

IST-2001-37075: MKMNET
Deliverable 1.2:
Report on Technologies for Rights Management

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Preface

This deliverable relates to workpackage 1 of the project: copyright and IPR. When the project was initiated, there was, in the internet community, a great deal of interest in the area of “Intellectual Property Protection” — so-called IPP. There was a strong view at the time, boosted by the U.S.’s Digital Millenium Copyright Act, that this would be done by cryptographic-based “Digital Rights Management” techniques — so-called DRM.

1 Digital Rights Management

Digital Rights Management technology was seen in 2001, by many, especially in the music and video industries, who claimed to be suffering greatly from Internet “piracy”, to be the panacea for their woes¹. It was felt at the time of writing the MKM proposal that mathematics could just latch on to what were clearly going to be industry-standard solutions.

However, a more balanced view has now emerged, and a recent report [4] has the following in its Executive Summary.

A principal consequence of deploying DRM technologies is to reduce the variety of tools available for accessing and modifying information goods. Thus, technological solutions threaten to worsen the imbalance between producer and user interests further.

While there were a plethora of statements about DRM on the W3C website in 2000–1, the very few later statements were significantly more pessimistic. In 2002, we read the following [3].

Today, choosing a Digital Rights Management System (DRM) often locks you into a limited usage space for the content protected by the DRM due to limitations of the client software that plays back the content. To give customers what they want and allow broader usage, publishers and e-tailers have to offer the content in multiple formats, protected by multiple DRM systems. With the lack of a standard business rule definition language, these publishers or e-tailers have to specify the business rules separately for each DRM system they support.

As far as one can tell, this was never followed up technically, though W3C did issue the following comment².

New technologies are needed to address a variety of issues around copyright and the Web. Electronic copies of a digital (intangible) item have no age: one can’t distinguish between the original and the copy. The cost of copying has disappeared, which changes the whole

¹Often simply described as ‘Napster’.

²<http://www.w3.org/Submission/2002/05/Comment.html>

landscape for the content industry. DRM and metadata can provide the necessary framework for a new balance and peace in the content arena.

Consequently, this submission is a valuable attempt to provide input for a future DRM-Activity.

There are many Activities around DRM in different Standards bodies and Consortia around the world. MPEG is integrating DRM into MPEG-4, MPEG-7 and MPEG-21, CEN/ISSS has a Steering Group around DRM. OASIS just opened a Technical Committee on DRM to create a rights-language and Content-guard provided XrML as a contribution. None of the above mentioned initiatives federate all the stakeholders and interested parties around one table. The library community, new initiatives like the Creative Commons, like Project Gutenberg or consumer-protection associations offer welcome user perspectives too often missing from the technical design discussions of rights management systems. During the DRM-Workshop stakeholders asked W3C to help coordinate this broad variety of initiatives. This was partly done with the Workshop and the www-drm mailing-list.

DRM technologies are broadly covered by patents. This might affect the widespread use of such technology outside the very commercial sectors of the Web.

It is worth noting the sheer range of technologies and interest groups listed in this W3C comment. The last sentence probably implies that it is W3C's view that DRM would not be applicable for the bulk of mathematics.

Similarly, there are some proposals in MPEG-21 [1], which state that they have some connection with Digital Rights Management, but again follow-up seems to be limited, and probably not applicable to our community.

A further problem with the DRM technologies advocated by the music and video industries is that they tend to block all copying, whereas our community is used to "fair dealing", and indeed this is currently enshrined in most (paper-oriented³) copyright law. This discrepancy is brought out in the following quotation⁴.

More specifically, the content development industry, which consists of the recording industry and the movie studios, has repeatedly emphasized the need for immediate DRM solutions that stop all unauthorized copying and distribution. Meanwhile, the information technology industry is emphasizing that DRM solutions should support the concept of "fair use," which allows consumers to make copies of some types of copyrighted content for their own personal use. In the

³See http://www.eff.org/IP/DRM/20030916_brownback_statement.pdf for illustrations of how current interpretations in the U.S. of the Digital Millennium Copyright Act are restricting this right.

