# TECHNOLOGY

Do you remember the 1970s? Those of us who misspent our teenage years during that decade had a simple solution to sharing our favourite music with our peers: invite them round to hear the latest album on our parents' stereo record player, or converge on a friend to make use of his or her folks' music centre. The lucky among us might even be able to hook up a lead to the record player and tape the record onto an audiocassette, and share it that way.

As far as TV broadcasts went, the only way to see a favourite programme again was to wait for a repeat. The advent of consumer VHS machines and tapes considerably eased that problem, with an increasing range of programming and studio movie product being made available for rental and purchase. The physical nature of the content format was maintained with the arrival of CDs and DVDs, but with these often came an unwanted extra – a form of content protection that would only enable playback on a compatible device, with copying made impossible for the average consumer.

As the 80s and 90s progressed, portability increased, but the content was still in a physical form. The concept of 'my media' effectively related to a consumer's collection of vinyl, audio and videotapes. Then along came digital networking, and as Rob Logan, CEO, ContentGuard observes, two versions of content distribution emerged. One was driven by the owner of the content, the other by the consumer, empowered by the digital networks. " A balance needs to be found between the two," he suggests.

**ROLE PLAY.** The first – broadcast distribution - was distributor driven, concerned with protection and monetisation, and had 50 years of history; the second – network distribution – had Usage as a core principle, based on sharing and enabling. Logan suggests that 'Version 3.0' is emerging today. He describes this as 'eXtreme Distribution' with Empowering at its heart. "In this, the Distributor and Consumer have complementary roles. The consumer is embraced and rewarded for behaviour and the value-add to the ecosystem. There is a symbiotic relationship between and among content creators, owners and consumers."

Logan is confident that DRM can bring together the needs of content owners and consumers, but can it really balance the needs of content owners and consumers to create a 'win-win' situation? Howard Silverman, NDS product marketing manager, believes that this is possible and shouldn't interfere with the range of content usage models. "Crucially, for anyone who wants to be serious player, it shouldn't stand in the way," he states.

Eric Diehl, security domain director of Thomson's technology division, suggests that normally it's a contractual agreement to enforce, and the service provider has to employ some form of DRM, Conditional Access or Content Protection. For him, it is important to question whether it is well done from the point of view of the user. "Is DRM's biggest problem not fulfilling the expectations of customers," he muses. "The consumer wants to use the content around the household," he observes. "It's a plea for interoperability - the 'Holy Grail' of DRM. He espouses the notion of the 'domain', which covers a set of devices that belong to the consumer. It's a way to extend your household, he suggests. In this respect, he recommends consideration of the DVB Projects DVB-CPCM system, which he feels could be a win-win for content protection and the customer. "The best way to win is to make legal means [of consumption] more attractive than illegal," he concludes.

**RULE CHANGE.** According to Werner Strydom, director of IPTV products, Irdeto, DRM changes the rules from the point of view of the consumer. "You pay for the content, but the rules become stiffer, therefore there's an imbalance. At best it should be an enabler/disabler. It's not the problem, it's the way it's being used." He suggests that content owners can't live without DRM, and accepts that it needs to be as easy and transparent as possible for the consumer. For Ivan Verbesselt, Nagravision SVP marketing, DRM is an overloaded term, for an activity that is concerned with the content as well as service protection and propagation. A win-win can be created provided we don't over DRM-ise the process," he warns.

Richard Bullwinkle, chief evangelist, Macrovision, sees power shifting towards the users. "They'll demand that there will be more aggressive 'use cases,' adding that it's not so much a question of 'how will DRM shape the market?' it's more how users will let us shape it."

> **"There is a symbiotic relationship between and among content creators, owners and consumers."**
>
> **- Rob Logan, CEO, ContentGuard**

**Content Security in a multi-platform, 'my media' world, remains a key concern among content providers and platform operators. CA, DRM, Watermarking, all play their part. Can an ideal world of IP-driven seamless interoperability ever be compatible with copyright protection? Colin Mann finds out.**

# Open house, locked door?

Noting that there is no standard DRM or media format, he says that consumers are confused and won't be disposed to buy content. "The user has no confidence that my media will come with me," he says. "People are learning how to steal content that they can play anywhere. Unless we come up with a standard, then we'll have to get rid [of DRM]."

Geir Bjørndal, COO at Conax, accepts that there is a new challenge when content comes into the home, and suggests that one of the main problems with DRM is that it presents a reduced business model. "Content providers will give more opportunity if the content is traceable," he suggests, noting that watermarking is increasingly being adopted. "It's a move away from Conditional Access, where you have active protection until it is released."

