slow to commit to using these channels for HDTV; instead, they want to use them for other digital broadcasts whose resolution may not be significantly better than today's broadcasts. Cable stations are also vague about HDTV programming plans.

• **Converter boxes are coming.** These devices, which manufacturers say will cost $200 to $800, will turn HDTV broadcasts into signals your conventional TV can use. Converted HDTV signals are expected to be freer of static than current analog signals. But the boxes won't offer the high resolution of an HDTV set. Don't be fooled into buying a costly regular TV by promises that a converter will transform it into HDTV.

What should you buy in this pre-HDTV era? A set that costs no more than $2000, which includes models from 27 to 35 inches and some projection TVs. Many such sets have good picture quality and an S-video input, which supports a higher resolution and will make the most of those better signals.

In our March 1997 issue, we found high-quality 31- and 32-inch sets for $800 or less. We'll rate 27-inch sets in March 1998.

KIDS AND ADVERTISING

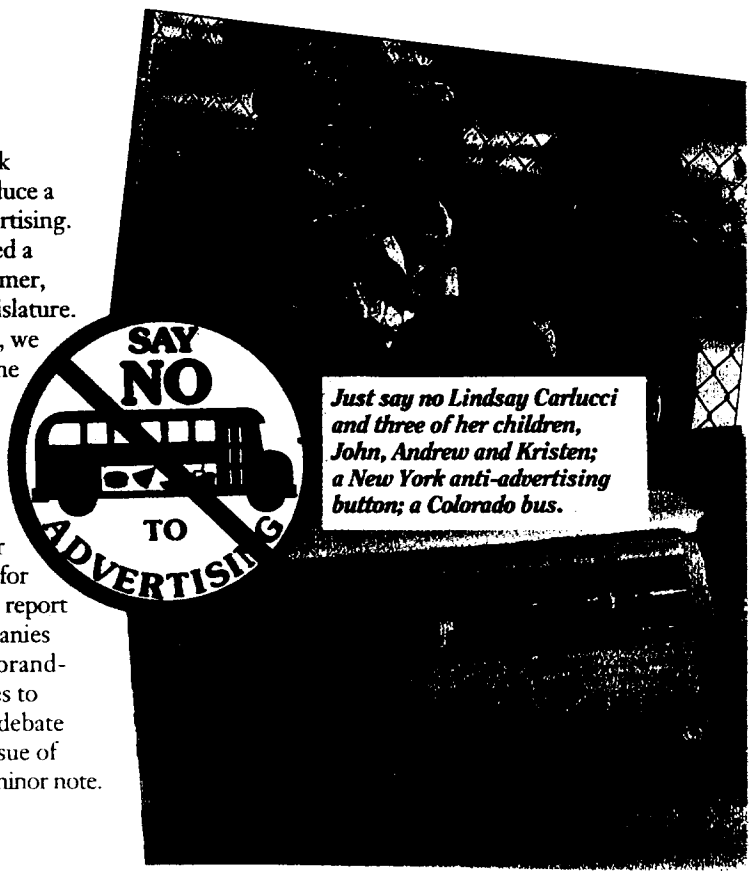
What's next: Burger King Elementary?

As students head back to school this year, an increasing number of the yellow buses that carry them will be carrying something else, too—ads touting everything from Pepsi to Volvos. Districts see ads as an easier way to raise money than hitting up taxpayers, and eight states now allow it: Alabama, Arizona, Colorado, Nevada, New Mexico, New York, Tennessee, and Texas (the issue is under review in Massachusetts and Minnesota).

Critics focus on safety risks. "You throw ads on the back and sides of school buses, and you take away the immediate identification," says Peter Mannella, executive director of the New York Association for Pupil Transportation, a group of school-transportation officials (no national study has been done to quantify the risk). In January, New York lawmakers plan to reintroduce a bill to ban school-bus advertising. Mannella's group supported a similar effort this past summer, but time ran out in the legislature.

Whatever the safety risk, we believe that school—and the ride to it—should be an advertising-free zone.

