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Retransmission Rights: The Free-to-Air Broadcasters' View

Bridget Godwin reports on the free-to-air broadcasters' views on the Broadcasting Services Amendment Bill 1998.

BACKGROUND

Free to air broadcasters have been calling for the introduction of a retransmission right since the early 1990s. Around this time, it was first realised that with the imminent introduction of pay television in Australia, pay television operators would be able to use the signals of free to air broadcasters as part of their subscription services without permission.

Both major political parties have since recognised the inherent unfairness of this situation and promised to amend section 212 of the *Broadcasting Services Act* 1992 (Cth) to give broadcasters the right to control retransmission of their services.

BROADCASTING SERVICES AMENDMENT BILL 1998

On 10 March 1998, the Federal Government announced that free to air broadcasters would be provided with retransmission rights which would enable them to control their own signal. This was the implementation of a promise made in the 1993 election campaign.

Following this announcement, the Broadcasting Services Amendment Bill 1998 ("the Bill") was passed by the House of Representatives and introduced into the Senate on 2 July 1998. The Bill was referred to the Senate Environment, Recreation, Communications and the Arts Legislation Committee for consideration. The Committee received

submissions and held a public hearing in Canberra on 21 August 1998.

The Committee was due to report back to the Senate by 9 September 1998. However, at the time of writing the calling of the Federal election has created a more uncertain environment. The Bill's future depends on whether the incoming government chooses to restore the Bill.

THE PROPOSED SCHEME

The retransmission provisions of the Bill require pay television operators to obtain the permission of the ABC, SBS and commercial broadcasters before being able to retransmit their signals. Commercial broadcasting services may only be retransmitted within their licence areas. Retransmission outside licence area requires the permission of the ABA.

The Government has also announced that it intends to establish a statutory licence scheme requiring pay television operators

to compensate owners of underlying copyright material in the retransmitted broadcast.

The scheme contains special provisions for self-help groups who retransmit services for the purpose of obtaining or improving reception in a community. These groups may retransmit national or commercial broadcasting services without the permission of the broadcaster. Self help groups are also exempt from making payments to the owners of copyright in underlying material.

The Bill allows the ABA to specify that particular areas are "declared remote areas". Retransmission is permitted within these areas without the permission of the broadcaster. However, payment to underlying rights holders would still be required.

In metropolitan/ regional overlap areas for commercial television licensees, the Bill places a mandatory obligation on pay television operators to retransmit all

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television programs of a regional commercial television licensee if that operator is also retransmitting the television programs of a metropolitan commercial television licensee whose licence area includes the overlap area.

This requirement operates if the regional licensee is related to the metropolitan licensee and the regional licensee consents to the retransmission. If no related regional licensee exists in the overlap area, the subscription television licensee must retransmit all consenting regional licensees in the overlap area.

WHY BROADCASTERS NEED A RETRANSMISSION RIGHT

All national and commercial free to air television broadcasters strongly support the proposal to give broadcasters the right to control their signals.

The current situation is based on a long standing and unintended anomaly in broadcasting and copyright legislation, which allows pay television operators to retransmit free to air television services without seeking the consent of the

original broadcaster. This is clearly contrary to copyright and broadcasting principles. It enables pay television operators to appropriate broadcasters' property with impunity.

Commercial broadcasters argue that pay television is a serious competitor to commercial free to air services. Pay television operators are permitted to use the services their competitors as part of a competitive package. As is the case with other owners of proprietary and intellectual property rights, free to air broadcasters argue that their rights should be respected and properly remunerated.

At present, a broadcaster is unable to control the quality or channel number of the retransmitted free to air service. Nor can a broadcaster insist that teletext and closed captioning for the hearing impaired be included as part of the pay television package.

In some regional areas, pay television has chosen to transmit network or capital city services rather than the regional affiliate free to air service intended for the area, placing the affiliate's commercial interests at risk and disturbing the

delicate balance between capital city and regional services established over many years.

Free to air broadcasters are concerned that in many cases, pay television operators routinely remove external free to air aerials, locking subscribers out of free to air access if they end their pay television subscription.

Many new generation services, such as digital terrestrial television and associated data, multiview and multichannel services will be delivered free to air. Removal of aerials, combined with an inability to negotiate acceptable retransmission conditions, threatens the viability of these new services. They are expensive to implement and should not be able to be misappropriated and subverted by direct commercial competitors.

Free to air broadcasters do not want to prevent the retransmission of their signals. It is in their interests to ensure that their services are received by as many viewers as possible at the best possible quantity. These commercial and public interest considerations will ensure that

both sides have an interest in reaching an acceptable agreement.

IMPROVEMENTS TO THE BILL

While supporting the overall thrust of the legislation, free to air broadcasters have suggested a number of modifications to the Bill. The major concerns raised by free to air broadcasters were:

The Bill does not currently contain a definition of 'retransmission'. A definition is needed to clarify that retransmission must be simultaneous, unaltered and of the whole broadcast signal. This is necessary to ensure that practices such as cherry picking or the stripping of advertisements do not occur.

It is expected that in most cases, the ABA will determine existing remote commercial television licence areas to be declared remote areas. Retransmission in remote areas raises a number of issues. The object of the remote area provisions is to ensure that remote area residents receive a full suite of broadcasting services using one set of domestic reception equipment.

In most remote areas, free to air and pay television services are delivered by satellite, usually on competing systems. This requires the consumer to purchase two different types of domestic reception equipment. However, the Federation of Commercial Television Stations (FACTS) argues that the government's proposed scheme may have the unintended consequence of diminishing competition between satellite service providers. Each satellite would be able to transmit any signal they wish without consent, removing the incentive for satellite providers to compete to provide comprehensive packages of services. The scheme may also result in retransmission of signals outside service areas, given the nature of satellite distribution of signals.

The ABC and FACTS are of the view that the consent regime established for non-remote areas should apply equally to remote area broadcasters. In the absence of a consent regime, they have proposed that remote area retransmissions require special provisions to ensure that retransmission occurs at an appropriate

quality and that signals are not able to be intercepted outside licence areas. SBS has also raised a concern that self help providers in remote areas may be disadvantaged, as they are not exempt from payments to underlying copyright owners in the same way as self help providers in other areas. At the very least, SBS was of the view that retransmission in remote areas for commercial purposes should require the consent of the broadcaster.

Concerns have also been raised that retransmission of commercial television services outside licence area is permitted with the consent of the ABA. Commercial television interests argue that these decisions should also require the consent of the broadcaster and that the ABA should be required to take the objects of the Broadcasting Services Act and in particular its planning provisions into account. This would prevent authorisations to retransmit becoming de-facto planning decisions.

Broadcasters have commented on commencement and enforcement provisions of the Bill. The government has expressed an intention that the Bill will not be proclaimed until the enactment of companion copyright legislation establishing a payment scheme for underlying copyright holders. As copyright legislation is unlikely to be a speedy process, this could leave broadcasters waiting a number of years for their retransmission rights to come into force. Broadcasters believe that this would be unfair, and have pressed for the commencement of the Bill within three months of enactment.

A related concern is that the Bill contains no provisions enabling broadcasters to take action in relation to breaches of the retransmission regime. There appears to be no sanction or remedy against pay television operators retransmitting in breach of the legislation. This omission clearly needs to be rectified. Rights are of little value if they cannot be enforced.

PAY TELEVISION CLAIMS

Pay television operators have vigorously opposed the introduction of a retransmission right for free to air

broadcasters. They claim that free to air broadcasters will prevent them from retransmitting, that subscriber rates will increase, that consumers will be inconvenienced, forced to buy external antennas and unable to switch between free to air and pay services. They also argue that the provisions will restrict the development of the pay television industry and that it is therefore anti-competitive.

Free to air broadcasters reject these arguments. To refuse retransmission would be quite contrary to the commercial interests of broadcasters, who are trying to reach the maximum number of viewers at the best possible quality. Subscriber rates are clearly entirely at the discretion of the pay television operators themselves, not determined by free-to-air broadcasters.

At present, the inability of broadcasters to control their signals gives pay television an unfair competitive advantage because of pay television's unfettered ability to trade on the property of others. Commercial and national broadcasters have invested millions of dollars in their services, in an environment which places far more regulatory requirements on them than is the case for pay television. Unlike pay television operators they have invested heavily in the Australian production industry. Commercial broadcasters pay huge licence fees to government which pay televisions are not required to pay.

To argue that giving broadcasters a retransmission right, a simple mechanism to protect the value of the creativity and investment which goes into producing a distinctive broadcasting service, is unfair to pay television is to ignore the reality of an environment which already gives significant concessions to pay television operators. It is also to ignore a principle so basic we teach it to our children - the property of one person should not be taken by another without the owner's permission.

Bridget Godwin is Corporate Counsel with SBS. The use of submissions prepared by FACTS and the ABC in relation to the Bill is gratefully acknowledged.

COMMUNICATIONS AND MEDIA LAW ASSOCIATION INCORPORATED (CAMLA)

ESSAY PRIZE

The Communications and Media Law Association is holding an essay competition in 1998.

The purpose of the competition is -

- to encourage high quality work in communications and media law courses; and
- to improve links between those studying and practising in the area.

The prize will be given for -

- a previously unpublished essay which is the original work of the author;
- an essay completed by a student enrolled in an undergraduate or postgraduate course, possibly as part of that course;
- an essay on a subject relating to communications or media law;
- an essay of 1000-3000 words. The 3000 word limit (inclusive of all footnotes, annexures, attachments and bibliographies etc.) is not to be exceeded.

A prize of \$1000 and a one year membership of CAMLA will be awarded to the winner. The winning essay, edited in consultation with the author, will be published in the Communications Law Bulletin.

The winning entry, to be selected by a panel of experienced communications and media law practitioners, is likely to demonstrate original research, analysis or ideas. The panel will not necessarily be seeking detailed works of scholarship.

The award will be made at the annual CAMLA Christmas function.

Please send three copies of the entry typed well-spaced on A4 paper. Only one essay per student may be submitted. Entries will only be accepted by mail and must be received by 30 October 1998. The name, address, telephone/fax contacts and the tertiary institution and course in which the author is enrolled should be included on a separate, detachable sheet. The author's name should not appear on the pages of the essay.

Entries should be submitted to:

The Administrative Secretary
Communications and Media Law Association
PO Box 545
GLEBE NSW 2037
Australia

Entries must be received by Friday 30 October 1998.

Late entries will not be accepted.

ASTRA's Views on Retransmission

This is an edited excerpt from the recent submission of ASTRA to the Senate Environment, Recreation, Communications and the Arts Legislation Committee by Tom Mockridge, former Chairman of ASTRA and CEO of Foxtel.

The Australian Subscription Television and Radio Association (ASTRA) is the peak industry body for subscription television and narrowcast radio. ASTRA was formed in September 1997 when industry associations representing subscription (multichannel) TV and radio platforms, narrowcasters and program providers came together to underpin and propel the new era in competition and consumer choice that these new services have brought to broadcasting, communications and entertainment in this country.

Subscription broadcasting and open and subscription narrowcasting services were new categories of broadcasting services introduced by the *Broadcasting Services Act 1992* (Cth) ("BSA"). These new services added to the mix of existing categories of service, being the national broadcasting services; commercial broadcasting services (commercial TV and radio); and community broadcasting services. Subscription (multichannel) television, the most prominent of the subscription services, was first launched (satellite/MDS) in January 1995 with cable services launched in September and October 1995.

By the end of 1995 there were 85,000 homes with 300,000 potential viewers by the end of 1996 - 400,000 homes with approximately one and half million people. By the start of this year about 750,000 homes were subscribing to pay TV - about two and half million potential viewers - a penetration rate of about 13 percent of Australian homes.

This follows a 30 year moratorium before pay TV was allowed to compete with the commercial free-to-air terrestrial services. Once allowed in the original operators were required to use digital satellite and restricted to only eight channels. There was an immediate requirement for new Australian drama expenditure. Advertising was banned until 1 July 1997 and there is still a limit on that advertising revenue. One of the major subscriber drivers, sport, was nobbled by the anti-siphoning list. Now as well as a protected market (with the decision having been made of no fourth commercial network until the year 2006), the commercial

networks control the gateway to digital terrestrial broadcasting.

However in three years, subscription television has made a substantial impact on the way we experience entertainment and information in the home in Australia. ASTRA members have made an enormous investment in relation to licence fees and capital costs to establish subscription television, on-line and telephony businesses in metropolitan, regional and remote markets and subscription television has created an enormous number of jobs, investment, infrastructure and content.

