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The Informed Dialogue about Consumer Acceptability of DRM Solutions in Europe

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## Quote

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## INDICARE Project

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INDICARE – The Informed Dialogue about Consumer Acceptability of Digital Rights Management Solutions – addresses problems pointed out in the eContent work programme 2003-2004: "There has been little attention to the consumer side of managing rights. Questions remain open as to the level of consumer acceptability of rights management solutions" (p. 19). In addition to consumer issues INDICARE addresses the user side, in particular concerns of creators and small and medium-size information providers.

INDICARE maintains an informed dialogue about consumer and user issues of DRM. Informed dialogue means that discussions are stimulated and informed by good quality input such as news information and profound analyses. Options for participation and more information about the project and its deliverables are provided at the project website: <http://www.indicare.org>

The INDICARE project is conducted by the following partners:

- Forschungszentrum Karlsruhe, Institute for Technology Assessment and Systems Analysis (FZK-ITAS), Project Co-ordination
- Berlecon Research GmbH, Berlin
- Institute for Information Law (IViR), University of Amsterdam
- SEARCH Laboratory, Budapest University of Economics and Technology

## Preface

The INDICARE Monitor is the online-journal of project INDICARE being published every last Friday of a month. The present first volume of the INDICARE Monitor contains the nine issues which were published during the first year of INDICARE operation. It contains 62 articles written either by members of the project team or external experts.

To add value to this volume we have included a *keyword index* and a *name index*. While the keyword index helps to find articles by article-type (editorial, interview, review, legal analysis, policy analysis, technical analysis, announcement, hands-on-experience), subject matter and regional focus, the name index references names of persons mentioned in the articles – not including deliberately names of authors. For this edition all articles have been checked again in order to diminish typos, to apply the layout rules more consistently, and to attribute keywords more carefully. As the present publication is just a compilation of INDICARE Monitor issues, content has not been changed, validity of links has not been checked again, and information about the authors has not been updated. Thanks to Gabriele Kaufmann, secretary at ITAS, for the many hours of skilled word processing and layout it took to produce the present publication.

In the remainder of this preface I would like to briefly share with you our self assessment of the INDICARE Monitor after its first year. The main purpose of the INDICARE Monitor is to inform on consumer and user issues of DRM solutions in Europe and to stimulate public debate. Debate means two things here: first, the online-journal itself is designed as a platform for debate where different opinions and views can be expressed, and secondly articles posted on the INDICARE website can be discussed online straight away.

Some articles reached an audience of almost 1000 readers at our website within a month. As articles can also be obtained by RSS feed and by downloading the whole monthly issue as pdf-file, the effective readership is always larger than the counter of article visits indicates. A more qualitative measure for the success and the quality of articles is the fact that articles from the INDICARE Monitor are not seldom referenced, commented or syndicated by other web resources, e.g. PaidContent by Rafat Ali, QuickLink by Richard Swetenham, Urs Gasser's blog at Berkman Center for Internet & Society Berkman Center, Stefan Bechtold's blog at the Center for Internet and Society (CIS) at Stanford Law School, or at BillboardPostPlay.

Our self assessment of the INDICARE Monitor also reveals that this publication has turned out to be a place,

- where empirical *consumer research* is reviewed and presented,
- where *young researchers* working on DRM can present original ideas and research,
- where interesting *interviews* with key persons take place,
- where *European and US* debate meet,
- where you can find information about *DRM events* not covered elsewhere (e.g. workshop and conference reports).

The keyword index gives an impression which topics ranked especially high. Conforming to the scope and the focus of INDICARE it is most naturally that the issue of consumer expectations, copyright law, DRMS design, business models, as well as standards and interoperability have been dealt with most often. In terms of application field, developments of online music markets were hottest.

For the future we want to increase the number of articles from industry stakeholders, the number of cases studies, hands-on-experiences, and critical descriptions of DRM systems. We also want to give more attention to institutional customers as consumers and users of DRM solutions, especially in the public research sector (including higher education and libraries). We also envisage broadening the European coverage of experts writing for the INDICARE Monitor, and of course we aim to make the INDICARE Monitor known more widely, and to increase our subscriber base.

We would be pleased if you could be part of the solution helping us to achieve our goals. In the *Masthead* at the end of this publication (cf. p. 214) and the *Guidelines for Authors* in the Annex (cf. p. 215), you will find more information about the dissemination of the journal, the editorial team, the editorial policy, and how to become an INDICARE author.

Knud Böhle  
(Editor)

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### The INDICARE Monitor: What is it good for?

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** Within the INDICARE project the INDICARE Monitor is an important means of analysis, information, and communication. This first editorial describes the aim and focus, concept, spirit, target groups, dissemination of this electronic publication, and introduces the articles – of this issue: two on mobile services and two conference reports.

**Keywords:** editorial – INDICARE, newsletter

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#### Aim and Focus

There are many electronic resources on Digital Rights Management available. So what is a new one like this good for? Of course, time will tell. However there are some characteristics from the outset that might render the undertaking worthwhile: aim and focus, concept, “spirit”, and your envisaged co-operation.

While the overall goal of the INDICARE project is to establish and maintain an Informed Dialogue about consumer and user issues of DRM, the publication of the INDICARE Monitor is an important means of communication to achieve this objective. On the one hand it aims to monitor technological, legal, business, and social developments concerning DRM solutions, especially in Europe, trying to draw attention to consumer and user concerns, and on the other hand it aims to stimulate interaction of experts and public debate. The INDICARE Monitor is not a one way street of communication. It supports informed debate among knowledgeable people.

#### Concept

To achieve a maximum of interaction, the publication process is composed of two steps: First, after a rigorous internal review process, articles written by members of the INDICARE team and external DRM experts are published on the INDICARE website. At this stage the public is invited to debate the content and to argue with the respective author online. After at least 10 days of web-presence, authors are free to will revise the article in the light of debate.

After revision, consolidated articles will be selected for the INDICARE Monitor which is being published the last Friday of each month during the INDICARE project. The topics actually chosen depend on what catches attention at a given moment and on the agenda of the INDICARE project. Often we will choose a thematic focus for the monthly publication, arranging analyses of a subject from different points of view offering complementary information which helps to balance controversy. Each monthly issue will also provide an Editorial and a Masthead containing among others information about the editorial team and the authors of the issue.

#### “Spirit”, Readership, and Dissemination

The INDICARE Monitor intends to convey unbiased information and to cover the whole spectrum of opinions, including those of the prominent industrial stakeholders as well as those of consumers, non governmental organisations, civil rights movements, and groups threatened by social exclusion. The “spirit” of articles could be expressed in the following slogan: “We reject DRM systems disregarding consumer and user concerns, we believe in reasoning, discussions, and consensus in order to achieve better solutions, and not in code as code”. Obviously our motto is inspired by the famous sentence attributed to Dave Clark of the IETF “We reject presidents, kings and voting, we believe in rough consensus and running code”.

The targeted readership are all knowledgeable people with an interest in user and consumer concerns of DRM solutions such as stakeholders, interested citizens, policy-

makers, scientists, and last not least also organised user and consumer organizations. The style of articles attempts to take the diversity of readers into account. It is meant to be analytical and journalistic at the same time, and it will strive to make complicated legal, technical and economic matters understandable, avoiding jargon without trivializing things.

To serve different kinds of persons with different usage habits and expectations, several publication formats are available: Individual articles can be commented and downloaded as soon as they appear on the INDICARE Website. Readers who wish to be alerted and receive the article directly, may use the RSS feed. Readers may also subscribe to an e-mail newsletter sent out twice a month with information about new articles and the INDICARE Monitor the day it appears.

### Articles in this Issue

The content of the first issue is composed of just one article by each partner in the INDICARE project. While Nicole Dufft, Berlecon, Germany analyses the prospects of music on the mobile phone with a view on consumers' specific demands for music services, Kristóf Kerényi, SEARCH Laboratory, Hungary writes about Standards in the Field of Mobile DRM, helping end users to find their way in the maze of drafts and bodies. One interesting pointer is about the competition between ODRL (Open Digital Rights Language) supported by the Open Mobile Alliance (OMA), and the Microsoft-supported XrML (eXtensible rights Markup Language).

### Sources

- ▶ The Webpage of the "INDICARE Monitor" can be found at: <http://www.indicare.org/tiki-page.php?pageName=IndicareMonitor>

**About the author:** Knud Böhle is researcher at the Institute for Technology Assessment and Systems Analysis (ITAS) at Research Centre Karlsruhe since 1986. Between October 2000 and April 2002 he was visiting scientist at the European Commission's Joint Research Centre in Seville (IPTS). He is specialised in Technology Assessment and Foresight of ICT and has led various projects. Currently he acts as editor of the INDICARE Monitor. Contact: + 49 7247 822989, [knud.boehle@itas.fzk.de](mailto:knud.boehle@itas.fzk.de)

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In the remainder of this issue we have included two conference reports: Natali Helberger from the Institute for Information Law, Amsterdam, gives an account on the Jupiter Conference, Digital Rights Management Strategies, New York 12-14 April 2004, while Knud Böhle, Institute of Technology Assessment and Systems Analysis (ITAS), Karlsruhe, Germany reports on a Conference held in Munich on April 22 on "Digital Rights Management – Distribution and Security of Digital Media and Information". Although one was held in the United States and the other in Europe, the key message of both sounds similar: the old days of criminalising consumers as pirates and thieves have gone, the interplay of players has become better natured. Nevertheless, the standing of consumer and citizen concerns in DRM discourse still seems rather weak.

### Bottom line

The development of the INDICARE Monitor itself is an ongoing process. What we deliver today is sort of warming up. It is likely that the publication will improve in the course of the INDICARE project when we get deeper into the issues through our own investigations. In the end, however, success of the INDICARE Monitor will depend on your willingness to discuss the articles and your willingness to turn from a reader into a participant of debate and even author of INDICARE Monitor articles.

Welcome to the first issue of the INDICARE Monitor!

Knud Böhle  
(Editor)

## The dream team: music on the mobile phone?

By: Nicole Dufft, Berlecon, Berlin, Germany

**Abstract:** Mobile Music is a hotly discussed new field of business that is expected to grow strongly over the coming years. Most mobile operators and music labels are currently launching or about to launch mobile music services. However, as promising as this new market may look, there are a number of issues that need to be addressed before music on the mobile phone can really become an attractive (mass?) business. In particular, the suppliers' wish for copyright protection has to be matched with consumers' specific demands for music services.

**Keywords:** market analysis – business models, consumer expectations, content protection, mobile networks, music markets, piracy

### Introduction

Two of the most heavily sold electronic devices in Europe in 2003 have been mobile phones and MP3 players. In one of the latest issues of Germany's weekly "Der Spiegel" you can see actress Calista Flockhard jogging with an iPod in one hand and her mobile phone in the other (Der Spiegel, May 3, 2004). Now imagine that these two very successful products could be merged into one and music could be consumed on the mobile phone. The match seems perfect! Online music services on the mobile could offer a new, very attractive source of income to some of the largest companies in Europe – ranging from media technology giants such as Sony or Nokia to mobile operators such as T-Mobile or Vodafone.

### Strong growth of the mobile music market expected

There are a number of arguments that make this proposed success story even more appealing:

- ▶ Music on the mobile phone is already a big business. In the UK, ring tones outsold CD singles in 2002 and 2003 (see Concise-Insight.com, March 2004); in South Korea, revenues from mobile music services already outstripped all CD sales in 2003 (see Rafat Ali, March 2004).
- ▶ Unlike some other new technologies which require relatively strong changes in the consumption patterns of customers, the value proposition of music for the mobile phone is easily understood. It is

only a small step from listening to music on portable music players to enjoying music on the portable phone (see Ollila et al. 2003).

- ▶ Billing music consumption via the mobile phone is very easy due to existing billing relationships between mobile operators and their customers.
- ▶ And last but not least, DRM-based business models are facilitated on mobile phones, since customers are – in contrast to the Internet – not anonymous but can be clearly identified by their SIM-card (see Hartung 2003).

Accordingly, the research firm A.T. Kearney expects that by 2006 20-30% of all music revenues will be over mobile phones. Most mobile operators and music labels are currently launching or about to launch mobile music services. European mobile operators such as T-Mobile in Germany, Telekom Austria, Telenor Mobil in Norway, Telia Sonera Finland or Eurotel Praha have already entered the market in cooperation with major music labels. Others are about to start their mobile music services within the next few weeks. In Germany, all four mobile operators are expected to offer online mobile music services by the end of the year (see de.internet.com, April 17, 2004)

### Content owners fear that mobile networks could become a new channel for piracy

However, as promising as this new market may look, there are a number of issues that need to be addressed before music on the mobile phone can really become an attractive

(mass?) business. In particular, it is yet to be seen if the various involved players in this market (ranging from music labels over mobile operators and aggregators to handset manufacturers and technology providers) will be able to create business models that match the suppliers' wish for copyright protection with consumers' specific demands for music services.

Content owners fear that music on mobile phones could open up a new channel for illegal copying and copyright infringement. From their point of view, viable business models need to involve DRM solutions that prevent the unpaid use of music files. In the Open Mobile Alliance initiative (OMA) more than 250 industry players are therefore working on the definition of DRM standards for mobile networks. The first set of OMA standards, however, is said to be not entirely secure. As a result, some large music labels like Universal are not yet authorizing full track downloads over OMA-compliant phones (see Schenker 2004). A number of other providers are using proprietary DRM solutions. This, however bears the risk of a fragmentation of the newly emerging market due to missing interoperability.

The lack of standards is however a normal feature of immature markets and their emergence will only be a question of time. But the application of DRM solutions involves yet another and much more severe risk: that such solutions neglect consumers, specific demands and limit possible uses of mobile music products. Forward-lock DRM solutions, for example, which prohibit forwarding of music to other devices and sharing with others would be contraproductive to a fast development of the mobile music market.

#### **Consumers will only be willing to pay for attractive services that match their specific demands**

Experience from the online music business on the Internet shows us that some of the most important factors for consumers, acceptance of online music services are: the ease of use, low costs, the possibility to access and store a large diversity of music collections, the personalisation of music compila-

tions, listening to music on various devices and sharing music with friends.

- ▶ **Ease of use and low cost:** Most forms of music consumption require only little input functionality. The limited functionality of mobile phones, therefore, does not pose a severe problem to ease of use (see Buhse and Wetzel 2003). What does limit the ease of use, however, are long downloading times on current 2.5G networks. In addition, costs for file downloading are still way too high (see Lin 2004). At T-Mobile's new "Mobile Jukebox" service, for example, downloading a 90-120 second version of a song costs €2.49 and takes about 2 minutes.
- ▶ **Storing:** In addition, the limited memory on most mobile phones currently puts mobile phones at a clear disadvantage against music-only-devices such as MP3 players. Special devices at reasonable costs have to be developed that merge communication and music features. However, it is still questionable, whether such an all-in-one-devices could become a mass-market product or rather remain a device for dedicated music-fans.
- ▶ **Personalisation:** One of the major advantages of online music over traditional music consumption from physical media are the almost endless possibilities to select, save and sort music according to the very personal tastes of each user. The sale of music, therefore, has to be imbedded into a wide set of services. One example is the so-called "Personal Music Assistant", that will be released by Sony Connect and Telia Sonera in June, which includes a smart personalisation system that keeps track of individual tastes. Consumers can tailor their personal music stream by pressing a button on their phone to indicate whether they like or dislike a song (see [paidcontent.org](http://paidcontent.org), March 17, 2004).
- ▶ **Diversity:** To date, primarily the large music labels are getting active on the mobile music market by cooperating with mobile operators and technology giants. Experience from the Internet has shown,



however, that consumers want to access a wide diversity of music content, including work by less known artists. Towards this end, the inclusion of smaller, independent labels into the service offerings of mobile music providers could become crucial in the medium-term.

- ▶ **Listen to music on various devices:** Consumers want to listen to their music collections on various devices that they possess. They will hardly be willing to pay for music downloads that are limited to just the mobile phone. Successful mobile DRM solutions will have to address this issue by allowing content to be legally transferred to different devices that belong to the consumer.
- ▶ **Share music with friends:** The success of peer-to-peer networks on the Internet cannot only be attributed to their low-cost-nature (or no-cost-nature). It also lies in consumers, inherent wish to share music with friends. The OMA has therefore developed a DRM concept, called superdistribution that can turn private file sharing from a content owner's enemy into a friend. Superdistribution allows that media content and the rights for using it are transmitted separately. The content can be forwarded to another device, but not the respective rights for using it. The content object contains some meta-data, though, informing the holder of the second device about how and where to acquire the related rights (see Hartung 2003). This allows a user, for example, to

inform a friend via MMS about a brand new song. The friend can listen to the song once, but in order to store, copy or forward the song he has to acquire the necessary license from the music service provider. If superdistribution is applied intelligently it could become a very effective new marketing tool for content owners.

### **DRM has to support special user habits in consuming music**

If the above issues are not solved by providers, online mobile music will hardly become a profitable new area of business. In the end, consumers will only be willing to pay for mobile music if the offered services support their specific habits in consuming music. For suppliers of mobile music this involves that they have to apply intelligent DRM solutions that enable various forms of music consumption such as sharing, copying and transferring music. Instead of using DRM to fight piracy and locking up content, it should be used as an effective instrument for satisfying consumers' demands. Mobile DRM solutions can, for example, be effectively used for marketing and promotion purposes in connection with low distribution cost (superdistribution) or for price-differentiation in various stages of the life-cycle of a song. Against this backdrop, DRM has to be regarded as enabling "money making" instead of only as a way to avoid losing money due to content leakage (see Ikola). Everything else will be counterproductive to a fast development of the mobile music market.

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## Standards in the field of mobile DRM

### Short description of some standards currently used in the field of DRM solutions

By: Kristóf Kerényi, SEARCH Laboratory, Budapest, Hungary

**Abstract:** Standardization of technologies is a very important point in Digital Rights Management in order to create a single solution or a small set of solutions which are widely used and thus accepted by the community of end users. This article focuses on DRM solutions in mobile telecommunications aiming to disentangle the organizations and standards in the field of mobile DRM solutions to help end users to find their way in the maze of drafts and bodies. The Open Mobile Alliance (OMA) supporting ODRL (Open Digital Rights Language) and Microsoft supporting XrML (eXtensible rights Markup Language) appear as powerful competitors in the standards race.

**Keywords:** technical analysis – competition, mobile networks, rights expression language, standards

#### Introducing OMA – Open Mobile Alliance

The Open Mobile Alliance – formerly known as the WAP Forum – was formed in June 2002 by nearly 200 companies including the world's leading mobile operators, device and network suppliers, information technology companies and content and service providers. Goals of OMA are among others to deliver high quality, open technical specifications based upon market requirements, and to be the catalyst for the consolidation of standards activities within the mobile data service industry. OMA cooperates with other existing standards organizations and industry fora. Its focus is on the development of mobile service enabler specifications, which support the creation of market driven, interoperable end-

to-end mobile services. Enablers are collections of specifications (enabler releases), which together form something like a standard for a service area fulfilling a number of related market requirements, e.g. a download enabler, a browsing enabler, a messaging enabler, a location enabler, etc.

#### Open Digital Rights Language Initiative

The Open Digital Rights Language Initiative is an international effort aimed at developing an open standard for rights expression in the DRM sector and promoting the Open Digital Rights Language (ODRL) within standards bodies. The ODRL specification supports an extensible language and vocabulary (data dictionary) for the expression of terms and



conditions for any content including permissions, conditions, constraints, requirements, and offers and agreements with rights holders. ODRL is intended to provide flexible and interoperable mechanisms to support transparent and innovative use of digital resources in publishing, distributing and consuming digital media content across many sectors including publishing, education, entertainment, mobile and software. ODRL also supports protected digital content and honours the rights, conditions and fees specified for digital contents. It is important here that ODRL has been officially accepted by the Open Mobile Alliance as the standard rights expression language for all mobile content. OMA found that ODRL meets its requirements of a lightweight and simple language for expressing rights, easy to implement and optimized for delivery over constrained bearers (i.e. relatively slow and expensive connections like CSD or GPRS) and suitability for specifying rights independently of the content type and transport mechanism. ODRL is co-published with W3C (World Wide Web Consortium).