Andy Mathieson, director, Latens, sees the matter as a series of compromises between business models and technology, and notes the problems created with so many people being involved in the supply chain. Robert Payne, general manager and VP of sales with Verimatrix, suggests that it's a series of commercial policy, service-led questions. "Where does the content owner want to allow the con-

tent to go? What does he fear? What does he want to profit from?" **LOSING CONTROL.** Another area of focus is whether content owners really benefit from accessing the new markets and revenue opportunities without relinquishing control of their content. Fred Ellis, CEO of SecureMedia, says this is absolutely possible, if it can be put in the market at a low enough price. "All that needs to be asked is: 'Are you authorised to play back the content?'" Thomson's Diehl suggests that content owners' main concern is that they want to make sure people won't make money of their back. "So long as people are paying, it's fine," he says.

Macrovision's Bullwinkle suggests that it is still possible for the content owner to set parameters. "You need to figure out a fair use case. It's a great opportunity for him." NDS's Silverman considers this "the essential issue, based on rights enforcement and fair usage. "DRM is not the issue, the models are there." Latens' Mathieson suggests that content owners are benefiting. "They stay away, then begin to experiment. Maybe they can't control the content, but they look at business models that will help to monetise it. They need to get to mass audiences. That's why they experiment with new release windows." Simon Drinkwater, VP sales, EMEA at Entriq, accepts that much depends how much the consumer values the content, while his colleague Andrew Ioannou, VP busi-

> "For anyone who wants to be serious player, it shouldn't stand in the way."
>
> - Howard Silverman, NDS
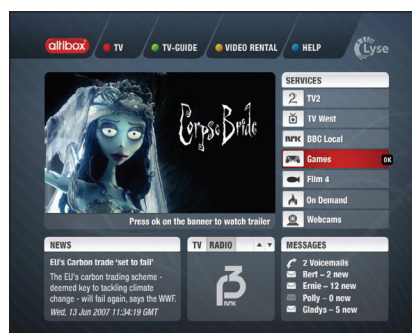
## WHAT IS DVB-CPCM?

DVB-CPCM is a system for Content Protection and Copy Management of commercial digital content delivered to consumer products. It protects audio-visual works, including films and television programmes AFTER they have been received by a consumer to ensure that the usage is managed in accordance with rights granted by the content owner or broadcaster.

## WHY IS DVB DEVELOPING DVB-CPCM?

The initial 'analogue assumption' in place when DVB first began defining terrestrial, cable and satellite TV transmission and reception standards are no longer true. Consumers are increasingly receiving content from multiple sources, enjoying it on multiple devices around their home and even accessing it or carrying it

along with them while on the road.

Films and television programmes are delivered in a variety of ways to consumers with different usage 'offers'. Today's technology has the ability to allow consumers to enjoy films and TV in an incredible variety of ways. Current mechanisms for protecting content within the home environment fall short of the needs of many stakeholders including consumers and content producers, in that they are too simplistic for today's
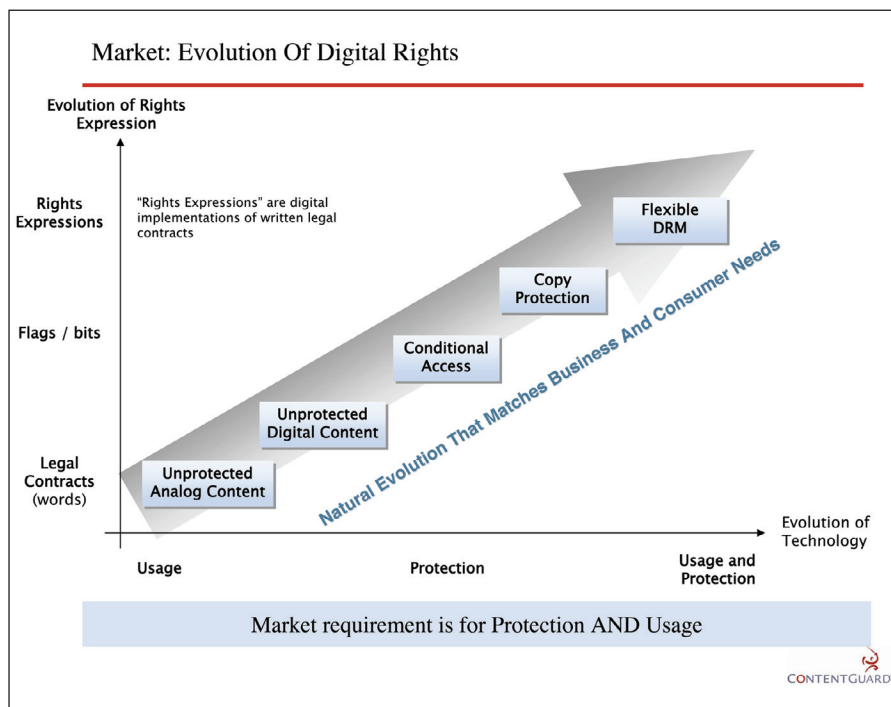
multi-device, networked homes. DVB-CPCM corrects that disconnect between the functionality of devices and the management of content usage offers. DVB-CPCM manages the content in accordance with rights granted by the content providers or distributor. It allows for the elaboration of distinct, flexible offers. DVB-CPCM therefore allows content providers to offer more choices to consumers.
*Source: DVB Project*