Our membership includes the major subscription television operators as well as more than twenty stand-alone channels that provide programming to these platforms. Other members include narrowcast television and radio operators such as racing TV and radio and information radio, and communications companies such as AAPT, Optus Communications and Telstra.

Clearly we remain a long way short of the penetration rate in the world's most mature pay TV market in the US where up to 70 per cent of homes are connected to cable or satellite pay TV, but it is impressive nonetheless in spite of the risks and costs involved with a rapidly changing regulatory environment which continues to put restrictions in the way of the pay TV industry.

THE RETRANSMISSION BILL

These provisions are intended to amend the retransmission provisions of the BSA to specifically address the retransmission of commercial and national television broadcasts by subscription television operators.

Retransmission of free-to-air signals by subscription television operators is permitted under the current law. For example FOXTEL and Optus Vision retransmit (via cable) the national (ABC and SBS) and commercial television services simultaneously and unaltered under the current provisions of section 212 of the BSA relating to television broadcasting services within licence

areas. These channels are free additions to the suite of subscription channels and provided as a service to subscribers.

The validity of the current law was tested in the courts when commercial television challenged the cable operators' right to retransmit under section 212. The 1996 decision of the Full Court of the Federal Court in *Amalgamated Television Services Pty Ltd and others v Foxtel Digital Cable Television Pty Ltd* and another confirmed that simultaneous and unaltered cable retransmission of terrestrial television services is permitted within licence/coverage areas under the BSA and the *Copyright Act*.

The proposed legislation before the Senate makes 'illegal' what subscription television operators have been doing legally for the past three years as confirmed by the courts. Changing legislation now unfairly disadvantages existing customers.

There are about 500,000 cable subscription television subscribers. The retransmission of free-to-air services arises at no cost to either broadcasters or underlying rights holders; retransmission increases the reach of broadcasters and therefore potential advertising revenue; and more importantly greatly benefits consumers not only in the convenience with which they can switch from subscription channels to free-to-air and vice versa but also in the improved signal quality of free-to-air reception and the fact they can remove unsightly aerials if they so choose.

In retransmitting free-to-air signals, cable operators have already addressed the initial concerns of free-to-air operators by providing each in its usual channel position. The ABC is carried on channel 2, the Seven network occupies channel 7, the Nine network occupies channel 9, the Ten network is on channel 10 and SBS on channel 28.

In lobbying for these changes to the current retransmission rules, commercial television broadcasters have argued that they have a property right in their broadcast signal which they should have control over with respect to retransmission except in 'genuine self-help' cases.

ASTRA maintains that commercial television broadcasters only have a limited right to broadcast by virtue of licences which have been granted under the BSA.

A subscription television operator, by retransmitting this signal, does not decrease the value of this right. Because the value of the signal is dependent on the number of people who can receive the signal, and because subscription television can only increase the number of people who receive a signal within the licence area, it is more logical that retransmission increases the value of the original broadcast rather than decreases the value.

In addition commercial television broadcasters are compensated through advertising, not by the recipient of the broadcast. If consumers paid for television signal reception directly, then the argument by commercial television that they are unfairly 'uncompensated' might have some validity. Cable retransmission improves the signal quality of reception and in turn increases the value of placed advertisements. There is no need for pay TV operators to compensate commercial television licensees as they are already compensated by advertisers.

The retransmission regime of the United Kingdom as it relates to copyright, reflects the no pay position advocated by Australian cable operators. That is, the copyright in a broadcast or any work included in the broadcast is not infringed by a cable retransmission that takes place in the licence area of the original broadcast.

This Bill contemplates complementary amendments to the *Copyright Act*. The fact that such proposed amendments have not been released with this Bill raises its own problems in terms of how the two Acts will operate together. Once again we are left with an uncertain and incomplete regulatory framework. (This was the case with the digital television conversion legislation which provided a general regulatory framework with much of the essential detail to be determined in subordinate legislation).

It is assumed that changes to the *Copyright Act* will see a new broad-based technology-neutral communication right to the public and pay TV operators will be required to pay a licence fee to underlying rights holders although whether this will be a statutory licence or subject to negotiation is unclear.

The proposed retransmission regime includes both a consent provision which requires subscription television operators to negotiate and reach agreement with all free-to-air broadcasters if they want to retransmit the signal and a limited must carry provision in overlap areas (where metropolitan and regional licence areas overlap, for example the Gold Coast) which imposes a mandatory obligation upon pay TV operators to retransmit the regional commercial television signal if it is retransmitting a metropolitan commercial television signal. However this can only be done with the consent of the regional commercial television licensee.

SPECIFIC CONCERNS

Under section 205N and 205V of proposed Part 14B of the BSA, a subscription television broadcasting licensee is required to reach agreement with a commercial, community or national broadcasting licensee. This requirement takes effect as soon as the amending Act is proclaimed and does not provide for a transitional period.

Pay TV operators currently providing retransmitted signals to consumers will have to cease retransmission upon the Bill coming into force if they have not entered into agreements with the free-to-air broadcasters at the time.

As long as parties are negotiating in good faith then those negotiations should be able to continue under a transitional regime with no adverse affect to consumers. ASTRA considers an appropriate transitional period to be 12 months.

AMBIGUITY RE IMPACT OF PROPOSED AMENDMENTS TO THE COPYRIGHT ACT

It is unclear how the proposed amendments to the BSA will operate in relation to the yet to be seen amendments to the *Copyright Act*. While there are assumptions from the second reading speech to this Bill on what the proposed copyright amendments will cover (a new broadly-based technology-neutral communication right and requirement to compensate underlying rights holders), there is no indication of whether, in addition to the compensation to underlying rights holders, pay TV operators will also be required to pay the free-to-air operators any additional fees other than those agreed upon under the retransmission provisions. There is also

no indication of how the regime will be administered and by whom.

The second reading speech implies that there will be a statutory licence with respect to underlying rights holders but does not expressly say so. A possible situation is that subscription television operators would be required to pay:

- a statutory licence fee to the underlying rights holders* under the *Copyright Act*;
- a licence fee to the free-to-air operators under the *Copyright Act*; and
- a fee agreed to between parties under the BSA.

(*NB. free-to-air broadcasters will hold underlying rights in some of the material retransmitted, as such, under these proposals, they will receive payment twice for the same material.)

The proposals assume that, in agreeing to allow a pay TV operator to retransmit its broadcast, the free-to-air network is granting a pay TV operator a copyright licence to transmit its service, however the amendments only explicitly deal with being exempt from the regime prescribed by the BSA and does not refer to any possible copyright breaches.

Subscription television operators could find themselves having to seek consent from the underlying rights holders, from two broadcasters (metropolitan and regional) under both the BSA and the Copyright Act and seeking permission from the Australian Broadcasting Authority ("ABA") in terms of retransmissions in declared remote areas or for providing particular programming in regional areas which is substantially the same as programming on a metropolitan commercial television station during particular times of the day.

MUST CARRY PROVISIONS: NO CONSIDERATION OF CAPACITY TO CARRY

At present it is only viable for pay TV operators to retransmit on cable. However, the must carry element with respect to overlap areas will be a problem in terms of limited technical capacity. Section 205W of the proposed legislation does not take into account any considerations of the technical capacity and capacity limitations of the different

delivery modes of subscription television whether cable, satellite or MDS (wireless cable).

Subscription television systems do not have unlimited channel capacity. There are restraints in terms of technical capacity and the channel needs of the pay TV broadcasters take priority. There are limited MDS channels available (11 through to a maximum of 19 channels); satellite capacity is driven by cost per transponder and is based on a national beam, hence the cost becomes prohibitive in attempting to 'regionalise' the signal; and cable capacity is limited by cost effectiveness.

MUST CARRY AND STILL MUST PAY

Section 205X of the proposed legislation provides that pay TV operators must comply with the must carry provisions on such terms and conditions as are agreed between the related or unrelated regional commercial television broadcaster (or failing agreement, as arbitrated). This leaves the pay TV operator in a situation where it will presumably have to pay to retransmit a broadcast which it is compelled to carry. No other country in the world has such a draconian impost. For example under the US regime, cable operators do not have to pay the retransmitted free-to-air licensees who elect must carry rather than the consent regime.

ASTRA welcomes the recognition of the difficulties this may pose for pay TV operators with provision of an arbitration mechanism, albeit restricted to this particular circumstance.

NO ARBITRATION MECHANISM

ASTRA has long maintained that any consent regime should include provision for arbitration for circumstances where a free-to-air broadcaster and a pay TV operator have failed to reach a retransmission consent agreement.

With no arbitration mechanism ASTRA views this proposed legislation as

providing commercial broadcasters with unprecedented control over signal transmission. While the Government seems to acknowledge some level of comfort from the free-to-air operators that they will not extract exorbitant fees, ASTRA has no such comfort especially given their previous position on this issue and no legal requirement to ensure fair and reasonable negotiation.

As proposed, there are no procedural requirements in negotiating agreements, no time limitations and no dispute resolution procedures. ASTRA seeks provision within the legislation to require the free-to-air operators "to make access to their broadcasts available on reasonable terms and within reasonable time of a request being made".

ASTRA impresses upon the Senate the importance of including a mediation or arbitration mechanism in the legislation, otherwise all negotiating leverage will lie in the hands of the commercial television broadcasters. ASTRA believes the Copyright Tribunal is the most appropriate arbitrator in these circumstances and such arbitration should recognise the inequality of the bargaining positions of the parties.

COMPLIANCE WITH THE BSA BUT POTENTIAL BREACHES OF COPYRIGHT

Further to the must carry element of the Bill, ASTRA maintains there should also be corresponding provisions in the amended Copyright Act in which pay TV operators obtain a statutory licence to retransmit the copyright material of underlying rights holders. If there is no such provision, an anomalous situation is created under which pay TV operators are compelled to carry the broadcast under the BSA (despite scarce broadband or spectrum capacity) and must pay a fee under the Copyright Act or risk an action for infringement.

Another failure to cross reference with the proposed amendments to the Copyright Act is the fact that the only instance where the Government sees a public interest in retransmission is in declared remote areas. The Bill does not

address the copyright implications of pay TV operators retransmitting a free-to-air signal in a remote area. In such circumstances pay TV operators may find themselves complying with the regulatory regime of the BSA but be in breach of the copyright of the underlying rights holders under the Copyright Act.

IMPACT OF DIGITAL TELEVISION

It seems incongruous to introduce a new retransmission regime specific to analogue transmission when Parliament has just passed the digital television conversion legislation to provide for the introduction of digital terrestrial television by 2001. Especially when that same digital legislation already provides for a review of the retransmission rules to consider what amendments would be needed to take account of retransmission of digital signals (including capacity to retransmit HDTV, enhanced programming and possible multichannels).

This Bill is silent as to the implications of digital television. The digital regime will see commercial (metropolitan and regional) and national television broadcasters required to transmit their services in digital format and during the simulcast period, these services will be transmitted in both analogue and digital format.

This situation is only now being tackled by the Federal Communications Commission (FCC) in the US, which believes that the most difficult carriage issues arise during the transition period when the digital and analogue signals are operating simultaneously. (see attached press clipping at Appendix C).

Given the unknowns, why rush to introduce a regime which has such a limited life?

Tom Mockridge is the Chief Executive Officer of FOXTEL and was Chairman of ASTRA at the date of this submission.

Datacasting Defined, or "Data is data is bits is bits is bits"

Holly Raiche analyses the new digital conversion legislation

Datacasting is a new term in the lexicon of broadcasting. For the current free to air television broadcasters, datacasting could be an additional revenue raising service they deliver when broadcasting in digital mode. For pay television licensees and providers of on-line services, it represents potential competition to services they provide or plan to provide. For Parliamentarians debating the term, it represented a source of both technological and semantic confusion.

Datacasting services are provided for in the recent legislative package² covering the migration of terrestrial television from analog to digital transmission. The main provisions of the legislative package include, relevantly:

- plans developed by the ABA for the conversion from analog to digital transmission for existing commercial and national broadcasters, in accordance with listed policy objectives;³
- implementation plans for individual broadcasters which are either drawn up by commercial broadcasters for approval by the ABA or by national broadcasters for approval by the Minister;⁴
- a simulcast period of eight years⁵ during which:
 - the ACA will allocate an additional 7 Megahertz channel, free of charge, to the free to air television broadcasters to provide digital terrestrial television services;⁶
 - the free to air broadcasters must not broadcast programs in digital mode unless the program is also broadcast in analog mode;⁷
 - the free to air broadcasters, when broadcasting in digital mode, must meet specified goals or targets on the extent to which programs are transmitted in accordance with high definition standards which will be set by regulation;⁸
- at the end of the simulcast period, the return by free to air broadcasters of one of their two 7 Mhz transmitter

licences (used for analog or digital broadcasting);⁹

- a further moratorium on the allocation of any new commercial television licences until after 31 December 2006;¹⁰
- two series of Ministerial reviews, one to be completed by 1 January 2000 and one to be completed before 31 December 2005.¹¹

Datacasting comes into this legislative framework in two ways.