#### **OMA DRM Enabler**

In 2001 OMA started a Mobile DRM initiative. As a result, in 2002, the first version of the DRM enabler release was published. This set of specifications allows the expression of three interesting types of usage rights: the ability to preview DRM content, the ability to prevent DRM content from being illegally forwarded to other consumers, and to enable superdistribution of DRM content. It relies on the following DRM components, found in most DRM systems:

- ▶ **Rights Expression Language – DRMREL** provides a concise mechanism for expressing rights over DRM content. It addresses requirements such as enabling preview of content, possibly prior to purchasing, expressing a range of different permissions and constraints, and optimization of rights objects delivered over constrained bearers. It is independent of the content being distributed, the mechanisms used for distributing the content, and the billing mechanisms used to handle the payments. DRMREL describes

the structure of the rights expression language. The REL is defined as a mobile profile of ODRL.

- ▶ **Content Format – DRMCF** was invented by OMA to define the content encoding for DRM protected encrypted media objects and associated metadata. The content format is intended to be used in the separate delivery DRM method.

Partial implementations of this first specification are to be found in some mobile phones by Motorola, Siemens, Nokia and Sony Ericsson, while the latter two have also full implementations, realizing all of the specified methods in their most recent top-of-the-line phones. Naturally several vendors support the server side of OMA DRM 1.0 with middleware solutions. This year OMA released the DRM 2.0 specification. The major difference is that while the earlier version provided basic protection functionalities for limited value content (e.g. ring tones, black&white logos, screensavers and Java games), the new specification adds trust and security mechanisms to enable protected distribution of high-value content (e.g. video clips, music and animated colour screensavers). The new enabler release is designed for future phones presuming enhanced device features and multimedia capabilities.

#### **XrML – eXtensible rights Markup Language**

XrML is a completely different breed than the OMA specifications. Based on years of research at Xerox Palo Alto Research Center, which invented the digital rights language concept, and backed by patented technology, XrML is currently governed by ContentGuard. The eXtensible rights Markup Language provides a universal method for securely specifying and managing rights and conditions associated with all kinds of resources including digital content as well as services. In XrML, rights and conditions can be securely assigned at varying levels of granularity to individuals as well as groups of individuals and the parties can be authenticated.

XrML is extensible and fully compliant with XML, and supports XML Signature and

XML Encryption for authentication and protection of the rights expressions. Although currently controlled by a private company, XrML is going to be governed by the international standards community. It has already given input for MPEG-21, the OASIS Rights Language Technical Committee and the Open eBook Forum. Note however that both XrML and ODRL are, although freely available, using patented technologies, so implementing a new DRM system could infringe on intellectual property rights. The most powerful adopter of ContentGuard's XrML technology is Microsoft.

### Bottom Line

With ODRL and XrML as the two most promising general purpose rights expression languages (others are IPMP by MPEG and XMCL by Real Networks), the standardization of DRM solutions has begun. A key

difference between ODRL and XrML is that ODRL seems more applicable to actual transactions in the real media and publishing world, whereas XrML is more abstract and has designs for a broader spectrum of applications. Now there is a race of sorts between the two big standardisation efforts: XrML is the one being used in commercially deployed solutions, including the DRM solutions from Microsoft. ODRL is still in the game, notably with gains in the wireless world, where OMA has adopted it as rights-management language for mobile content. Nevertheless, while Microsoft may not be a key player in the mobile phone industry yet, its operating system for smart phones is gaining support among device developers not to mention their huge share in the handheld computer market. No doubt, it will be interesting to further watch competition of standards in the mobile field.

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## A bite from the apple

### “Digital Rights Management Strategies 2004”, New York, April 2004

By: Natali Helberger, IViR, Amsterdam, The Netherlands

**Abstract:** This is a report from the Digital Rights Management Strategies 2004 conference in New York, 12-14 April. The conference was organised by Jupitermedia, under the chair of Bill Rosenblatt. The conference provided a platform for discussion, information exchange, brainstorm and product expo for about 400 representatives from the content industry, technology producers, academics and law- and policy makers. The report presents the highlights of three days of discussion on economic, technological and legal aspects of DRMs; what is new, what is controversial, and what could be on the agenda for the next conference?

**Keywords:** conference report – business models, consumer expectations, content management, interoperability – USA

#### Introduction

New York, Broadway; New York’s centre of cinemas, theatres and media provided an appropriate setting for Digital Rights Management Strategies 2004 – an interdisciplinary conference on digital rights management business, technology and legal issues. About 400 representatives from the content industry, technology producers, academics, legislators, etc. came together in New York to discuss about prospects and problems of DRMs, to network over breakfast bagels and tea-biscuits, and to present their newest products. Panelists and participants arrived from all corners of the world, although the US representation was still the strongest. What follows is a selection of some hot topics at Jupiter DRM Strategies.

#### From DRMs to DCMLs – Digital content management solutions

While a majority of copyright scholars still discusses DRMs in the first place as a remedy to unauthorized copying and distributing of digital music, texts and other contents, Peter Sargent (Senior Analyst, Jupiter Research) left no doubt that this is a rather outdated and narrow view of reality. Or, to speak with the words of Chris Barlas (Rightscom), content management is secondary for DRMs. In the first place, DRM is about “Digital Richness Management”. This is because rights are complex and must be managed throughout the chain, rights management is a pre-requisite for creating rich multimedia products, and the complexity and

volume of rights requires extensive automation of the rights management process.

Peter Sargent explained that, in practice, modern DRM solutions are far more than “simple” anti-piracy devices. DRMs have grown out to sophisticated all-round content management solutions. As such, DRMs are implemented as basis for a whole range of different and new business models, such as tailor-made service packaged, arranged according to location, language or preferences; sharing, e.g. of medical records or government data; audience tracking and building of strong loyalty bounds with subscribers or the provision of hard to deliver services (e.g. newspapers in the snowy mountains of Canada), and many more. With other words, DRMs can present commercial users with a broad array of functionality to design solutions for the different requirements and challenges of an electronic business environment.

#### Who pays for DRMs?

Security and functionality has its price. These were the conclusions from the panel on “Economics of DRM I: Who Pays for DRM?”. Tsvi Gal (Senior VP and CIO, Warner Music Group), Eric Grab (Technology Architect, DivXNetworks, Inc.) and Talal Shamoon (CEO, Intertrust), under the chair of Bill Rosenblatt (President of Giant Steps, Media Technology Strategies, Managing Editor, DRMWatch.com and organiser of this conference) discussed the question of who pays for the implementation of DRMs.

The answer is close at hand: in the end they are the consumers who pay for the costs of more security and functionality. With other words, products and services using DRMs might become more expensive. Less convincing, though, was the argument, that costs could remain “invisible” to consumers as they formed an integrated part of the service costs. It was also agreed in the course of the conference, that DRM featuring products and services still have to compete with DRM-free offers, and one of the characteristics of the Internet is to offer consumers better options of choice and comparison.

### **Interoperability**

Not less controversial, but also not less important is the question of DRM interoperability. Consequently, a separate section was dedicated to DRMs standards, chaired by Michael Gartenberg (VP & Research Director, Jupiter Research), under the participation of Willms Buhse (Acting Chair, DRM Working Group, Open Mobile Alliance), Leonardo Chiariglione, Ph.D. (President, Digital Media Project), Albhy Galuten (Chairman, Content Reference Forum). The speakers described interoperability of DRM solutions as a crucial factor for the future development and prosperity of this sector.

Interoperability is the ability of two or more systems or components to exchange information and to perform their required functions. Sharing the same hardware or software environment requires that the systems understand each others “language” or standard. Examples from the pay-TV sector, Microsofts Palladium or of Apple’s iPod illustrate that standardisation can have important implications for the information landscape. Users of the Apple iPod are forced to buy music from Apple’s own iTunes site. Vice versa, iPod is the only player that supports the FairPlay DRM, and it does not support any of the dominant standards used by competing digital music services, nor does it license for the time being its own format to rivals. The existence or non-existence of standardised solutions, therefore, can decide not only on consumers, access to contents, but also about competitors, access to consumers.

The present tendency in the legal discussion is to move lightly over difficult ground, and basically leave the matter for the industry to solve. At least Europe is still suffering from its negative experiences from earlier standardisation attempts in digital television (for example its promotion of a common encryption standard for satellite television; Eurocrypt). This and the wish to refrain from imposing standards on the market that soon could be overtaken by technological or economic developments are common arguments against a legal mandate of certain standards, and those arguments seem also to dictate the policy in DRM matters. But, and also this was an outcome of the conference, until now industry representatives failed to suggest any concrete solutions on how to achieve this goal. So far there was only agreement that different forms of interoperability are possible, such as interoperability solutions at a technical level or at a business model level.

### **Mobile platforms**

Mobile platforms and DRMs were another topic discussed in New York. The panel “DRM Markets I: Mobile and Wireless Content” of Willms Buhse (Head of Products and Marketing, CoreMedia), Josh Hug (Development Manager, DRM and Applications, RealNetworks, Inc.), Ralph Simon (Chair, Mobile Entertainment Forum Americas), chaired by Azita Arvani, President, Arvani Group examined the potential of DRMs in mobile markets. The speakers agreed that one “natural” strategic advantage of mobile platforms in digital content markets was the already existing service provider-subscriber relationships, as well as the fact that consumers are already used to paying for content and (value added) services. In addition, the business model of mobile network operators has already led to the necessary infrastructure for individual client management and billing. To this extent, operators of mobile platforms can benefit from long-standing experience with selling services directly to individual subscribers, and ensuring that only authorized subscribers benefit from certain services (as opposed to e.g. the broadcasting media that were characterised by the one-to-many distribution of services to a not further defined, anonymous audience). But apparently also

the mobile industry still has to find attractive business models for selling actual content to consumers. The provision of higher value content such as songtunes, music, video and streaming were named as promising sectors for future business activities. One important target group of these markets are the YAFs: Young, Active and Funseeking people. Superdistribution was another important key word in this context, as well as time-dated distribution and mobile equipment with pre-installed contents.

With this emphasis on content distribution, it is obvious that DRMs can be, and already are, of importance also for the mobile industry. And because mobile markets were described as still nascent in nature, they can probably benefit from the experiences made so far by the Internet content industry. The more so, since the mobile industry will probably be confronted with problems already known from the online industry (Napsterisation, piracy, viruses, etc.). And also for the mobile sector, the issue of standardisation plays a prominent role. Among the things that were unclear was the question of who should push standardisation: mobile phone producers, network operators, government, or standardisation bodies?

### **DRMs and consumers**

The issue of DRMs and consumers was one of the re-occurring topics of the conference. And again, it was interesting to note the different angles from which the consumer issue was discussed by representatives from the legal and the business world. In the legal discussion, DRMs are genuinely seen as a tool to individualise and personalise consumer-service providers relationship. Because DRMs manage the distribution of contents to individual consumers, it is argued, they are often designed in a way to identify and individually authorise single consumers, and thereby to break with the anonymity of the world wide web. The consequence is, so Chris Barlas (Rightscom), that DRMs pave the way for “work and rule based relationships”, i.e. specified contractual usage terms for different users or user groups. In contrast, industry representatives made repeatedly the point that, ideally, consumers should not be

even aware that DRMs are used. Willms Buhse (Head of Products and Marketing, CoreMedia) referred to the need for DRMs being “unobstrusive”.

It was interesting to note that no representatives of consumer organisations or other institutions representing the consumer side were present at the conference. Invisible also were interest groups representing the interests of consumers as citizens in access to information services and infrastructure under affordable, reasonable conditions, and under conditions that respect further public interest objectives. It was unclear whether this lack of representation was due to a conceptual failure of the organisers of the conference or the lacking awareness of consumer and citizens interest groups? Did the organisers perceived consumers still first and foremost as buyers and subscribers that are not more interested in DRMs than they are in the different transistors and technical specifications in their television or settop box? Or was it because the majority of consumer organisations has not yet recognised the impact of DRMs on the rights of individuals, both as consumers and as citizens, and still consider the safety of garden chairs and microwaves their prime battlefield (important issues, too – no doubt about that)?

It was even more interesting to note that some of the conference participants clearly welcomed this situation. As Josh Hug, Development Manager at RealNetworks, Inc. put it: “Consumers are not represented here, perhaps that is good. They do not have to be. They have already enough power”.

Do they? The quote might highlight the tensions and the level of insecurity on the side of (among others) the content industry. Similarly, the number of open questions signalled the lack of experience with and knowledge of the consumer perspective. Todd Chanko (Jupiter Research) identified in his presentation “Creating successful DRM-enabled business models” a number of key questions, namely: How can media companies take advantage of consumer attitudes toward content ownership and copying? What are examples of DRM-enabled business models? How elastic is pricing for DRM-protected



content? Some other key questions that were raised during the conference were:

- ▶ How much choice do consumers want (if they want choice at all)?
- ▶ How to demonstrate added value to consume?
- ▶ How apart are seller and customer preferences?
- ▶ Managing consumers, experience: what do consumers want/expect from content, services?
- ▶ How to get users to accept DRMs?
- ▶ What do consumers value more: interoperability, stability, continuity or innovation, rapid technological progress?

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- ▶ Further information can be found at the conference page:  
<http://www.jupiterevents.com/drm/spring04/>

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## Interplay of players better natured than expected

### A report from the conference “Digital Rights Management – Distribution and Security of Digital Media and Information”, 22 April 2004, Munich

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** The professional conference was above all about market perspectives of copyright industries in the light of DRM, giving special attention to the music and publishing industry. This short conference report aims mainly to select and reflect those consumer concerns which were present in the talks by industry and academia.

**Keywords:** conference report – consumer expectations, consumer behaviour, business models, DRMS design, piracy – Germany

### The Munich Circle

Telling a friend that I was going to participate in an event of the Münchner Kreis (the Munich circle?!) he looked at me as if I were going to a conspiratorial circle’s meeting. In fact it is simply “a supranational association for communication research”, and DRM has

The search for finding answers to all these questions might very well fill the agenda of a – still to be organised – conference on its own.

One conclusion to take home from this conference is that the functionality and application of DRMs reaches further than being simple anti-piracy devices, and that DRMs as a basis for a whole range of new models for marketing and distributing information have the potential to impact information markets and society to a far greater extent than commonly recognised. DRM Strategies was not the last conference of this kind.

already been a topic on their agenda for a while. The conference was a one day event with 10 presentations and a larger space for discussion towards the end. Although in terms of speakers and participants (conference material below) the event had a strong national bias, the issues dealt with are by nature of wider interest. Industry (Bertels-

mann Music Group, Philips Corporate Technologies, Microsoft Germany, Deutsche Telekom, and Vodafone), researchers and consultants contributed to the conference. Open Source evangelist Bruce Perens, Berkeley, and information scientist Rainer Kuhlen (during the debate) raised their voices as Digital User Rights advocates. Arnold Picot, chairman of the board of directors of Münchner Kreis, framed the conference with an introduction and a closing remark. About 200 participants attended.

### General Impression

To start with a general impression: at this conference actors and positions appeared to be more flexible than in earlier days of DRM debate. Content providers acknowledged the role of IT-companies, and even thanked Apple for paving the way — of course the iTunes hymn was sung at various times this day. Music industry has lessons learnt accepting music downloads as new distribution channel and the challenges this new business implies. In a mid-term perspective Bertelsmann expects an oligopolistic market, and of course to become a major player alongside Apple. In contrast to earlier debates, industry now puts forward that the hassle for consumers has to be definitely reduced to make DRM solutions acceptable. Even fervent advocates of consumer concerns were well received at the conference. All in all, confrontation seems less attractive in the light of envisaged win-win situations. It would be interesting to know if this kind of responsive and almost playful interaction was simply due to the thoughtful arrangement of invited speakers by the organizers or can be taken as a sign of a new trend.

### Consumer Concerns

Concentrating on consumer concerns, there was obviously a common understanding prevailing that the hassle with DRMs for consumers has to be reduced, and at best consumers ought to be integrated more consciously in new business models. This was more than pure lip service as it materialised in three strands of thought: first, basic forms of usage of non-protected media ought to be preserved when shifting to DRMs-protected media, e.g. users should be enabled to play

and use content on all devices they own. For example Philips is developing an approach, presented by Alty van Luijt, which assumes that a user's presence is represented by the presence of his mobile phone. Accordingly, rights objects stored in the SIM can be transferred to stationary consumer equipment by near-field communication (NFC). Second, "unobtrusive DRM", which might cover watermarks as well as identification methods was regarded as a promising approach to ease the life of consumers. Forensic watermarks as well as "Light Weight DRM" operate at this level. A forensic watermark is ideally a digital signal marking the copyright owner within a digital media object, hard to detect, hard to attack, and surviving conversion to analogue forms. In contrast digital fingerprints and "signcryption" (as used in LWDRM) identify specific individual users purchasing or delivering a digital object. Even Bruce Perens was in favour of forensic DRM as it does not criminalize consumers beforehand — the mere threat of being potentially detected was assumed to have the desired effects. Third, a new role can be assigned to consumers as part of the distribution and business model coupled with incentives. The corresponding buzzword "superdistribution" was mentioned in practically all presentations. The basic idea behind the word is to combine the free (re)distribution of digital goods by consumers with a mechanism to generate revenue if and only if the new recipient is about to use the good. Rolf Schuster of Vodafone and Willms Buhse, a former Bertelsmann employee now with CoreMedia?, alluded at the new OMA 2 standard (Open Mobile Association) just released and to concrete superdistribution projects underway for mobile music based on OMA.

### Categorisation of DRM Approaches

The talk by Rüdiger Grimm, security expert and professor for multimedia applications at TU Ilmenau, offered an interesting categorisation of DRM approaches. He starts from the assumption of an intrinsic dilemma: providers of digital content may claim and define their intellectual property rights, but ultimately they depend on the consumer's willingness to conform to the rules — as long

as the enduser owns his or her computer device. Here is where DRM comes in: the first option to enforce the rights of rightsholders, in other words to make consumers behave compliant with the rules set, is enforcement by technology. In this case users have no choice but to behave as the DRM-system demands (or to crack the protection mechanism). Consumers conform to the rules because they must. That's what Lawrence Lessig has termed "code as code" and written a book about (Lessig 1999). Second option, consumers adhere to the rules, because they don't dare to break them, due to the risk of being detected and the disadvantages this might cause. This can be achieved by tracing, tracking and identification technologies. Third, consumers conform to the rules because they want to, due to incentives and advantages they expect, e.g. receiving commissions for attracting new consumers.

### Unlawful User Behaviour

Prof. Dr. Ulrich Sieber, director of the Max Planck Institute for Foreign and International Criminal Law, Freiburg, shed light on a special kind of user behaviour, namely unlawful or criminal behaviour. He was very much in favour of a systematic analysis of crime instead of talking of "piracy" in general terms. In addition to a classification of crimes he also proposed to distinguish types of perpetrators (mere private users, hobby-hackers who understand their behaviour as sport, dealers, and organized crime). He also provided some statistical data on lawsuits in Germany: there were 2,727 cases of software piracy, of which 780 were classified as professional and 1,947 as private, referring to 2002; there were 7,311 cases of copyright law infringements, of which only a few were concerned with piracy in the audio sector, and there were 5,902 cases of fraud related to "unauthorized access to communication services". The last figure might be compared with Premiere, the German payTV channel's complaint about 500,000 illegal users – the number of subscribers being 2,908 million at the end of 2003. Sieber ended his talk identifying shortcomings in current legislation and proposing a reform. Present German legislation allows the prosecution of infringements aiming at commercial exploitation but leaves

too much freedom for private users and hobby hackers. He spoke of "a privilege for private attacks" on DRMs. There were some critical murmurs to be heard at this stage, but they did not mature to an articulated statement during the debate.

### Other Issues

During discussions other issues and open questions came up. To pick up just two of them:

- ▶ Werner-Christian Guggemos, an eBook publisher from Munich, complained about providers of DRMs. Available DRM-technology was too limited to the basic usage forms and neglected additional usage forms, hindering user acceptance. The DRMs still lack transparency for users and are still too unstable – which by the way reminds of the early days of e-money schemes on Internet. Small changes of the user's IT-configuration might render the use of the system impossible. He also criticised that datamining was an inherent feature of many DRM-systems, which many end-users would not appreciate and which again might hinder acceptance.
- ▶ One of the most interesting questions put forward was about DRM for ordinary people. The answer from the podium was a reference to the "creative commons license", which by the way will be launched in Germany in June at the WOZ conference. But I guess that the person raising the question was also thinking of DRMs to be applied by any owner of content, anyone with a homepage and some content to offer to the public. In my view everyman's DRM is an important but severely neglected topic.

