

DIGITAL RIGHTS MANAGEMENT IN TELEVISION

Rob Nicholls & Kate Harrison– 13 October 2004

Speaking Notes

What I would like to do is run through a number of issues. The idea behind raising these issues is precisely to provide the food for thought that represents opening a discussion rather than closing it. So what I thought I would do is to consider some of the issues that are facing television broadcasters in respect of digital rights management. Rather than take a single view and, despite the presence of Kim Williams at this table, I thought I might look at the differences between the constraints and business needs of commercial broadcasters and subscription broadcasters. I have decided for the purposes of this talk not to use emotive terms such as free-to-air or open television or pay TV versus subscription television and to use the terms as they are defined in the Broadcasting Services Act. What I will show is that there are substantial similarities between the challengers facing commercial and subscription broadcasters with a slight edge in terms of the challenges to the subscription broadcasters because of their degree of vertical integration.

I then have a quick look at some of the general requirements associated with digital rights management again taken from a broadcasting prospective rather than from a more general internet or library or whatever digital rights management approach. That is, I address those parts of digital rights management which will actually affect broadcasters.

I then have a brief discourse on “open boxes” to contrast the issues facing broadcasters with their set-top boxes and, in the future, personal video records with those issues which are facing suppliers of content to the PC world. Indeed, I argue that some of the issues which have affected the music industry can actually be addressed by broadcasters in Australia.

I briefly then move on to the implementation of the “broadcast flag”. This topic, which seems to have become significantly overstated in its operation, is important for broadcasters in Australia but only important if a particular approach is taken to the regulation of consumer devices. It is not clear that this approach will be able to be taken and this ties back to the open boxes.

I address the analogue hole, that is, digital rights management is precisely that – digital. That there are ways of countering digital rights management in the analogue domain certainly needs to be addressed.

I then look at some of the practical issues on keeping PVRs and set-top boxes, that is, the devices associated with broadcasting connected to the television rather than the internet. I conclude, by addressing the balance of needs of viewers (who are important both commercial and subscription television broadcasters) and those of the rights holders.

NEW SLIDE

The business of commercial television is the sale of advertising. I am not going to argue that there is some sort of “social contract” or indeed any other sort of contract but broadly the principle is that consumers watch advertisements in return for enjoyable programming. Programming that is designed to entertain, inform or educate and according to the Broadcasting Services Act advertising which is other than this.

Although commercial broadcasters in Australia make television programming they also buy programming. In particular, commercial broadcasters acquire drama, particularly movies, from the major studios. Popular drama such as ER, The Practice and even The Simpsons is acquired from a small number of organisations which have their headquarters in the United States. The importance of the United States in this regard is that the expectations of protections of rights are initially set by those protections provided under United States law. Whereas it might be argued that well this is Australia the reality is that contracts for the supply of programming will reflect those assumptions.

There has been a major change in the technical model associated with commercial broadcasting and that change has been reflected in the quality of video received at the home. In the analogue world, commercial broadcasters did their very best to deliver to the transmitter the best possible video and audio quality services that they could. As the programming was transmitted from the towers to the antennas at peoples homes because it was in analogue mode it degraded and the pictures that were received were not of the same quality that was delivered to the transmitter. This has changed. In the digital world, the quality of pictures and of audio that arrives at the home is identical in every respect to that which leaves the commercial broadcasters facility. What’s more, that quality is comparable to DVD quality in the case of standard definition signals and substantially better quality than DVD in the case of high definition signals. The broadcasters understand this. The broadcasters have come to terms with it. It is only now that the rights holders are starting to be concerned that these perfect quality television programmes could be redistributed by consumers unless steps are taken to prevent that.

At the same time that the rights holders have realised the potential for consumers to copy, it is has become much more apparent to the commercial broadcasters that they have little or no involvement in consumer equipment. Indeed, the move by the commercial broadcasters to “seed” the market for digital set-top boxes at the start of digital broadcasting was unusual. It was an anomaly. It was not the operation of the commercial broadcasters in their normal course of business.