The transmitter licences which the ACA must issue to the free to air broadcasters for digital transmission must authorise the transmission of datacasting as well as broadcasting services.¹² This provision is legislative recognition that, even when broadcasting a high definition television program, there may be spare capacity in the digital 'channel' for the transmission of other matter - datacasting. Indeed, when broadcasting a standard digital television signal, there will be enough spare capacity for additional full program streams.¹³ While broadcasters will not be permitted to provide additional programming streams during the simulcast period, the legislation will permit broadcaster use of spare capacity for datacasting, or presumably the sublease of spare capacity to others for datacasting purposes.¹⁴

The legislation also provides for datacasting by organisations other than free to air broadcasters using broadcasting service bands capacity not part of the digital 'channels' allocated to the current broadcasters. This was the policy response to very strong protests made by ASTRA and other information providers including Fairfax, News and the Internet Industry Association that the broadcasters were being given free transmission capacity - capacity which anyone else would have to purchase in the marketplace.¹⁵

Evidence given to the Senate Committee suggested there is some capacity in the broadcasting services bands which might be available for allocation.¹⁶ Therefore, one of the tasks of the ABA in its planning is to identify such capacity which might be allocated for datacasting

- capacity which must not be allocated to the existing broadcasters.¹⁷ Amendments to the *Radiocommunications Act* therefore also authorise the ACA to issue transmitter licences for the transmission of datacasting services to non-broadcasters.¹⁸

All of which begs the critical question: what is datacasting?

DEFINITION OF DATACASTING

The components of the datacasting definition are that:

- it is a service - *other than a broadcasting service*;
- it delivers *information* (whether in the form of data, text, speech, images or in any other form) to a person having equipment appropriate for receiving that information;
- delivery of the service *uses the broadcasting services bands*.¹⁹

In other words, services which are defined as *not* broadcasting services are, by definition, potentially datacasting services - as long as they are delivered using the broadcasting services bands.

DEFINITION OF BROADCASTING

The definition of 'broadcasting service' is:

a service that delivers television programs or radio programs to person having equipment appropriate for receiving that service, whether the delivery uses the radiofrequency spectrum, cable, optical fibre, satellite or any other means or a combination of those means.

It then excludes from the definition services which are:

- a service (including a teletext service) that provides no more than data, or no more than text (with or without associated still images); or
- a service that makes programs available on demand on a point-to-point basis, including a dial up service; or

- a service or class of services that the Minister determines, by notice in the Gazette, not to fall within this definition.²⁰

And 'program' is defined to be either 'matter the primary purpose of which is to entertain, to educate or to inform an audience' or advertising or sponsorship matter.²¹

PROBLEMS WITH THE DEFINITIONS

The definitions of broadcasting services and datacasting services do not sit well together.

The exceptions to the definition of broadcasting service would confine non-broadcast services (therefore, potentially datacast services) to those which provide *no more than data or no more than text (with or without still images)*. Yet the datacasting definition assumes such services can be in the form of *data, text, speech, images or in any other form*. Those words suggest a far broader concept of datacasting than the 'exception' to the definition of broadcasting service permits.

Further, the other stated type of non-broadcast service is *a service that makes programs available on demand on a point-to-point basis, including a dial up service*. Yet datacast services are defined as services *delivered by broadcasting service bands* - not generally considered as delivering point-to-point services.

PARLIAMENTARIAN CONFUSION

The Parliamentary debates and Senate Committee hearings showcase the confusion all participants displayed on the exact boundaries of what is or is not a datacast service.

One Member of Parliament thought datacasting charges would apply to 'advanced information services linked to programming'.²² Another thought he was defining datacasting in calling it a service by which one can watch football, but 'use the computer icon control' to 'come up with the player's home page' and then 'buy boots from Rocca'.²³

One Senate Committee Member said a datacasting service 'helps deliver such things as home banking, home shopping and a whole range of computing activities - services that are normally delivered on a computer through the Internet....'²⁴ Another Committee Member said that the broadcasters' view of datacasting is that

'they would be moving into some form of broadcasting.'²⁵

Evidence before the Committee suggested a wider definition. The Committee Report noted particularly submissions from the Internet Industry Association and John Fairfax Holdings Limited which defined datacasting as anything that can currently be done on the Internet. And those services go way beyond text and data, to include high quality video and audio.²⁶

As ABA General Manager Giles Tanner told the Senate Committee, datacasting 'is really any data - we are only talking about noughts and ones - other than data that can be reassembled as a broadcasting service'.²⁷

As the Senate Committee Report acknowledged, in the face of such confusion, there are mechanisms within the legislation to clarify what datacasting does or does not mean.

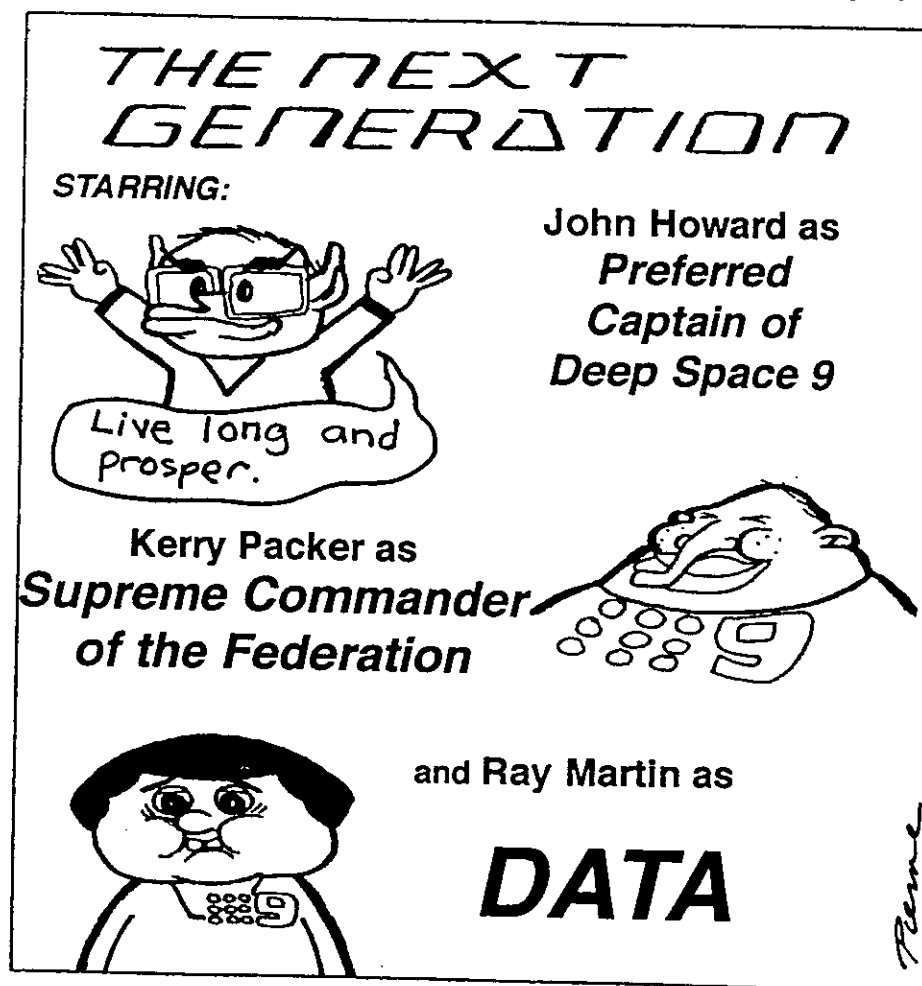
Under the BSA definition of broadcasting services, the Minister has the power to further define a service or services which fall *outside* of the definition of broadcasting services - and therefore *inside* the definition of what are possible datacasting services.²⁸ Further, one of the

Ministerial reviews to be held before 1 January 2000 will examine whether any amendments to Commonwealth legislation should be made 'to deal with the scope of the services that are categorised as datacasting services'.²⁹

The structure of this legislation allows time for both mechanisms to be fully canvassed.

Senate opposition members, in debates on the legislation, voiced their concern at the very short time in which legislation of such importance was being debated. As a result of Senate amendments, therefore, the only provisions of the Act that can proceed are those relating to the development of conversion and implementation plans. Other parts of the Act await the outcome of the Ministerial Reviews to be conducted by the year 2000 and approval of both Houses of Parliament.³⁰

For example, Part 4 of the Act provides for regulations which set 'goals and targets' for HDTV broadcasting, set captioning standards, determine technical standards relating to transmission in digital mode, and set datacasting standards. However, that Part has no effect until a day fixed by Proclamation, which cannot be made except by a



resolution of both Houses of Parliament and not before a copy of a report on the relevant review has been laid before each House of Parliament.³¹

Further, while amendments to the *Radiocommunications Act* require the ACA to issue transmitter licences to commercial and national television broadcasters for both broadcasting and datacasting purposes, those amendments have no effect until a date fixed by Proclamation, which again cannot be made except by a resolution of both Houses of Parliament and not before a copy of a report on the relevant review has been laid before each House of Parliament.³²

Similarly, the ACA cannot allocate transmitter licences authorising the transmission of datacasting services to non-broadcasters until a Proclamation has been made after a resolution of both Houses and after the tabling in both Houses of the result of the review report.³³

THE DATACASTING CHARGE

One final issue on datacasting: the imposition of a datacasting charge.

Again, protests were made that the free to airs would be given capacity to transmit not only a digital television program being broadcast in analog mode, but also to use any spare capacity to gain additional revenue through the provision of subscription services, the provision of information services from which additional advertising revenue could be earned, or to sublease the capacity to another for profit.

The policy response was twofold. There is a blanket prohibition on the free to air broadcasters providing any other category of broadcasting service with their transmission capacity.³⁴ There will also be a 'Datacasting Charge' if the 'digital' transmitter licence is used to provide datacasting services.³⁵

At present, there is no guidance as to the basis on which a datacharge will be levied. Will, for example, the charge relate to the actual capacity used for transmission of datacast services, or will it relate to the revenue gained from the provision of capacity or services?

The Digital Act does allow the ACA to determine principles upon which the datacast charge will be levied.³⁶ However, when those principles are set, and how, has not yet been determined.

Clearly those principles must spell out the basis for a charge. They should also consider whether exemptions from the

charge should be made for the provision of some services. For example, if the national broadcasters provide datacast services which are within their respective Charters and from which they derive no revenue, there is an argument that they are doing no more than providing services to the public for which they are funded and should be exempt from paying a charge. Further, all broadcasters will be subject to requirements to provide captioning for the hearing impaired. While captioning would fit within the definition of datacasting, there must be an argument that broadcasters should be exempt from paying a charge for a service which they are required to provide under legislation and from which they derive no revenue.

Industry and the Government have at least a year to complete the year 2000 reviews, not only on the issues surrounding datacasting, but on the larger issues it raises on the convergence between services we used to think of as broadcasting or telecommunications. The short answer to the reviews may have been provided in reply to a challenge about confusing broadcasting and telecommunications issues: 'data is data is bits is bit is bits'.³⁷

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1 Quote by Bruce Meagher, Acting Director Government and Public Affairs, Optus Communications, in evidence before the Senate Environment, Recreation, Communications and the Arts Legislation Committee's Inquiry into the *Television Broadcasting Services (Digital Conversion) Bill 1998* and the *Datacasting Charge Imposition Bill 1998*, (Senate Inquiry) on 1 June 1998.

2 *Television Broadcasting Services (Digital Conversion) Act 1998* (Digital Conversion Act) and the *Datacasting Charge (Imposition) Act 1998*, which passed through Parliament in July and have received Royal Assent. The Digital Conversion Act amends both the *Broadcasting Services Act 1992* (BSA) and the *Radiocommunications Act 1992* (RA).

3 BSA, Schedule 4, Clauses 6 and 19

4 BSA Schedule 4, Clauses 9 and 20

5 For commercial broadcasters, under the BSA, Schedule 4, Clause 6(3)(c) the simulcast period will begin on 1 January 2001 in metropolitan areas and no later than 1 January 2004 in regional areas. Provision may also be made for a simulcast period in remote areas for commercial broadcasters under Clause 6(7). Similar provisions apply to national broadcasters under Clause 19(3)(c) and 19(7).