### Bottom Line

Less confrontation among players, basic user concerns more widely acknowledged, unobtrusive forensic DRM instead of pre-emptive DRM, superdistribution hot, three ways to make users adhere to rules: by pre-emptive technical measures, by risks of negative consequences, by incentives; four types of perpetrators breaking the rules. Further topics: DRMs solutions neglecting content provider requirements, and DRMs for everyone.



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**Of vanishing media and copyright enforcement by destruction**

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** The article links the idea of "vanishing media" to the enforcement of usage restrictions and the avoidance of illegal copying. In this sense it is held that vanishing media might even be seen as a noteworthy approach to DRM. William Gibson's Agrippa, EZ-D and DIVX are recalled as well as the ideas of politicians with respect to "technological self-help measures". Finally the author wonders among other things, why all these stories come from the United States and not from the European Union.

**Keywords:** editorial – business models, content protection, DRMS design

**Prelude: What the second issue of the INDICARE Monitor contains**

Before I get into "vanishing media" I would like to start with an overview of what this second issue contains. It is the first one including contributions from external experts. Nynke Hendriks one of the experts, who converted the Creative Commons licenses into Dutch law reports of this experience, and Marc Fetscherin, one of the few DRM consumer researchers, who for the time being is visiting researcher at the University of California (UC) Berkeley, outlines his approach of stakeholder analysis taking the music industry as an example.

INDICARE has analysed the Final Report by the High Level Group on Digital Rights Management released 9th of July by the European Commission (Carsten Orwat), reflects about the future of Apple's iTunes music store in Europe, which started in June (Nicole Dufft), and our technical experts from Hungary discuss a particular issue of file sharing on P2P networks seldom addressed, namely the network bandwidth problem and the limits of filtering to cope with it (Kristóf Kerényi). Finally the editor contributes some ideas about "vanishing media" and DRM you can read in the following.

**Introduction to vanishing media**

Theories about black holes are basically about the fate of vanishing stars. Recently Stephen Hawkin's U-turn in this matter made it to the media (see e.g. Adam 2004, science

correspondent of the Guardian, clearly explaining the subject). This made me think that the idea of vanishing stars might also be applied to media fading away when their time has come. This notion does not only refer to the lifetime of storage media and the problems to preserve paper, hard disks, CD-ROM etc., but also to media content. In the old days of analogue media when time had come and copyright had expired there was no halt to unlimited distribution. In the days of digital media, however, the idea of vanishing media is also linked to the enforcement of usage restrictions and the avoidance of illegal copying itself. In this sense vanishing media might even be seen as an interesting third type of DRM solution besides copy protection and forensic DRM. There is no theory of vanishing media yet, but there are some interesting cases – and of course I am eager to learn about more cases.

I am inclined to distinguish four types of vanishing media: (1) self-devouring read once media, (2) self-devouring media with a determined period of grace, (3) media with an extensible period of grace, and (4) media destruction by third parties.

**Self-devouring read once media**

William Gibson, author of Neuromancer, later wrote an introduction to his work "AGRIPPA, A Book of the Dead" describing it as "a longish poem to be designed by artist Dennis Ashbaugh and 'published' by art-guy Kevin Begos. Ashbaugh's design eventually included a supposedly self-devouring floppy-

disk intended to display the text only once, then eat itself. Today, there seems to be some doubt as to whether any of these curious objects were ever actually constructed. I certainly don't have one myself. Meanwhile, though, the text escaped to cyberspace and a life of its own, which I found a pleasant enough outcome. But the free-range cyberspace versions are subject to bit-rot, it seems, so we've decided to offer it here with the correct line-breaks..." etc. (Gibson 2002). This case is interesting in many respects. In our context, the interesting lesson at the end of the day is: the "self-devouring" approach has never been performed or did not work, and the poem has eventually been made publicly available to everyone.

#### **Self-devouring media with a determined period of grace**

Some of you might know EZ-D. EZ-D is almost the same as a conventional DVD, and works in all players, DVD drives and gaming systems designed to accept a standard DVD. The special thing is "that it has a 48 hour viewing window that begins when the disc is removed from its packaging. Consumers will then be able to enjoy the movie as many times as they wish during this time frame. After 48 hours of impeccable play, the DVD will no longer be readable by the DVD player" (HighWheeler 2003). The new copolymer degrades once exposed to air, becoming opaque rather than transparent (see Wikipedia 2004). The EZ-D entry in Wikipedia also relates that the intended market for the EZ-D discs is "short-term hire and promotional deals" and hints at the fact that EZ-D once unplayable can be recycled. EZ-D was based on a development by Flexplay, and it was tested by Buena Vista Home Entertainment Division of The Walt Disney Company in 2003. The e-shop of Buena Vista Home Entertainment for EZ-D discs is still operational. I doubt if this approach is a success, but actually I don't know. In our context the crucial question is if the 48 hours are used to copy the original to a DVD or to watch the movie. It would be interesting to learn more about consumer behaviour in this case.

#### **Media with an extensible period of grace**

The DIVX story is well told in Wikipedia, so I quote them at length: "DIVX (Digital Video Express) was an attempt, by Circuit City and an entertainment law firm, to create an alternative to video rental in the United States. (It is unrelated to and should not be confused with the video codec DivX ;-).) The idea was to sell customers a DIVX disc (similar to a DVD) at a low cost. This DIVX disc had a limited viewing period (generally 48 hours) that started after its initial viewing. After this period, the disc could be viewed by paying a continuation fee (generally \$3.25). DIVX discs could only be played on special DVD players that needed to be connected to a phone line. After the DIVX disc was viewed, the disc could be kept for future viewing, resold, given away, or discarded. The physical disc was not altered in any way by playing it, only the account that the DIVX player ... (keeps, KB)."

"The DIVX rental system was created in 1998 in time for the holiday season and was discontinued in June of 1999 due to the costs of introducing the format as well as not being accepted by the general public. Over two years, the DIVX system was to be discontinued. Customers could still view all their DIVX discs and were given a \$100 refund for every player that was purchased before June 16, 1999. All discs that were unsold at the end of the summer of 1999 were destroyed. The program officially cut off access to accounts on July 7, 2001..." (Wikipedia 2004)

This story was also told in other words by Bruce Perens at the Munich DRM Conference (INDICARE Monitor reported about it). He called it a sad DRM story, explaining the disadvantages of proprietary systems creating lock-in situations. In the perspective of vanishing media the case is interesting because the whole media system vanished with the result that certain content was no longer available. This problem however is not only the outcome of commercial failure, in more general terms the short innovation cycles of consumer devices intrinsically bring about continuous casting aside of technology and consequently of content.

### Media destruction by third parties

In the United States some politicians fiercely fight P2P file sharing by preparing legislation to allow for direct attacks on computers and content of assumed law-breakers trading (illegally) copyrighted works. Howard Berman achieved some resonance in 2002 with the idea to make “technological self-help measures” legal (see Greene 2002). A year later Orrin Hatch (the one who recently presented the “Inducing Infringement of Copyrights Act”) suggested “that he might favour technology that can remotely destroy the computers of those who illegally download music from the Internet” (see Mark 2003). Both are not exactly saying that media content found on consumers’ computers should be destroyed; nevertheless it is one option among the many forms of attack we can think of. Joseph D. Schleimer gave an overview of what already could be done in 2001 (Schleimer 2001). He explicitly includes deleting files as an option: “A more direct approach would be to identify specific infringing files posted on a file-sharing system, initiate an upload of those particular files, and during the “handshake” (when the uploader’s computer is introducing itself), insert a program into the uploader’s computer that blocks copying of the infringing file, deletes it, or replaces it with a cease-and-desist or decoy program”.

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### Bottom line

The term “vanishing media” can be attributed to physical artefacts as well as to digital content which can be made inaccessible in many ways, by self-deletion, by third party destruction, or by discarded media systems. In all of these cases consumers are not sovereigns of what’s happening, they may be reluctant to accept this determination by others and they see their sense of ownership harmed. The failure of DIVX and the fact that the ideas of Berman, Hatch and others remained ideas are telling. By the way it is surprising that all these things happen in the US and not in the EU. Is this the price for being at the cutting edge of the trial and error innovation process? Coming back to the “vanishing media”, there is no need to condemn self-devouring media. There are promotional forms of media like “previews” where vanishing media could be welcome. Vanishing, recyclable media could also be an element of (media) ecology. Talking of ecology I would like to close with a remark on what I found in the Internet looking for “vanishing media”, a piece by an advertising expert of the tobacco industry writing about the ever decreasing media formats which can be used for cigarette advertisements (British-American Tobacco Company 1999).

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## The Creative Commons experience in the Netherlands

### Taking the law into your own hands, copyright law that is

By: Nynke Hendriks, Institute for Information Law (IViR), Amsterdam, The Netherlands

**Abstract:** The Creative Commons licenses seek to facilitate the distribution and sharing of copyrighted works. The licenses are characterized by various optional conditions and may therefore be customized according to the individual wishes of the author. In many countries across the world, the original US licenses are currently being converted into national licenses. The Dutch licenses were launched on 18 June 2004. This article is based on the experience of porting the Creative Commons licenses into Dutch law carried out by the Prof. P. Bernt Hugenholtz and the author, both from IViR.

**Keywords:** legal analysis – Creative Commons – The Netherlands

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#### History and underlying ideas of Creative Commons

Creative Commons (CC) was founded in the United States in 2001 and since then the “some rights reserved” logo of Creative Commons has been applied to over 3 million US web sites. Creative Commons is based at Stanford Law School and chaired by Lessig. The CC project was set up to counteract the threat of a diminishing public domain as a result of the growing world-wide lockdown on copyrighted works by (multimedia) corporations and increasingly stringent draconic anti-piracy laws adopted by governments. The CC project also points out that the availability of creative works on the Internet may be a source of inspiration for the development of entirely new forms and works of art.

Creative Commons seeks to strike a balance between strict regulations and unprotected use of works within the boundaries of the existing copyright law system. The underlying idea is that creatives will once more be stimulated to freely share and distribute their works, i.e. to allow broader (and cheaper) access to their work. This new (or perhaps

we should say “old”) approach to copyright law is also a response to the technological developments of the past decades. Digital innovations enable people across the world to remix, pastiche and transform existing works into new works of art. Based on the general idea that new art always draws its inspiration from existing art, this positive reflection on the reuse of works is one of the pillars of the Creative Commons programme.

On 18 June 2004, the Dutch versions of the American Creative Commons (CC) licenses were launched in the presence of Creative Commons co-founder Prof. Lawrence Lessig. The project leads of the Netherlands were Prof. P. Bernt Hugenholtz and Nynke Hendriks (Institute for Information Law (IViR), University of Amsterdam). With the introduction of localized CC licenses, the Netherlands followed in the footsteps of Finland and Germany that were the first European countries to introduce their national versions of the CC licenses. Japan and Brazil launched their CC licenses earlier this year and many other countries are currently localizing the CC licenses as part of the



“iCommons (International Commons) movement”.

During the porting of the Dutch CC licenses, Creative Commons already introduced some new varieties on the original licenses, including a sampling license geared to the reuse of works for new sampling creations. The regular introduction of new licenses (and updated versions of existing licenses) forms part of the idea of continuous evolution underlying the Creative Commons project, in line with the ongoing technological developments on the Internet.

### Features of the CC licenses

Since 18 June 2004, it is therefore possible for Dutch writers, musicians, filmmakers, webmasters and the like to publish their work on the Internet using one of the Dutch Creative Commons licenses. The CC licenses enable creatives to make their work available to others while retaining their traditional copyrights by applying specific terms of use. This concerns the following four (optional) terms:

#### 1. Attribution

The licensor’s credits must be clearly visible whenever his/her work is used by others;

#### 2. Derivative works

Others are or are not allowed to make derivative works of the licensor’s work. Derivative works are works based upon the work, such as a translation, musical arrangement or a motion picture version in which the work may be recast, transformed or adapted;

#### 3. Using the work for commercial or non-commercial purposes

Others may or may not use the licensor’s work for commercial purposes;

#### 4. ShareAlike

When others use the licensor’s work, they in turn must make their work available to the licensor under the same conditions.

These terms of use have been designed to provide the creator of a work with the freedom to distribute his/her work via the Internet under customisable licenses, while still being able to invoke his/her copyright where

it is violated. The licenses are furthermore geared to individual creators rather than companies and thereby return to the roots of the original copyright law system which intended to protect the individual creator and to stimulate a creative and intellectual climate by doing so.

An important aspect of the Creative Commons licenses is their **customer-friendly application**. The CC site presents the licenses in three (i.e. human-readable, lawyer-readable and machine-readable) versions of which the human-readable version usually suffices. In plain language, this version lists the four optional terms under which the creator may publicize his/her work. All that is then required is clicking the preferred terms and the license is automatically compiled and linked to the creator’s site. In addition, cartoons explain how the licenses work in practice.

### The porting of the CC licenses into Dutch law

The iCommons project commenced in March 2003 aiming at a worldwide application of the CC licenses. To date, countries ranging from Japan to Brazil and Australia have introduced their national CC licenses, and all EU countries should ideally have launched their licenses by the end of the year.

The porting of the licenses into national laws is carried out by an acknowledged copyright institution or a law firm in the country concerned (i.e. the project lead). The project lead produces a first draft of the ported licenses. This draft is posted on the CC site inviting a public discussion, after which the final draft is produced. An important premise for the localization of the CC licenses is that all licenses across the world should be as close to the (American) original as possible. They may only differ from the original licenses when absolutely necessary, and not on grounds of policy or philosophy.

A consequence of this strict rule of uniformity is that the Dutch licenses have been drawn up in an American style and as a result occasionally have a distinctly “non-Dutch” feel about them. Although the centrepiece of the licenses, i.e. the four optional terms of use, has remained intact, other provisions of

the licenses had to be adapted to Dutch contract and copyright law. In addition to the 11 licenses, it is also possible to opt for the “Public Domain Dedication” in which the creator dedicates his/her work to the public domain, thereby waiving all copyrights.

Below, five provisions of the original licenses and their conversion into Dutch law are discussed to illustrate the porting process of the Dutch licenses.

#### a. Definition of legal terms

All licenses consist of eight provisions including a definition of terms. One of the changes that had to be made concerned the American use of the term copyright.

Copyright under US law is a broader term than Dutch copyright, encompassing performing rights, amongst other things. Such rights come under the separate neighbouring rights regime in the Netherlands. Like the other EU countries, the Netherlands furthermore recognizes separate database rights which may also be relevant to CC licenses in respect of websites. US law does not (yet) recognize database rights as such. The Dutch licenses therefore refer to “copyright, neighbouring rights and database rights” where the original licenses use the term copyright.

#### b. The payment of fees

A striking aspect of the current CC licenses is their non-profit nature. The licensor makes his/her work available to others under the stipulated terms, but no money changes hands. Article 5 explicitly states that the licensee does not have to pay “any royalties, compulsory license fees, residuals or any other payments”. However, in the Netherlands some statutory fees may apply which the licensee will be obliged to pay. This concerns in particular the so-called reprography fees which are laid down by law and are payable upon copying (parts of) a work protected by copyright. Such fees may be included in the price of data carriers (CD-ROM's etc) where it concerns copies for private use, but they may also be payable per copied page, for example where libraries or universities make copies.

#### c. The transfer of future rights

Another provision that raised questions in the original license concerns the transfer of future rights. Article 3 provides that the rights granted to the licensee may be exercised in all media and formats “whether now known or hereafter devised”. The transfer of future rights continues to be a complicated issue in the Netherlands. German law is lucid in this respect, i.e. it is not allowed. In Dutch law the exact scope of the rights that may be transferred continues to be a point of debate. In 1997 a Dutch court ruled that a license concerning the transfer of copyrights did not include the transfer of rights (in this case Internet rights) that were unforeseen upon concluding the license. This may well be interpreted as a prohibition of the transfer of future rights. In the light of this interpretation, Article 3 in the Dutch licenses has been confined to the transfer of existing rights.

#### d. The automatic contract principle

The original licenses are based on the principle of the so-called automatic contract. By the mere exercise of any rights to the work provided by the licensor, the person exercising those rights is bound by the terms of the applicable license. Contrary to US law, a license is at all times regarded as a contract under Dutch law and contract law therefore applies. Dutch contract law does not recognize the automatic contract as such. The (contents of the) license must have been made sufficiently clear to the recipient beforehand for a contract to be legally valid. This requirement has therefore been added to the original provision.

#### e. Waiving copyright

Finally, in addition to the 11 licenses that provide the licensee with specific rights of use, a creator may also opt to waive all copyrights and dedicate his/her work to the public domain by means of the “Public Domain Dedication”. Waiving one's copyright is not possible under Dutch copyright law. A creator may however state that he will not exercise his/her copyright (i.e. the right to reproduce the work and to communicate it to the public) in any way. This statement is irrevocable and, for all practical purposes, will

therefore amount to a public domain dedication in the sense that others will be free to reuse the work in whichever way they like without any obligations on their part.

#### Bottom line

The Creative Commons licenses intend to stimulate the distribution and reuse of copyrighted works by means of customisable licenses. It is up to the individual author to decide under what conditions he/she wishes to distribute his/her work. In a way this signals a return to the roots of the original copyright law system whereby it is up to the individual authors (rather than corporations and copyright organizations) to determine

whether and how their work is copied and made available to third parties. Another important aspect of the CC licenses is their customer-friendly application. Individual authors are able to apply the licenses to their work by following a few simple steps on the Creative Commons website. Moreover, the license is available in three versions: human-readable, lawyer-readable and machine-readable as a result of which the terms of the licenses are clear to lawyers and non-lawyers alike. The Dutch CC licenses differ from the original US licenses in various ways although it must be noted that the essence of the four central terms of the licenses has remained unaltered.

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## Report by the High Level Group on DRM at the European Commission

By: Carsten Orwat, ITAS, Karlsruhe, Germany

**Abstract:** On July 9 the European Commission released the Final Report by the High Level Group on Digital Rights Management, which summarises the work of the Group from March to July 2004. The involved representatives agreed in particular on the need for interoperability and open standards for the benefit of both consumers and companies. The achievement of a common position on interoperability might be seen as a success. However, it is worth noting that the remaining parts two and three of the report titled “private copying levies and DRM” and “migration towards legitimate services”, have not found the support of the consumer organisation involved.

**Keywords:** review – authorized domain, collective rights management, consumer expectations, European Commission, interoperability, stakeholders, standards – EU

#### Introduction

In March 2004, the European Commission established the High Level Group (HLG) on Digital Rights Management in particular to address and discuss the obstacles to the implementation of DRM. The HLG comprises mainly ICT companies and industry associations, i.e. IFPI, Vivendi, Eurocinema, BBC,

France Telecom, Vodafone, Fast Web, Philips, Nokia, Alcatel, Hewlett Packard, Siemens, and the New Media Council. The European Grouping of Societies of Authors and Composers (GESAC) represented collecting societies, the Federation of European Publishers (FEP) publishers, and the Euro-



pean Consumers' Organisation (BEUC) consumer interests.

In March the Group had agreed to focus on five issues:

- ▶ Interoperability requirements
- ▶ Acceptance and trust by users
- ▶ Migration to legitimate services
- ▶ Impact of DRM on existing rights management approaches, in particular levies
- ▶ Assessment of some DRM applications

From this list, the report includes only three topics, in which the "Interoperability" issue has been dealt with rather extensively, while the chapters "Private copying levies and DRM" and "Migration to legitimate services" are relatively short.

#### Interoperability and open standards

The fact that the 16 actors involved agreed on the need and importance of interoperability and open standards to overcome the current situation can be regarded as a success in itself. While currently content providers license their catalogues to different technological systems with incompatible DRM systems, as described by the HLG, **interoperability** would enable consumers to choose among different devices and to use content with different services and devices. Content providers would not depend on one distribution channel, and device manufacturers have the advantage that their products can be used with different services (p. 10). Standards by the Open Mobile Alliance (OMA), the Motion Picture Experts Group (MPEG) and by the Digital Video Broadcasting project (DVB) are seen as examples of open standards relevant for DRM systems (p. 7). As there are however **obstacles to establish open standards**, the HLG recommends to the European Commission and the Member States to support the development of open standards (p. 13).

Besides open standards, the development of new concepts is seen as fundamental by the group to achieve interoperability among devices that incorporate DRM systems. Special emphasis is given to the "**authorized domain**" (AD) concept in the context of the DVB activities or the "**digital home**" con-

cept of Digital Living Network Alliance (DLNA). These concepts refer to personal spaces in which authorized content may circulate, e.g. from the living room hi-fi system to the car, to the MP3 player etc.