# TECHNOLOGY

### Market: Evolution Of Digital Rights

Evolution of Rights Expression

**Rights Expressions**

"Rights Expressions" are digital implementations of written legal contracts

**Flags / bits**

**Legal Contracts (words)**

- Unprotected Analog Content
- Unprotected Digital Content
- Conditional Access
- Copy Protection
- Flexible DRM

*Natural Evolution That Matches Business And Consumer Needs*

Evolution of Technology

**Usage**   **Protection**   **Usage and Protection**

Market requirement is for Protection AND Usage

CONTENTGUARD

ness development, channels and partners, suggests that it is important to support all business model changes. "The key is to be flexible."

Alex Terpstra of Philips' content identification group, perceives a slight change of mind of some management regarding the distribution

### Market: Evolution Of Content Distribution Business Models

**Precursors**   **Migration**   **Market Adoption**

**Business Innovation**

- Grant / Fair Use / Piracy
- Grant / Piracy
- Grant / New Business Models
- Grant / New Business Models

**Yesterday**   **Today**   **Tomorrow**

Taking the illegal and making it legal (and profitable).

CONTENTGUARD

of their content, with the arrival of techniques such as watermarking providing tools and ecosystems that identify usage and provide links to databases where consumption rights are captured. "Some are more cautious. We want to make sure we can provide the technology to enable them," he says.

Matt Cannard, VP marketing at Widevine, observes a change in the way monetisation is occurring. "No longer is DRM limiting rights," he suggests. "We have now got true multi-platform protection, and the traditional models are in flux." Nagravision's Verbesselt suggests that
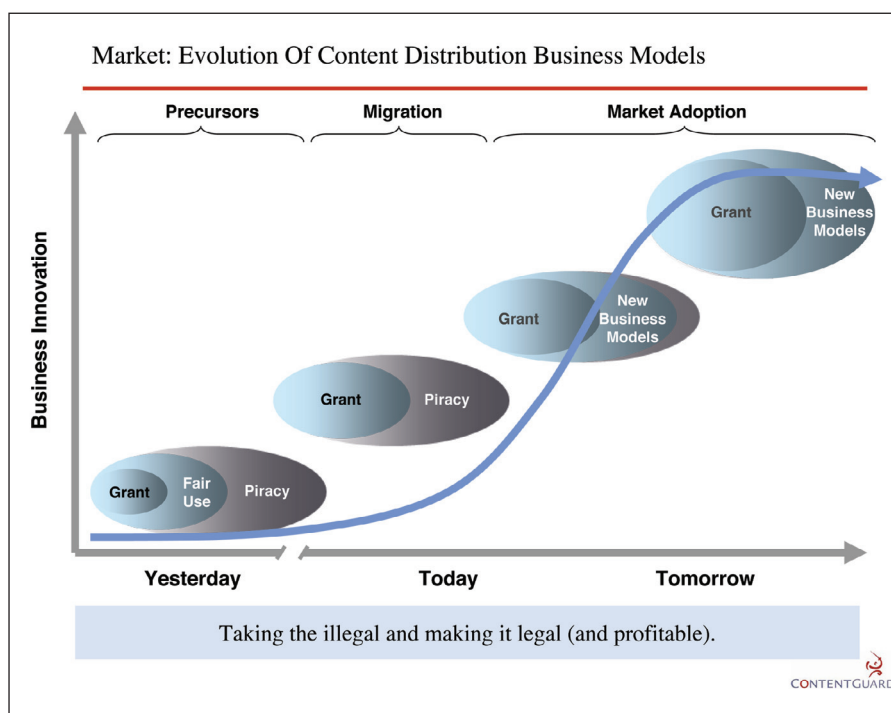
the benchmark is still physical distribution, "and that's still fairly insecure, but still more convenient than STBs and iPods." He notes that as the value of the content increases, such as with HD, protection will be more stringent.