6 BSA, Schedule 4, Clause 8(1) for commercial broadcasters and Clause 23 for national Broadcasters.

7 BSA, Schedule 2, Clause 7(1)(m) and Clause 35(1). However, reviews required to be held before 1 January 2000 may allow both commercial and national broadcasters to provide programming which is 'incidental and directly linked' to the analog programming, and may also allow national broadcasters to use multi-channel capacity. BSA, Schedule 4, Clause 59(da-dc).

8 BSA Schedule 4, Clause 37(1)

9 BSA Schedule 4, Clauses 6(3)(h), 8(4-6), 19(h) and 23(4-6)

10 BSA, Section 28 (as amended).

11 BSA Schedule 4, Clauses 59-60.

12 RA, Sections 100A(1), 100B(2), 102(3) and 102A(3).

13 See Parliamentary Library, Bills Digest No. 178 1997-8, *Television Broadcasting Services (Digital Conversion) Bill 1998*, pp 1-2.

14 Objectives for the conversion scheme for both commercial and national broadcasters include provision for the use of 'spare transmission capacity' on digital channels for transmission of datacasting services. BSA, Schedule 4, Clauses 6(3)(k) and 19(3)(k). The legislation suggests, however, that some additional programming will be permitted. Reviews required to be held before 1 January 2000 may allow both commercial and national broadcasters to provide programming which is 'incidental and directly linked' to the analog programming, and may also allow national broadcasters to use multi-channel capacity. BSA, Schedule 4, Clause 59 (da-dc).

15 Submissions to the Senate Environment, Recreation, Communication and the Arts Legislation Committee, May 1998, from the Australian Subscription Television and Radio Association, Attachment 6: Principles for DTTB, - a summary of ASTRA's position and reasons, p. 5, Submission from News Limited, pp 9-10, from John Fairfax Holdings Limited, pp 2-3, from Internet Industry Association, p. 5.

16 ABA General Manager Giles Tanner, in evidence before the Senate Inquiry hearing on 1 June 1998.

17 BSA Section 34(3) allows the ABA to determine that a part or parts of the broadcasting services band spectrum is or are available for allocation for the transmission of datacasting services.

18 RA, Section 131AD.

19 BSA Schedule 4, Clause 2. The *Explanatory Memorandum Television Broadcasting Services (Digital Conversion) Bill 1998*, Clause 2, p. 25 adds nothing to the definition.

20 BSA Section 6.

21 BSA Section 6.

22 Mr. Billson, Member for Dunkley in House of Representatives debate on the legislation for 3 June 1998.

23 Member for North Sydney Mr. Hockey in House of Representatives debate on the legislation for 3 June 1998.

24 Senate adjournment debate on the legislation for 1 April 1998

25 Senator Tierney (NSW) in Senate Inquiry debate on 26 June 1998.

26 Senator Schacht, in Senate Standing Committee on Environment, Recreation, Communications and the Arts Legislation Committee, *Television Broadcasting Services (Digital Conversion) Bill 1998 and Datacasting Charge (Imposition) Bill 1998*, June, 1998, Paragraph 4.7 to 4.10.

27 ABA General Manager Giles Tanner, in evidence before the Senate Inquiry, on 1 June 1998.

28 BSA Section 6

29 BSA Schedule 4, Clause 59(dd)

30 Listed in BSA Schedule 4, Clause 59.

31 BSA Schedule 4, Clause 41A.

32 RA, Sections 100A(1A), 100b(2A), and 102(3A)

33 RA Section 131AD(2)

34 BSA Schedule, 2, Clause 7(1)(p) and Schedule 4, Clause 36(1).

35 *Datacasting Charge (Imposition) Act 1998*, Section 6.

36 BSA Schedule 4, Clause 53.

37 See fn 1.

Update on Internet Telephony

Michael Mueller and Claudine Tinellis look at the current state of Internet telephony in Australia

The ability to make telephone calls over the Internet is a phenomenon which has sparked worldwide interest and spawned huge industry growth in the last two years. Internet telephony is forecast to capture a significant portion of the long-distance and international call market by the turn of the century.

Continual improvements in technology are expected to overcome the technical shortcomings which are still inhibiting the widespread adoption of the technology. These improvements, coupled with significantly cheaper rates, may well see more people turn away from standard telephony, thereby reducing traditional revenue.

This paper examines the nature of Internet telephony, the base technology, its growth, regulation and the implications for the long-distance call market. Products currently available in Australia will also be discussed.

WHAT IS INTERNET TELEPHONY?

Internet telephony refers to the use of the Internet to make telephone calls. Although limited at one time to PC-to-PC communication, it now refers to the following five applications:

- (i) voice mail or email with sound - a non real-time audio communication where one person sends a message to another person;
- (ii) fax - a near real-time communication between two users which stores and forwards data;
- (iii) voice telephony - real-time audio communication between at least two users;
- (iv) desktop video conferencing - real-time audio and visual communication between at least two users; and
- (v) application and document sharing - sharing of software applications and/or documents, in real-time, between at least two users.

Voice telephony over the Internet, in particular, has developed in three directions:

- (i) PC-to-PC (communicating online through your PC);
- (ii) PC-to-phone (making and receiving calls while connected to the Internet); and
- (iii) phone-to-phone (a call is made and received using the normal telephone handset).

IP TELEPHONY GATEWAYS

Internet telephony gateways have enabled Internet telephony to extend beyond PC-to-PC communications. Gateways operate to bridge different networks. So, in the case of the Internet, gateways bridge the Public Switched Telephone Network ("PSTN") and the Internet to facilitate communication between them. More particularly, gateways facilitate voice conversations between users with telephones without needing computer or Internet access.

Calls made using gateways are carried over the local PSTN network to the nearest gateway server location. The gateway then extends the call to the destination local PSTN (the function normally performed by telecommunications companies ("telcos"). The gateways operate to digitise and compress the voice or fax signal for transmission over the Local Area Network ("LAN") and then over the Internet to the destination gateway.

Consequently, gateways have enabled communications involving voice mail, fax and voice telephony to be carried over the Internet despite that the communications may originate from and terminate to different devices including telephones, fax machines or PC's.

CIRCUIT SWITCHED VS PACKET SWITCHED

Internet telephony differs from the traditional method of voice telephony in that it is a "packet switched" network as opposed to a "circuit switched" network. This means that traditional voice

telephony via the PSTN transmits data through a circuit from the user's handset to the telco's switch which is then, in turn transmitted to the receiver's handset

Internet telephony, on the other hand, divides the data into short packets which each contain the destination address of the data. Each packet is transmitted through intermediate nodes (routers - which direct the packets towards their destination) where they are briefly stored before being transmitted to another node. The structure of the packets is defined by the Internet Protocol ("IP"), and the routing and transmission of the packets is controlled by the Transmission Control Protocol ("TCP").

Depending upon the traffic over the Internet at any one time, each packet may follow a different route to the destination address in order to achieve the most efficient transmission. The packets are reassembled into the original message once they have all reached the destination address.

RELIABILITY AND QUALITY

In circumstances where traffic conditions on the Internet are congested, routers can drop packets resulting in delayed reception of the data. Packet loss is an ongoing problem with Internet telephony as Internet usage increases. Packet loss results in clipped speech. As large packets of data are used, the loss of even one packet has an impact on the intelligibility of the transmission.

Clearly, for Internet telephony to be effective, it must be subject to imperceptible levels of delay and quality reduction, with both parties able to speak and be heard simultaneously. The real problem here is that IP was designed for data files and can tolerate delays, lost packets and retransmissions. Hence while Internet telephony uses an IP-based network, its quality will remain relatively poor.

However, improvements in the quality of Internet telephony are continually emerging. The enormous difference between bandwidth pricing for voice vis-a-vis data is too large an arbitrage opportunity for technological problems not to be overcome. The most significant

improvement came about through the introduction of gateways. In addition to providing the convenience of being able to use the telephone handset to make the call over the Internet (ie ease of connectivity), gateways also improve the quality of the transmission by providing silence and background noise suppression, echo cancellation and forward error corrections.

Improvement in voice quality through codec technology, better compression techniques and PC sound cards enabling two-way simultaneous calls are factors progressively making Internet telephony a competitive alternative to the PSTN. At best, at the moment, the quality of phone calls over the Internet is only as good as that offered by mobile telephones.

Finally, to be effective, Internet telephony will need to be able to locate and identify customers. Whereas traditional telephony assigns numbers to locations or customers, IP networks do not. This presents problems for online and other directory assistance.

ESTABLISHING INTRA-OPERABILITY STANDARDS

One difficulty preventing Internet telephony from becoming a real alternative to the PSTN is the current incompatibility of Internet telephony products. Development and adoption of standards is the key to ensuring interoperability between the products.

Progress is evident in Netscape's support of H.323, the telephony and video conferencing standard that Microsoft and Intel have promoted as an Internet telephony standard. The development of H.323 goes some way to facilitating interoperability of Internet telephony products. H.323 is a framework of standards defining how voice, data and video will be transported over the Internet. In addition, the Real-Time Protocol ("RTP") and the Real-Time Control Protocol ("RTCP") form part of this overall framework and define how delay-sensitive voice and video data will be given special priority - ensuring real-time communications.

IMPLICATIONS OF IP TELEPHONY

The major implication of Internet telephony is the competition it poses to telcos in the long-distance call market. Users can make long distance phone calls

via the Internet for the price of connection to the Internet Service Provider's (or "ISP's") network.

Internet telephony allows the placement of voice telephone calls which bypass part or all of the PSTN. So, in the case of long-distance or international telephone calls, users of Internet telephony will only pay the fee for Internet access which may well be fixed monthly fee. This pricing regime will apply irrespective of the duration and destination of the call. This may significantly affect the revenue telcos generate from the long-distance call market (a major source of their revenue).

The impact of Internet telephony on the long distance call market is evident in the reduction of international tariffs by as much as 90%. Examples of the tariffs offered by Internet telephony service providers are: 25 cents per minute to the US from Tokyo and Osaka; 24 cents per minute from Paraguay to the US; 10-20 cents per minute for global calling from Italy and South Korea; .07 cents per minute for a call to any point within Australia (in addition to a 25 cent access charge); and 35 cents per minute from any point in Australia to the UK, USA and New Zealand (in addition to a 25 cent access charge).

In Australia, Internet telephony charges compared with the charges of telcos Telstra and Optus, in 1997, are as follows: a 15 minute call from Sydney to Melbourne during business hours - \$1.25 over the Internet compared with \$4.21 for Telstra and \$4.00 for Optus; and a 15 minute call from Sydney to the US over the Internet - \$5.50 compared with \$19.32 for Telstra and \$17.97 for Optus.

IMPLICATIONS FOR THE CORPORATE SECTOR

Corporations can jump onto the Internet telephony bandwagon by utilising their own networks (intranets) to bypass the PSTN. In so doing, some US companies have reported savings of 80% off their telecommunications bills.

IMPLICATIONS FOR THE PSTN

Not only does the emergence of Internet telephony threaten to erode revenues derived from long-distance phone calls, but it also potentially undermines the existing infrastructure. By allowing end-users to bypass the PSTN partially or totally, Internet telephony may remove

incentives to upgrade networks and invest in new infrastructure.

In addition, ever-increasing Internet usage is resulting in lengthy local calls, causing significant congestion of the PSTN.

IMPLICATIONS FOR INTERNATIONAL ACCOUNTING RATES

By providing a mechanism to avoid using the PSTN, it is said that, at an international level, Internet telephony may also provide a method of evading international accounting rates for interconnection with the networks of foreign carriers.

GROWTH IN INTERNET TELEPHONY INDUSTRY

Two years ago, Internet telephony was a little known 'toy' used only by Internet hobbyists. Since then the industry has seen phenomenal growth - and that growth is set to continue.

Frost & Sullivan, an international marketing consulting firm, published a study in 1997 indicating that software and hardware manufacturers will earn US \$1.89 billion in Internet telephony revenues worldwide by the end of 2001.

Between 1995 and 1996, the industry saw a 997% growth. In 1995, there was only one company selling Internet voice software. However, by the middle of 1997, there were at least 38.

A British report in 1997 predicted that 15% of all voice calls would be made via the Internet by 2000. While a US report valued 1997 sales of Internet telephony products at US\$80 million. In addition, the market's worth is estimated to reach US\$500 million by 1999.

Another US study published in 1997 foreshadowed that Internet telephony will steadily evolve into a reliable and broadly adopted technology for three reasons:

- quality will quickly approach acceptability;
- the economics are compelling; and
- huge markets are ripe for poaching.