#### "Private Copying Levies and DRM" as well as "Migration to Legitimate Services"

The second chapter of the report addresses the **relationship between levy schemes and DRM**. In general, levies are intended to grant a fair compensation to content producers or rights holders for private copying. The widespread application of DRM has the potential to alter the role of levy schemes, since the compensation would be enabled by individual DRM-based licensing contracts. Although the report states that DRMs are the way forward, it is cautious with respect to "adapting existing levy systems" and argue that adaptation should be made on a case by case basis taking specific devices and services, the application situation and the specific amount of private copying into account (p. 15).

The third chapter is on ways to accelerate the use of commercial online services and products, in particular by encouraging migration from online file sharing services.

#### Why BEUC did not support chapters two and three

The only consumer organisation involved, BEUC, does not support the arguments and recommendations on "Private Copying Levies and DRM" and "Migration to Legitimate Services". Inquired by INDICARE, a representative of BEUC pointed to the one-sided stigmatisation of private copying and file sharing in these chapters, which was not acceptable for the consumer organisation. The lawfulness and benefits of private copying for consumers and the many options of P2P networks for others than illegal usages for sharing copyrighted material, e.g. for the promotion of content, were not acknowledged in a balanced way. Regarding the substitution of levy systems by widespread use of DRM-based individual licensing, BEUC points out obscurity on by whom and how it should be judged that DRM solutions are fully operational and are adequate to justify adaptations of the levy schemes.

## Bottom line

From the report, one can observe the strong interest of all the actors involved to avoid situations in which specific DRM technologies become gatekeepers or bottlenecks to digital markets. All in all, the intensive work on interoperability seems to have been at the expense of other issues interesting for con-

sumers, i.e. the envisaged consultation on consumer trust and confidence aspects that has been postponed for further discussions. The Commission announced to start a wider consultation of all stakeholders on the report, to feed the results into other fora, and to convene a follow up meeting of the HLG in November 2004 (p.3).

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## Will iTunes be successful in Europe?

### And if so, what does that mean for consumers?

By: Nicole Dufft, Berlecon, Berlin, Germany

**Abstract:** Apple started the European version of its very successful iTunes musicstore in June. Will Apple be able to repeat its US success, even though it is entering an already very competitive market in Europe? This article takes the standpoint that its proven ability to offer seamlessly integrated systems, could help Apple to stay ahead in the online music business.

**Keywords:** market analysis – competition, consumer expectations, IT-industry, music markets – EU, Germany, United Kingdom

## Introduction

Earlier than expected, Apple started the European version of its successful iTunes musicstore on June 15. In the US, Apple has been able to show the music industry that

legal music downloading can be a successful business – if only consumers are offered attractive services. In its first year of existence, iTunes sold 70 million songs. According to Apple, this corresponds to a market share of 70% of the total online music busi-

ness worldwide. The question is now, if Apple will be able to repeat its US success in Europe and become the long-term market leader and what this would mean for European consumers.

The starting position for Apple in Europe today is significantly different from that in the US one and a half year ago: While iTunes was the first major legal online music store in the US, Apple is entering an already very competitive online music market in Europe. Each month, new online music stores are opening their virtual doors ranging from Napster 2.0 to AOL. The largest European music platform OD2 already has a large network of distribution partners with strong brand names such as Coca Cola, MTV or Microsoft's msn Music Club. Other providers such as Dell, Yahoo, Amazon or Sony are planning to start their own music services this year. This means that Apple will have to compete with some of the strongest brand names in Europe. But how is Apple going to differentiate itself from its competitors in Europe?

#### **What are Apple's competitive advantages?**

- ▶ Surely not over the price. Price competition can be expected to become ruinous in Europe, because the large number of online music stores is not only competing against each other but also against the even larger number of illegal – and costless – music offerings on the Internet.
- ▶ iTunes' large number of features and services, e.g. very intelligent search and archiving functionalities, sampling and playlists are an important short-term advantage, but can in the medium-term be copied by competitors.
- ▶ The same is true for Apple's comparatively relaxed DRM rules, which allow users to burn songs onto an unlimited number of CDs and use them on up to five computers. In the medium-term, competition should result in similar usage restrictions across all online music offerings.
- ▶ Apple's broad portfolio of more than 700,000 tracks is often cited as its main

competitive advantage. In the US, Apple was not only able to offer music from all five major labels, but also from more than 450 independent labels. In Europe, however, negotiations with some of the most important "indies" have failed to date. Sony Connect, probably iTunes' foremost competitor, is expected to open its European online music store at the beginning of July with about 500,000 songs. It will be intriguing to see, if Connect will better be able to include the independent labels into its offering.

#### **Apple is offering a seamlessly integrated system**

Despite the mentioned threats, there is one strong argument why Apple has a good chance of being successful in Europe even in the long-term: Apple is not just selling music, but a very intelligent and perfectly integrated system of software, hardware and music services. Within this system, less profitable areas of business can be subsidised by the more lucrative ones. And the integrated nature of the system makes it very attractive to consumers.

The most profitable area of business for Apple is its iPod portable music player. Until the beginning of this year, Apple had sold more than two million iPods. Not only in the US but also in Europe the iPod has become an absolute must-have for trendy music-fans. Music platforms that cannot subsidise their music stores with profits from device sales will have a hard time, particularly against the backdrop of thin margins to be expected in the downloading business.

In this respect, so far only Sony can be regarded as a serious competitor for Apple, offering both, a music platform and very stylish music players. However, Apple seems to have the edge on Sony here. First, because even Sony's hip Walkman devices, do not reach the cult status of the iPod. And, second, because Apple has the proven ability to offer truly integrated systems. The seamless integration of the iPod with the iTunes software, the store, and the various services and features is Apple's most crucial competitive advantage. iTunes users can, for example, easily, quickly and without any problems,

synchronise large music archives across various devices; convert different music formats (not only MP3s but also unprotected Microsoft Windows Media Audio files); import music from CDs; play, publish and share playlists (among others charts of more than 1000 radio stations); and connect their home stereo wirelessly with the iTunes music store or the iPod over a new connector device, called AirPortExpress.

#### **What will be the effect for consumers?**

While in the PC business, bug-plagued systems and complicated use are broadly accepted flaws (due to the lack of choice), ease of use and perfect functionality are imperative in the consumer electronics business. Apple has understood this necessity and seems well positioned with its integrated "music system" to serve consumers' demands.

This competitive threat will on the one hand be beneficial to European consumers since it will force competitors to offer high-quality services at low prices. It will probably also foster competition on usage rules, as the flexibility of DRM rules could become a

criteria of choice for consumer – just like price or quality.

The question remains to be discussed though, if a strong market position of Apple will be detrimental to consumer interests, e.g. by hindering standardisation efforts. More compatibility among online stores, music formats and music players would increase transparency and ease of use for consumers. If Apple's Fairplay DRM becomes a de-facto standard due to Apple's strong market position and the company sticks to its policy of not licensing its Fairplay DRM system (with sales of the iPod in mind) less rather than more competition could be the result in the long term.

#### **Bottom line**

The integrity of Apple's music systems is a strong argument for a long-term success of iTunes in Europe. However, it is yet unclear how a strong market position of iTunes would affect European consumers. Much will depend on if and how Apple will make its system compatible with other digital music offerings.

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# Stakeholders in Digital Rights Management

## The case of music industry

By: Marc Fetscherin, University of California (UC), Berkeley, US

**Abstract:** The aim of this article is to identify the various stakeholders related to Digital Rights Management taking the music industry as an example. First key stakeholders in this sector will be identified and their interests in and attitudes towards Digital Rights Management will be as-sorted. The next step of the stakeholder analysis consists of estimating the power to influence the achievement of their interests. However, the evaluation of this power is a very difficult task. One way to approximate the influencing power of the various stakeholders in economical and political terms is to look at the number of proposed technology bills and which stakeholders are giving financial support to politicians supporting these bills. This article concludes that the content industry on one side confronts hardware industry, digital enablers, public interest groups as well as the users on the other side.

**Keywords:** economic analysis, policy analysis – IT-industry, music markets, stakeholders – USA

### Introduction

Current literature focusing on stakeholder analysis of DRM has not been widely discussed so far and has not led to a better understanding of the various stakeholders' interests and attitudes or of their relative power to accomplish their goals. Most of these works lack in-depth analyses and conclusions. This article is a first attempt to help closing this gap.

It takes the music industry as an example and identifies the various stakeholders involved and outlines their power to achieve their goals.

### Interests and attitudes of stakeholders towards DRMs

The various stakeholders have different interests in, and attitudes towards, Digital Rights Management and the underlying technologies and related technology bills.

Interests of all types of stakeholders may be difficult to define and even in the same "category" of stakeholders attitudes may differ. In the case of artists, unknown artists might prefer to distribute their songs over P2P networks while others might prefer to stop this sharing.

Thus, Table 1 and the explanations provided within it are not conclusive and may lack completeness but it does outline the broad interests and attitudes each "actor group" has toward Digital Rights Management.

**Table 1:** Stakeholders in the music industry

Stakeholder	Examples	Interest and attitude towards DRMs
Artist	Creators of content such as artists, singers, songwriters, composers.	(1) Wish to protect their Intellectual Property. (2) Are for fair use, free speech, and artistic freedom to innovate and create new content. (3) Well-known artists are probably negatively affected by internet piracy, whereas less popular artists might profit. (4) Are not in favour of government control. (5) Do not wish to enforce current copyright law.
User	Users of digital content such as consumers (individual), schools, libraries.	<i>Consumers:</i> (1) Do not like to be restricted in their usage, advocate fair use, free speech, privacy, and do not like new regulations and laws. • Do not like to be treated as criminals. <i>Schools / Libraries:</i> (1) Privacy and fair use concern them. (2) Both do not wish to enforce current copyright law and are against excessive technological and legal control.



**Table 1:** Stakeholders in the music industry / *continued...*

<b>Content Industry</b>	Recording Industry Association of America (RIAA), Content Owners (Disney), Music labels (Sony, BMG).	(1) Wish to protect Intellectual Property. (2) Desire government regulation, DRM per federal mandate(s) and private efforts. (3) Anti fair use, believe it gives hackers an excuse to circumvent DRM. (4) Affected negatively by internet piracy. Fight with technological (DRM) and legal solutions (lawsuits). (5) Wish to enforce current copyright law.
<b>Government</b>	Government departments and bodies which establish and maintain the legal & regulatory environment for other stakeholders.	(1) Have to balance various requirements such as piracy, privacy, fair use, copyright on a political, regulatory level. (2) Represent to a certain extent all stakeholders. Are not heavily affected by Internet piracy (possibly loss of tax revenue). (3) Enforcement of copyright related laws is the result of the power exercised by the various stakeholders.
<b>Digital enablers</b>	Companies which support the distribution of digital music to users. Companies from the telecommunications industry, DRM providers, ISPs.	(1) Have to balance various interests both of content providers (copyright protection) and those of users (fair use, privacy). (2) Not directly affected by internet piracy. (3) Try to find market-driven solutions, instead of government regulations, by taking into account the concerns of both the content industry and users. (4) Some have been sued by content providers (RIAA vs. Verizon).
<b>Hardware industry</b>	Hardware companies producing end-devices for users of digital content (e.g. PC, PDA, CD-player, or mobile devices). Companies like Sony, Philips, Nokia, IBM, Ericsson, or HP.	(1) Try to balance privacy, fair use with copyright protection. (2) Not directly affected by internet piracy. On the contrary, legal or illegal demand for content increases demand for end-devices. (3) Want market-driven solutions, instead of government regulations.(4) Do not wish to enforce current copyright law.
<b>Software industry</b>	Software for the production, distribution and consumption of digital content. Companies like Microsoft, Linux, Apple, Real Networks.	(1) Have to balance copyright protection and privacy, fair use. (2) Some effort on Trusted Computing under way (Microsoft) with Next Generation Secure Computing Base (NGSCB). But others try to remain "open" (Linux). (3) Some negatively affected by internet piracy, others not. (4) Have also a perspective as artists (creator of content) as well as content industry. (5) Try finding market-driven solutions, instead of government regulations.
<b>Public Interest Groups</b>	Public Interest Groups support mainly artists and users of content. Organizations such as Net Coalition, Electronic Frontier Foundation (EFF), Electronic Privacy Information Centre (EPIC).	(1) Wish to preserve privacy, free speech, fair use, and artist freedom. (2) Are not negatively affected by internet piracy. (3) Are against government regulations and combat technology solutions restricting users and threatening user rights. (4) Do not wish to enforce current copyright law.
<b>Retailer</b>	Distributors of digital music such as "traditional" retailers, e-retailers, web sites, portals. Example. B&N, Amazon.com, Music Net.	(1) Have to balance interests of both, content providers (copyright protection) and of users (fair use, privacy). (2) Are negatively affected by internet piracy. (3) Try to find market-driven solutions, instead of government regulations.
<b>Collecting Society</b>	Act mainly in the name of artists and content providers for the collection of royalties.	(1) Wish to protect Intellectual Property. (2) Are negatively affected by internet piracy (e.g., loss of royalties due to illegal streaming of music).

### The influencing power of the various stakeholders

Thus far we have identified the various stakeholders in the music industry and their interests in and attitudes towards Digital Rights Management. The next step of Stakeholder Analysis consists of estimating the power to influence the achievement of their interests. However, the evaluation of this power is a very difficult task. By power we mean the influence which stakeholders have to control the decisions that are made, to

facilitate their implementation, or to exert influence affecting their rejection. Power is determined by the type of stakeholder, or by his position relative to other stakeholders, mainly in economical and political terms. By economical terms we mean the economic power to have sufficient money to assert their interests whereas by political terms we mean the power to propose and introduce new legislation supporting the usage of DRM technologies. One way to approximate the influencing power of the various stake-

holders in economical and political terms is to look at the number of proposed technology bills and which stakeholders are giving financial support to politicians supporting these bills.

A number of technology bills have been drafted and mandated by politicians, mainly in the US. Most of them not only represent the interests of the politician concerned, but more those of their financial backers. By looking at the proposed bills, the initiator and the various financial contributors, we get an impression of which of the stakeholders identified above is exercising his own interests through financing politicians.

Quite a significant number of technology related bills has been proposed recently.

Table 2 lists a number of so called DRM related technology bills. Although the list is not complete, it summarizes the most relevant bills related to Digital Rights Management. The last column of Table 2 lists the various stakeholders presented earlier in this article who are financially supporting the initiator of the bill. The information on donations by the various stakeholders to politicians is available at the web site. This information has been taken into account, but is not presented here explicitly for the sake of brevity. We have based our analysis on the top five financial contributors (i.e., industries) for the year 2002, as the figures for 2003 were not always available.

**Table 2:** Technology bills and supportive stakeholders

Name of initiator /pol.	Technology bill	Description	Stakeholders fin. support
<b>Berman</b>	P2P Piracy Prevention Act (PPPPA).	This bill would release copyright holders from liability when they take technological steps to stop copyright infringement on P2P systems.	Content industry
<b>Boucher</b>	The Digital Media Consumers' Rights Act (DMCRA).	Demand exact labelling requirements for usage-impaired "copy-protected" compact discs, as well as several amendments to 1998's infamous Digital Millennium Copyright Act (DMCA).	Hardware
<b>Brownback</b>	Consumers, Schools, and Libraries Digital Rights Management Awareness Act.	The bill acknowledges the important uses of digital technology and databases but insists that, no matter the format, the concept of fair use and protection for consumers, school, and library users has to be acknowledged.	Digital Enabler
<b>Hollings</b>	Consumer Broadband and Digital Television Promotion Act (CBDTPA).	The bill would mandate copyright protection technologies in all digital media devices.	Content Industry Digital Enabler
<b>Lofgren</b>	Benefit Authors without Limiting Advancement or Net Consumer Expectations Act (BALANCE Act).	This Bill reforms the DMCA by allowing consumers to bypass technical measures to make fair use of the copyrighted digital works they legally purchase. The bill defends the right of lawful consumers to make back-up copies of their digital works.	Hardware
<b>Smith</b>	Piracy Deterrence and Education Act.	Enhance criminal enforcement of the copyright laws, educate the public about the application of copyright law to the Internet, and clarify the authority to seize unauthorized copyrighted works (authority to seize infringing copyrighted materials at the border).	Content Industry Hardware
<b>Tauzin</b>	The Broadcast Flag.	This foresees a signal embedded in a digital television signal. The system prevents the re-broadcast of digital copies of music and films broadcast on TV or other media.	Content Industry
<b>Wyden</b>	Digital Consumer Right to Know Act.	Ensures that consumers of digital information and entertainment content are informed in advance about technological features that may restrict their uses, so that they may factor this information into their purchasing decisions.	None (Consumer Groups)

## Conclusion

From Table 2, we can see that there are three groups which can be distinguished in the Digital Rights Management field with respect to technology bills. The first group consists of the content industry which is in favor of strong technology solutions and supportive technology bills and has a strong influencing power to push its interests. The second group could be described as a coalition of users and their related public interest groups, the digital enablers and the hardware industry (except Sony and other companies which are in both the content and hardware industry). They have similar interests but different levels of power to achieve their interests. The third group consists of stakeholders either in favor or opposed to DRM but marginally active at the political level (compared to the others, they have less “invested” in financial terms).

## Bottom line

This article has attempted to provide a structured way to understand and classify the various stakeholders in the current Digital

## Source

- ▶ The Center for Responsive Politics, a non-partisan, non-profit research group based in Washington, D.C., tracks money in politics, and its effect on elections and public policy. It maintains the website: <http://www.opensecrets.org>

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tal Rights Management debate. The proposed conclusion should not be taken as granted, but more as a starting point for further research. This article has several limitations as its results are mainly based on either secondary data like literature reviews or static primary data such as donations to each politician. It lacks in-depths analysis and statistical tests. Nevertheless the conclusion should be valid that the battle over intellectual property protection technologies such as DRMs and the implementation of technology bills will be fought between the content industry on one side and the hardware industry, digital enablers, public interest groups as well as the users on the other side. Notwithstanding further research is required in order to better understand the various stakeholders, their interests and power exercised which all affect the future application of Digital Rights Management. The full paper will be presented at 15th Biennial Conference of the International Telecommunications Society in association with the 31st EARIE Conference, Berlin, September 4-5, 2004



## File sharing on P2P networks

### The network bandwidth problem and the limits of filtering

By: Kristóf Kerényi, SEARCH Laboratory, Budapest, Hungary

**Abstract:** Peer-to-peer (P2P) networks are today one of the main carriers of (illegal) content copying. Although at first glance it looks like everyone except for the recording industry is for P2P networks, they negatively interfere with the increased need of network bandwidth for non file sharing services. A solution – not only proposed by content owners – could be filtering P2P data from network traffic. The present article, beginning with a more general introduction to P2P networks, aims to discuss this issue in particular.

**Keywords:** technical analysis – bandwidth problem, broadband, file sharing, filtering, P2P

#### Introduction to P2P networks

It all began with Napster. The MP3 format has been around since the early 90's, but it was not before the middle of the decade when PCs were massively connected to the Internet and were powerful enough to play back the tracks. Still network bandwidth and storage space were limited. This made Napster came up with the idea of a distributed network in early '99 – and P2P networks were born. People downloaded Napster's client software, and became part of a network –mainly of home computers – where they could share their own MP3 files with others, offering their own hard disks and network connections for unpaid music. This network used central servers, which held just the database of online users and available music tracks, where people could search for particular pieces of music. After they had found what they were looking for, the central server was bypassed, and the two end computers communicated “peer-to-peer” directly with one another to access the music files stored on the other person's computer. These “centralized” P2P networks were under attack by the content industry, by jurisdiction, and a new generation of P2P clients, and had eventually to close down.

Users sadly acknowledged the death of the “single and biggest” hub for music exchange, and moved on to the new networks. These did not use centralized services, and beside the traditional audio search, it was possible to use them for the sharing of any kind of data. Today, zeropaid.com (“the file sharing portal”) lists 67 different client applications

which connect to different file sharing networks, and according to BigChampagne – a company monitoring file sharing networks – “8.3 million people were online at any one time in June using unauthorized services”. This represents a rise of almost 20% during the last year.

