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<u>B2C Technology Story</u>

Web Summary:
Digital Rights Management
by Leon A. Enriquez

Reading Time:
8 minutes

Reader Benefit:
♦ Understand what Digital Rights Management or DRM is about;
♦ Copy protection using DRM technologies;
♦ Explore the DRM issues between content creation and content protection.

It is a fact that many of the companies that own the most popular songs, books and movies are eager to sell their content over the Internet. If only they can find a way that's both convenient for customers, and profitable for copyright owners.

Undoubtedly, PC owners are today looking for more of their entertainment online – as the now defunct Napster, and its subscription-based successors have amply demonstrated. To counter the trend of P2P file sharing, the music companies are now offering music downloads of popular songs online and at a somewhat compelling price.

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No matter what opinion you hold about DRM (digital rights management) today, one fact remains unchanged. With the digital revolution, the audio and video industry has found itself in a Catch-22 situation today.

On the one hand, more people are listening to popular music as well as a diverse range of musical genres. Yet, on the other hand, the record companies are reporting massive revenue losses in millions of dollars – due to the widespread proliferation of digital recording devices.

Also, with the breakthrough in peer-to-peer (P2P) networking as evidenced in the post-Napster era – sharing of files, notably, music and songs have caused recording companies substantial margin erosions.

But to the average consumer – who had in the past no choice but to pay a princely sum for a CD where only one or two songs were the popular hits – this is where the all-powerful, vice-like grip of the recording companies have been somewhat shattered.

To counter the trend of P2P file sharing, the music companies are now offering music downloads of popular songs online and at a somewhat compelling price. More recently, a spokesperson from AOL-TimeWarner was reportedly stating that "we're in the early stages of rights management, and we're in the beginning of figuring out how to sell commercial digital downloading."

To complicate the DRM issue, vendors are resorting to the use of many, incompatible DRM technologies for rights management. Thus, is it a realistic expectation for a seamless yet interoperable system that is invisible to the consumer?

For instance, there is the InterTrust security system which provides an end-to-end solution for retailers. Using a technology called Digibox, businesses can determine how, when, and what they will sell by programming the information into the security software. Since the platform is not content specific, any file can be wrapped in this secure format. This should appeal to entertainment companies that sell video and audio content.

Yet, developing a platform for DRM that is consumer-friendly has largely been a failure. The problem is simple one. So far, there is no de facto common DRM platform and standard in existent as yet. A free-for-all situation exists for copyright owners of content and digital distribution.

A record company such as Sony may introduce a new DRM implementation that plays secure music files, but may meet a stormy barrage of bad press and an even worse fate – poor consumer sales!

If the technology is impossible to use, then everyone loses. Whatever the approach, it finally comes down to whether the consumers like the way it works out. And until consumers decide what they will pay for, companies will continue to explore ways to ensure that they can make money distributing secure audio content.

Copy protection – like poor environment and chemical instability before it – for books and works of art, looks to be a major impediment to preserving humanity's cultural heritage. It is worthwhile to note that works that are copy protected are less likely to survive into the future as an archiving scientist once pointed out.

The formal and informal world of archivists and preservers will be unable to do their job of moving what they keep from one media to another newer one, nor will they be able to ensure survival and appreciation through wide dissemination, even when it is legal to do so.

If you are a recording artist or author who cares more than about the near-term value of your work – your concern will be about releasing your work in copy protected form. Like the days when art was only accessible to the rich, two classes will probably develop – copy protected and not copy protected, i.e., the "high art" and "folk art" of tomorrow.

Obviously, recording artists and authors need to create their works and still make a living. Copy protection initiatives arising as a "simple fix" to preserve business models seem to be based upon the physical properties of old media and distribution.

But new media and distribution techniques need new business models – and especially ones that don't shortchange the future. Trying to keep those old, worn-out business models in place is as unproductive as continuing to produce only 33rpm vinyl records in the digital age.