The report concluded that US carriers will lose more than \$3 billion to Internet telephony in 2004. Out of this, consumers

and businesses will spend nearly \$2 billion on Internet telephony services and equipment (about 4% of the total long-distance calls) and save more than \$1 billion.

COST SAVINGS: DRIVING GROWTH IN INTERNET TELEPHONY

The economics of Internet telephony are indeed very compelling. One can squeeze between five and ten voice calls over the same bandwidth as compared to traditional, circuit switched voice, and an even a greater number of fax sessions. The cost savings achieved by the use of Internet telephony derive from the following:

- **Simple arbitrage**

ISP's lease high-capacity lines at low rates and provide Internet telephony at prices which are lower than those available from traditional voice carriers to end-users. The savings presented to ISP's by this process is similar to that provided to long distance resellers using traditional PSTN technology and leasing high capacity lines at T-1 and T-3 rates which are lower than purchasing lines separately. The opportunity for savings exists because the market for high capacity lines is competitive (as there is an oversupply of capacity which, therefore, increases buyer power), and the market for single lines is not.

- **Benefits of advances in technology**

The technology which Internet telephony capitalises on enables real cost savings as compared with standard telephony. Digital compression and packet switching reduces bandwidth consumption and allows other services to use the network at the same time. The ability to functionally integrate voice, data and fax over a single link will create greater efficiencies in the use of access bandwidth.

- **Regulatory regime imposing obligations on telcos but not ISPs**

For example, ISP's are not subject to the Universal Service Obligation ("USO"). The situation is similar in the United States where ISPs are free of the local access fee and Internet telephony providers generally are not

required to contribute to the Universal Service Fund. The regulatory impost on ISPs vis-a-vis telcos in Australia is discussed below.

FLEXIBILITY OF INTERNET TELEPHONY

Apart from cost savings, using the Internet to carry voice calls gives telcos greater flexibility in routing calls. For example, Telstra's voice-internet gateway (yet to be released) allows two simultaneous phone calls - one data, one voice - to be routed over the one domestic phone line. The same gateway could be used to integrate the phone system and the worldwide web, so that a user could place a voice call to a company simply by clicking on a button on the company's web-page.

In the future it is arguable that the further growth and widespread adoption of the Internet telephony will be driven more by its inherent flexibility than the cost savings it offers over traditional technologies. This is particularly so given that charges for more traditional telecoms services are closing the gap on voice-on-the-net charges. Indeed, Pulver.com's Mr Geoff Pulver and MCI's senior vice-president of data architecture Mr Vinton Cerf argue that it will be the greater flexibility of services and not price, that determines the success of Internet telephony.

AUSTRALIAN TELECOMMUNICATIONS REGULATION AND IP TELEPHONY

An ISP providing Internet telephony will be a carriage service provider within the meaning of section 87 of the Telecommunications Act 1997 (Cth) (the "Act").

In addition, such ISPs will be eligible carriage service providers within the meaning of section 245 of the Act, as they supply "a carriage service that enables end-users to access the Internet" (paragraph 245(a)(iii)). Paragraph 245(a)(i) is probably not applicable here as enquiries with the Telecommunications Industry Ombudsman ("TIO") indicate that the provision of Internet telephony is not considered to be a "standard telephone service" within the meaning of the Act.

TELECOMMUNICATIONS INDUSTRY OMBUDSMAN

As eligible service providers, ISPs must enter into the TIO scheme established under Part 10 of the Act; section 246(1). The TIO scheme enables the Ombudsman to investigate, make determinations and give directions relating to complaints about carriage services by end-users of those services eg. a complaint about billing or the manner of charging for the supply of carriage services.

UNIVERSAL SERVICE OBLIGATION

Carriage service providers, unlike carriers, are not subject to the USO. Consequently, carriage service providers are not required to contribute to the net universal service cost (a contribution to funding of losses incurred in fulfilling the USO in any financial year). This is one of the reasons why Internet telephony can be a more cost effective alternative to traditional voice telephony.

INDUSTRY DEVELOPMENT PLANS

Unlike carriers, carriage service providers are not required to prepare an Industry Development Plan and then comply with that plan in relation to their R&D activities, in addition to the specified reporting and consulting obligations (see Part 2 of Schedule 1 to the Act).

INTERCEPTION CAPABILITY REQUIREMENTS

At this stage, only carriers are required to prepare and lodge an annual interception capability plan with the Australian Communications Authority and the agency coordinator - a relatively burdensome obligation. No carriage service providers have yet been nominated by the Attorney-General under subsection 331(3) of the Act.

SPECIFIC REGULATION

Internet telephony may raise issues of pricing regulation in the future. Debate within the US context suggests that access charges will provide a subject for debate and, in turn, pressure for regulation in Australia.

Some people are calling for the US Federal Communications Commission to

take a lead in developing rules for Internet telephony providers worldwide. The intention here is to prevent the emergence of a myriad of country-specific Internet telephony regulations which is already occurring in the Czech Republic, Iceland and the European Commission. At the moment in Australia there are no regulations relating specifically to Internet telephony.

INTERNET TELEPHONY SERVICES IN AUSTRALIA

There are already a variety of service offerings on the Australian market which make use of Internet telephony.

In early 1997, ISP OzEmail launched what it said was the first commercial service in the world to provide Internet telephony using a standard telephone. The product is OzEmail Phone and it can be used to make long distance phone calls between most Australian cities, to New Zealand, the United States and Britain. OzEmail plans to offer a domestic service in the US this year, in addition to offering services throughout Europe, Japan and Hong Kong. OzEmail's Internet-based pre-paid card costs 35 cents a minute to any of its 70 international destinations.

In April 1997, Sydney-based ISP Knowledge by Design Pty Ltd became the first ISP to offer handset-to-handset phone calls over the Internet between Sydney and Hong Kong.

Australian company, Dynamic Bell, also offers an Internet telephony product - Net2Phone. This product allows computer to handset long-distance and international calls over the Internet. Dynamic Bell claims to offer savings of up to 85% off international call rates. Net2Phone uses a US central telephone switch which means that rates are not dependant on the country of origin. Effectively all calls originate from the USA. Some of the rates are as follows: Canada - US\$0.13 per minute; UK - US\$0.18 per minute; Australia - US\$0.20 per minute; Singapore - US\$0.26 per minute; and Japan - US\$0.29 per minute.

Also, US-based company, USA Global Link plans to offer overseas and long distance phone calls in Australia for an initial price of 28 to 62 cents per minute. In addition, the company hopes to gain 5% of the Australian domestic and international long distance telephone market in its first year - increasing to 15 - 20% in the future.

While much of the early focus has been on ISPs, other more traditional telecommunications companies have experimented with Internet telephony. RSL Com is one of the first of what is expected to be a host of telcos offering Internet-based alternatives to their regular services.

RSL Com has released a prepaid phone card that uses internet technology to route calls at between half and one-third the cost of regular calls. It offers phone-to-phone and PC-to-phone Internet telephony services. RSL Com's service relies on a private version of the Internet, known as the Delta Three global intranet, rather than the public Internet. Calls to the US and Canada in Australia will cost a flat rate of 37 cents a minute, and calls to the UK and Ireland will cost 48 cents a minute, plus local charges to the gateway.

AT&T and Deutsche Telekom have both announced intentions in relation to Internet telephony that will impact on usage within Australia. Similarly, Optus said it was developing a voice-on-the-Internet system, and was looking to release it as a prepaid phonecard, but refused to say when such services would be available.

In 1997, Telstra unveiled its first two Internet telephony products: virtual second line ("VSL") and icon calling. VSL enables incoming calls to be diverted through Telstra's Internet PSTN gateway while the user's phone line is tied up browsing the Net. It also enables users to make outgoing calls. The icon-calling enables people browsing in organisation's website to use Telstra's popular 1800 FREECALL service to immediately talk to a person from that organisation". Icon calling is what Telstra's General Manager

of Internet Access Products, John Rolland, describes as a "convergence telephony product", that is, a product which bridges the gap between the 'voice world' and the 'web world'.

Telstra is also trialing a service which allows customers in Sydney to make telephone calls to London over the Internet. The trial, which will involve about 250 Telstra customers and last 6 months, is designed to provide Telstra with essential information to aid future product development decisions. Calls are made direct from one telephone handset, to another handset; no computer is required. So far the trial, in both customer and technical terms, has been extremely successful.

John Rolland has said that it is Telstra's intention to continue to play a leading role in all forms of telephony in Australia. Mr Rolland stated that "telephony across the Internet Protocol opens up a new technology option for Telstra over which we can continue to offer the range of telephony products." Once Telstra is satisfied that this technology can be used to offer customers reliable service, then it will consider whether to go to the next stage of integrated technology to offer a commercial service.

CONCLUSION

A new cost and revenue paradigm has arrived to challenge traditional methodologies. The Internet telephony revolution will have a significant impact on call revenues, as the industry channels more of its resources into embracing the opportunities that 'voice over the Internet' can provide. While advocates would concede that Internet telephony is not quite ready for mainstream communications, its capacity to reduce costs and integrate voice and data is already capturing the imagination of telcos and consumers alike.

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Local Number Portability:

"You may experience a short delay..."

David Stewart considers the technical and regulatory challenges surrounding local number portability and some long-term benefits of intelligent network solutions.

Around the time of publication of this paper, the ACA is expected to have finalised its assessment of what constitutes the standard of 'full' local number portability under the *Numbering Plan 1997*. That decision represents a vital opportunity for the ACA to require Australian carriers to adopt an intelligent network ('IN') platform for call routing – as has been required by regulators in the US and Hong Kong. If that opportunity is lost, consumers (particularly business consumers) may have to bear the costs of a stop-gap, second-best solution which could delay the introduction of truly up-to-date technology in the largest network in Australia for years to come.

WHAT'S ALL THE FUSS ABOUT?

Number portability is the ability of customers of a carriage service to change their carriage service provider, while retaining the same phone number. Under the *Telecommunications Act 1997*, no formal distinction is necessarily made between a customer changing between switchless service providers amongst a single network, and customers who change from being connected from one network to another (they're both changing 'provider'). However, it is the second form of number portability – changing networks – which is crucial to competition between network providers.

Without number portability, competition between network providers for customers is chilled by the inevitable costs of changing telephone numbers which must be borne by a churning customer. Many businesses, particularly small to medium businesses, invest substantial amounts in the goodwill in and promotion of their phone number. While the impact is arguably less severe on residential consumers, the costs of changing numbers – which can include the indirect costs of missed calls and sheer inconvenience – mean that access to the lower prices offered by competitors may be lessened unless a simple, workable and affordable mechanism exists for the

customer to bring (or 'port') their number across from their old provider to their new provider.

TECHNICAL SOLUTIONS

There are two broad categories of technical approaches capable of achieving number portability.

The first category, 'call-forwarding' solutions, depend on the original network attempting to connect calls to a ported number, and then a subsequent re-routing of that call to the network of the new provider when that call attempt fails. Because call-forwarding is only triggered in the event of an unsuccessful call to the original network, such solutions invariably produce performance differences in connecting users to ported and non-ported numbers. In particular, the two-stage call routing process to customers of a rival network takes longer than connecting calls to one's own customers. This process is experienced by users as 'post-dial delay'.

One option for enhancing the performance of call-forwarding solutions is to engage in 'drop-back', whereby the number of superfluous circuits within the original network is reduced, though not eliminated. Nonetheless, such systems still have a process which relies on a 'normal call plus something extra' approach to dealing with a rival's traffic.

The second category, 'intelligent network' solutions, use a database which matches particular users and their telephone numbers with their network provider. This database is interrogated for every call, identifying whether the call needs to be connected to a point within the originating carrier's network, or elsewhere. Call routing, whether to a directly connected customer or to a rival's network, takes the same amount of time irrespective of whether the caller is attempting to reach the customers of the original provider, or their rival.

Call-forwarding solutions are generally characterised by the following features:

- there can be only two (or at most three) carriers involved in the porting of numbers;
- it is most effective where the proportion of calls to ported numbers is small compared to calls to non-ported numbers – put another way, where the call-forwarding network enjoys overwhelming market share compared to its rivals;
- it lends itself to attempts by network providers to require their rivals to bear costs, in the form of a 'call-forwarding charge' per call; and
- operators of existing networks based on technology similar to most incumbent ex-monopolist's networks around the world (such as Telstra's PSTN) are spared the cost of upgrading their equipment to accommodate the enhanced quality and breadth of service associated with IN solutions (since, once installed, IN databases can be used to activate a variety of services, other than LNP).

By contrast, IN solutions generally involve substantial set-up costs for operators who use non-IN-based networks, generate little if any incremental or 'per call' cost and are, generally speaking, readily scaled to include multiple carriers. In addition, IN-solutions, although more expensive where the market share of new entrants remains small, do not create increased congestion where the market share of the incumbent falls.