#### File sharing is moving to exploit the technical evolution

Despite the huge financial power of the recording industry, file sharing is hard to attack and moves on. There are no centralized servers which can be closed down by courts to stop the networks. To the contrary, in Canada the Copyright Board decided that users are legally allowed to download files (but not upload!) via P2P networks, and in The Netherlands, according to a court decision, Kazaa (one of the leading P2P clients currently) cannot be held responsible for the pirate activities performed with the help of their software.

As important as the legal standing is the increasing support by the IT industry. Since late 2001 Sun is pushing its JXTA (Java based P2P) protocol to the mobile platform, and it is not far that – with the increasing mobile bandwidth – the majority of file sharing will happen on mobile devices. There is also an application called Kazaa Wireless which makes it possible for users to access Kazaa “anytime, anywhere using any kind of mobile device”. Even on Internet2 (an ultra-high bandwidth network, established between US universities and communication corporations, to experiment with future pro-

ocols and services) there are already solutions for ultra fast P2P file sharing (I2HUB).

There are more interest groups that enjoy financial advantage resulting from P2P networks. Just to mention some companies, Linspire (formerly called Lindows, a much debated provider for Linux based operating systems) chose P2P networks to promote a version of their operating system, and hopes that people will like their product and buy the full version. This way they can make their free version available distributed on people's computers, and save a large amount of money otherwise needed for download servers. IBM also chose P2P technology as a background for their TotalStorage Global Mirror technology, distributedly and safely storing data around the globe. BigChampagne maintains a Top 10 list of the most downloaded songs (helpful to determine the real user taste for music) and sells it to the music industry.

Beside that, manufacturers of CD and DVD burners would not be very happy if P2P networks were stopped; neither would be manufacturers of recordable disks. Moreover, one could think about what for consumers need today's huge hard disks, if not for storing videos or music. This means that manufacturers of hard drives benefit from file sharing networks too. ISPs are also among the winners of file sharing, since many people buy broadband – and even broader band – services for such “illegal” downloads. Other organizations have plans built upon the P2P tide: OMA (Open Mobile Alliance) explicitly names file sharing to realize the “superdistribution” of content, and DCIA proposes that ISPs should collect additional money from subscribers and transfer it to the rightful owners to compensate them for losses resulting of file sharing.

### **The network traffic problem**

Peer-to-peer networks cause many headaches for certain groups. To leave aside the well known problems for content industries, there are universities and large companies providing “free” Internet connection for their students or employees, who face a different problem: network traffic. File sharing creates a huge load on the network, even when peo-

ple are in “idle mode” (i.e. they are actually not downloading anything, but other people are downloading tracks from their computer). In fact, file sharing clients always try to use the maximum available bandwidth of the network connection, at least for uploading. Thus they slow down other services, like web browsing, e-mail or even database queries. For companies who pay a certain amount of money for a relatively limited connection – at least in comparison to their size – this means direct loss of money; employees waste valuable network bandwidth to such useless services, and by slowing down the network, those who are working can not do so efficiently. Universities receive very high speed connections for free, or for very little money. However, they also have to manage network bandwidth, since providing connections for thousands of computers at the university and in dormitories, they can quickly run out of their capacity. This way – just like in the case of companies – the bandwidth is consumed by file sharing instead of “legitimate” applications. On top of that they could be held liable for hosting illegal services.

Therefore, these providers would like to restrict P2P traffic on their network to spare network capacity and thus money. In addition, ISPs (Internet Service Providers) are also pushed – by RIAA (Recording Industry Association of America) and MPAA (Motion Pictures Association of America) – to apply some kind of protection against unlawful file sharing.

### **Filtering P2P traffic**

One way to realize such protection would be filtering P2P protocols from the network traffic. By this users could be prevented from using file sharing networks. However it hits upon technical difficulties. First, the newest P2P protocols are defined to be very flexible. Just by restricting network ports (channels which are used to transport particular “types” of data) the operators do not reach their goal, since file sharing download streams can easily be redirected to other channels, or they can even be masked to “look like” traditional web browsing content. What would help is to analyse the whole network traffic passing beyond checkpoints, like company gateways. However, this is not so easy, since in today's

broadband connections and gigabit networks, there is no hardware that could evaluate and process all incoming and outgoing data in real time (i.e. since the connection is masked, the gateway would have first to understand the contents of the channels, which is really resource-consuming). There were other solutions under discussion, for example to “acoustically process” all network data (by Audible Magic), and filter music files from the traffic based on this technique. Another method to stop P2P services would be to upload bogus files on file sharing networks, to make it harder for downloaders to find what they are looking for (see the patent of Prof. John Hale and Gavin Manes from the University of Tulsa). However, P2P developers and users are many steps ahead of the technology aimed at catching them (just look at compressing, or otherwise encoding files on the fly, or the currently popular hashing algorithms, which were originally aimed to make download clients more user friendly, but which also render the method with bogus files unusable).

So, monitoring network traffic and restricting access to such services is not as easy to realize as to imagine. Beside the technical diffi-

culties, the main problem is that ISPs are the last who want to stop file sharing on their networks. They get paid by their subscribers to provide a “common carrier” of data, but who would pay for filtered networks, and who would pay for realizing the filters? Network traffic filtering is an expensive business, which would need special high performance hardware and software solutions, moreover, technology paid for today is not guaranteed to keep up with the times tomorrow. Therefore it is not very likely that filters will be successfully applied in near future networks.

### Bottom line

Peer-to-peer networks are not necessarily bad. They can be used for piracy, but as future services are emerging, they will probably find a way to become a “common carrier” as telephone lines, or Internet connections are today. There are many legal business models that use P2P to their advantage. Others propose to collect the exchange-value of downloaded copyright content from other sources. Time will decide about the future of the peer-to-peer trend, but file sharing networks will be here tomorrow, and filtering certainly won't help about that.

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## Consumer concerns considered?! A selective book review

**Becker, Eberhard; Buhse, Willms; Günnewig, Dirk; Rump, Niels (Eds.): Digital Rights Management – Technological, economic, legal and political aspects. Berlin: Springer 2003**

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** The book reviewed comprises 35 articles on technological, economic, legal and political aspects of DRM – most of them state of the art. The guiding question of the present book review is: To what extent are concerns of consumers and citizens recognized and taken into account? A merit of the book is to have left behind the simplistic and erroneous stance of regarding end-users mainly as “abusers”, “free-riders” or “pirates”.

**Keywords:** review – business models, consumer rights, information law, P2P, privacy, trusted computing

### Overview

The publication reviewed here is an outcome of an interdisciplinary research project on DRM at the University of Dortmund, funded by the Ministry of Science and Research North Rhine- Westphalia, Germany. Main activities of the project were the organisation of two international conferences on DRM, one in 2000 and the other in 2002, and the publication of the present volume towards the end of the project in 2003. The ambition of this book is to provide the “first interdisciplinary overview of DRM” (p. V). Its primary goal is to shed light on DRM issues “from various relevant viewpoints and scientific disciplines” (p. 1). The focus of the book is on “distribution of entertainment content (i.e. as music, pictures, movies, text, etc)” (p. 1f). Authors come mainly from academia, the IT industry (e.g. Nokia, Ericsson, Microsoft, HP), and from copyright industries, i.e. industries whose performance depends on copyright laws and effective enforcement.

The book reveals the complexity of the subject matter and provides insights into the state of the art. In a highly aggregate form, lessons to be learnt from the book are, with respect to technology:

- ▶ that DRM technology is a systemic technology,
- ▶ that it is more about infrastructure than just products, and
- ▶ that one of the crucial questions is, how far DRM systems can be shaped “in a

value-cantered design process so that important policy and legal values are preserved” (Bechtold, p. 599).

With respect to economic aspects the main message seems to me that a world with only protected content is utopia. In reality protected content has to compete with free content (assuming no copyright) as well as with technically unprotected content (assuming copyright). Regarding the legal aspects, I have learnt that copyright is a too narrow perspective. I tend to agree with Thomas Dreier and Georg Nolte “that copyright as a body of law is currently overloaded with information policy issues, which – like a ship carrying a too heavy load – it has never been designed for” (p. 480). A broad perspective of information law covering databases, digital broadcast, online-services etc. seems to be required to cope with the diversity of digital media formats.

### Consumer and citizen concerns

After the very short overall review, let’s look for consumer concerns in this stack of 800 pages. Do we hear the voice of consumers and citizens in this book? The first answer is no: The organised interests of consumers, handicapped persons, and civil society organisations are not present in this multifaceted book, except from Barbara Simons, representative of the US Public Policy Committee of the Association for Computing Machinery (USACM) reasoning about current US Copyright.



The second answer is more positive. Asking whether consumer and citizen concerns are present, the answer is yes. In fact the consumer-citizen is one person, but it may help to distinguish the two roles: the consumer-role and the citizen-role. Looking at the consumer role, the main question is how to bring about a sufficiently good user experience (ease of use, price, etc.). In a broader sense the role of the consumer in different distribution models, e.g. superdistribution, might also be regarded as part of the user-experience (we won't go that far here, cf. however Willms Buhse and Amélie Wetzel, pp. 271-287, developing four scenarios for "mobile music" with different types of benefits for consumers). Looking at the citizen role, the constitution in general and civil rights is the yardstick. Main concerns are that copyright and user rights could be undermined by legislation, license agreements, and DRMs, and that data protection and privacy could fall short. In the following we will pinpoint articles dealing with these issues.

### Consumer concerns

"Genie is out of the bottle" writes Michel Clement (p. 327) and most authors – reflecting "napsterization", P2P -networks and ubiquitous copy devices – would probably agree. Peter Biddle et al. of Microsoft add that this process is irreversible. Purposely coining the term "darknet" for filesharing and related practices on free distribution channels, they conclude: "the darknet genie will not be put back into the bottle" (p. 344). As a consequence, as Marc Fetscherin argues, "content providers must accept electronic theft of their intellectual property as the unchangeable reality and learn to compete with pirated versions of their own products" (p. 302). In the same vein the Microsoft authors state "Darknets are a competitor to legal commerce, and the normal rules of competition apply" (p. 364). The article "Evaluating Consumer Acceptance for Protected Digital Content" by Marc Fetscherin is especially interesting in this context as he scrutinizes and models the calculus underlying end-users' decision to either obtain protected legal content or non-protected illegal content. At the end of the day, business models have to be developed "making the origi-

nal easier and cheaper to buy than to steal" (p. 319). His basic criticism of current business models is their focus on illegal use, while ignoring the consequences for legal users, i.e. the hassle and the disadvantages caused by protection technologies (e.g. registration, software download, usage tracking, file expiration after a given time span, limited device range, limited copies). He concludes "... consumers are frustrated by the restrictions placed on how they can use content they own. Their frustrations are enough to encourage piracy" (p. 315).

### Citizen concerns

The consumer as citizen is a person aware of his or her rights. Consequently the consumer as citizen is very present in legal debate. One focus of debate is the legal provision of fair use or exceptions from Copyright for private use. That is true for the "Digital Millennium Copyright Act" (DMCA), the EU directive 2001/29/EC, and the legal provisions of member states implementing the directive. Most of the analyses in the present book come – more or less – to the same conclusion: exemptions and fair use are threatened. The assessment of the DCMA by Mathias Lejeune concludes "Apparently the rights of users suffer, because in order to have effective anti-circumvention rules, the exceptions were tailored narrow, probably too narrow" (p. 379 f.). Barbara Simons of USACM criticises the DMCA even more fervently with respect to fair use accusing the DCMA of missing the real target "wholesale illegal copying and sales of copyrighted material by factories operating outside the U.S." (p. 403). With respect to EU legislation Séverine Dusollier criticises the copyright exceptions granted as "empty promise" (p. 462). Thomas Dreier and Georg Nolte regard the question what "the appropriate scope of private use exceptions" should be in the digital and networked environment as "one of, if not the most prominent question" for the future (p. 500). In this sense they caution that "DRM-systems may pose a threat to the finely tuned copyright system as we know it" (p. 501).

Lee Bygrave deals with a second important citizen concern: the relation between Digital Rights Management and privacy (pp. 418-446). In his opinion "recent developments in

Digital Rights Management Systems (DRMS) are bringing to the fore considerable tension between the enforcement of intellectual property rights and the maintenance of consumer privacy” (p.418). Hence what is required seems to be an integration of technological measures for protecting intellectual property rights with privacy enhancing technologies (PETs). More precisely Bygrave recommends building mechanisms into DRMS architecture which enhance the transparency of the systems for information consumers, and building mechanisms into the systems architecture which preserves, where possible, consumer anonymity, and which allows for pseudonymity as a fall-back option, i.e. a separate persistent virtual identity, which cannot be linked to a physical person or organization.). In parallel, as he says, “it may be useful to draw on the technological-organizational structures of DRMS to develop equivalent systems for privacy management” (p. 446). In short, the development and application of the “least privacy-invasive devices” is encouraged.

The next step is to extend the individual citizen’s view to a political view asking for “democracy-enhancing technologies”, think of freedom of speech or freedom of information. In this perspective Trusted Platforms are obviously the most controversial issue. With respect to Trusted Platforms and DRMS, Dirk Kuhlmann and Robert A. Ge-

hring explain how trusted computing is able to strengthen DRMS. They warn however not to confuse Trusted Platforms and DRMS, because “DRM technology, by definition, is policy-specific, built ‘to police copyright’, while TCPA technology is conceptually policy-neutral” (p. 198). While I am not sure if I would underline this statement imagining flexible DRMS able to also enforce user-rights, I would agree with the authors that a “broad qualified, political debate” about these issues is needed (p. 205).

### Bottom line

With respect to the entire book, the overall quality of contributions is good, and some are without doubt excellent. The bibliography of about 100 pages is great and the index helpful. Reading can be recommended – despite some weaknesses of copy-editing. Although the book is not a primer I would expect that it will be digestible for most of INDICARE-Monitor readers. With respect to consumer concerns, the DRM discourse has entered a second stage: consumer concerns are indirectly present. It is recognized that acceptable DRM solutions need to respond to consumer and citizen concerns, and this is demonstrated in various contributions, some of which were highlighted. Nevertheless it is high time to learn more about motivations, experiences, and wishes of citizen-consumers, and to hear them or their organisations talk directly.

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**Knock out by copyright expiration. The JibJab Media Inc. v Ludlow Music Inc. copyright affair watched from a distance**

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** This Editorial is about two intertwined success stories, and a third derivative one about copyright. It is about the success of Woody Guthrie's song "This Land is Your Land", and the success of JibJab Media's web animation "This Land. A parody of Woody Guthrie's". Our focus is on the copyright thread, which runs in parallel and ties both stories together. Although at the time of writing the case seems to be settled, many relevant questions remain open.

**Keywords:** editorial, legal analysis – copyright law, fair use, public domain

**The JibJab success story**

JibJab Media Inc., based in California and run by Gregg and Evan Spiridellis, achieved enormous attention with its two minute humorous and satiric flash animation about the U.S. presidential election campaign. In my own words and based on what I have heard and seen I would describe the work (JibJab 2004) as follows: It builds on the well-known Woody Guthrie song in quite an innovative way: the original lyrics are by and large replaced by polemics to be heard in the election campaign, which are elaborated and acuminated here for satirical purposes. The lyrics are sung by "voice talent" Jim Meskimen, who imitates the voices of President Bush and Senator Kerry turning the song into a duet with a new potential to play around with the meanings of the possessive pronouns "my", "your", and "our". In the video the singing protagonists appear as animated caricatures with faces taken from the candidates' Web sites, as Gregg Spiridellis said in an interview (CBS 2004). Adrienne Spiridellis contributed the instrumental part (which sounds like ukulele), which apparently is played without any artistic ambition, almost mechanically. JibJab released its animation on the 9th of July 2004 (EEF 2004b), and drew 10.4 million unique visitors in July (comScore 2004). It was also broadcasted on various occasions on TV (see EEF 2004b).

**The Woody Guthrie success story**

"This land is your land" was composed by Woody Guthrie in February 23, 1940, and recorded in 1944. Joe Klein, his biographer, writes: "In April, 1944, Woody recorded

about 120 of his songs. One of the songs at the last, undated, session was Woody's old Irving Berlin parody, 'God Blessed America', changed slightly, with a new tag line at the end of each verse ('This land was made for you and me ...') and a new title, 'This Land Is My Land'" (Klein quoted in Kochlin 2002). This song also had made a considerable carrier: on the one hand it carried on as protest song with a focus on property and the social inequality (see Spivey 1996). On the other hand it was understood by many as a song of national unity. This double use was facilitated by the different character of the various verses. There are some, which can be easily adopted in a nationalistic way – those which are usually recorded (even by protest singers). In this domesticated form the song made it to the school books, not preventing however pupils to be creative and to reinvent the original focus on property even more drastically than Guthrie himself (e.g. *This land ain't your land, this land is my land / I've got a shotgun, and you ain't got one / I'll blow your head off if you don't get off / This land is private property*; quoted in Walker 2004). Further criteria of success to be applied are uses of the song as an advertising jingle of United Airlines and Ford Motor Company, and as theme song for George McGovern's 1972 presidential campaign (see Klein quoted in Kochlin 2002), and last not least efforts to make the song the national anthem (see e.g. Pete Seeger quoted in Kochlin 2002).

## The copyright story of This Land

The history leads us back to at least the 19th century and an old Baptist hymn “Oh my Lovin’ Brother” (that’s what Joe Klein writes). A slightly different category is used by Mark Zwonitzer and Charles Hirshberg who classify it as “African-American sacred song” (quoted by Chuck Welch on BlogJazz, Welch 2004). In a collection of “Hymns and praise songs” maintained by Doug Plata, a physician from California, I found the following lyrics: *Oh my loving brother, when the world’s on fire / Don’t you want God’s footstool to be your pillow? / Oh hold me over to the Rock of Ages, / Rock of Ages cleft for me.* Tastes like public domain.

An early recording of this gospel goes (probably) back to the late 20ies when a black singer and guitarist Blind Willie Davis recorded it as “Rock of Ages” (see Welch 2004). Next step, the Carter Family, which had begun to put African-American sacred songs on record, recorded it in 1930 under the title “When the World’s on Fire”. Text and melody are still those of the old hymn, while the transformation from gospel or blues style to country style is apparent. Michael Rader, incidentally a jazz fan and colleague working for the INDICARE project, used the word “song catcher” in a LesigBlog on the issue to describe the activity of A.P. Carter, meaning someone copyrighting songs from the public domain (Rader 2004). The Guthrie song was written in 1940, but according to EFF (2004c), “the initial copyright term was triggered when Guthrie sold his first version of the song as sheet music in 1945”. In his first song book (Guthrie, 1945; available as facsimile on the net), which starts with an introduction against copyright for this type of song, he nevertheless claims “Words and music” for THIS LAND. This might not be the complete truth given the origin of the melody mentioned already. In 1945 the copyright laws granted a copyright term of 28 years, renewable once for an additional 28 (EFF 2004c). Ludlow filed its copyright in 1956 and renewed it in 1984 believing it remains valid, while EFF disputes the claim arguing that copyright on the song then ran out when Ludlow failed to

renew its registration in 1973 (see EFF 2004c).

## The copyright story of This Land.

### A Parody...

The copyright story of JibJab is well documented thanks in particular to the Electronic Frontier Foundation and its Online publication Deep Links, to Wired reporting repeatedly about the progress of the controversy, and especially to Ernest Miller making his blog on the subject available at Corante (EFF 2004a-c, Dean 2004, Metz 2004a,b, Corante 2004). A good overview is also contained in the Complaint itself (EFF 2004b). Here are the main steps:

- ▶ **09/07/2004:** Release of the web animation “This Land”
- ▶ **20/07/2004:** Certified letter by Kathryn Ostien, Director of Copyright, Licensing & Royalties for Ludlow Music, Inc.
- ▶ **21/07/2004:** Answer by Goldring Hertz & Lichtenstein, litigation counsel for JibJab, to the letter
- ▶ **23/07/2004:** Sonnenschein, Nath & Rosenthal, litigation counsel for Ludlow, Inc. send a cease-and-desist letter to JibJab setting the litigation deadline 30/07/04 (Sonnenschein 2004)
- ▶ **26/07/2004:** the same law firm sends a cease-and-desist letter to Atom Shockwave, which via its AtomFilms website hosts the video
- ▶ **28/07/2004:** the Electronic Frontier Foundation, now litigation counsel for JibJab answers the afore mentioned letters (EFF 2004a)
- ▶ **29/07/2004:** the Electronic Frontier Foundation sends its “Complaint for copyright misuse and for declaratory relief of non-infringement of copyright” to the Unites States District Court for the Northern District of California (EFF 2004b).
- ▶ **24/08/2004:** JibJab dismisses its suit against Ludlow, and Ludlow is not planning to pursue any further legal claims against JibJab (EFF 2004c).

