

THE SATELLITE SYSTEM

The issues facing advertisers with the advent of Australia's National Communications Satellite System were the subject of a speech by the Secretary, Department of Communications, Mr R.B. Lansdown, to the annual seminar of Australian Association of National Advertisers, in Sydney on 2nd March, 1981. CLB reproduces that speech (with slight editing changes) for the better backgrounding of its subscribers.

Before I go into specific details of what a communications satellite system would mean for the Australian advertising industry, I would like to give some background on the system, proposed ownership and management plans for it, and the rationale behind developing such a system.

A national communications satellite system would have a profound impact on Australia's communications industry and that means on the people informed and served by the industry, on those employed by it and on those investing in it. Coupled with other technological changes, a satellite will also lead to important changes in the operation of our broadcasting system and the services it provides.

I will not go into these potential developments in any detail here, but just ask you to bear in mind that the satellite system needs to be seen in the context of other activities which all have ramifications for communications.

There has been public debate on the concept of a communications satellite system for Australia, via a number of forums including public inquiries, seminars and discussion in the media. But despite this, I suspect the debate is frequently so shrouded in jargon and technical detail, that only those with a compelling interest in the subject have the tenacity to follow it through. This results in decisions being made which affect people from all spheres, although they have little awareness of the implications of these decisions.

I shall try first to demystify the satellite for some of you.

Background

In October 1979, the Government announced it had decided in principle to establish a National Communications Satellite System. This followed government consideration of a report by a working group of officials and an earlier Task Force appointed late in 1977 to consider the potential of a communications satellite for Australia. In its investigations, the Task Force called for public submissions and investigated the situation in other countries using communications satellites.

A Satellite Project Office was established within the Postal and Telecommunications Department — now the Department of Communications — to develop proposals for establishing the system. This worked

closely with other bodies such as the Overseas Telecommunications Commission, the Australian Broadcasting Commission, Telecom Australia and the Department of Transport.

It was intended that the satellite would provide television, radio and telephone services for remote areas of Australia and for other areas which do not receive these services adequately. Also a satellite system would be able to distribute high speed data communications and improve other services, such as navigational communications.

The Present Position

Where are we now in planning for the satellite?

Tenders for the space and earth segments were called for in late October and an eight volume Request for Tender was released to interested organisations in Australia and overseas.

Tenders close on May 4 this year, and those working on the satellite system are aiming at a spacecraft launch date of 1985. Discussions have been taking place with overseas organisations to find a suitable vehicle to launch the satellite and options have been taken out on the Space Shuttle and Delta.

As an interim measure, the Government has directed that the Overseas Telecommunications Commission will manage and develop the satellite; as part of this function, OTC invited tenders for space and earth segments, on behalf of the earth segment authorities. My Department, largely through what has now become the Satellite Policy and Co-ordination Division, will provide overall policy

advice to the Government on the role of the satellite, and issues such as financial implications, Australian industry involvement and employment aspects.

Type of Satellite

What type of satellite are we talking about and just what does a communications satellite do?

A satellite communications system is different to a terrestrial system not only in concept, but also capability. It represents a major breakthrough in the way in which we can design information systems.

To communicate between the opposite ends of Australia, it has sometimes been necessary to wait until a network of landlines and microwave repeater stations is installed. Sometimes, necessarily, development of these networks came after the economic development of an area.

Because of its altitude, a satellite system can pass information between any number of places in Australia without waiting for an extensive infrastructure to be developed. Also, because the satellite system operates in the microwave region, it has an enormous capacity to handle information.

The very fact that its transmissions can be received anywhere in Australia places a new perspective on what could be achieved in broadcasting. No longer are the broadcasters limited by the vagaries of terrestrial propagation. In theory, if not in practice, any person with suitable equipment could receive signals transmitted by the satellite system. It is usual when designing a satellite system for broadcasting applications, to specifically design the characteristics of the system so as to minimise the cost of the necessary ground equipment.

Some decisions on the precise parameters of the satellite system will have to wait until all the tenders are in. The tender documents do, however, contain detailed specifications on the services to be provided and the ways in which this should be done.

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The satellite system will be made up of a space segment and an earth segment.

The space segment is composed of the satellites and the associated ground control stations — tracking telemetry control and monitoring stations.