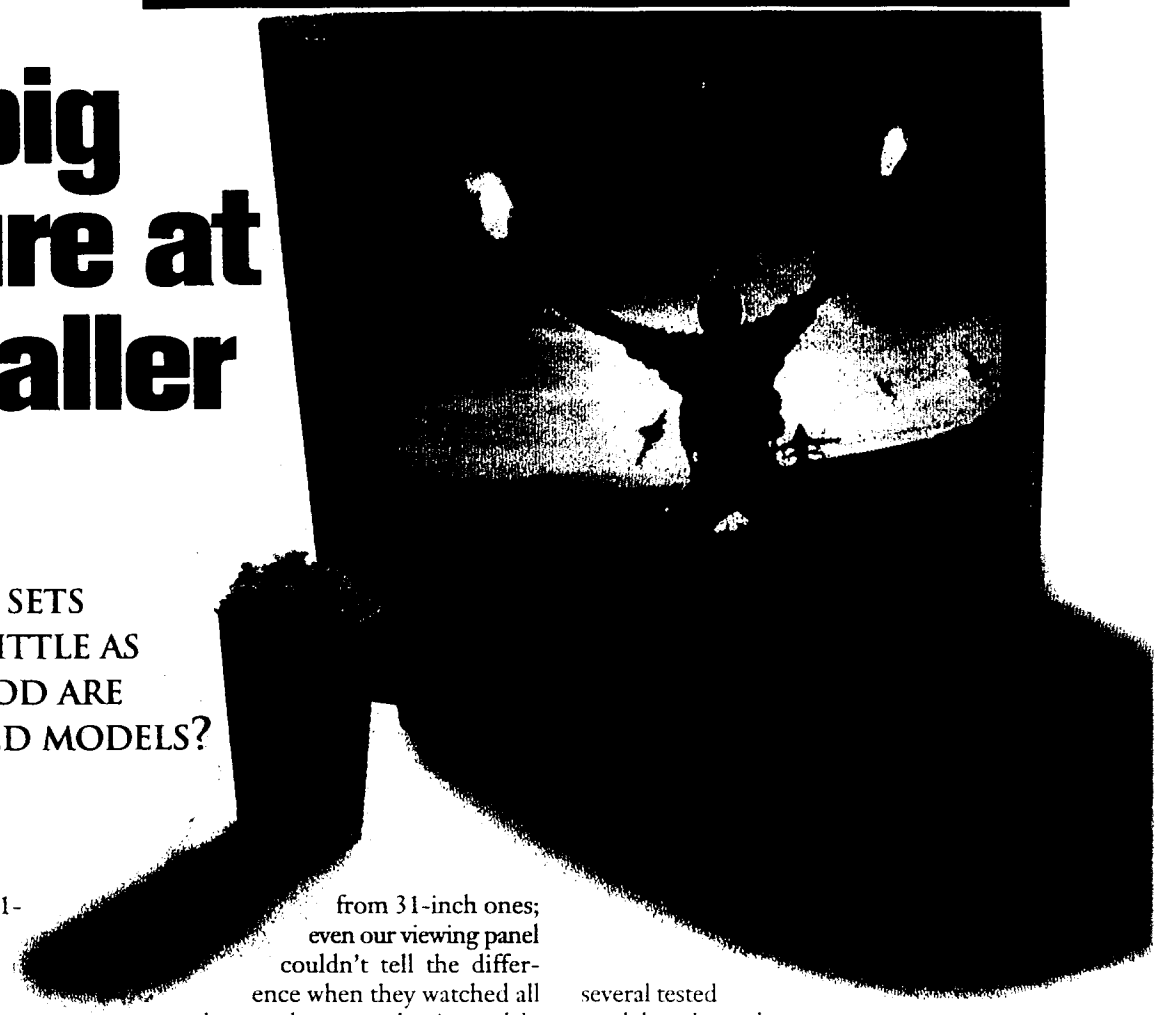
"School should be a sacred place for children," agrees Lindsay Carlucci, a PTA president and mother of four who supports a ban for New York. But as our 1995 report "Captive Kids" said, companies provide everything from brand-oriented curriculum guides to book covers. Sadly, in the debate over school-bus ads, the issue of commercialism has been a minor note.



Just say no Lindsay Carlucci and three of her children, John, Andrew and Kristen; a New York anti-advertising button; a Colorado bus.

The big picture at a smaller price

BIG-SCREEN TV SETS NOW COST AS LITTLE AS $550. HOW GOOD ARE THE LOW-PRICED MODELS?



When we tested 31- and 32-inch TV sets in 1993, they were still in the category of a big indulgence; prices averaged about $1200. Now, a basic 31- or 32-inch set costs around two-thirds what it did then; the models we rate in this report range in price from $550 to $1000.

You can spend more than $1500 for a 31- or 32-inch TV set, but doing so won't necessarily buy better performance. As the Ratings (page 54) show, you can buy a fine set with plenty of features for as little as $650. The performance of some rated models that cost $900 and more—and of a $1500 set we tested for comparison's sake—fell short of the best low-priced sets.

Our test results are one good reason to think basic if you're thinking of buying a big-screen TV set. Another is the approach of a whole new TV format, high-definition television, which is expected to replace the present TV technology eventually (see the box on page 52). Keep this development in mind if you're contemplating spending thousands on a TV set—as you can for a set with a screen size that's much larger than 32 inches.