THE DIRECTION, THE PLAN AND THE SEEMING LACK OF DIRECTION OR PLANNING

Number portability is regulated by the *Numbering Plan 1997*, which is the regulatory instrument issued by the ACA under Part 22 of the *Telecommunications Act*. Section 458 of the Act provides that the ACA may include rules for 'the portability of allocated numbers' provided



that the ACCC has directed the ACA to do so.

The ACCC issued a draft direction to the ACA canvassing the issues shortly after the commencement of the Act, and a final *Direction* was issued to the ACA on 22 September 1997. That *Direction* provided that, amongst other things, the ACA must include rules on the portability of allocated numbers in the *Numbering Plan*, and laid out in detail what those rules were to be.

The *Direction* provided for two forms of local number portability: 'limited' number portability, required to be provided in the short term, and 'full' number portability (simply referred to in the *Direction* as 'number portability'). The ACA was directed to ensure that each form of number portability was to be offered by carriage service providers at the 'earliest practicable date' for that to occur, as determined by the ACA.

In its *Explanatory Statement* to the *Direction*, the ACCC identified the standard required for full number portability as being that carriage service providers could offer:

'equivalent services and features independent of whether the end-user is using or calling a number that has been ported from another carriage service provider. Any differences in the quality or reliability of services ... must not be apparent to end-users in a way that may affect the choice of carriage service provider by customers.'

The Commission nominated IN-based solutions as being capable of meeting this standard. Call-forwarding (and, in particular, Telstra's 'facilities re-direct' service) was specifically identified as being able to discharge the standard of 'limited' number portability (not full number portability).

The requirement of equivalence was subsequently set down in the *Numbering Plan* in clause 11.4, which provides that:

'A carriage service provided in relation to a ported number is an equivalent service if (and only if) any differences between it and a carriage service provided in relation to a non-ported number:

- (a) will not be apparent to a customer; or*
- (b) if they are apparent to a customer – will not affect the customer's choice of carriage service provider.'*

THE OVUM REPORT

The ACA has subsequently specified 1 May 1998 as having been the earliest practicable date for the provision of limited number portability by all carriage service providers (a requirement overlapping substantially with the licence condition imposed on Telstra by the Minister in late 1997) and 1 January 2000 as the earliest practicable date for full number portability. Following this process, the ACA commissioned Ovum to produce a report identifying the technical solutions and issues associated with each of 'full' and 'limited' number portability.²

That report has been released for a second round of industry consultation. Ovum states in the report that it considers that 'non-equivalence' requires three things:

'Firstly, a difference in services, features, reliability or quality levels must be objectively caused by the implementation of local number portability. Secondly, this difference must be perceived by end-users. Thirdly, the end-user perception of the difference must be significant enough to affect the choice of carriage service provider.'

For reasons stated below, this third criterion should not be considered by the ACA and should not have formed part of the study.

WHAT THE LAW SAYS

It is not clear that an interpretation of the *Numbering Plan* which resulted in a call-forwarding solution which yielded post-dial delays capable of affecting consumer choice being an acceptable form of number portability in the long-term could be reconciled with the specific wording of the ACCC's *Direction* and *Explanatory Statement*. It is an open question whether, in that case, there needs to be amendment of the *Numbering Plan* sufficient to bring it clearly into line with the *Direction*.

The *Plan* is required under the *Direction* to ensure that the ACA does not permit

carriage service providers to offer full number portability in a way that interferes with the provision of 'equivalent quality and reliability' of service, or access to 'equivalent services and features'. Equivalence means, in this context, that any differences are not apparent to end-users to the extent that such differences 'may affect' the choice of provider. Branding is permissible – perceptible and substantial post-dial delay is not.

The current wording of clause 11.4 of the *Numbering Plan* refers to differences which either 'will' or 'will not' affect a customer's choice of carriage service provider. Although the distinction between this and the previous concept of a difference which 'may affect' consumer choice is a subtle one, it is significant. Matters which *may* affect consumer choice go to the issue of perceptibility – itself a performance issue. Matters which *will* affect consumer choice are questions determined as a matter of customer research and preference. A regulator assessing the first question is focused on the technical issues. The second requires judgments concerning subjective questions of quality and choice.

With all due respect to the Authority and its staff, the approach of the ACA in commissioning the Ovum report, and the matters addressed by the report, suggest that the ACA has found itself on the wrong side of this logical divide. By allowing themselves to be drawn into debates about the relative impacts on consumer choice of particular call holding times, the point seems to have been missed. More significantly, the 'two-tier' approach, designed to deliver both short-term and long-term benefits to end-users, is in danger of being stalled at the first hurdle.

A final consequence of this approach to full number portability would be the somewhat bizarre scenario of the ACA having specified 1 January 2000 as the 'earliest practicable date' for the

introduction of a service which Telstra (at least) has been offering since 1 May 1998.

WHAT SHOULD HAPPEN

The ACA should strongly affirm the conclusion that it reached in a preliminary form in its earlier *Report on Implementation of Number Portability*, that only an IN solution meets the requirements of the *Numbering Plan*, and thereby require all carriage service providers to provide to themselves, or acquire, IN functionality supporting LNP. The principle benefits to end-users would be long-term, but nonetheless real and substantial. This would deliver a 'second dividend' to end-users, complementing the benefits arising from having the fastest possible introduction of limited number portability.

This is good policy, as well as good law. To focus overly on the arguments as to the limits imposed by the ACCC's *Direction* to the ACA miss the point. Use of IN technology combines the advantages of number portability as a general proposition which increases access by consumers to the benefits of competition, with the technological advantages of a network routing system which is easily adapted to develop new and innovative services. The benefits of number portability were recognised by the Minister when he described the introduction of any form of number portability as a 'major boost to competition ... [which] will help to bring lower prices and improved services to millions of Australians'. The benefits of IN include a common platform for the management of call routing information, a key precursor to wider availability of the kind of call management services which are taken for granted in the commercial world.

It seems plausible that part of the reasoning of regulators in not being

explicit about specific technical solutions in the *Direction* and *Plan* was the perceived need for the ACCC and ACA to remain 'technology neutral'. While it is both natural (and appropriate) for regulators not to be bullish about their own ability to foresee and act upon technologically-specific information, in the case of LNP, the time has come to take the plunge – as OFTA in Hong Kong, the FCC in the United States and AUSTEL before July 1997 have already done.

This is particularly true given that the distinction between 'limited' and 'full' local number portability in the *Direction* has the distinct appearance of being a decision which is, on its face, *implicitly* specific about the technological issues involved. Far better to be clear about this issue, than to try and 'herd the flock' towards an end result that is not overtly stated.

Both the ACA and ACCC (and AUSTEL before them) have been well informed of the relevant issues, both domestically and by being able to observe regulatory processes overseas. Granted that the ACCC appeared to require a 'two-tier' approach to number portability in its *Direction*, and that only two clear alternatives present themselves, what possible use is there in having that approach thwarted, and delaying the onset of local number portability once again?

David Stewart is a solicitor with Minter Ellison. The views in this article are the author's alone, and are attributable neither to Minter nor the firm's clients.

1 *Explanatory Statement to the Direction to the ACA on number Portability*, ACCC, 22 September 1997 at explanation of *Direction* 3.

2 ACA letter to industry attaching the Ovum report, dated 1 September 1998.

3 Ministerial Media Release on the decision to require Telstra to provide LNP as a licence condition dated 23 September 1997.

Cryptography Policy: Overdue for Reform

Greg Taylor of Electronic Frontiers Australia looks at the regulation and policy surrounding cryptography and highlights the problems with current local export restrictions

Data encryption plays an essential role in secure transmission of commercial information over public networks, yet its widespread employment is being stifled by cold-war era regulations. Within the Defence Department in Canberra, the arcane science of cryptography is still being treated as if it were a military secret, despite having moved into the academic and commercial sectors over 20 years ago.

Cryptography is a technology used to "scramble" information into an unreadable form. Computers have revolutionised cryptography and have enabled incredibly powerful ciphers to be deployed. Computer ciphers have two chief components: a method (or algorithm) and a key. The two are used together to encrypt a message or file. The algorithm is generally public but the key is kept secret. Anyone who has the key can use the decryption algorithm for the cipher to unscramble a message or file. The key is usually just a large number.

DEVELOPMENTS IN CRYPTOGRAPHY

The two main developments of interest are:

- secret key cryptography, also called symmetric cryptography because the same key is used for encryption and decryption.
- public key cryptography, also called asymmetric cryptography because different keys are used for encryption and decryption. Public key systems usually rely on key pairs, one of which is a public key which can be given to anyone, while the other is a private key which must be kept secret by its owner.

Public key cryptography, invented in the late 1970s, has revolutionised the development of methods for secure transmission of information over public networks. It enables two computers to generate and exchange one-time keys in a way that is protected against interception.

Computer cryptography is already in widespread use, although unknown to many people. Common applications include:

- protection of information transmitted during electronic banking transactions, such as automatic teller machine transactions, EFTPOS purchases and Internet transactions.
- encryption of email sent over the Internet for confidentiality (using PGP or S/MIME)
- encryption of files stored on computers - again to protect their confidentiality.
- the use of digital signatures which are an essential part of the authentication process in electronic commerce transactions.

Cryptography is now an essential tool for many businesses and governments to protect valuable confidential information both when it is stored in their computer systems and when it is transmitted from one location to another over public networks. Without cryptography, it would be very difficult or expensive to protect this information. For individuals, it is an extremely valuable tool to protect private information or communications.

Sophisticated cryptographic software is readily available now to virtually anyone who wants it, and often at little or no cost, and is widely and legally available on the Internet. Much of this software is also extremely powerful - to the point where it would be impractical for governments or their defence agencies to attempt to 'break' the encryption.

However, the strength of cryptography is an issue that is surrounded by controversy. On one side of the debate is the argument that free access to cryptography by the general public enables them to fulfil their right to protect the privacy and security of their communications, including commercially valuable data. On the other side, the government argues that it needs to control the use of cryptography to enable eavesdropping on

communications as part of its law enforcement activities.

THE US EXPORT RESTRICTIONS

With certain exceptions, all software originating in the USA has limited crypto strength because of export restrictions.

Examples include:

- The major Web browsers (Netscape Navigator/Communicator and Microsoft Internet Explorer), which are limited to 40-bit keys in the export version as opposed to 128-bit keys in the US domestic version.
- Some widely used 'office' software such as Lotus Notes, the export version of which is limited to an effective 40-bit key. (The actual key length is 64 bits but part of the key is escrowed in the USA.)

In September 1998 the US relaxed its export controls, but only for export to defined markets or industries, with more liberal exceptions being made available for licensed key recovery products (see below).

The US limits have obvious effects on Australia. Because of the large international market share held by some US software companies, many of the products of these firms have become *de facto* standards. Since cryptography requires both the sender and the receiver(s) to communicate using the same protocols (ie, standards), any US limits on cryptography can affect standards, which in turn affect the types or strength of encryption available to users in other countries.

THE AUSTRALIAN SITUATION

Within Australia, encryption software can still be freely used and exchanged within national boundaries. A number of local firms also produce cryptographic software

and hardware. Nevertheless, there are some restrictions in place.