It is envisaged that in the space segment there will be three satellites. One of these will be operational in orbit, one will be spare and in orbit, and one will be a standby on the ground. There is also an option for a further satellite if required.

Each spacecraft will have 15 transponders, or in lay terms receiver transmitter devices. Four of these will each have a 30w power output and the remainder will each have an output of 15w.

It is planned that the ABC will be able to use the high-powered transponders in operational unit No 1 to transmit television and radio programs to isolated homesteads and small communities, and each transponder would be able to carry one television and up to four radio channels at the same time.

The other, lower-powered, transponders will be used for services such as telephony and data communications, and can have the capacity to carry up to 1,000 voice circuits at once as well as being able to be used by broadcasters.

The earth segment comprises the wide range of earth stations transmitting and receiving the communications signals for television, radio, telephony data etc. Relatively large earth stations with antenna diameters of 8 metres will be located in each capital city. In areas of high rainfall however, such as Darwin, diameters of 11 metres will be needed. At the other extreme, tens of thousands of small earth stations with antenna channels of 1.2 to 1.8 metres will be located in more remote regions throughout Australia.

Isolated homes and communities receiving television and radio services via the satellite's high-powered transponders will generally own their own earth stations. It is very difficult at this stage to estimate costs accurately but something of the order of \$1,000 at present day prices is anticipated.

Services to be provided by the Satellite

To discuss in a little more detail some of the services which could be provided by the satellite system. The issues for advertisers will, after all, depend on what services the satellite provides.

We need to remember that these services will complement the existing terrestrial telecommunications network within Australia. Because satellite-related technology is in a constant state of development and change, we cannot predict exactly the limits to which broadcasters may use such a facility in the years to come.

Another point to realise is that the full potential of a satellite system cannot be reached immediately. We speak of different "generations" of satellites, meaning that each system has a life expectancy of 7 to 10 years, before it needs replacing.

The satellite system can be used to provide broadcasting services in a number of ways. It can be used:

- in the production and assembly of programs, or in the exchange of program items such as news events;
- in the distribution of programs by relaying material from an originating station to a network of terrestrially-based transmitters; and
- in the provision of direct broadcasting services, that is, going directly from the satellite into houses.

Programs via satellite may be transmitted on a fully national basis or within specified regions or zones.

The regions or zones which have been specified are:

- Western Australia, including the north-west shelf;
- Central Australia — including South Australia and the Northern Territory;
- Queensland; and
- South Eastern Australia including New South Wales, Victoria, Tasmania, Lord Howe Island and Norfolk Island. These zones coincide approximately with State time zones.

In a first "generation" satellite system proposed for Australia, using three satellites, the ABC would be able to use the 30W transponders in satellite unit No. 1 for broadcasting.

It would use these transponders:

- for program exchange purposes;

in the distribution of ABC programs to

ABC terrestrial transmitting stations for transmission by those stations;

- to bring ABC services to remote areas which are currently denied such services, in the form of a "direct" broadcasting service.

This direct broadcasting service is usually referred to as the Homestead and Community Broadcasting Satellite Service or HACBSS. Homesteads or communities would receive the transmissions by using the small receiver or dish — a dish 1 to 2 metres in diameter and expected to cost about \$1,000.

A three-satellite system — one in service, one on stand-by and one on the ground — could be used for broadcasting purposes other than the ABC.

It could be used by commercial broadcasting interests, for example to provide:

- program exchange, including news events which are gathered around Australia and then sent to (say) Sydney for incorporation in national news programs;
- program distribution, such as distributing programs from a central point to a network of stations which would then transmit the program via their terrestrial transmitters.

The satellite could help in overcoming some problems with existing terrestrial facilities. One example of which you will be aware, is the Perth situation where there is effectively only one bearer to Perth from the east coast. This limitation has often prevented the transmission of topical programs, such as sport to the West. With a satellite system, this type of problem will be overcome.

With a three-satellite system, and with commercial broadcasters using the 15 watt transponders in that system, it is unlikely the commercial services would have a "direct broadcasting" application, except in those rare cases where a person or community was prepared to invest in a large earth station to receive the commercial transmissions on a direct basis:

The ease with which the satellite system can distribute commercial television programs throughout Australia raises the vital issue of networking by commercial television interests. This raises issues relating to the independence and viability of the smaller metropolitan stations and regional stations, for there is a body of opinion that says that stations can be controlled through programming and advertising, just as effectively as through shareholding.