**SEAMLESS TRANSFER.** Whereas the 70s and 80s consumer was grateful for the ability to transfer vinyl onto cassette, the modern-day user is far more demanding. How can you ensure seamless transfer of content to a range of different devices? Silverman suggests that if the DRM is visible, it's not doing its job. "There's some experimentation at the moment. There are technical hurdles to be overcome, such as sizing, formats, DRM hand-over and speeds. These are all issues that need to be addressed."
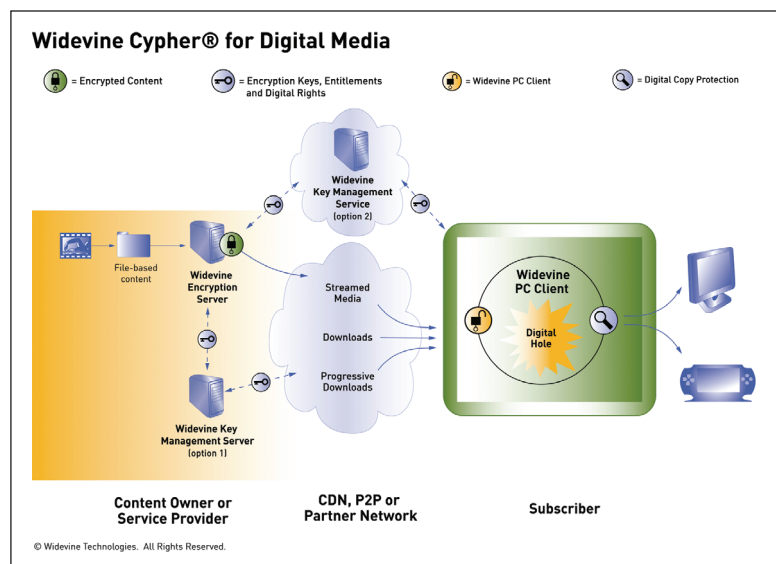
"The format issue will go away in time," predicts Bullwinkle. "It'll be more a case of 'download and play'. With pipes becoming larger, storage will decline. You'll buy the rights to a piece of content. The library will identify and send the appropriate format. It may be a bit Utopian, but I don't see an easy solution. There's a lot to iron out until things are really seamless." Pierre Hunter, director business development, Irdeto, suggests that in terms of interoperability, nowadays the consumer expects to play the content

> **"There is a new challenge when content comes into the home."**
>
> **- Geir Bjørndal, Conax**

> **"The best way to win is to make legal means of consumption more attractive than illegal."**
>
> **- Eric Diehl, Thomson**

# TECHNOLOGY



**Widevine Cypher® for Digital Media**

Content Owner or Service Provider | CDN, P2P or Partner Network | Subscriber

© Widevine Technologies. All Rights Reserved.

on any device. "That calls for device and format interoperability, but from the content owners point of view, if they lose the content, they can't generate revenue."



Verimatrix's Payne contends that it's not technology driving the business models. "Content owners want to slice as thinly as possible," he suggests. "Where do they see the profit stream?" His marketing VP colleague Steve Christian adds that DRM only enforces the business rules set by the owner. "It depends on the value put on the content by the owner." According to François Moreau de Saint Martin, CEO of Viaccess, the company addresses the multi-device content distribution conundrum through its CAS-DRM bridge solutions. "In simple terms, the promise is to buy once and play on any device within the home and on the move," he explains.

**HASSLE-FREE.** Bjørndal accepts that how to integrate fully is a hard nut to crack, with so many outlets in the home, and notes that watermarking is an important tool for content providers. He is happy to work with others to help achieve interoperability and seamless transfer. "We think it's best to work with expert integrators. They have many components that are applicable to middleware. Our philosophy is not to compete with our partners." He prefers to focus on the security part of value chain. "We need to ask; 'What is beneficial for the customer?'" Gisle Ostereng, CEO of SecureMedia, says that the IP world gives new ideas in terms of content security. "It's important to have a transparent system. It's about the user experience. There should be no hassle."