In the letter of July 23 Ludlow claims to be the exclusive copyright owner of the Woody

Guthrie song. They accuse JibJab of having copied “the entire melody, harmony, rhythm and the structure” of the song without authorisation or consent, and claim this constitutes a “blatant and wilful copyright infringement”. They reject the argument that the animation is a parody, because the “purpose and character of Jib Jab’s work clearly is not to parody the original work” as it does “not comment on the themes of the song” and uses “too much word” of the original to be a parody. In addition they envisage “a significant negative impact on the market for the composition and any derivative work”.

The July 28 response by EFF basically refers to the First Amendment and the “fair use” legal provisions. They regard the animation a “humorous political commentary of both actual politics and the classic” and as “a work that contains both transformative and original expressions of creativity to be encouraged by copyright”. They hold that JibJab is engaging in political speech, and that fair use allows to “build upon, reinterpret, and reconceive existing works”, and that transformative works with a non-commercial character do not supersede the original. Parodies are no substitute for the original. In contrast to Ludlow, EFF holds that the animation is a parody exploring the same themes as the original and uses “only a hand full of words”. They also reject the argument of financial damage, as “effects of a derivative work on primary market would not be relevant under copyright law”. With respect to the copyright of the melody, EFF points to the Carter Family recording and the traditional spiritual.

In the Complaint for copyright misuse of 29.7.04 by EFF, more or less the same arguments are put forward, however there is more emphasis on the weak copyright claim for the composition regarding the Guthrie Composition now a “derivative work” of the Carter Family’s work of 1930. The knock-out-argument however is that the Guthrie composition “is no longer protected by copyright and/or is part of the public domain”.

### **Open questions**

Although for the time being the case seems to be settled on these grounds, some ques-

tions remain. The overall question is what would have been the result of the conflict if Ludlow had been the exclusive rights owner? Would all these new types of creative works, enabled and pushed by the Internet as technology and repository, be legal or illegal? One should also consider, if a company like Ludlow would have licensed rights to JibJab for their non-commercial creative work under acceptable conditions? I guess they would not have, stifling creativity.

With respect to the character of the JibJab animation I wonder why the EFF did not play the public domain card right from the start. In my feeling the voice imitation as an element of the animation was not taken into account sufficiently in order to underpin the character of work as parody of the original. If the argument that the JibJab animation is a parody of a parody (given that Guthrie’s song had been a parody of Irving Berlin’s), is good for anything, I don’t know. More interesting might be the observation on the “double use” character of the song, because the partisan view always tends to stress just one reception or perception.

Next, the commercial side of the affair seems still to be underexposed. As Natali Helberger of IViR – the legal expert within INDICARE – told me, the non-commercial character of a work is most important for the fair use argument. On the JibJab website there is a donation button. Assume this income mechanism would have generated considerable income caused by those out of 10 million+ spending a Dollar, or assume JibJab gets a share of the advertising income of the web hosts. How would this change the fair use argumentation? Turning to Ludlow, they probably won’t suffer financial damage. On the contrary, they will experience an increase of music sales because the JibJab animation will have raised new interest in the original interpretation and other licensed interpretations of the song. Finally, as INDICARE is a European project we should not forget to ask how the same case would have been dealt with under European law. Volunteers to write the story from a European perspective for INDICARE Monitor are welcome!

## Bottom line

Why does this case matter for INDICARE? The answer is clear: the interests of small creative companies leveraging the new potential of the Internet are at stake as well as the interest of citizens to enjoy freedom of expression and of consumers who long for quality entertainment. A drawback of the preoccupation with “This Land” however is, as Woody Guthrie already noted in his songbook “you think about these Eight words all the rest of your life”, and I would add you will never ever get the tune out of your head.

## About this issue

A short remark on what to expect in this issue: You will find three complementary articles dealing with interoperability. While Willms Buhse, among other things Vice Chair of the Open Mobile Alliance (OMA), provides insights into evolution and ambition

of OMA standardization efforts, Gergely Tóth from Budapest (SEARCH) gives a well structured introduction to different music formats and their relation to DRMs, before he discusses the question how to achieve interoperability between them. Ot van Daalen, a Dutch lawyer, contributes a thoughtful and provoking opinion article on the tension between interoperability and information security, and suggests compulsory licensing as solution. In the remainder of the issue Lutz Niehüser examines the right to resell, which is of great importance to consumers, with respect to digital online media. Next, Ulrich Riehm, ITAS, presents the opinions of musicians about download, filesharing, DRMs etc. based on two U.S. surveys. Finally Rik Lambers shows – on the occasion of an IViR-workshop – why the abstract “code as code” debate is inherently about consumer concerns.

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## Open DRM standards for interoperable mobile services

### The Open Mobile Alliance releases OMA DRM 2.0 — moving from OMA 1.0 onwards

By: Willms Buhse, CoreMedia, Hamburg, Germany

**Abstract:** Media and entertainment content is increasingly used on mobile devices. While consumers want interoperable services that are easy to use and can be shared with others, content providers and mobile operators are looking to protect their investment in high value content. OMA DRM standards aim at fulfilling these demands and allow for superdistribution of mobile content. Within only 18 months, OMA DRM has become the most widely available mobile DRM standard implemented on currently over 80 handsets from all major phone manufacturers.

**Keywords:** technical analysis – interoperability, mobile networks, open standards, standards, superdistribution

#### Introduction

The sharing of media and entertainment via mobile devices is becoming an increasingly popular pastime and one of the most widely used mobile services. Typically, the media consumed on a mobile device today includes light media content types, with a lower value of around \$1.00 – \$2.00 per item, such as screensavers, wallpapers, or ring tones. As new smart phones and other devices with colour displays and richer audio capabilities penetrate the market, and as network capacities increase thanks to a growing number of W-LAN hotspots, to Bluetooth and IR (infrared), consumers are demanding access to higher value content. Mobile carriers and

content providers aim to fulfil those consumer demands, while at the same time looking to protect their investments in high-value content. What they are looking for is a copy protection solution that is specifically designed for the needs in a mobile environment, i.e. mobile digital rights management (DRM).

#### The OMA approach of defining open standards for interoperable mobile services

This is where the Open Mobile Alliance (OMA), or, more specifically, the OMA DRM open standards for the mobile industry, comes in. Created in June 2002, its member-

ship now includes about 400 mobile operators, content, service and applications providers, wireless vendors and IT companies. Its goal is to deliver high quality, open technical specifications based upon market requirements and to reduce industry implementation effort.

OMA has taken a different approach to DRM when compared to other standards groups. The alliance aims to enable content delivery in an evolutionary process by implementing basic protection as soon as possible and then taking on more complex issues, thereby avoiding spending years addressing every threat before implementing a definite standard. In line with this, OMA and its members identified the market need for various levels of protection depending on the value of the content being protected.

Hence, the OMA DRM v.1.0 enabler release was developed rapidly in order to reduce time to market and to be immediately available for member companies to implement into their mobile products without requiring massive new infrastructure or changes to handsets. The first set of specifications was released in late 2002. Based on a subset of the Open Digital Rights Language (ODRL) rights expression language and entirely royalty-free, the OMA DRM v.1.0 has been adopted by all the major parties in the content value chain. This includes handset vendors, such as Motorola, Nokia and Siemens, and various European and Asian software providers among them the German content technology expert CoreMedia. While handset manufacturers are implementing DRM on their mobile phones, operators are integrating the DRM server components into their service delivery platforms.

The DRM v.1.0 enabler is a suitable protection system for lower value content, appropriate for lower bandwidth networks and simpler devices. Higher bandwidth provided by 2.5G and 3G mobile networks allows for larger content files to be transmitted over the air and smart phones and other mobile devices with removable media and larger colour screens support downloading and streaming of valuable rich media content. Hence, the level of security OMA DRM v.1.0 is no

longer satisfying to content providers and mobile carriers who are eager to release high value rich media content such as exclusive music tracks and applications into the mobile marketplace but worry about a “napsterization” of the mobile space. Nevertheless, in the lack of stronger protection, music labels today already use OMA DRM v.1.0 for full track music delivery.

The above factors contribute to the need for a continuously enhanced OMA DRM solution. OMA’s Browser and Content (BAC) Download and DRM Sub-Working? Group began working on its upgraded DRM v.2.0 enabler in early 2003 and announced it to the public in February 2004. The new specifications take advantage of expanded device capabilities and offer improved support for audio/video rendering, streaming content, and access to protected content using multiple devices, thus enabling new business models. They have added security and trust certificates that allow more complex and rich forms of media content, i.e. premium content, such as music tracks, video clips, animated colour screensavers and games, as well as improved support to preview and share content.

In the following we will go into more detail with respect to the business models enabled by OMA DRM v. 1.0 and 2.0.

### **OMA DRM v.1.0 – Basic content protection on three levels**

Designed to protect light media content such as ring tones, wallpapers, java games, video and audio clips and screen savers, OMA’s first DRM enabler provides an appropriate level of security for these content types. It includes three levels of protection and functionality: Forward Lock, Combined Delivery and Separate Delivery, each level adding a layer of protection on top of the previous level.

- ▶ **Forward Lock:** The first level, Forward Lock, prevents the unauthorized transfer of content from one device to another. The intention is to prevent peer-to-peer distribution, or super-distribution, of lower value content. Often applied to subscription-based services, such as news



or sports, the plaintext content is packaged inside a DRM message that is delivered to the terminal. The device can play, display or execute the content, but not forward the object.

- ▶ **Combined Delivery:** Adding a rights definition to the first level, Combined Delivery equally prevents superdistribution (or forwarding), but also controls the content usage. The DRM message contains two objects, the content and a rights object. The rights object, written into the content using OMA Rights Expression Language (REL), a mobile profile of ODRL, defines usage rules that govern the content. The rules include and support all kinds of business models, including preview, time- and usage-based constraints. For example a complimentary preview, the permission to play a tune only once, using the content only for a specific number of days, or an annual subscription with non-interfering price models. When applying the Combined Delivery mechanism, neither content nor the rights object can be forwarded from the target device.
- ▶ **Separate Delivery:** The third level, called Separate Delivery, is the most sophisticated mechanism because here, the content is encrypted, thereby providing better protection for higher value content. Encrypted into DRM Content Format (DCF) using symmetric encryption, the content is useless without a rights object and the symmetric Content Encryption Key (CEK), which is delivered separately from the content. OMA requires that the CEK is delivered securely via WAP push directly to the authorized mobile device, where the DRM User Agent uses it for content decryption. An OMA DRM compliant device such as the Nokia 3200 and 6230 or the Siemens SX1 and C62 securely stores the rights objects outside of the consumer's reach. Only the media player on that device has access to both encrypted content and the rights object including the CEK, in order to enable the consumption of the content by displaying or playing it.

People can download media and entertainment content and forward it to friends via MMS, but the recipient will not be able to use the content until they obtain their own CEK for content decryption. A "rights refresh" mechanism enables recipients of super-distributed content to contact the content provider to obtain rights to either preview or to purchase the content they have received. This so called superdistribution is the key benefit of Separate Delivery. OMA aims to promote superdistribution of content because it maximizes the number of potential customers through peer-to-peer recommendations while retaining control for the content provider through centralized rights acquisition.

#### **Added protection and functionality by OMA DRM v.2.0**

Version 2 of the OMA DRM standard, which CoreMedia has already integrated in its latest DRM solution, integrates additional security and trust elements. Security is enhanced by encrypting the rights object and the content encryption key, using the device's public key to bind them to the target device. Integrity protection for both content and the rights object reduces the risk of either being tampered with. In addition to these enhanced security features, the specifications include additional trust elements. Mutual authentication between the device and the rights issuer, i.e. the content provider, will add trust to the downloading or messaging scenario. The rights issuer can accurately identify the device in order to determine the revocation status of the transaction. The new enabler also supports a wide variety of distribution and payment use cases.

Since February, several draft specifications have been announced as part of the OMA DRM 2.0 enabler release, which hint to the new capabilities in terms of security, trust, and support for business models:

- ▶ Enhanced security, enabled by the binding of rights objects to user identity: individually encrypted rights objects use a device's public key to provide cryptographic binding (to SIM/WIM); integrity protection for content and rights objects.

- ▶ Explicit trust mechanisms, including mutual authentication between a device and the rights issuer as well as device revocation, i.e. the rights issuer can identify the device revocation status.
- ▶ Support of secure multicast and unicast streaming: collaboration with 3GPP and 3GPP2 on a file format for protected streaming and progressive download
- ▶ Export to other copy protection schemes, for example the transfer of music to the SD card for a mobile music player.
- ▶ Support for a wide variety of business models, including metered time and usage constraints, subscription rights for content bundles and gifting.
- ▶ Support for messaging and peer-to-peer (i.e. super-distribution): viral marketing and a reward mechanism.

#### What are the benefits for consumers?

In general terms enhanced security means that premium mobile content will be available to users. More specifically, the advanced content management allows for example to easily move content and rights between several devices owned by one user, or moved to remote or removable storage and later be restored to the device. OMA 2.0 also provides for sharing of content between multiple users within a domain (i.e. community or family). Furthermore, content can be copied to SD card for a mobile music player thus allowing content use at unconnected devices. OMA also supports the export of protected content to other copy protection schemes,

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Mr. Buhse is author and editor of two books and has been speaking at about 80 conferences on the subject digital distribution in the media industry. Mr. Buhse holds degrees in industrial engineering (Dipl.-Ing.) and in management sciences (Dipl.-Oec.) from the University of Hannover (Germany) and Madrid (Spain) and a Ph.D. in economics from the Technical University of Mu-

e.g. transfer of music to a DRM-enabled set-top box or computing device. Last not least, OMA provides for complimentary previews, i.e. super-distributed content can be previewed before purchase.

#### Bottom line

All in all, the standardization effort of OMA strives for a balance between suitable business models for content owners and the demand of consumers. The incremental evolution of OMA has led from OMA v.1.0 to v.2.0. Handsets and other mobile devices that support OMA-defined DRM technology are already on the market. Currently about 80 models are available in all categories – given that the specifications were released 14 months ago this can be considered a tremendous success. The evolution of OMA enables the step from appropriate protection of “light media content” to the protection of premium content. The success of premium 3G applications and high value media and entertainment content delivery lies in security, ease of use, and in the market penetration of suitable handsets. Numerous content suppliers have announced support for OMA DRM v.2.0, among them Sony and Time Warner. Carriers and handset vendors, who see significant revenue enhancement opportunities by offering pervasive mobile access to premium rich content, are expected to release handsets that have implemented OMA DRM v.2.0 by 2005.

nich. His research thesis is titled: Digital Rights Management vs. the DarkNet – Competitive Strategies and Business Models for the Music Industry (ISBN 3-8244-8078-6). He is Vice Chair of the Open Mobile Alliance (OMA) und member of the Recording Academy (Grammy). Contact: Willms.Buhse@CoreMedia.com.

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## Contest of formats

### **The race of audio formats is advanced, while the race for interoperability of protected formats is just about to start**

By: Gergely Tóth, SEARCH Laboratory, Budapest, Hungary

**Abstract:** Audio formats are improving in terms of compression ratio as well as of audio quality, and new formats like OGG, FLAC or AAC have started to dethrone the former king of digital music formats MP3. The contest of formats however takes place at the level of protected formats too, i.e. integration of audio codec and DRMs. At this level proprietary formats still prevail, and interoperability – demanded by consumers and expert groups – consequently falls short. This article gives some background on popular audio formats and their connection to DRM systems, and discusses ways to achieve interoperability.

**Keywords:** technical analysis – audio formats, competition, interoperability, music markets, standards

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### Introduction

In the early times of digital electronic music copy protection was neglected: MP3 stormed the on-line world without DRM at all and people loved it. The main idea behind MP3, soon becoming the standard, was data compression (1:10) to help content providers and consumers to save bandwidth during music downloads. However this very feature also enabled illegal distribution. According to estimates, 3 million illegal MP3 files were downloaded every day in 1999 (Veridisc 2001). The deficiency of audio formats without content protection was soon realized, although it took quite a while for solutions to be developed. The main idea behind all these techniques is to encrypt the encoded (e.g. AAC) audio stream and store the decryption key in a sand-box (i.e. in a well-controlled environment) on the consumer's device. The music may only leave the hardware as sound waves or in the encrypted format. Decrypted data must not leave.

The current situation can be characterized by unprotected audio codecs (coder and decoder of audio signals from analogue to digital and

vice versa often involving compression algorithms) on the one hand, which enable file sharing and easy distribution, and proprietary solutions on the other hand by e.g. Microsoft, Sony, Real and Apple, which are still not fully interoperable.

Before we enter into the debate about interoperability we will provide some background on audio formats in DRMs-protected and unprotected mode.

### Audio formats overview

In order to better understand our categorization, first let's define two important terms: lossless and lossy compression. They both compare to the original CD audio quality. On a Compact Disc digital audio information is stored without any compression and therefore it consumes a large amount of storage space (1 minute of CD audio is about 10 MB of data), however CD audio offers superb sound quality. Lossless compression means that compression algorithms are used to reduce the storage space without any data (i.e. quality) loss. They typically reduce the size to 50%. On the contrary lossy techniques

consider that the human ear has special characteristics that make the audio experience almost the same even if some parts of the sound are missing or are altered, this way a much higher compression ratio can be achieved, i.e. reduction to less than 10%. In the following we present the different popular formats, distinguishing between unprotected formats, DRMs-protected proprietary formats, and DRM-protected formats.

### Unprotected formats

- ▶ **MP3:** MPEG Layer 3, the pioneer in the field of audio compression, was developed by Fraunhofer Institute for Integrated Circuits (Fraunhofer IIS, Germany) more than 15 years ago. The main idea was to store audio information using “perceptual coding”, a data reduction algorithm that is (almost) imperceptible to the human ear. The original solution achieved a compression of about 1:10. Virtually all music playing devices now support MP3.
- ▶ **AAC:** Advanced Audio Coding is the next generation audio compression algorithm, first introduced in MPEG-2 and now also incorporated in MPEG-4, the latest ISO/IEC standard of the Moving Pictures Expert Group. MPEG-4 is a complex specification defining a container for all kinds of media (i.e. audio and video), while AAC is the basis for natural audio encoding within MPEG-4. AAC was developed in order to give better performance over MP3 in compression while keeping or even improving sound quality (e.g. AAC fulfils the requirements for studio sound quality specified by the European Broadcast Union). AAC offers typically 1:16 compression ratio.
- ▶ **OGG Vorbis:** This is a compound solution developed by the Xiph.org Foundation, where OGG is the global container specification for containing any kind of multimedia data (just like MPEG-4), whereas Vorbis is the audio codec. The aim of Vorbis is the same as for AAC: to outperform MP3 by offering better compression ratio (i.e. over 1:10) while giving better sound quality. However, unlike

AAC, which is commercially licensed, OGG Vorbis is free.

- ▶ **FLAC:** The Free Lossless Audio Codec is probably the newest contestant in this race of formats. The main rationale behind the sourceforge-hosted project is to provide lossless compression in a free product. The average compression ratio is about 1:2. DRM is not planned for this format by the developers.

### DRM-protected formats

- ▶ **WMA:** Windows Media Audio is the proprietary solution from Microsoft for audio encoding. It is part of the Windows Media project (together with WMV, Windows Media Video). It supports several storage formats ranging from lossless compression to high-performance lossy compression and also voice encoding. The copy-protection of WMA is built on the Windows Media DRM architecture.
- ▶ **RealAudio:** It is the product offered by RealNetworks<sup>?</sup>. The core focus of RealNetworks activity was traditionally on streaming media for which they achieve a compression ratio of about 1:16. The Helix DRM solution is part of the product.
- ▶ **ATRAC3:** The Adaptive TRansform Acoustic Coding is the DRM-enabled sound encoding technology used by Sony and it is the successor of ATRAC. It achieves a compression of about 1:10, whereas its companion ATRAC3pro may go up to even 1:20. This format is used in Sony’s MiniDisc<sup>?</sup> or by the online shop Sony Connect.
- ▶ **FairPlay:** This is the DRM solution used by Apple’s iTunes. The FairPlay<sup>?</sup> offers protected AAC files in form of M4P (encrypted MPEG-4).
- ▶ **LWDRM:** The Light Weight Digital Rights Management is a new approach in the audio DRM field. Like MP3 it has been developed by Fraunhofer Institute. LWDRM currently supports MP3 and AAC, although in principle it could be applied to other formats too. The main idea of LWDRM is that there are LMFs (Local Media Files) to be used only locally, and SMFs (Signed Media Files) to



be distributed. There are three levels of participation: level 1: you may only “read” SMFs, while you cannot create/modify anything; level 2: you may create LMFs, but these will be tied to your computer, and level 3: you may create SMFs but a signature (and watermarks) will be added to them that will identify you as the creator. The idea behind LWDRM is that the consumer may copy the content if he is willing to mark the media as his own. As long as the content does not leak out to the public, it is like using unprotected formats. But an illegal copy caught in the wild could be traced back to its originator. This approach is clearly an alternative to the existing encryption/key based solutions.

