

THE 'BRIGHT SIDE' OF DRM: NEW BUSINESS OPPORTUNITIES

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Disclaimer. The potential business scenarios described herein are outlined for technical feasibility and do not represent any proposed or actual business offerings.

Abstract

Digital Rights Management (DRM) has been, unfortunately, characterized as an “evil” method of restricting user’s rights and abilities to consume content. Quite the contrary is true – the use of DRM, providing usage rules and advanced security, enables new opportunities and new business offerings. This paper describes some of the potential business offerings that might be provided if an operator were to use DRM to distribute content outside the normal scenario of linear content and traditional VOD.

INTRODUCTION

Digital Rights Management (DRM) represents a comprehensive system of cryptographic controls tied to business rules that govern the use of content. Basically, DRM is a combination of Conditional Access (CA) that is used as an on/off switch for payment, and Copy Protection (CP) the coarse control over the duplication of content.

DRM adds the component of usage and business rules to the consumption of content – examples of content rules:

- Defined consumption (playback rules) such as number of permitted viewings, time limit before viewing window ends;

- Rules for permitted copies that can be made on certain devices under controlled circumstances
- Rules for content movement and requirements for protected outputs or security of devices including downstream (subsequent) other DRM systems.

Different DRM systems may have additional features or slightly different implementations but for the purposes of this discussion, these core features will be used to build business models.

As an example of how varied DRM system capabilities can be, here is a summary of a few key features of major DRM systems from public sources:

DRM Feature	Microsoft DRM	Apple Fair Play	Cable CA & CCI
Restrict Access to “content for payment”	Yes	Yes	Yes
Limit copying to Free / Once / No Copies	Yes	Yes	Yes
Can require protected outputs (e.g. Macrovision)	Yes	No	Yes
Limit unprotected outputs	Yes	Yes	Yes
Limit viewing time and copy retention	Yes	No	No
Permit / Restrict movement specifically to portable devices	Yes	Yes	No

NEW OPPORTUNITIES

Existing “sales” of content generally reflect either a single narrow use (e.g. VOD / PPV) or almost a perpetual right to view content (such as physical ownership of a DVD). Intermediate variations are also possible such as limited-use subscription, or transaction-based rental.

Most opportunities that use DRM require that all “devices” in the chain of content and/or transaction have an implementation of the same DRM system and/or a compatible downstream DRM system via an approved output – including the “client” device used to consume the content.

Scenario One – “Burn to Own” DVDs

Conventional (standard definition) DVD’s use a copy-prevention system called Content Scramble System (CSS). Other than the prevention of copies (and, in some cases, enabling output controls such as Macrovision), there are no other proscribed DRM attributes such as limited “permissions” of copying.

Newer disc formats (e.g. HD-DVD) have an advanced system of copy management (Advanced Access Content System (AACS)) that is more of a full DRM system to address this shortcoming. However, business plans that wish to target the millions of existing (CSS-only) DVD players are obliged to “regress” to that technology.

Since DVD content is “authored” (both MPEG formatting as well as menus, chapters and other non-cable formatted data), it is impossible to “capture” a DVD from a live streamed program and burn to a disc. Content to be burned to disc has to be distributed to the burning device (e.g. specialized STB) using DRM to encapsulate the CSS-encoded DVD image file.

Scenario Two – “Portable Devices”

Currently, conventional “linear broadcasts” are “fat” – i.e. they are distributed for pretty pictures on big screens – this is a poor choice for portable devices with small streams and small disk drives. Thus, a content “move” from DVR to portable device is inefficient and expectation of transcoding (bit-rate reduction) is a burden for existing DVR STBs..

An improved method to provide content to portable devices is to encode specifically for that target device and efficiently move content securely to the portable device.

Secure DRM can be used to authorize the delivery of content to portable devices.

Scenario Three – “Electronic Sell Through”

Without advanced DRM, a file transfer of content to a PC would be considered “lost” to the Internet, thus any “retail” transactions that enable consumers to have and use content require a sophisticated DRM.

EST is the process where a “locked” file is distributed to a user with a proscribed rights-enabled DRM license to permit viewing and/or movement to portable devices and inside the home (e.g. on a home network).

Scenario Four – “Early Window High Value Content”

Two variants of potentially-interesting new business opportunities are possible with a highly-secure and usage-restricted environment.

First, “Day and Date” refers to the deployment of on-demand assets that are available to consumers coincident with their home video consumer release. This represents an interesting opportunity since the consumer interest and revenue model of the existing home video marketplace are well characterized. Such distribution would probably require both copy protection (copy never, Macrovision protection for analog outputs) and potentially, restrictions on other outputs – such as component analog outputs

that do not support Macrovision, limiting, perhaps this offering to standard-definition content as copy protection is not implemented on high-definition analog outputs. In these cases, either digital outputs with HDCP or image constraint would be required. Unprotected outputs would severely increase the risk that analog-sourced copies could be made and undermine the very significant home video-window revenue stream.

Another “Early Window” content idea represents a potentially new revenue stream that may afford electronic distributors with a very visible (and promotable) offering to consumers. With extremely robust DRM and content controls, content could be offered much closer to the theatrical “first-release” than was previously possible. Movie titles (for example), could be offered on a very restricted and limited basis to HDTV Home Theater households very near their release to theaters. Of course, copying or other content leaks could undermine several subsequent revenue streams and would not be tolerated. Thus, an early window release could include some or all of the following restrictions (which, due to the nature of a new business offering like this, may require review of the FCC’s rules that govern output controls, etc.):

- Mandatory highly-secure distribution environment
- Copy Never on protected digital outputs, perhaps restricted to HDCP and not Firewire
- Analog unprotected outputs disabled (Selectable Output Controls (SOC))
- Limited viewing window (e.g. no pause, no 24-hour bookmark / retention)

- HD Only distribution (since this offering may be potentially targeted to home theater owners)

CONCLUSION

The proper end-to-end implementation of advanced DRM involves cooperation of distributors, manufacturers (CE and others) as well as assurance that the overall robustness of the distribution architecture is without question.

While the form of new product offerings and revenue opportunities will be determined by those who create and provide them, their existence will all rely upon one common denominator: The use of a robust Digital Rights Management System capable of attaching and enforcing the specific rights granted to consumers who use these new products. Our ability to manage the digital rights associated with the video programming will open the door to new choices for consumers and new revenue for programming distributors.