NEW SLIDE

Contrast the commercial broadcasters with the subscription broadcasters. On this slide very little has changed. The business model is different – instead of consumers watching the service and putting up with the adds the consumers pay to watch. Instead of the technical model having changed because of transmission the technical model has changed regarding delivery to cable head ends. That is, the business model is different but the technical issues are the same. The major issue which differentiates, from the prospective of digital rights management in any case, the operation of commercial television from subscription television is that subscription television providers are in control of their own destiny with respect to consumer equipment. That is, the set-top box that you use to watch Foxtel is specified by Foxtel, it is owned by Foxtel, it is controlled by Foxtel. Does this make any difference to you as a consumer? Well yes but only as a benefit. You don’t have to pay for the set-top box. It comes as part of your subscription. From the prospective of digital rights management however, the subscription television broadcasters have the benefit of having control of all of the elements of delivery of their service including the set-top box.

NEW SLIDE

So what are the general needs in digital rights management for television? Well initially the digital rights management system needs to be effective and robust. What does this mean? Broadly that the system must work and must continue working even when circumstances change. This also brings in the need for renewability. That is, if there are cryptography aspects in the digital rights management system that they need to be able to changed if the system is “hacked”. That is, much in the same way that conditional access systems in subscription television broadcasting can be renewed when there is a degree of piracy, at the cost of a single device such as a smartcard, so a digital rights management system needs to have that level of renewability without having a population of legacy devices which are no longer usable by consumers.

Further, the digital rights management system associated with broadcasting has to deal with several types of broadcasting. It has to be able to cope with data casting and other forms of enhancement for commercial broadcasters. It has to be able to cope with multi-channelling for the national broadcasters. It has to be able to cope with multi-channel and additional conditional access systems for the subscription broadcasters. It may be that this is not a single solution. However, the degree to which there is interoperability and commonality between subscription television and commercial and national broadcasting, particularly in a market as small as Australia, can influence the cost of implementation.

And the last issue is that there needs to be easy compliance. What does this mean? Broadly it is more than the slide says that it must ensure that people can comply with the rules. It must be as invisible as is technically and operational feasible to consumers of television programming. As a practical matter, neither the commercial nor subscription broadcasters deliver their content to a rising mass of would be pirates who will copy content at every opportunity and resell it into the markets of Asia or beyond but much more to a large number of Australians who simply want to sit down and watch something entertaining.

It is the challenge faced by designing a digital rights management system which is effective against the small minority who would abuse the delivery of programming against the reasonable expectations of the many that generates the greatest challenge.

NEW SLIDE

There are technologies behind digital rights management. The fundamental issues though are the ones which technology can actually give to rights owners or rights holders. The access that they want to give to consumers and the conditions under which that access is given.

Clearly there are some aspects of digital rights management and they are set out on the slide. However, on the slide I use the term technology for protecting files via encryption. In the television sense this should probably be technology for protecting programmes via encryption. However, commercial broadcasting cannot be encrypted unless there are widely available decryption devices (which rather defeats the point encryption). However, encryption applying to copying could be sent with a free-to-air programme and I deal with this a little bit further when I talk about the broadcast flag. Clearly, if there is going to be use of content then there needs to be technology to provide for business rights, that is contracting for content access tracking and rights licensing.

NEW SLIDE

I now would like to start to deal with the issue of open boxes versus closed boxes and to do this I would like to compare a device like a PC and very specifically a PC with dedicated hardware such as a DVD player. I choose for the analogy not to use PVRs or set-top boxes because most new desktop PCs sold today have at least a DVD player in them and, appropriately for this forum, often a DVD recorder.

The contrast that I would like to make is set out on the slide. Broadly, a general purpose computer is not terribly secure. The user can have access to everything. There is little level of tamper resistance. There are minimal licensing obligations and those licensing obligations tend not to have cross requirements for other people's content.

Contrast this with a DVD player where the device is not user programmable except you can choose which tracks to watch in which order and there is very little that you can do to actually get into a DVD player (with the exception of changing the region code which every branch of Harvey Norman will do for you for free).

The key thing about the PC is that it is also likely to be connected to millions of other PCs via the internet. Networking a DVD player would not be the first priority for most users. It may in the future be an issue with home media centre but this is another story.

NEW SLIDE

Once in a PC content can be copied, reformatted and redistributed via the internet.

In general there is little security within a PC to enforce the digital rights management associated with content. This is particularly true in the case of broadcast content where a digital television tuner card in a PC can be used with the software that comes with it to record add-free programming and to subsequently burn it on to a DVD.