### Discussion of interoperability

In this section we will put forward three arguments, why current approaches to interoperability are still deficient:

1) One might think any DRM solution could protect any kind of audio format, e.g. Fair-Play could be used to encrypt, apart from AAC files (M4P), MP3 or OGG Vorbis files as well. This would be feasible in principle but would not solve the interoperability problem. Let’s take OGG Vorbis, an open standard with published specifications, as example: Without DRM a compliant device simply decodes the data stream according to the definitions, and produces the sound output. However if some kind of DRMs was used, the result would not be OGG Vorbis any more and only devices fitted to understand the DRM solution would be able to play the content. Basically this is the main reason why currently only proprietary systems are used, where the chosen DRM solution can be enforced at the device level too. Finally, if the used DRM technology has to be enforced at this level, why bother about different formats? A single method is enough in a closed system environment.

2) While the approach of LWDRM is interesting and holds some promise to be applied to audio formats in a generalized way, we should not overlook one important issue. In tomorrow’s world full of computer viruses,

identity theft will be a key “black business”. How can it be ensured that contents owned by someone won’t be stolen when marked as their property and be held responsible for them (e.g. today’s viruses are intelligent enough to send e-mails in the name of the infected computers owners, the next step is not that big)?

3) A third approach to interoperability of DRM-protected content could be interoperability of formats by conversion. The Real-Networks company recently introduced Real Harmony (Smith 2004a), which basically transforms its own copy-protected Real-Audio files into other popular formats, this way allowing consumers to play their Real-Audio songs also for instance on Apple’s iPod, which was until now not possible. This can be seen as a step towards interoperability, but at the same time it can be interpreted as an effort to invade the domains of other companies (e.g. Apple-M4P, Microsoft-WMA). As this approach is very controversial, one may doubt that it is the best way to achieve interoperability. Notwithstanding, with this move Real has started the interoperability game, and we will see if others will follow (Smith 2004b).

### Bottom line

It is safe to say that quality of audio formats is constantly improving – a clear benefit for the consumer. It is less clear how DRM-protected formats, which are backed by the record industry, will relate to free formats, which many people still prefer to use for the exchange of music files. The next big question is interoperability of DRM-protected formats. From the consumers’ point of view, playing multimedia content on different devices (coming from different manufacturers) is an important requirement. Until now only hacker tools or nifty tricks allowed DRM protected content to be moved between devices from different vendors. Real Harmony is the first clear step in this direction by creating a solution for converting different DRM technologies, but it is not yet clear if this approach put forward by just a single company will be accepted by the entire industry concerned.

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## The tension between interoperability and information security

### Compulsory licensing of information security technology

By: Ot Van Daalen, De Brauw Blackstone Westbroek, The Hague, The Netherlands

**Abstract:** Digital Rights Management (DRM) systems will become an important distribution channel for music and other content. Because of network effects and switching costs, DRM systems incline to dominance. In the absence of competition, one might consider having third party DRM providers offer parts of the system, in order to safeguard consumer interests. However, this might break the security of the system. A possible solution is to have dominant content providers compulsorily license their security technologies. This however, poses the question what can be considered a security technology and what not. Are, for example, skip-the-commercial buttons an information security technology or not? It should be content providers, not technology providers, who should decide on this distinction.

**Keywords:** policy analysis, economic analysis – competition, interoperability, music markets, security

#### Introduction

“Tactics and ethics of a hacker”? or “fully legal, independently developed paths to achieve compatibility, choice and quality”? If you happen to be the producer of the popular iPod, you’ll probably call RealNetworks attempt to achieve interoperability the former. If you happen to be RealNetworks, producer of the not-so-popular RealMedia player, you’ll probably call your attempt the latter.

What gave rise to both statements was RealNetworks’ decision to offer its Harmony Technology, which, according to the press release, is “the world’s first DRM translation system to enable consumers to securely transfer purchased music to every popular secure music device” (RealNetworks 2004). Unlike before, music bought at Real’s online music store can be encoded in Apple’s proprietary music format and listened to with Apple’s iPod. And unlike before, the integrity of Apple’s music distribution system is threatened and an important reason for buying music from Apple’s music store has vanished. And that’s why Apple announced that it will investigate the legal implications of Real’s decision to sell songs in Apple’s format.

Regardless of the legality of Real’s decision, its attempt to offer interoperable file formats for music distribution offers a new example

of an old problem: how to solve the tension between interoperability and information security.

#### The problem

To answer this question, and elaborate on why exactly there is a tension between the two, some background on digital music distribution systems (also called DRM systems) is helpful. DRM systems consist of several parts: an encoder and a decoder, sometimes combined with a server and a receiver. These components could be offered by several producers, but in reality they often form an integrated system, offered by one and the same producer.

One important reason for this is that an integrated DRM system offers content providers a complete channel for the distribution of secure content. Content providers value secure channels. As will be discussed in more detail below, there are reasons to assume that integrated distribution channels are more secure. And consumers want high quality, functional music players. If sufficient competition between integrated DRM systems exists (and if one believes in the benefits of the free market), DRM systems will compete for the user, offering better functionality, and higher quality.

However, DRM systems incline to dominance, because network effects prevent alter-

native DRM systems from entering the marketplace. If alternative DRM systems will not be able to license enough content, they will not attract sufficient users. And if they will not be able to attract sufficient users, they will not be able to license sufficient content. Users will not easily switch to alternative formats if they have a music collection in one format. Given high switching costs and high barriers to entry, in the absence of competition, consumer choice will lessen, and functionality and quality of music players will lower. The question then becomes how to safeguard consumer interests in the face of dominant DRM providers while providing incentives for innovation.

### **Solutions**

One solution might be to allow third-party producers of individual components of the dominant DRM system to enter the market. This, however, creates a threat to the security offered by the DRM system. DRM systems contain complex technologies designed to offer secure content distribution. Third-party DRM-parts might unintentionally or intentionally break this security. For example, third-party decoders could intentionally ignore metadata (the rules describing how the content may be used), and save content on the computer harddisk, contrary to the wishes of the content provider. Or third-party DRM parts might unintentionally contain design flaws which open the system up to attacks from malevolent users aimed at freeing the content from the distribution channel. On the long term, a battle between code makers and code breakers might lead to more secure systems. In the short term, it definitely will not. This is exactly why interoperability and information security are at odds.

Another solution might be to strictly regulate dominant DRM products. Regulations could for example oblige DRM systems to contain a fast-forward capability, or a skip-the-commercial button. This solution, however, would involve far-reaching governmental intervention, and will therefore not easily be accepted by the marketplace. In addition, the question remains whether strict regulation could sufficiently take into account consumer interests. Consumer demands are pluriform

and complex, and the marketplace probably will be better able to address these demands than the government, even in the absence of competition.

The third solution might be to prohibit third-party DRM parts from being offered on the market. Laws in Europe and the United States currently take this approach. Article 6 and 7 of the Copyright Directive, and Article 1201 of the Digital Millennium Copyright Act currently prohibit the circumvention of technological measures to protect content. Third-party DRM parts circumvent these measures, and are therefore currently prohibited, even though they might have perfectly non-infringing uses.

However, this solution not necessarily offers the highest security for content distribution. A dominant DRM provider has only limited incentives to design its system in a secure manner if no realistic competition exists. But content providers might only switch to alternative DRM systems if they have sufficient reach. And if users are locked-in in one DRM system, alternative systems will not acquire sufficient reach.

### **The better option**

The better option is to have dominant DRM system providers compulsorily license their technology to others. This should be done on reasonable and non-discriminatory terms, as has been envisioned in the context of digital pay-TV in the European Access Directive. This would safeguard the security of the distribution channel, while still offering consumers enough choice in price and quality.

There definitely are reasons for not doing this. Some might argue that software producers, faced with the threat of compulsory licensing, will be hesitant to produce innovative secure systems. This is an empirical question, and I do not have an answer to that.

However, assuming that this solution will not forestall the emergence of innovative security technologies, it poses different questions as well. The most pressing question is on what parameters licensees should be allowed to compete. For one, licensees should not be allowed to compete on the core functionality of the distribution channel: the security itself.

This solution is adopted in the Access Directive where it states that a potential licensee should comply with “relevant and reasonable conditions ensuring, as far as he is concerned, the security of transactions of conditional access system operators”. Alternative DRM systems should respect metadata and not create leaks in the content. But competition on any other parameter should be allowed. But even still: there is a thin line between “information leaks” and functionality. Content providers consider a skip-the-commercial-button in a DVD-player an information leak. Users consider it a function. Content providers consider the possibility to copy content to an MP3-player an information leak. Users consider it a function.

These are difficult distinctions, but if anyone should have to decide on what leaks can be

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## The right to resell

### Will eBay finally allow secondary markets for digital media?

By: Lutz Niehüser, European Business School, Oestrich-Winkel, Germany

**Abstract:** eBay has just announced that it is conducting a 180-day pilot to offer music files for download. "Pre-approved" resellers will be able to offer downloadable music within auctions at eBay. Is this the beginning of a legal secondary market for digital media? This article gives a brief background on the legal and technological requirements to resell digital media items and on the economic implications of such a possibility.

**Keywords:** economic analysis – consumer rights, first sale doctrine, music markets, secondary markets

#### Introduction – The “Double Dutch Bus”

At the beginning of September 2003 U.S. citizen George Hotelling offered the digital music file “Double Dutch Bus” for auction on eBay. Originally, he had bought the song at iTunes for the usual price of 99 US-cents. After a while the auction had gained popular-

ity and the bids for the music file had risen to 15.000 dollars, which Hotelling wanted to donate to the Electronic Frontier Foundation (EFF, a consumer interest group in the digital arena). Only a few days later, eBay cancelled the auction explaining its “downloadable media policy” prohibits any listing of items

#### Bottom line

All in all, my suggestion is that information security and interoperability are in tension, but can co-exist. If the “tactics and ethics of a hacker” are being used to create “fully legal, independently developed paths to achieve compatibility, choice and quality” – I’m all for it.

or products to be delivered electronically through the Internet. Hotelling argued he just wanted to sell his legally acquired property – the music file – as others sell CDs. He assured he would transfer the music file and delete the original afterwards. iTunes – advertising with the slogan “You own the Music” – stated it would in principle be legal to sell a purchased file, but technically unfeasible.

Following last year’s incident, eBay.com has recently announced the introduction of a new category called “digital downloads”, within which pre-approved sellers can offer digital media items, such as music files. These sellers must prove that they either are the holder of the copyright or have contractual permission from the rights owner to resell the listed media items. Furthermore, the transfer of the digital media item must take place in the secure environment of the seller, to which the buyer will be redirected after the auction is completed.

#### **Primary or secondary market?**

The question arising from the above background is, whether the new category “digital downloads” constitutes a real secondary market or merely an auction-based primary market. To put it simply: Can George Hotelling at last sell his iTunes song? The answer is no.

In the note to the press announcement eBay clearly states: “A buyer of downloadable media through eBay cannot re-list or resell the media on eBay.” With this restriction, eBay is explicitly excluding consumers from the opportunity to resell purchased items. Furthermore, the common consumer will not be able to meet the different criteria, which must be fulfilled by the “pre-approved sellers”. Presumably, only commercial power-sellers will have the opportunity to offer digital media items within the category “digital downloads”. A secondary market in the sense of a C2C-market? will not emerge under these conditions.

#### **The rationale behind secondary markets**

As mentioned above, secondary markets for digital media have not emerged so far. However, do we also need such markets for digi-

tal media? From an economic perspective, there are several reasons why secondary markets are generally desirable (see Reese 2003):

- ▶ Secondary markets lead to more competition in the market, as the supplier of the primary market has to compete with its own products offered on the secondary market. Without this competition, primary market suppliers have an incentive to offer products at higher prices resulting in a lower level of economic welfare.
- ▶ A secondary market leads to a better allocation of items among consumers. From an individual, but also from a macro-economic perspective, it is only reasonable to sell property, which is not to be used anymore and which other consumers are willing to pay for.
- ▶ Secondary markets extend the affordability of media items to the public. “Used” or older media items are typically being sold at lower prices leading to a situation of natural price discrimination. People, who can afford it, purchase items earlier on the primary market and people with a lower willingness to pay are able to buy media items on the secondary market.
- ▶ Secondary markets extend the availability of media items. For instance, media items can be accessed through a secondary market long after they are “out of print” or withdrawn from primary markets.

#### **Legal requirements for secondary markets**

Most American and European music download services explicitly exclude the option for consumers to resell media items in their terms of sale. Thus, consumers who purchase physical media items, such as CDs, and those who acquire digital media items by downloading are treated differently.

The reason why consumers can resell physical media items, lies in a principle, which in U.S. copyright law is called the *first sale doctrine*, but also exists in a similar form in EU copyright law. Originally, copyright holders are given an exclusive right to

(re-)distribute media items. However, this exclusive right is limited by law, in order to balance the interests between copyright holders and consumers, who purchase media items. Once sold to consumers for the first time, the exclusive right of the copyright holder to (re-)distribute the media item concerned exhausts. As a consequence, owners of CDs, DVDs or books can resell or give away their property without asking the copyright holder for permission.

After the introduction of the Digital Millennium Copyright Act (DMCA) and the European Copyright Directive (EUCD) legal experts have argued whether the First Sale Doctrine and the corresponding European principle are applicable not only to physical media but also to the online world. The DMCA does not explicitly state a non-applicability, whereas the EUCD implicitly does with its “right of making available to the public”. Hereby the EUCD generally classifies all types of content made available in digital networks as a service and not as a product, with the consequence that it cannot be resold. Thus, under European copyright law content on a website or in a newsgroup is treated the same way as music files downloaded at iTunes. Nevertheless, the latter have more similarities to physical media items, regarding economic characteristics such as exclusiveness and rivalry in consumption due to copy protection.

There are two legal options under which secondary markets can emerge:

- ▶ Music or other media download providers, such as iTunes, grant permission to resell media items within their terms of sale. However, this option is very unlikely, because providers are giving away market power, as media items offered on the secondary market cannibalize their own primary market (see Coase 1972).
- ▶ The *first sale doctrine* and its corresponding principle in European copyright law must be applicable not only to physical media items, but also to downloadable media items. Against the prevailing opinion, some legal experts argue that the principle of *first sale* must be applicable

to downloaded media items as long their economic characteristics are similar or equal to physical items such as books or CDs.

### Technological requirements for secondary markets

In order to enable consumers to resell digital media items, certain technological requirements have to be met. The digital media item must be exclusive in a way that it cannot be used anymore by the seller after being resold. Instead of copying the digital media item, it must be forwarded and deleted.

Apart from the functions to copy-protect and manage the media items, also the transfer of the items in the manner of “forward and delete” can be basically implemented with DRM systems. In order to do so, two main technological problems have to be solved:

- ▶ The option to resell – as part of the terms of sale or licence agreement – has to be modelled with Rights Expression Languages (RELS) in order to be processed by DRM systems. Compared to the fairly complex concept of *fair use* due to many exceptions, the task of modelling the *first sale doctrine* can be regarded as quite simple.
- ▶ As far as users want to interchange media items between different DRM platforms, problems of interoperability arise. From a technological point of view, this problem could be solved (see Mulligan and Burstein 2003). However, different interests of competing market players can hinder or delay agreements on industry-wide standards and the goal of interoperability.

### Threat of efficiency

As described in the rationale behind secondary markets, the right to resell digital media items would be to the consumers, advantage for several reasons. Nevertheless, a potential right of consumers to resell has to be balanced with the interests of the copyright holders. Compared to a secondary market for physical media, such as CD auctions on eBay, a secondary market for digital media can be significantly more efficient, due to



electronic transmission and automatic delivery. Additionally, digital goods are not subject to physical “wear and tear”, which makes “used” goods a perfect substitute for “new” goods. The devaluation of a media item only depends on the topicality of the content, which is the same for both “new” and “used” media items.

In comparison to a secondary market for physical media, the increased efficiency of a secondary market for digital media items can lead to a situation where every single media item can be traded among consumers significantly faster. Thus, the potential revenue from primary market sales could erode at the expense of the authors, interests. Such a market could regulate itself, as providers could ask for higher prices to include all future usage of each individual media item. Another solution to balance the consumers, right to resell with the interests of copyright holders could lie in DRM. For instance, an artificial “resell delay” could slow down the circulating rate of a “too efficient” secondary market in favour of an increased demand for items on the primary market. By adjusting the period of an obligatory “resell delay”, the market power can be shifted slightly (but not entirely!) to the primary market. Such a scenario would resemble the current situation on markets for physical media items, where the sellers on the primary markets usually have an advantage over the competitors on the secondary markets leading to significant differences in prices.

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### Bottom Line

This article described the rationale behind secondary markets, which have not emerged in the digital era so far. Furthermore, legal and technological requirements for such markets were analysed. From the consumers, perspective secondary markets for digital media are desirable for several reasons. Unfortunately, the aspects regarding the right to resell have been neglected too long, as the public and scientific discussion focussed on the appropriate balance of DRM and Fair Use (especially private copying). Nevertheless, the right to resell goods is an essential consumer right and – not least – one of the pillars of the social market economy. The non-existence of secondary markets for digital media can lead to an unbalanced and non-efficient supply of goods. The more the whole media market is shifting from physical to digital media, the more impact a non-existence of secondary markets in the digital era will have.

Secondary markets can be facilitated with DRM systems as soon as similar P2P-alike? distribution mechanisms such as “Superdistribution” are technologically feasible. Nevertheless, the threat of efficiency of such markets could possibly erode sales on the primary market. Therefore, the consumers, right to resell must be balanced with the interests of copyright holders. Perhaps, a solution to readjust this balance could lie in DRM repeating a quote from Charles Clark: “The Answer to the Machine is in the Machine”.



“Secondary Markets for Digital Media based on Digital Rights Management“. Contact: [Lutz.Niehueser@ebs.de](mailto:Lutz.Niehueser@ebs.de)

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## Musicians' voice to be heard!

### What musicians think of file sharing, DRM, and copy protection

By: Ulrich Riehm, ITAS, Karlsruhe, Germany

**Abstract:** Two surveys of musicians in the USA are examined here with a focus on sharing music files over the Internet, downloading, protection by technical measures, and copyright law. While there are different and even converse opinions among musicians in many respects, there are also common views. In particular most musicians appreciate the promotional effects of the Internet for their work, and most argue against strict technical control and fierce prosecution.

**Keywords:** review – copyright law, creators, file sharing, musicians, survey – USA

#### Introduction

We have heard many complaints from the music industry about P2P music filesharing causing financial damage to creating and performing musicians, composers, songwriters, singers, instrumentalists, etc. To quote the International Federation of the Phonographic Industry (IFPI): Unauthorized use of music “has hurt sales of music worldwide, causing artist rosters to be cut and thousands of jobs to be lost” (IFPI 2004, p. 10). But have you ever heard the musicians, own voice on peer-to-peer file sharing, DRM and online music? If you have met musicians face to face you will probably understand why they seldom raise their voice in these matters. Generally speaking, musicians are sensitive individualists, scarcely organised, and often show little interest in dealing with economic affairs. Some indications what musicians think can however be derived from the two surveys we present in the following.