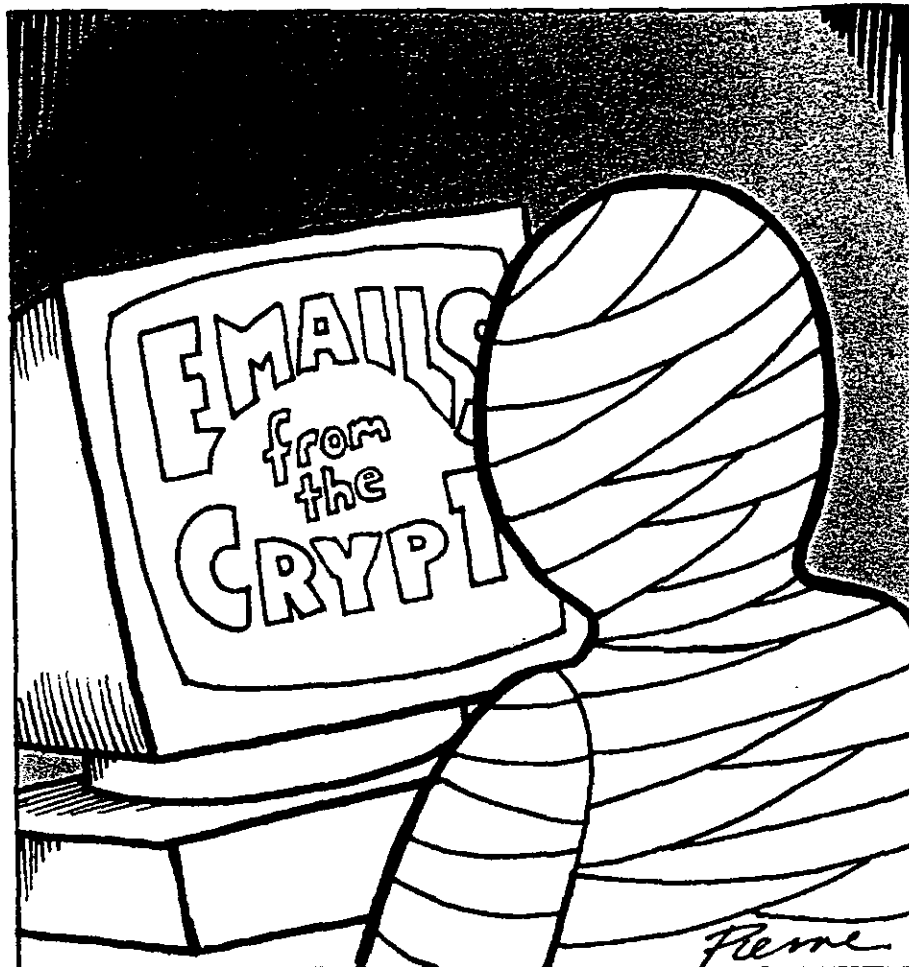
The *Telecommunications Legislation Amendment Bill* was passed by the Senate in November 1997. The purpose of the Bill is to amend several existing Acts including the *Telecommunications (Interception) Act* of 1979. The amendments will require carriage service providers (CSPs) to provide, at the CSP's expense, access to any data or communications which they transmit for their customers. CSPs include a wide range of telecommunications service providers including telephone service providers and most Internet service providers.

Importantly, the amendments require the CSP to decrypt any data which the CSP was responsible for encrypting for a customer. There is, however, apparently no requirement on the CSP to decrypt data or messages which the customer personally encrypted (ie. encryption which did not involve the CSP).

Prior to the November 1997 amendments, the government still had mechanisms for gaining access to the plain text of any data or messages encrypted by a CSP. For example the government could withhold the approval for any new telecommunications service which a CSP proposed to supply unless the service was capable of providing access for authorities to the plain text of any message. A recent example was the roll-out of Telstra's revamped ISDN OnRamp service in 1997. Availability of the new service was delayed until systems were in place for interception of any traffic transmitted using this service. A similar delay occurred with the introduction of GSM mobile phones.

AUSTRALIAN PUBLIC POLICY

There has been silence from the federal government for some time on broader cryptography policy. However, there have been some specific cryptography-related initiatives mainly related to the establishment of a legal regime for electronic commerce. Several expert working groups have been established - one by the Minister for Communication, the Arts and the Information Economy and another by the Attorney-General. The latter is dealing with the legal regime for online transactions and information exchange. Both working groups have released reports this year.



In 1996, the Federal Government made substantial steps towards developing a policy on the use of cryptography in Australia. A report was commissioned from Mr Gerard Walsh, a former deputy head of the Australian Security Intelligence Organisation (ASIO).

However, the Walsh Report was withheld by the Attorney-General's Department from publication. It was eventually obtained by EFA under the *Freedom of Information Act* and published on the EFA Web site (subject to the deletion of certain sections on grounds of national security under the Act).

The Walsh Report comes out in favour of free access to cryptography by the public. The conclusions in the report are especially interesting in view of Mr. Walsh's background with ASIO. Some commentators have suggested that the report was withheld because it did not reach the "right" conclusions (ie., that use of cryptography should be restricted). The status of current thinking in the government is unknown, although all major parties have published policies supporting relaxation of controls.

AUSTRALIA'S EXPORT CONTROLS

It is illegal to export any cryptographic software products from Australia without a license issued by the Department of Defence. Australia's export regulations are amongst the most stringent in the world, and closely parallel restrictions imposed in the USA, although all licence applications here are evaluated on a case-by-case basis, rather than in accord with any published guidelines.

The controls are administered by the Director, Strategic Trade Policy and Operations (STPO), a division of the Defence Acquisition Organisation. With one major exception (the General Software Note) the Australian controls are based on obligations under the international Wassenaar Arrangement, discussed below.

The Australian regulation of cryptographic export controls is set out in Schedule 13E of the *Customs (Prohibited Exports Regulations)* and Section 112 of the *Customs Act 1901* which deals with prohibited exports. Items prohibited under this legislation are

listed in the Defence and Strategic Goods List (DSGL) of the Australian Controls on the Export of Defence and Strategic Goods. Crypto software is identified under Part 3, Category 5/2 of the controlled goods list.

Under these regulations, all cryptography software requires a permit or a licence before it can be exported. Evaluation of licence applications is carried out by Defence Signals Directorate, the body responsible for Australia's external security.

An exception to the rules is the Personal Use Exemption, which allows encryption software to be taken out of the country without a permit under specified conditions for personal use (eg., where installed on a notebook computer). There are also exemptions for authentication-only products and limited application devices such as ATMs and smartcard readers.

There is a major loophole in the Australian legislation in that the *Customs Act* applies only to physical goods. Intangible exports via electronic networks such as the Internet are not covered by the regulations. This has resulted in some controversial media coverage of late, particularly in regard to the availability on Australian websites of products such as Cryptozilla, a strong-crypto version of Netscape which used Australian-developed crypto software embedded in the open source code provided by Netscape Communications.

Although there have been hints that the *Customs Act* would be amended to cover intangible exports, there are no known moves at present to do so. In the meantime, the Defence Department is attempting to enforce export controls in the electronic medium by means of "moral suasion", a strategy that is not meeting with widespread support or success.

THE KEY RECOVERY CONTROVERSY

A number of governments, in particular the US and UK, have proposed key escrow or key recovery schemes. The aim of the schemes is to allow authorised officials to decrypt intercepted messages. Law enforcement and intelligence agencies argue that without this ability, criminals can abuse cryptography to

conceal illegal activity from the law. Australian policy is to encourage key recovery products for export purposes, but no official policy on this matter has been published.

Under key escrow, it would be mandatory for everyone using encryption products to provide a copy of their key to the government for law enforcement access. Under key recovery, the key would be kept by a third-party, generally a commercial service provider. Both systems generally claim that keys and/or plain text would only be available to law enforcement with a court warrant.

The basis of key escrow and key recovery is that all encryption keys are stored in key repositories where government officials can obtain copies of them for use in decrypting messages. There are significant privacy concerns with this approach. There are also major risks in having large numbers of keys stored in central locations. Honest mistakes, corruption and criminal hacking all pose major threats.

THE WASSENAAR ARRANGEMENT

The basis for the export controls of most countries is a military treaty officially entitled *The Wassenaar Arrangement on Export Controls for Conventional Arms and Dual-Use Goods and Technologies* ('Wassenaar Arrangement') which is a protocol intended primarily to control weapons of mass destruction. There are currently 33 signatories to the Wassenaar Arrangement. The Dual-Use section of the Arrangement forms the basis for most national controls over the export of cryptography products.

The Wassenaar Arrangement is the successor regime to the Co-ordinating Committee for Multilateral Export Controls (COCOM) established by NATO in 1949 to control the export of military equipment and dual-use technologies to Warsaw Pact states. Negotiations to establish a successor regime to COCOM commenced in 1993 and COCOM was terminated in March 1994. The Arrangement was not intended to impede bona fide civil transactions.

There is a preamble to the Wassenaar Dual-Use list called the *General Software Note* (GSN), which was intended to exempt mass market and public domain

software from the scope of the controls. However, Australia explicitly disallows this waiver in respect of encryption software. Four other countries, USA, New Zealand, France and Russia, also disallow the GSN waiver.

The reasoning behind this stance by Australia has never been explained, despite the fact that this policy position means that Australian crypto developers are at a severe disadvantage compared with their European counterparts.

There are now moves afoot to further tighten international restrictions on cryptography in a current review of the Wassenaar Arrangement. The Australian delegation is at the forefront of this movement, although their position is widely believed to be influenced by the US government's hardline stance. Amongst the proposals to be put forward are a plan to include intangible exports as controlled items, and removal of the GSN waiver.

CONCLUSION

Most technical and professional organisations involved in the development of network standards are opposed to the controls that are placed on cryptography, since they restrict the development of global standards, weaken security, encourage information warfare, and impose severe risks to human rights and privacy.

Campaigns involving both industry and civil liberties interests are active in many countries. There is now an international movement sponsored by the Global Internet Liberty Campaign (GILC) which has gained the support of many industry and civil liberties lobby groups, to call a halt to what are generally perceived as silly and unworkable restrictions. Strong cryptography is now widely available and is in the public domain. Export controls are starting to be routinely circumvented by developers moving offshore. It appears to be only a matter of time before the legislature and the bureaucracy wakes up to the obvious.

Greg Taylor is a board member of Electronic Frontiers Australia Inc. and chair of its cryptography committee. Further information is available from the EFA website: <http://www.efau.org.au>

New Copyright Laws

Karen Gettens reports on the latest amendments to the Copyright Laws and also discusses the current position of recognition of moral rights in Australia.

The *Copyright Amendment Act 1998* and the *Copyright Amendment Act (No.2) 1998* commenced on 30 July 1998. All of the provisions of these acts are now in force, except for the amendments concerning the parallel importation of packaging and labelling, that have been delayed for 18 months.

THE ROAD TO COPYRIGHT REFORM

Governments over the past decade have been struggling with the issue of copyright reform. In 1996 the Coalition Government was elected on the promise of long overdue copyright reform to provide fair and adequate protection of rights, including moral rights, in Australian copyright law. The road to reform followed:-

18 June 1997 - the *Copyright Amendment Bill 1997* ("Bill") was introduced to the House of Representatives.

27 June 1997 - the Bill was introduced to the Senate. The Senate promptly referred the Bill to the Senate Legal and Constitutional Legislation Committee. The Committee held three public hearings concerning the Bill, and received 118 submissions.

27 October 1997 - The Committee's report was tabled supporting the Bill, including the issue of moral rights, but called for various amendments.

20 November 1997 - the *Copyright Amendment Bill (No.2)* ("Bill No. 2") 1997 was introduced to the House of Representatives. The Bill provides that non-pirate CDs can be imported into Australia without the consent of the Australian copyright owner.

26 November 1997 - Bill (No.2) is passed by the House, and is subsequently referred to the Senate Legal and Constitutional Legislation Committee for report. During February and March 1998 the Senate Committee held seven public hearings on the Bill.

1 April 1998 - the Senate Committee tabled its report on the Bill. The Report supported the Bill, but also made some suggestions for consideration.

11-12 July 1998 - both Bills were passed by the Senate (at around 12:45am). The

Bill had been passed with 28 amendments that were recommended by the Senate Committee. Bill (No.2) was passed with the support of Senator Harradine. Senator Colston had announced his opposition to the Bill, but was not in the Senate at the time the vote was taken. The vote was 33-32.

15 July 1998 - at a special sitting of the House, the House of Representatives passed the amended bills.

30 July 1998 - The Bills were given Royal Assent.

THE MAJOR AMENDMENTS AT A GLANCE

The *Copyright Amendment Act 1998* (Cth) ("Act") contains 10 schedules providing for wide-ranging copyright reforms in a number of areas:

- employed journalists copyright (Schedule 1);
- commissioned photographs (Schedule 1);
- parallel importation of packaging and labelling (Schedule 2);
- conversion damages and detention (Schedule 3);
- copying for the services of the Government (Schedule 4);
- copying for people with an intellectual disability (Schedule 5);
- copying of works by educational institutions (Schedule 9); and
- border enforcement (Schedule 8).

The proposed amendments dealing with protection of moral rights have been withdrawn, due to the debate over upfront waiver. The forecast is that a new stand-alone bill introducing comprehensive moral rights protection will be introduced in approximately three months time.

The *Copyright Amendment Act (No.2) 1998* removes the owner's control over parallel importation of CDs.

THE AMENDMENTS - EMPLOYED JOURNALISTS

Under the old s.35(4) *Copyright Act 1968* (Cth), a newspaper proprietor only owned the copyright in articles written by their employed journalists for the purposes of publication in a newspaper or magazine,

or for broadcasting. Employed journalists owned the copyright in all other uses of their works. This meant that when electronic means of publication was developed, the proprietors were not the owners of the copyright for this type of publication.