⁴<http://www.content-wire.com/drm/drm.cfm?ccs=104&cs=2639>

US, these disagreements have led to an increase in both DRM-related lawsuits and new legislative initiatives.

For all the reasons listed above, it is unlikely that DRM, as it is being deployed slowly and piece-meal by the “content development industry”⁵, provides a solution for the problems of the mathematical community.

2 Is P3P any better?

A more recent initiative, the P3P project, describes itself as follows⁶.

The Platform for Privacy Preferences Project (P3P), developed by the World Wide Web Consortium, is emerging as an industry standard providing a simple, automated way for users to gain more control over the use of personal information on Web sites they visit. At its most basic level, P3P is a standardized set of multiple-choice questions, covering all the major aspects of a Web site’s privacy policies.

It was originally hoped that this would also deal with issues such as copyright information as well as strictly privacy information. However, after the P3P 2.0 Workshop, the following statement appeared in the minutes⁷.

In general there was no consensus on the exact way how DRM techniques and privacy policy enforcement techniques in an enterprise should or could relate and this seems to be an interesting open question.

It seems to be a case of “watch this space”.

3 Lessig’s views

Lessig [2, p. 217] states the following.

The content layer — the ability to use content and ideas — is closing. It is closing without a clear showing of the benefit this closing will provide and with a fairly clear showing of the harms it will impose. [...] this closing of the content layer is control without any showing of a return. Mindless locking up of resources that spur innovation. Control without reason.

The Closing will not be without cost. Making it harder for innovations to enter, making resources more universally controlled - this will drive new competitors off the field, leaving the field once again safe for the old.

⁵Most mathematicians would claim that they provide content.

⁶<http://www.w3.org/P3P/\#what>

⁷<http://www.w3.org/2003/p3p-ws/minutes.html>

Lessig here is talking about the introduction of DRM, primarily in the music and film industry. The legal, political and economic drives behind such control, however, are extending into other spheres. The case of the Advanced eBook Processor, Sklyarov and Elcomsoft highlighted the problem. Adobe's eBook reader was inaccessible to screen readers, necessary for access by the blind non-braille readers to electronic textual information (and much cheaper than a braille output). Advanced eBook processor removed the protection on the contents of an eBook allowing it contents to be accessed directly. Adobe had refused to adapt its eBook system to cater for those using such disability access systems because it was not in their commercial interest and they were not required to do so by law. They made a criminal complaint against Elcomsoft and Sklyarov leading to his arrest in 2001 on a visit to the US. While they later withdrew the complaint following public disapproval of their stance the criminal proceedings were continued.

Scanning a book and passing it through an OCR system to enable a blind person to gain access to the material the book contains is not illegal⁸. However, producing software to allow exactly the same process for an electronic book was deemed sufficiently illegal to warrant the arrest and incarceration for five months of one of the programers.

4 Conclusion

[4] is really pretty pessimistic in his analysis of the future of IPP.

The most likely scenario for future developments will be a set of continuing skirmishes between those having the greatest interests in enforcing IPP rules and those with the greatest interests in defeating IPP. Some of the vast numbers of producers and users that are in the middle of this battlefield are likely to be caught in the crossfire. They will step into various traps designed to capture those viewed as pirates by IPP proponents or fall victim to the opportunistic behaviour of a growing population of claimants who have varying degrees of legitimacy. The possibility that users will en masse be converted to a regime involving strong self-regulation of IPP transgressing behaviours is not considered seriously here. While such a regime might be conceivable in some limited domain such as the exchange of pirated copies of current hit recordings, it simply does not reflect the realities of information use that have been considered here.

At this point, the authors tend to agree with this pessimism.

⁸Indeed the U.K.'s Special Educational Needs and Disability Act seems to require Universities to do so, and Davenport's experience has been that publishers of physical books, even American ones, have been co-operative in this respect.

References

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