Thirty-two-inch sets dominate the 31- and 32-inch category. It's virtually impossible to distinguish 32-inch sets from 31-inch ones; even our viewing panel couldn't tell the difference when they watched all the tested sets together in our lab.

Picture perfect?

Ideally, a 31- or 32-inch set should be viewed from about 10 feet away, to avoid distracting scan lines (see the box on page 53). Providing they are viewed at such a distance, the pictures on the best tested sets should look as good as those on the best smaller sets we've tested recently. Even the worst pictures on the tested sets were quite good; none was plagued by serious video problems, such as images that are markedly fuzzy or colors that are dramatically at odds with the original hues.

In fact, you might not notice any thing very wrong or unpleasant when watching any of these sets individually. But you'd easily notice a difference between the best and worst pictures were you to view the sets side-by-side—which is what our panelists did during testing in our lab.

The worst sets had such problems as slight color inaccuracies (especially apparent on flesh tones) and mushy contrast. With the best sets, picture flaws were more subtle. Some picture problems showed up only on certain images. For example, the pictures on several tested models showed noticeable distortion—straight lines were curved, and circles were turned into ovals. But the problem might become obvious only when the screen is displaying geometric shapes near the edge of the screen.

A handful of other models displayed an anomaly called "doming," the appearance of splotches of color when bright images are left on the screen for more than 10 seconds or so. Doming has become more noticeable as TV sets have grown in size and are being called upon to display a greater range of images; the problem is especially likely to show up when you watch black-and-white movies or any images with large blocks of bright white—including the grids for on-screen program listings or video games.

A stationary bright image left on

IN SHORT

If you're shopping for a big TV set, moderately priced 31- and 32-inch sets like those we tested are good values.

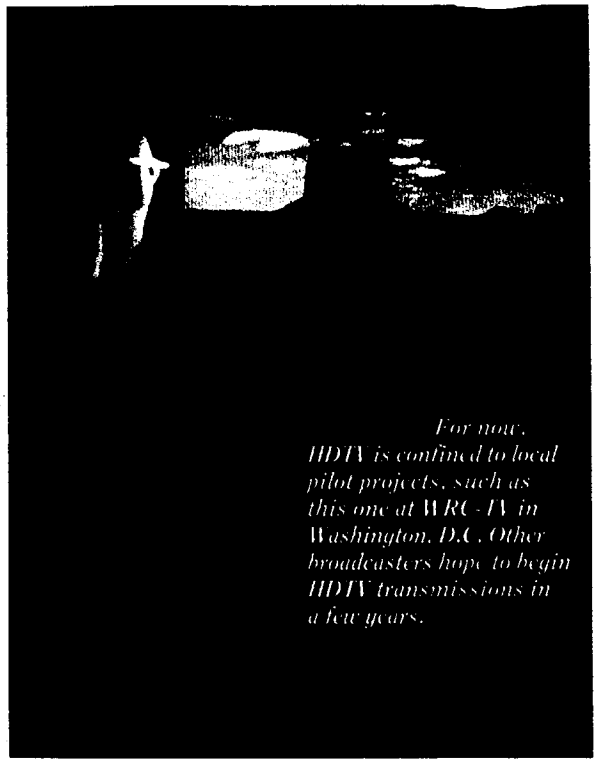
Today's TV sets won't become obsolete soon, even though new high-definition TV sets are due in stores within a few years (see box on page 52).

Most of these sets are fine choices for a home-theater setup. For more on home theater, see the reports on pages 56 and 58.

High-definition television sets
Is HDTV worth waiting for?

Late last year, the stroke of a pen began a process that will eventually turn today's TV sets into yesterday's television technology. Broadcast networks, electronics manufacturers, the computer industry, and others agreed on protocols to create North America's first high-definition television sets.

HDTV, the first completely new TV standard since the introduction of the medium in the 1940s, will allow a picture with finer visual detail and better color than with the National Television System Committee (NTSC) standard used with today's TV sets. HDTV sets will also have a wide screen (proportioned more like those in movie theaters), built-in surround sound, and digital signals that are much more immune to noise and static. The agreement will allow new sets to be compatible with personal computers, which may further meld the PC with the TV set and lead to the creation of some completely new kinds of entertainment/information devices.



For now, HDTV is confined to local pilot projects, such as this one at WRC-TV in Washington, D.C. Other broadcasters hope to begin HDTV transmissions in a few years.