There are things happening that is rather unsettling and worrisome – that the future may not be bright for preserving many of the works we create today. For example, using DRM, record companies are producing music CDs that cannot be copied into many other formats – which is a something that's allowed by law as "fair use."

Note that most new eBooks are copy protected. Also, laws are in the pipeline in many countries – that will require all digital devices to enforce copy protection schemes for copyrightable material.

Copy protection may break the chain necessary to preserve creative works. It will make them available for a limited period of time, and not be able to be moved ahead as media deteriorates or technologies change. This is because only those works that are thought to be profitable at a given time will be preserved by their owners.

Box Story 1:
What's DRM?

Digital Rights Management (DRM) systems restrict the use of digital files in order to protect the interests of copyright holders. DRM technologies can control file access, e.g., number of views, length of views; altering, sharing, copying, printing, and saving. DRM may be embedded in the actual hardware of a device or contained within the operating system, program software.

To secure content, DRM systems take two approaches:
♦ *Containment* is the first approach – where the content is encrypted in a shell – so that it can only be accessed by authorised users.
♦ *Marking* is the second practice – of placing a watermark, flag, or a XrML tag on content – as a signal to a device that the media is copy protected.

However, both approaches are vulnerable to cracking by individuals with moderate programming skills.

On the negative side, DRM technology and legislation requiring the inclusion of copy control systems pose serious threats to user privacy, open source software development, and the fair use of copyrighted content.

In fact, some DRM technologies have been developed with little regard for user privacy protection. Here, DRM systems usually require the user to reveal his or her identity and rights to access protected content. Upon authentication of identity and rights to the content, the user can access the content.

DRM systems can prevent the anonymous consumption of content. DRM systems could lead to a standard practice where content owners require all purchasers of media to identify themselves.

Where individuals can borrow or purchase media, such as video rental stores or libraries – statutory and ethical protections prevent the transfer of personal information linked to the content acquired. Obviously, such user protection does not exist in the music and growing electronic book markets.

In these unregulated areas, recording artists and authors may have more difficulty in finding an audience for their work because of the privacy risks associated with linking identity to content consumption.

In addition to preventing anonymity in access to digital information, DRM can be used to facilitate profiling of users' preferences or to limit access to certain content. This is done by assigning an identifier to content or to the content player, and attaching personal information to the identifier.

For instance, Microsoft's Windows Media Player has an embedded globally-unique identifier (GUID) to track users. Similarly, Microsoft's eBook Reader requires the user to activate the software and link it to a Passport account. From there, Microsoft captures a unique hardware identifier of the user's computer. There is also an activation limit that can stop a user from transferring an eBook to other computers. This enables Microsoft to prevent users from sharing books or from reading a book on a different machine.

These technologies mark an important development in the use of copyright law – copyright can regulate duplication of works to protect content owners. Even now, copyright is being used as a justification to both protect content, and to profile the consumers of content.

Alternatives exist that would provide copy protection and at the same time protect user privacy. For instance, token and password systems could be used to authorise a download of digital content. Furthermore, non-privacy invasive solutions have not been sufficiently and adequately explored.

DRM systems that have been designed impinge on users' control and use of content. For example, many DRM systems will not allow a user to transfer content to portable devices, such as MP3 players. In addition, many DRM systems work only with Windows operating systems to the exclusion of Linux and Macintosh users.

Today, we are being asked to make a bargain – not with the devil –(but) with the entertainment industry. The promise is a future in which we'll download music and movies over the Internet at rock-bottom prices.

It's a future where digital content – books, magazines, newspapers, and databases – will be at our fingertips. It's a future where software and information will be rented, and people will pay only for what they use. And it's a future in which computers will be inherently secure because they will be unable to run viruses and other hostile programs. It's a high-tech utopia that will be anything short of a miracle that never happens!

DRM systems have been presented as a solution to unauthorised copying of digital content. However, the content industry may have other objectives with DRM technology.

DRM technology can limit users' interaction with media. Through limiting interaction, over time, DRM technologies can change users' expectations about control and use of digital content. And that's a dangerous act to follow!

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