Video capture cards, popular with people who have analogue video cameras, can be used to capture any type of analogue video prior to re-digitalisation, copying and distribution. Of course, those people with a digital video camera with its fire wire or USB port do not have to go through the digitalisation process and, for once, we see a digital video issue which is less complicated from a digital rights management perspective than its analogue equivalent.

NEW SLIDE

Broadly then, if content is delivered to a PC it is delivered to an open box and the content is no longer secure, no longer protected, and available for redistribution. Once again, this contrasts to delivery to a closed box and leads to the logical conclusion that, from a broadcasters prospective, both set-top boxes and PVRs should be “closed” if the contractual obligations to rights holders such as the studios are to be able to be implemented.

NEW SLIDE

Clearly, the issues that I have raised also indicate that there is an “analogue” hole. That is, that the digital content is like a genie out of the bottle as soon as it is in the analogue world. After all, digital rights management is digital and not analogue. Although such devices as visible bugs and invisible watermarks can be used to deter analogue copying, these have limited application to video capture.

Of course in practice, relatively simple deterrents have worked with the vast majority of consumers. Any few who have tried to do a VHS to VHS recording of a tape hired from a video store will have come across the operation of “macro vision” which is a deterrent used to prevent such copying. On the other hand, until recently Dick Smith Electronics would also sell a “video clean-up box” which would strip the macro vision information and allow such recording. After all, the prohibition of anti-circumvention devices in the analogue domain has not been addressed by Australian copyright law.

NEW SLIDE

So what then is the “broadcast flag” which has caused so much controversy in the United States and is still the subject of appeal there? Well the broadcast flag is simply a piece of service information which is broadcast with a digital television signal that says to devices which choose to look for it, that this signal was originally broadcast.

That’s it.

It is only of value if it is associated with a regime which binds the suppliers of devices which would allow for copying of digital video content. This copying does not include use of a PVR. Rather, it is the recopying of video which has been captured by a consumer device.

Clearly, the broadcast flag of itself is not evil. The issue in the United States which has led to the appeal of the decision by FCC to mandate the broadcast flag is that the subsequent copying of programming becomes illegal by regulatory intervention in respect of consumer devices. That is, if you have used your PVR to record last week's Australian Idol and then, with a fire wire or USB port on your PVR have tried to record that programme on an all digital DVD recorder then the recorder must be configured not to record that programme because it contains the broadcast flag.

NEW SLIDE

In the absence of a broadcast flag, and perhaps even in its presence, broadcasters have a motivation to keep PVRs and set-top boxes connected to the television and not connected to networks.

The overriding driver is that the studios provide major content and the studios will be looking for protection of the content over which they hold rights. Further, each type of broadcaster has an objective of maintaining "television eyes". That is, their business model relies on programming being watched either live on air or, by time shifting. The assumption is that television is not available from another source although it is understood that some competition for eyes will exist from businesses such as DVD and video stores.

Because of these issues closed devices are of benefit to both types of broadcaster. However, at this stage at least, it is the subscription broadcasters who have a better mechanism for practical control.

NEW SLIDE

Finally I move on to the needs of viewers. The vast majority of viewers use VCRs to play pre-recorded tapes and to do time shifting. People may "lend each other" tapes on occasions but this is not a norm. The redistribution of content received from Foxtel or from commercial television is not common in this country and nor would that situation be expected to change.

This leaves a challenge. A challenge for all broadcasters to enable time shifting to occur without endangering the supply of programming. The aspects of this challenge include the fact that we need to come to terms with mechanisms that allow time shifting but prevent the leakage of

valuable content in a country which has far less interventionist regulation of consumer devices than the US or Europe.

We might be able to take a lead from the subscription broadcasters. For example, in the United Kingdom, BSkyB supplies PVRs to its viewers but the PVRs themselves encrypt the recorded programming on the hard disk of the PVR. This does not limit the subscribers ability to time shift and to watch recorded programmes as many times as they wish. What it does however is limit the export of recorded programmes from that hard disk to the internet. From the commercial broadcasters prospective it make sense for PVRs and set-top boxes to be closed to allow them to continue using the business models that they currently operate.

Thank you ladies and gentlemen