Should you put off buying a TV set until the first HDTV models hit the market, supposedly in early 1999? Not unless a very big, very expensive set is what you have in mind. The first HDTV sets will be neither small nor cheap. Because the superior visual resolution of HDTV will allow viewers to sit closer to the set without being distracted by scan lines, manufacturers hope to use better picture quality to persuade more people with small living rooms to buy big TV sets.

It will be some years, however, before HDTV will be available at mass-market prices. The first HDTV sets are likely to be big-screen models that cost about $1500 more than sets of comparable size cost today. Initially, most of the broadcasts available to watch on HDTV sets probably will be in the NTSC format, which HDTV sets are expected to be able to receive. Since Congress has not yet even decided how to allocate the new channels that will be used for HDTV, and the equipment needed to broadcast on those channels is costly, HDTV broadcasts and cable signals aren't expected to become widespread until 2003.

The first way to receive HDTV signals may be via satellite-TV setups, which already use a digital format and so are more easily adapted to HDTV. Also, HDTV may eventually become available via the upcoming Digital Video Disc format, which will offer full-length movies on discs that resemble CD. But the first DVD players and discs, due out this year, won't be HDTV-compatible.

Even after HDTV is well established, a TV set you buy or own now won't become obsolete; broadcasters will continue to run NTSC programs for a long while.

The bottom line: If you are contemplating buying a TV set that costs thousands of dollars, HDTV may be worth the wait. If you have something more modest in mind—one of the sets we rate in this report, for example—the prospect of HDTV probably shouldn't deter you from buying now. It may be a decade or more before HDTV sets become as affordable as today's TV sets in sizes up to 32 inches. By that time, you'll probably have got your money's worth from a basic set you bought today.

the screen for a long time can also permanently "burn" the picture tube. Manufacturers can design tubes to prevent such damage. Unfortunately, in a notable step backward, Sanyo and Hitachi have eliminated picture-tube burn damage from their warranties for certain sets—including the models we tested. That doesn't necessarily mean those *Sanyo* and *Hitachi* sets are especially prone to burns, but if you plan to use a TV set for games and the like, you should definitely check the warranty before you buy a TV set from those brands.

A set's ability to tune in channels isn't a buying consideration if you receive your TV signals via a cable box or satellite-dish setup—both of which have their own built-in tuners. But if you plan to pipe cable signals directly into the set, you could get some adjacent-channel interference in the sets that scored lowest for cable performance. Antenna users who live far from TV broadcast towers should note that the *GE* set we tested displayed more visual noise than the other models on channels 2 through 13 when fed a weak, fringe-area signal.

And the sound?

TV sound quality, often limited by the poor quality of most sets' built-in speakers, isn't a key consideration if you are hooking up the set to other audio components (for more on such hookups, including a home-theater setup, see "Sound connections," page 56).

On sets this size, stereo is standard. With their built-in speakers, the audio fidelity of the tested models ranged from as good as you'd get with a good stereo minisystem to as tinny as a small clock radio. But a set's audio deficiencies probably won't matter much to you if you mostly watch talk programming, such as newscasts and sports events.

The sound from a TV set can often be improved by adjusting its bass and treble controls. In our experience, sets (including most we tested for this report) reproduce sound most accurately if the treble is turned up almost to the maximum and the bass is set to a little below the midpoint.

All the tested sets have audio output jacks that allow them to be connected directly to audio components for improved sound, including better stereo and surround effects. They also have

Photo by Katherine Lambert

audio *input* jacks, for direct connection from a VCR or camcorder, providing better sound than connecting with an antenna cable. The "Details on the models," page 54, highlight the sets whose array of jacks makes them particularly good choices as the heart of a home-theater setup. They also identify a few sets that are less suitable in that role because their audio signals provide less stereo separation than those of other models.

If you opt to use the built-in speakers, some sets enhance the listening experience with an electronically generated "ambience" effect that can create the impression of sound that's wider or that surrounds you somewhat.

Friendly remote

The tested sets all come with a universal remote, which can control other devices (a VCR, receiver, etc.) made by other manufacturers. The design of remotes has improved greatly over the years, and the controls for these models were all easy to use. Nonetheless, in a recent survey, many of our readers reported difficulty in using a remote—especially in reading the labels on its buttons. Before you buy any TV set, try out the remote. Make sure you like the layout of its controls, the legibility of its labels, and the structure of the on-screen menus.

Recommendations

Most of the tested models have a fine picture. Their sound quality varies, but all would sound better if connected to a good audio system. The best values are the top-rated *Zenith SY3272DT* and *Samsung TXC3135*, both $700, which had the best pictures of all, and the *Sharp 31H-X1000*, $650.