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These are questions which strike at the basis of the broadcasting system as we know it in Australia today. In looking at them, we must realise that the issue of regional control and identity for television stations is complex. There is a demand for more television channels by viewers in regional areas. But this has to be balanced against the critical need to ensure diversity in ownership and control of this very powerful communications medium — a principle which is recognised in the present Broadcasting and Television Act.

I have discussed the potential of a three-satellite system. It is possible, in the first generation satellite to have four or even five satellites. With a "four satellite" package, this would mean 2 operational in orbit; one spare in orbit and one on the ground.

If there were a 4 satellite system, this would mean we would have 4 extra 30 watt or high power transponders as well as the extra 15 watt transponders. It would thus be possible to have a second HACBSS or direct broadcasting service covering the whole of Australia through the 4 zones which I have described.

There are various ways in which a second HACBSS could be used:

- a commercial service licensed to an existing licensee on a national basis, or licensed to 4 separate existing licensees on a zone by zone basis;
- a commercial service licensed to a new licensee on a national basis, or 4

new licensees on a zone by zone basis, providing alternative programming to the existing terrestrial commercial services;

- a nation-wide subscription television service, licensed to private enterprise or operated by the ABC;
- a second ABC television network;
- a national multicultural television network;
- an educational television network, perhaps also incorporating other forms of special purpose television;
- and various combinations of the above.

Strong expressions of interest have been registered in this second HACBSS from various quarters. These are being considered very carefully because the concept of a second HACBSS raises a number of major broadcasting policy issues.

Bearing in mind that, in a 4-satellite package, there can only be 2 HACBSS services — one for the ABC and a second for another purpose — the second HACBSS gives rise to a number of interesting questions:

- what should it be used for?
- in the case of a commercial or subscription service, to which organisation should it be allocated?
- what impact will a second HACBSS have on the operation of the existing broadcasting system, and the viability of existing licensees, bearing in mind the direct broadcasting capability of the second HACBSS?

Coupled with these issues will be the need for financial, operating and pricing judgements associated with the provision of a second HACBSS.

These and all of the related issues will be considered carefully by the Government when it reaches a decision, later this year, whether our first generation satellite system should comprise a "3-satellite" package or a "4-satellite" package.

Whatever the decision, there can be no doubt the availability of a national communications satellite system will open up fresh opportunities for national advertisers in the use of broadcasting.

To sum up

A national communications satellite system will have a profound impact on Australian communications services.

It will not replace existing terrestrial communications services, but will supplement and complement them.

For national advertisers, it will provide opportunity to make more effective use of broadcasting as an advertising medium.

For the organisations you represent, it has the capability to provide a wide range of information and data transmission services.

It will bring efficient communication services to those people in remote areas who are currently denied such services.

It will be an important step in the application of satellite technology to Australia's communication requirements — the first step in what probably will be a series of satellite systems designed to meet our country's special needs.

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That is an interesting concept and obviously one, for example, we will have to address in the cable inquiry. It is also raised by the possibility of a communications satellite, and subscription television. They could all add to the spectrum, to the existing systems and offer the opportunity for additional diversity in all senses of the word.

Now where does our lawyer stand in all this? In my view, the role of the lawyer in this field will very much depend upon lawyers themselves and whether they really want to have a role. If they're not prepared to find out what the communications area is all about in all its aspects, and I mean not

just in the strict legal sense, and if they're not prepared to show a willingness to adapt their thinking and their approaches to accommodate a new technology, new developments, they may find that they don't have a very great role at all because the advice and assistance they are able to provide to the people working within the broadcasting industry will not be helpful and therefore will not be utilised. Those people will tend to turn to other advisers who may be prepared to learn, who may be prepared to be constructive, etc.

I think that would be unfortunate not only for lawyers, but for the public and for the development of com-

munications in this country, because in my view, lawyers with the expertise, knowledge and approach have a very big and expanding role to play in the development, operation and regulation of the broadcasting industry.

But that is going to require a willingness to understand not only the law but the way in which the industry operates, to understand the existing technology without being experts, and to try to understand the future technology because unless that is done it is unlikely that any advice proffered will be of real assistance to the people who are working within the industry.

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