Verbesselt sees seamless transfer as being achievable via 'persistent rights management' tools that allow rights within bounds of the 'doable'. "There are opportunities for bundling across devices, but it will take a lot of pragmatism across the
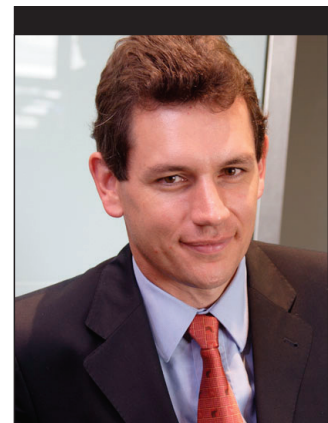
> **"The promise is to buy once and play on any device within the home and on the move."**
>
> **- François Moreau de Saint Martin, Viaccess**
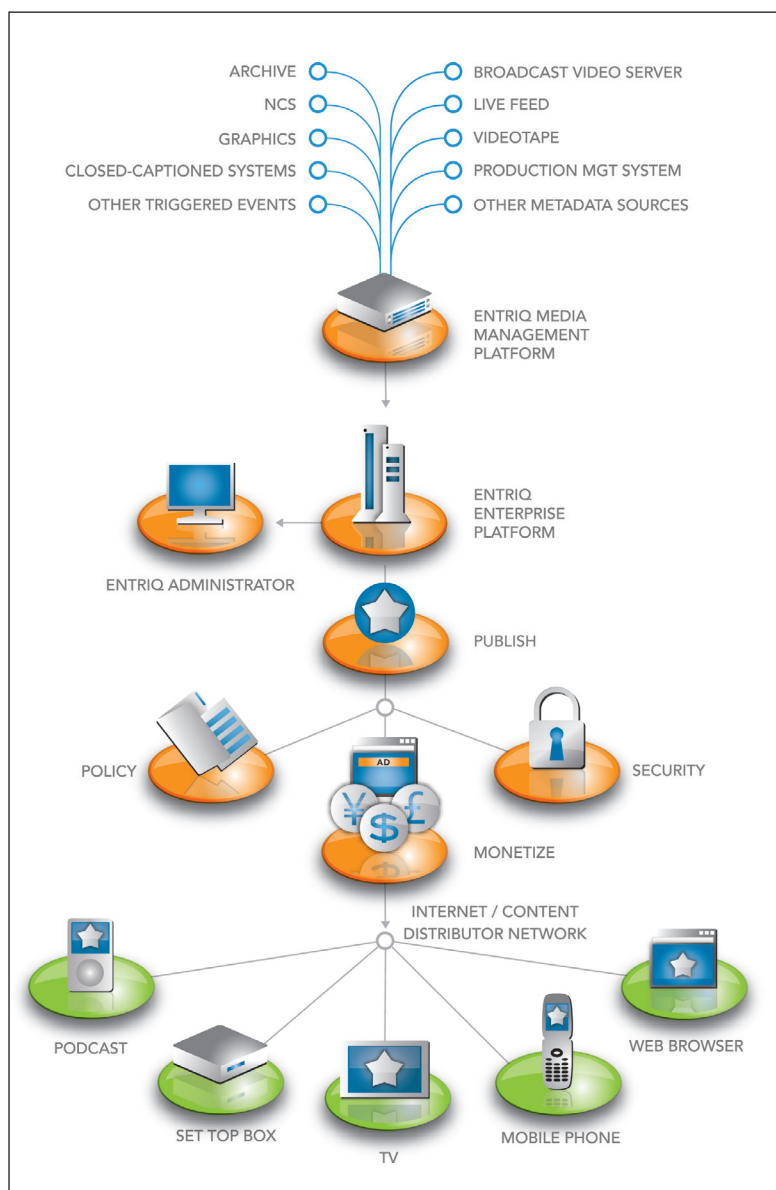
> **"Unless we come up with a standard, then we'll have to get rid of DRM."**
>
> **- Richard Bullwinkle, Macrovision**

# TECHNOLOGY

> **"All that needs to be asked is: 'Are you authorised to play back the content?'"**
>
> **- Fred Ellis, SecureMedia**

industry," he says. As with Thomson's Diehl, he sees a significant role for DVB-CPCM. "It will be great if we can achieve this as an industry."

Payne observes that with multiple devices, you need flexibility. "Consumers don't want DRM to constrain and interfere. When the content is easy to consume, they'll come back for more." SecureMedia's Ellis says that it is his company's intent that the user never knows what form of DRM, content protection or such like is operating. He warns, "these things can dissuade the consumer, you need to separate the content from the rights, and there should be a different fee for a different device. We believe it's the only way to strike the balance."