However, those three brands are among the many for which we lack the historical data to predict the reliability of their big-screen TV sets. But, like their smaller cousins, big-screen TV sets have been fairly reliable products overall. Even sets from Sony and RCA, two of the less reliable brands for 31- to 35-inch sets bought new since 1992 (see the Repair history on page 55), have required repair in less than 10 percent of cases.

Check the "Details on the models" in the Ratings for other attributes that make some sets better or worse choices for a specific use.

Turn page for Ratings

Illustration by Jared Schneidman

Key features *What to look for*

In sets of this size, a slew of features are universal, or nearly so (see the list in "Tests behind the Ratings," page 54). The features below are less widespread. The key numbers can help you find the models that have the features you want in the Ratings.

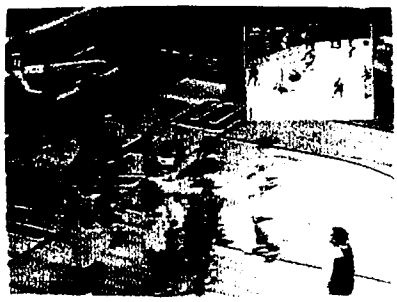
Improve performance

Flesh-tone correction. Can be set to automatically adjust skin tones that are too green or too red. **Found on:** 3, 6, 13, 14.

Video-noise reduction. Lowers picture-degrading noise. Useful if you often have reception problems. **Found on:** 6, 9,12.

S-video input jack. Lets you make the most of such sources as a high-band camcorder, satellite-TV system, and laserdisc player. If you own none of those components, you don't need this feature. **Found on:** All sets except 1, 8.

Increase versatility



Picture-in-picture. PIP lets you watch two channels at once, with one of them shown as a small image superimposed over the full-screen one. Unless the set has two tuners (these don't), you have to connect to the tuner in a VCR or a cable box that has a video output. About half our readers who have PIP said they didn't use it at all. **Found on:** All sets but 2, 6, 8, 12, 14.

Extended Data Services decoder. EDS is a system broadcasters can use to send on-screen channel information and program summaries. Few stations are transmitting EDS information so far, but that could change once more sets have the decoders. **Found on:** 3, 4, 11, 12.

Closed Captioning when muted. Automatically displays captions (for many programs and some commercials) when you mute the sound, so you won't miss the dialogue when you mute to answer the phone. (All sets have Closed Captioning that you can activate manually.) **Found on:** 5, 6, 7, 8.

Channel blockout. Lets you keep a child from watching certain channels. **Found on:** All but 2, 5, 8, 13, 14.

Make things easier

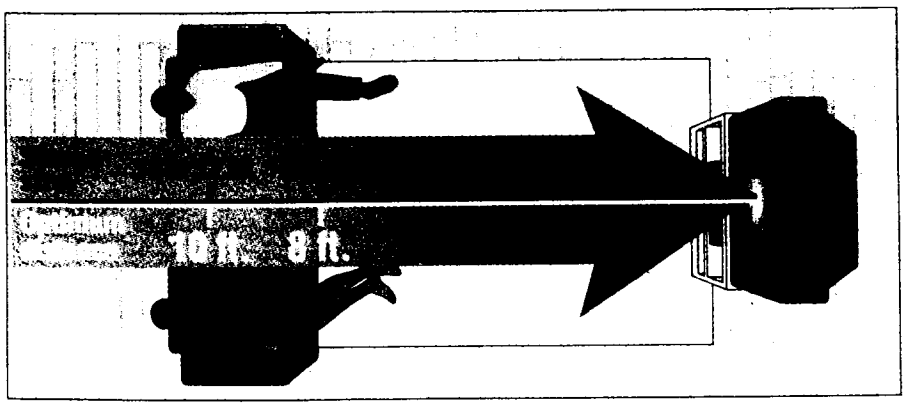
Auto code-entry remote. Instead of punching in a code for each device you want the universal remote to operate, the remote searches for the device's code. A marginal labor-saver. **Found on:** 1, 3, 5.

Automatic volume control. Compensates for the jump in audio volume that often comes with commercials or channel changes. **Found on:** 1, 5, 6, 7, 12.

Commercial skip-timer. Automatically returns to the original channel after a time period you've selected. **Found on:** 10, 13, 14.

Front audio/video input jacks. These make it easier and faster to plug in the cables from a video game or camcorder. **Found on:** 2, 3, 10.

How big a room for a big-screen set?



Sit too close to a TV screen and its scan lines may distract your viewing; sit too far away and you'll sacrifice some visual details. A 31- or 32-inch set is best viewed from about 10 feet away; a 25- or 27-inch set, from about 8 feet. Of course, you may also want to consider the appearance of the set itself; big-screen models can look very imposing.