The new amendments to the *Copyright Act* rewrites s.35(4) to give proprietors additional rights to facilitate the electronic publication and delivery of newspapers, magazines and similar periodicals. Employed journalists retain their traditional rights of photocopying and independent book publication, but proprietors are now classified as the owner of the copyright for all other uses, including publication on the Internet and on-line databases. Self-employed or freelance journalists will continue to retain all rights to their copyright work.

These amendments were recommended in the 1994 *Copyright Law Review Committee Report*, and also reflect agreements between major publishers and the Media Entertainment and Arts Alliance.

The original Bill also introduced a proprietor's "right of restraint" to block the photocopying of more than 15% of a newspaper or magazine (despite the fact that employed journalists owned the copyright in photocopying of their works). This right was criticised by the Senate Committee's Report, and has not been included in the Act.

These amendments will apply to all works created after 30 July 1998.

COMMISSIONED PHOTOGRAPHS

Under the old s.35(5), when a photograph is commissioned, the commissioner is the first owner of copyright, subject to any agreement to the contrary. This was an exception to the usual situation where the author of a work was the owner of the copyright. This anomaly has now been changed, in the new s.35(5) so that the photographer is the first owner of the copyright, except where the photographs are taken for private or domestic purposes such as weddings and family portraits. In these instances, the commissioner will retain ownership of the copyright.

These amendments to s.35(5) will now enable commercial photographers to

licence future uses of their photographs, which they have sought for a number of years.

PACKAGING & LABELLING OF IMPORTED GOODS

The amendments in Schedule 2 of the Act remove copyright control over parallel importation of packaging and labelling. These amendments were considered necessary to increase competition in respect of branded goods, and to improve service, reduce prices, and increase choice. These amendments were originally recommended by the Copyright Law Review Committee ("CLRC") in 1988. However the Government introduced amendments to delay the commencement of these provisions for 18 months after the Act commences. This will ensure that businesses legally using this means of controlling their exclusive distribution arrangements can have sufficient time to adapt their business operations. Thus, these amendments will not commence until February 2000.

SPECIAL POSITION RE THE OLYMPIC SYMBOL

The Olympic rings symbol has been excluded from the effect of the packaging and labelling amendments. This symbol is specially protected under the *Olympic Insignia Protection Act 1987*, which accords it perpetual copyright. With the express exclusion in definition of "accessory" in s.10(1), it stands in a unique position vis-a-vis other copyright material.

CONVERSION & DETENTION

Due to past abuse of the remedies for copyright infringement, the amendments under Schedule 3 of the Act make the availability and extent of the remedies of conversion damages and delivery up of goods, subject to the discretion of the court, rather than being an automatic right. These amendments were in response to the recommendations of the CLRC's 1990 *Report on Conversion Damages*. This Report found that where an infringing copy was an insubstantial part of an article (such as a badge on a soccer ball), and was not severable from it, the whole article had to be delivered up, or damages given for the whole value, thus allowing abuse by copyright owners and unfairness to defendants.

GOVERNMENT COPYING PROVISIONS

Schedule 4 of the Act amends the *Copyright Act* to streamline the system

for owners of copyright to be paid when their materials are copied by the Commonwealth, State and Territory governments. Payments will now be made on the basis of sampling, rather than the present method of full record-keeping, where there is a declared copyright collecting society.

COPYING FOR PEOPLE WITH AN INTELLECTUAL DISABILITY AND PEOPLE WITH A PRINT DISABILITY

Schedule 5 introduces more appropriate terminology in the provisions of the *Copyright Act* that affect people with a print or intellectual disability. The amendments include replacing the term "handicapped readers" with "persons with a disability" and replacing "intellectually handicapped persons" with "persons with an intellectual disability".

The Act also amends the license for institutions who assist people with a print disability under s.135ZP, to have the same rights as institutions who assist persons with an intellectual disability. Both of these institutions will now no longer be restricted to copying for the purposes of research or study only.

COPYING OF WORKS BY INSTITUTIONS

Schedule 6 of the Act makes a number of minor amendments to the statutory educational copying licences under Parts VA and VB of the *Copyright Act* to facilitate the effective operation of these licences for the benefit of both the relevant collecting bodies, and the institutions. One of these changes amends s.135ZM, so that when an artistic work is copied along with text that accompanies the artistic work, then the remuneration now payable to the author, will be shared with the visual artists. Visual artists have sought equitable remuneration for the copying of their works for some years now, and these amendments mean that they will now receive payments to the same extent as other creators.

COPYRIGHT TRIBUNAL

Schedule 7 of the Act allows for the appointment of one or more additional Deputy Presidents and for the appointment of former judges to the Copyright Tribunal. These amendments are designed to enhance access to, and the effective operation of, the Copyright Tribunal.

IMPORTED COPIES OF COPYRIGHT MATERIAL

Schedule 9 of the Act corrects minor errors made in the 1994 TRIPS amendments, and makes other minor changes to border enforcement provisions. These amendments include a fee for the lodging of a notice of objection, and authorisation for the CEO of Customs to provide certain information to objectors.

EDUCATIONAL INSTITUTIONS

The definition of "educational institution" has been broadened to include pre-schools and kindergartens, and the requirement that an educational institution must be not for profit has been removed.

THE AMENDMENTS UNDER ACT NO.2

The *Copyright Amendment Act (No.2) 1998 (Cth)* ("Act No. 2") removes the copyright owner's control over "parallel importation" of music CDs. This measure was announced by the Coalition Government in October 1997.

Sound recording prices in Australia are high by world standards. Restrictions on the parallel importation of legitimate sound recordings prevented Australian retailers from being able to source lower priced recordings from overseas sources without first gaining permission from local rights holders (usually major international record companies). This problem was identified in the 1990 Prices Surveillance Authority's report, *Inquiry into the Prices of Sound Recordings*, but has never been addressed.¹

POLICY BEHIND THESE AMENDMENTS

Parallel importation will increase competition between local and overseas suppliers of sound recordings in the Australian market. It is expected that local retailers will be able to source cheaper overseas product. This will encourage local suppliers to make sound recordings available to retailers at similar wholesale prices to those which could be obtained from overseas suppliers. Further local subsidiaries of global music companies, which control 70 per cent of the world industry typically only release 20 per cent of their titles in the Australian market. Parallel importation will mean that Australian consumers will have a greater range of choice.²

To allay fears that pirate CDs will flood the Australian market, the Act No. 2 includes a range of measures that improve the protection for owners of copyright in sound recordings:-

- In civil proceedings for importation of infringing CDs, the onus is on the importer to establish the CDs are not pirated;
- Maximum monetary penalties have increased: \$60,000 fines/5 years imprisonment for persons, \$300,000 fines for corporations, per offence;
- The Government, through the Department of Communications and the Arts, has allocated \$10m over three years to an Australian music industry promotion package.

MORAL RIGHTS

The major reform under the Act was to be the introduction of a comprehensive scheme of moral rights for creators of works and films. However once the Bill was introduced, the justification for comprehensive moral rights protection became obscured by a debate over a provision to allow upfront waiver for contracted works and films. In October 1997, the Senate Legal and Constitutional Legislation Committee recommended an extension of waiver at the time of commissioning a work or film. Since this time, the Government has held lengthy discussions with the film and television industry to find an acceptable compromise on the issue, that would satisfy all interests and would still maintain certainty and confidence in the industry. A compromise was not possible by the time the Bill was debated, so the Government withdrew the moral rights provisions from Schedule 1.

The Government is continuing to consult to develop a consensus on a workable waiver provision, and will resubmit a moral rights regime as a stand-alone bill in approximately three months time. The Government held a forum on the issue of waiver of moral rights in Sydney on 18 August 1998.

WHAT ARE MORAL RIGHTS AND WHY DO WE NEED THEM?

Moral rights are personal rights of the author of a work, that are completely independent of the author's economic rights, and continue to exist even after the transfer of economic rights. Moral rights include the right of the author to

be made known to the public as the creator of the work (paternity); the right to protect a work from distortion (integrity); the right to choose whether to publish the work; the right to restrain excessive criticism of the work; and the right to prevent violations of the author's personality. Currently, Australia has limited moral rights protections in ss189-195AA of the *Copyright Act*.

The call for a more comprehensive moral rights regime has been heard for over a decade now. Australia has an obligation under the Berne Convention for the Protection of Literary and Artistic Works to recognise moral rights under article 6bis. This was recognised in the CLRC's *Report on Moral Rights* in 1988, and then again in the 1994 *Discussion Paper, Proposed Moral Rights Legislation for Copyright Creators*.

The moral rights regime proposed in the original Bill satisfies Australia's obligations under the Berne Convention. Schedule 1 of the Bill, included:

- a creator's right to be identified as the creator of a work (the right of attribution of authorship);

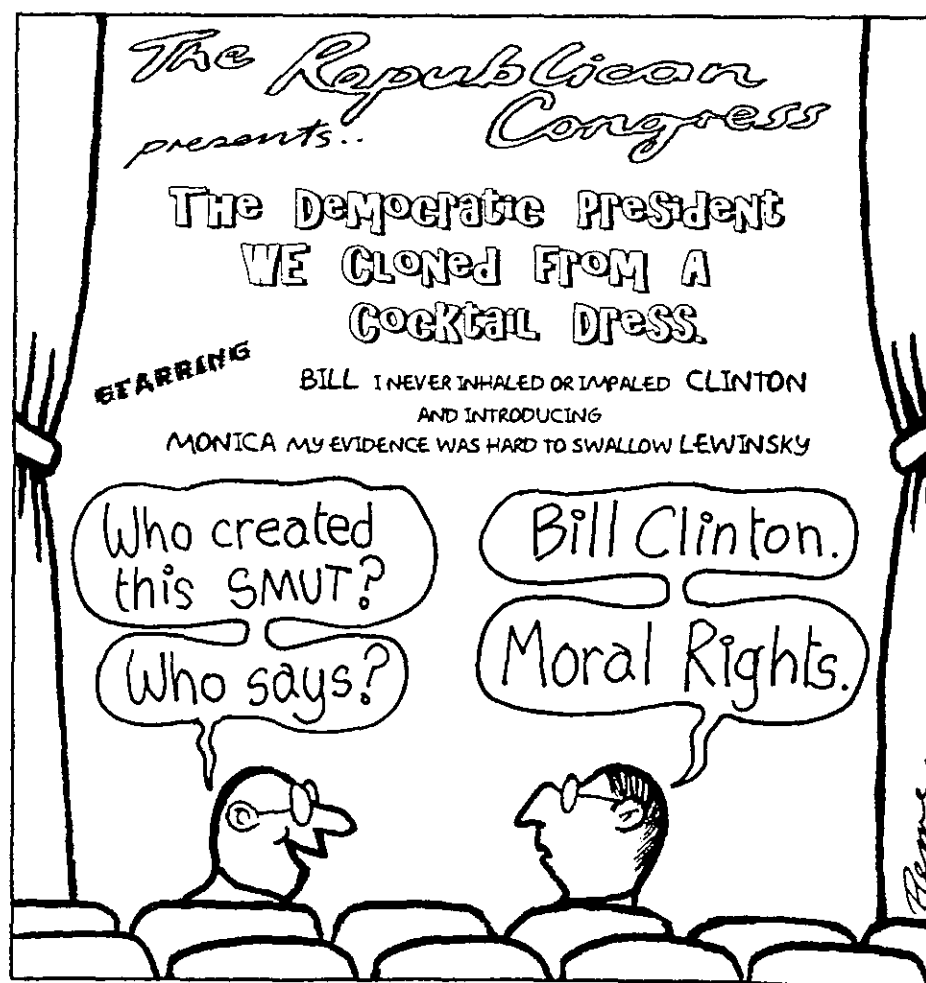
- the right of a creator to take action against false attribution (the right not to have authorship of a work falsely attributed); and
- a creator's right to object to derogatory treatment of his or her work which prejudicially affects his or her honour and reputation (the right of integrity of authorship of a work).

The rights will apply to authors of all literary, artistic, dramatic and musical works and authors of cinematograph films. Authors of cinematograph films are the principal director and the principal producer of the film. The current Part IX of the *Copyright Act* contained provisions relating to the false attribution of works, but did not require recognition or attribution of authorship. Cinematograph films were also not included.

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1 As outlined in the Regulatory Impact Statement – Options to Lower the Sound Recording Prices for Consumers, 1997.

2 From Explanatory Memorandum to the Copyright Amendment Bill (No.2) 1997.



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are sought from the members and non-members of CAMLA, including features, articles, and case notes. Suggestions and comments on the content and format of the Communications Law Bulletin are also welcomed.

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