**PLATFORM POWER.** In terms of portability and ubiquity, Apple is predominant with its iPod and related devices, so is there a case for having complete control from the platform to the device? Silverman observes that it is effectively a closed network. "It's a business built on margins selling devices and effectively giving away the content," suggesting that you'll continue to see 'open' and 'closed' offerings. "You'll find both – one can't win. It'll take time before we see significant change in structure." Logan disagrees. "Walled gardens are not sustainable in the networked world."

Viaccess's Moreau de Saint Martin advises that service operators like addressing controlled devices, so as to ensure the total control of security and user experience, and non controlled devices, so as to let the end customer buy any device in the retail market. "We let them address both the control and the non-controlled devices with an end to end security solution through a single Service Platform integration," he explains. "Apple's position has been gained through the product, rather than the service," suggests Ellis.



For many, an issue equally as important as transparency of content protection and enablement is whether the solution should be software, or hardware based. The more-established broadcast model is based on Smart Card and set-top box hardware, but the emergence of telco IPTV platforms and alternative consumption devices has seen the emergence of software alternatives. Diehl laments the fact that hackers will always find a way to try to access the content. He says that hardware solutions will be more costly, and describes the world of conditional access and content protection as "mostly a black art. If I were a hacker, I know what I'd attack."

**RIP-OFF.** Silverman notes that hardware security hooks are being

## Content the Babelgum way

**Mark Cranwell, director content acquisition, Babelgum, explains how the global Internet television network has developed a system which both protects content owners from piracy, and delivers a commercial return.**

Babelgum has introduced a comprehensive content management system for content producers, rights owners and programme makers allowing them to easily manage and monetise their assets on the platform, without relinquishing control of their content; reinforcing Babelgum's commitment to being a platform for qualified distribution, but open monetisation.

The content management system, incorporates a free direct upload facility, ensuring content owners have a quick and easy way to manage their content on Babelgum. Content owners simply sign an online agreement to begin uploading content and have the choice of either uploading entire libraries or just a selection of their content at a time. The Babelgum content management system also caters for content owners who have significantly large catalogues and need special licensing options or delivery methods.

With its geoblocking technology, the platform is able to decide which territories are able to receive content, and the advanced content encryption methods Babelgum uses ensures stringent security. Content owners are also able to decide the length of time the content remains on the platform, retaining the ability to remove it. The content management system incorporates a number of features which give content owners tight control over how their content is viewed.

Babelgum recognises that secure and robust content security systems are required to ensure content owners feel comfortable when distributing their material on online platforms. The content management system and peer-to-peer model used by Babelgum illustrates how the needs of both content owners and viewers – who are treated to a wider range of programming - can be balanced without compromising security.
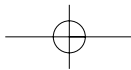
**VideoMark Insertion**

sic Watermark Extraction

ing # 443511
ess # 13057248
ate: 06.06.2006
me: 14:23

addressed, with people taking NDS's lead. "You want to be able to combine the two," he suggests, noting that IP is still a nascent market; as it grows larger, hackers will take a look. "That's when the question will be addressed." Bullwinkle also seems resigned to the fact that piracy will occur, whatever. "You'll Google for hints on how to rip from a DVD," he suggests. According to Bjørndal, with the arrival of IPTV, "there's a problem with telco people liking software solutions. We recommend a smart card, it's a higher level of security."

Moreau de Saint Martin doesn't see software-based CA as the only workable solution. "A hardware-based solution is also workable through, for example, USB Dongle, Smart card, CAM etcetera, depending on customers requirements and business model." He confirms that Viaccess offers both

solutions and can call on its CAS-DRM bridge to provide seamless distribution. Meanwhile, according to SecureMedia's Ellis, the company believes that software is the only path for the future.

A vexed question is what is a sensible CA/DRM approach when there are territory rights issues, but the content is free and ad supported? Is it a question of 'secure enough' on the basis that people won't pay for 'platinum' security? "The price has to fit the value of the business," says Silverman. "NDS is looking at ad-supported models. You'll still need to secure the content. If it's peeled off, it is still a form of piracy. Content owners will typically try to resist access, which entails geofil-tering and geotracking; that's been part of the approach for the PC world." Bjørndal admits that a 'secure enough' approach is being considered in some markets, but is not yet deployed. He recommends the benefits of a 'starter package', which you could then upgrade to higher level.

> **"From the content owners point of view, if they lose content, they can't generate revenue."**
>
> **- Pierre Hunter, Irdeto**