#### NEA Survey of the worklife of jazz musicians

In 2000 the National Endowment for the Arts (NEA) in the United States commissioned a study of jazz musicians in four U.S. metropolitan areas (Detroit, New Orleans, New York, and San Francisco). The aim of this conventional survey was “to enhance the quality of statistical information, which will

be used to help devise strategic ways to further the work of jazz artists” (Jeffri 2003, p. 4). The survey was conducted in 2001 in cooperation with the American Federation of Musicians (AFM). 1,900 persons responded. The survey results were published in 2003 under the title “Changing the beat. A study of the worklife of jazz musicians” (Jeffri 2003). Besides a host of questions dealing with demographics, income, health-care, jazz styles of the musicians, there were some queries addressing copyright issues, which we pick up here.

First of all, copyright is in fact a matter that is important for jazz musicians too. This is not self evident as we can imagine many jazz musician earning their living by gigs and jam sessions – not by composing, arranging, or recording. Following the survey results however, four of five of the responding jazz musicians (79 %) reported that their music has received airplay (sometimes), three of four (75 %) have (some) of their work been recorded by a professional recording company, more than half of the musicians (55 %) have recorded works themselves, nearly half (48 %) hold copyright in some of their artistic work, and 35 % said that their music has been broadcasted over the Internet (in the year 2001).

The latter group of “Internet broadcasters” was asked how they feel about people

downloading their music without paying. Their answers (multiple answers possible) were as follows: 63 % want to be paid, 52 % object downloading their music, but 37 % like the exposure they get, and 29 % do not mind downloading. In other words one of two musicians do not raise objections against downloading, and one of three appreciate the promotional side of downloading for their works.

### **PEW Survey of musicians and songwriters**

A more recent study has been conducted by the PEW Internet & American Life Project. Preliminary results were published in May 2004 (Rainie and Madden 2004). The Web-based survey was conducted in March and April 2004. The aim was to know more about the way musicians and songwriters use the Internet, and about their views on copyright and file sharing.

Before presenting the data we have to send ahead two methodological remarks: First, although 2,755 persons responded, the sample can not be regarded as representative for the entire population of musicians and songwriters, because of the bias due to “self selection” of participants in this web-survey. Second, the percentages we present are calculated irrespective of the answers “do not apply” and “don,t know” in order to draw a more accentuated picture based on the knowledgeable answers.

### **Impact of file sharing and downloading**

There are 72 % musicians who believe in the promoting function of file sharing. They either agree with the following statement: “File sharing services aren’t really bad for artists, since they help promote and distribute an artist’s work to a broad audience”, or they say that file sharing has a positive as well as a negative side for them. Only 24 % of the respondents say file sharing services are bad for artists because they allow people to copy or use an artist’s work without permission and without compensation for the artist. 3 % disagree with all of these statements.

While 57 % see no effect of free downloading on sales of own CDs, 35 % claim that

sales of their CDs have increased by free downloading, and only 8 % claim their sales have decreased.

53 % of the respondents see no effect of the Internet on protection of music from piracy and unlawful use. 27 % say the Internet has a small negative effect on the protection of music from piracy or unlawful use, while 21 % see a big effect.

In general more musicians say that free downloading has a positive effect on their career. Here are the figures:

- ▶ 44 % Free downloading has not really made any difference in my career
- ▶ 41 % Free downloading has helped my career
- ▶ 9 % Free downloading has both helped and hurt my career
- ▶ 6 % Free downloading has hurt my career

A similar picture appears when respondents were asked about their overall opinion on file sharing: 33 % agree with the statement that file sharing is no real threat to creative industries like music and movies, 34 % say file sharing is a minor, 32 % a major threat.

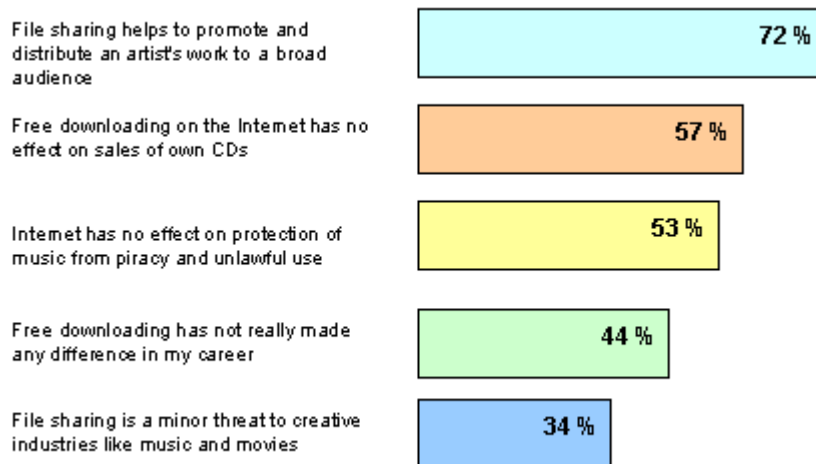
**First conclusion:** Musicians doubt the negative effects of downloading and file sharing, and point out the opportunities of file sharing to promote their work. This result underlines the findings of the NEA investigation. Figure 1 next page depicts those statements of the different questions, which were strongly supported.

### **Copyright law and copy protection**

The majority of 75 % respondents support the view, that copyright laws do more to protect those who sell art than to protect the artists themselves. 68 % agree or strongly agree with the statement that current copyright law does a good job of protecting artists, rights (31 % disagree).

A remarkable majority (73 %) does not believe that RIAA’s (Recording Industry Association of America) legal action against individual downloaders will benefit musicians and songwriters (27 % welcome these actions).

**Fig. 1:** Impact of file sharing and downloading (most supported items of different questions)



**Source:** Own calculations from PEW Internet & American Life project, see Rainie and Madden (2004)

Assuming that someone has broken or disabled the copy protection mechanism on a CD or DVD after purchase, 57 % of the surveyed musicians do not want prosecution of those individuals, while 43 % want it.

More than the majority (68 %) want complete control as copyright owner of their work, 29 % want some control, 3 % very little control. We see a clear dichotomy between proponents and opponents of copy protection. 50 % say “yes” and 50 % say “no” to the following statement: “Current technology makes it possible to copy-protect, digital forms of music such as CDs and audio files so that unauthorized copies cannot be made. If you had the choice, would you want your music to be copy-protected so that digital copies could not be made without your permission?”

#### **Second conclusion:**

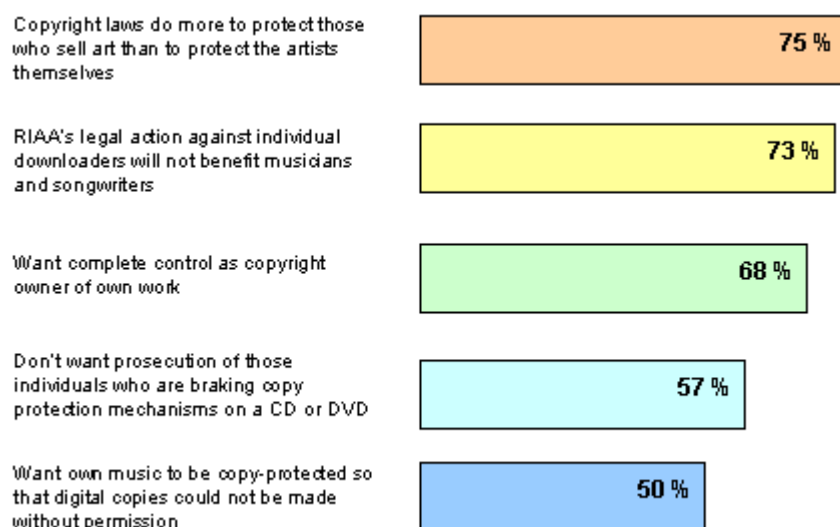
The responding musicians don't feel protected best by copyright law and RIAA's legal actions against individuals and their prosecution. They want more or complete control as copyright owners of their own work, and dislike the influence of the music industry, which presently exerts the greatest control. Figure 2 next page depicts the most frequently chosen answers to the different questions on copy protection, copyright law and prosecution.

#### **Bottom Line**

We have looked at musicians, responses addressing file sharing, copyright and DRM based on two surveys. The surveys revealed a huge divergence of opinions among musicians. Nevertheless, the majority acknowledges the opportunities of the Internet and file sharing. Only a minority gives more importance to the risks. While it is neither surprising that musicians want to be paid by those who consume and use their works on the Internet, nor that they are in favour of better control of their files, it is indeed surprising that the majority does not want more severe prosecution of individual downloaders of music. Maybe this mixed view is due to their double role of creators and consumers of music using the Internet themselves to satisfy their needs. Another result of the survey is that musicians don't see their interests represented best by the music industry, which often claims to act in their interest. In the view of musicians it is often more important to make their works widely available than to have them well secured, but nobody listens to them.

We warmly welcome pointers from readers to other surveys of creative workers on Internet use and DRM issues, and would also appreciate statements by artists and artists' organisations.

**Fig. 2:** Copy protection and copyright law (most supported items of different questions)



**Source:** Own calculations from PEW Internet & American Life project, see Rainie and Madden (2004)

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## Code is NOT law

### A short report on the "Code as Code" workshop in Amsterdam, 1-2 July

By: Rik Lambers, IViR, Amsterdam, The Netherlands

**Abstract:** This is a short report on the "Code as Code" workshop in Amsterdam, 1-2 July. It presents some highlights of the two-day discussion on regulation of behaviour through technical code, rather than traditional law. Finally the article explains why the "code as code" issue is not only of interest to legal scholars, but also to consumers.

**Keywords:** legal analysis, conference report – code as code

#### Introduction

Guru to some, populist to others, one thing is certain: Lawrence Lessig's legal thinking has achieved wide attention on both sides of the Atlantic. Five years after its publication, the heart of his first book *Code and Other Laws of Cyberspace* (Lessig 1999) functioned as the basis for a workshop in Amsterdam on 1 and 2 July: *Code as Code*.

Organised by the Institute for Information Law, in cooperation with Tilburg University, the workshop derived its name from the core statement of Lessig's book: "Code is law." (Lessig 1999, p.6). That is, code as in technical code is the true regulator of behaviour in the digital environment, not traditional law. It is the notion, or hype, that software and hardware impose a set of normative rules. Lessig popularised this notion, but Joel Reidenberg already referred to the set of rules as *Lex Informatica* in a 1998 essay of the same name. More precisely Reidenberg speaks of "the set of rules for information flows imposed by technology and communication networks" (Reidenberg 1998, p. 554). Examples of regulation through technical code are the online filtering of content, the use of cryptography to prevent unauthorized access to data, and the copy protection on CDs in the form of Digital Rights Management Systems (DRMS).

#### Workshop debate

A select group of international experts discussed if code can be considered law, and how code is used in different fields of law: freedom of expression, privacy and intellectual property law. Several papers on these

subjects served as a basis for the discussion. They will be published at the beginning of next year in the international *Information Technology & Law Series*. In his keynote speech Reidenberg noted that the papers showed a deep scepticism of technology as a legitimate means of rule making, specifically of code as a substitute for law. He stated that he shared this scepticism and that "*Lex Informatica* is inherently unfair and the state has to intervene."

The papers proved to be fertile ground for an often abstract, though high-level interaction between the participants. An introductory paper and related presentation provided a list of criteria to test if code can indeed be considered law. These criteria were derived from legal theorist Lon Fuller's criteria for law and projected on Lessig's "Code is law" metaphor. Key criteria were: *transparency*, *legitimacy*, *accountability* and *consumer choice* towards the use and working of technical code. Overall regulation through code was thought not to adhere to these criteria for law, and to have a negative impact on the discussed fields of freedom of expression, privacy and intellectual property.

On the last day of the workshop no concrete conclusions were reached. However, in an unofficial and somewhat playful final declaration it was stated that "code is *not* law", and that the "Code is law" metaphor is dead – a statement that Reidenberg however thought to be too strong. In his opinion the participants had agreed on the illegitimacy of code as a substitute for law in establishing behavioural control rules.



### Code as code as consumer concern

It is this very illegitimacy, due to a lack of the aforementioned criteria for law, which makes the “code as code” phenomenon important from a consumer’s perspective. The transparency of the implementation of technical code solutions and the related accountability of the users of these solutions are primary consumer interests. For example, it is in the interest of a consumer that he can hold a record company accountable if it has not sufficiently informed him through labeling that the used DRMS may prevent him from playing a purchased CD on all his devices. This has already been the subject of

litigation in both Belgium and France (Tribunal 2003).

### Bottom line

When technical code replaces legal code, when “code is law”, rules are enforced automatically and in an absolute fashion, and consumers may lose traditionally enjoyed legal protections. Consequently, also consumer oriented organisations and projects may look out for the *Code as Code* papers, providing a general, meta-view of the subject matter to which DRMS belong.

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**"On present trends DRM will make a bad situation worse"  
A short analysis of the position paper on Digital Rights Management  
by BEUC, The European Consumers' Organisation**

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** On September 17, BEUC published a position paper on DRM (BEUC 2004). Without doubt, the outcome of the High Level Group (HLG) on DRM – frustrating for the solitary consumer organisation participating (INDICARE reported; see Orwat 2004) – was a major motivation to prepare this paper. The 10 page position paper is a good opportunity to learn about the views, perspectives, and requirements of BEUC with respect to DRM. First we will summarize BEUC's particular perspective on DRM and its diagnosis of the actual situation. Next we assert the requirements put forward by BEUC. In the concluding section we point to the great challenge consumer organisations are facing when dealing with systemic and, in a way, disruptive technologies like DRM which change the rules of the game.

**Keywords:** editorial, review, policy analysis – collective rights management, competition, consumer rights, DRMS design, fair use, innovation, privacy – EU

**BEUC's motivation to present a position paper on DRM**

There are two obvious reasons why BEUC published a position paper on DRM: first the HLG report, prepared by a group of stakeholders on behalf of the European Commission (High Level Group on Digital Rights Management 2004), did not address the issue of consumer acceptance and trust as scheduled. Thus BEUC attempts to fill this gap in its own right. Secondly, as BEUC did not support two of the three chapters of the final HLG report ("private copying levies and DRM" and "migration towards legitimate services") the paper is a way to put forward its own position. The dissent within the HLG is explicitly addressed in the paper: Overall the consumer organisation blames industry for failing to supply in time competitive services which consumers want (cf. p. 5). Instead it wishes to criminalise consumers, disregarding consumers' legal rights (cf. p. 5), refusing to clearly state what consumer rights it is actually willing to concede; with respect to P2P networks industry ignores legal uses and positive effects, and industry does not distinguish appropriately between commercial piracy and private uses. With respect to levy schemes BEUC even argues that industry is too inert to implement DRMs in order to phase out levy systems more rapidly (cf. p. 9).

**BEUC's perspective on DRM**

BEUC has a clear and pragmatic understanding of DRM as a means to protect rightholders against copyright infringement, to give rightholders greater control over digital material, and to allow more flexible and differentiated product offerings. DRM *per se* is neither good nor bad but it bears considerable risks: "The current course of DRM development seems to aim at creating a new relationship between right holders and consumers, with altered consumer rights, freedoms and expectations and towards the general replacement of copyright law with contract law and codes" (p. 3). What is at stake is a new balance "how best to balance in the public interest the rights of right holders and consumers in the digital environment" (p. 1).

This perspective on DRM obviously exceeds a narrow-minded focus on consumer interests. The reasoning of BEUC has two focal points: one is on *fair B2C relationships* and the second is on *public policy and civil society concerns* such as innovation and creativity, competition, public access, digital divide, privacy, data protection, and free speech.

**BEUC's DRM requirements**

In the following we will try to present the DRM requirements derived from the position paper without claiming to be exhaustive. We

distinguish five areas of concern: (1) fair B2C relations and abuse of DRM, (2) shaping of technology, (3) creativity, innovation and competition, (4) legal framework, and (5) access and exclusion. The categorisation we use to reassemble the arguments and requirements of BEUC is different from the position paper's structure of content (see beginning of the interview with Cornelia Kutterer, BEUC, in this issue). We try to grasp the content properly and to put it under five headings indicating different clusters of policy concerns.

### **(1) Fair B2C relations and abuse of DRM**

It is noteworthy that BEUC states that "fair trading" implies "fair use" (a central right granted by the legal framework in the US) and that fair use requirements therefore have to be acknowledged in Europe too (cf. p. 9). Of course contracts governing the use of digital material ought to be fair and transparent. BEUC is also in favour of labelling so called "usage-impaired works" (like genetically modified food). In terms of business models, the consumer organisation asks for B2C business models based upon the first-sale doctrine (p. 3). Fairness implies that abuse of DRM has to be avoided in particular with respect to "unlimited post-purchase control" (p. 3) by rightholders. Abuse need not be restricted to undue usage control. There are other more fundamental ways of abusing the access to the consumer's device. In this respect the right of privacy and private data protection are vital. BEUC demands that common rules of data protection (essentially: not to collect more data than necessary for a specific purpose, and not to store data longer than necessary) are also respected by DRMs. Even further, BEUC is critical about trusted computing which may infringe on personal property rights, and of course BEUC is against "technical-self-help measures" aimed to punish deviant consumers.

### **(2) Shaping of technology**

BEUC asks for "fair use by design", a statement concerning the development of technology. The concept is similar to the concept of "value centred design" (see Bechtold in this issue). To put this requirement into practice BEUC demands consumer participation

at all levels of the standardisation process (p. 5). They also demand the involvement of privacy advocates.

### **(3) Creativity, innovation and competition**

BEUC also addresses innovation and creativity, which could be stifled by DRM. Competition is a major concern in this context. BEUC argues that in highly concentrated markets price differentiation as enabled by DRMs will not lead to price competition. BEUC also holds that DRMs are used to segment markets (e.g. regional code of DVDs), thus hampering competition. A further argument is that DRM protection may hinder research and the development of new technology thereby foreclosing legitimate competitors from entering the market (p. 5). They also share the view of many that digital information on global networks brings about new prospects for creativity. This opportunity however is threatened by DRMs, because on the one hand DRMs may impose restrictive usage rules and on the other hand they may be used to lock-up works from the public domain. Apparently the European Consumers' Organisation is annoyed with collecting societies arguing that their "monopolistic structure" (p. 6) would hinder competition. Pro-actively BEUC recommends policy makers to "withhold any attempt to make DRM systems mandatory on any media whatsoever" (p.6).

### **(4) Legal framework**

BEUC is by nature active in the context of legislation. It clearly demands "enforceable consumer rights which cannot be overridden by contract terms or deployment of DRM systems, or technical measures" (p. 6). This requirement is formulated against the background of the European Copyright Directive which makes it difficult in the eyes of BEUC to enjoy the right of private copy. The same position is discussed elsewhere under the header "user rights".

### **(5) Access and exclusion**

Another set of requirements can be derived from political goals defined by the European Commission at various times, namely access for all and exclusion of nobody. These goals

are explicitly and implicitly incorporated in policy documents and declarations like the Lisbon objectives or the eEurope 2005 Action Plan (cf. European Commission 2002). BEUC requests the European Commission to stick to its own goals and urges policy to take those effects of DRM into account which may hamper the achievement of these goals. DRM ought not hamper public access, nor increase the digital divide and discrimination of consumers with disabilities and elderly people. With respect to the last concern, DRMs should be compatible with assistive technologies. Another type of access restriction refers to limitations of free speech by DRM, i.e. “to control how and who gets access to information thereby limiting journalistic investigative activity, commentary, and other fair uses without which the fundamental human right could not be exercised” (p. 9).

#### Bottom line

In my view, the many facets of potential abuse of DRM systems presented, and the idea of deriving fair use rights from acknowledged fair trade were especially stimulating. The major difficulty I encountered was to understand why BEUC strongly advocates the right to private copy and at the same time the abolishment of the levy system as soon as possible (the “current levy system is unfair and should be ended quickly”; see also the interview with Cornelia Kutterer in this issue).

A more general point is about the limits of consumer organisations. DRM is by nature a systemic phenomenon where legal, contractual, and technological artefacts concur or interfere, affecting consumers, citizens and the public interest. This challenge is met by BEUC with a holistic approach to DRM transcending a narrow view of consumer interest. At the procedural level this is apparent in a participatory approach which sees a role for BEUC in stakeholder dialogues to achieve consensus and by requesting participation of consumers especially in the field of DRM standardization. The question is how a consumer organisation can achieve and organise the required competencies to directly influence technological developments at this

level. The second question is how organized interests cope with an overlap of competency areas, e.g. consumer organisations and civil rights organisations, and which synergies or conflicts may result from this overlap.

**PS.:** A short remark on what to expect in this issue: for the first time you will find INDICARE interviews. My colleague *Bettina-Johanna Krings* talked to Prof. Dr. iur. *Thomas Dreier*, M.C.J., Director of the Centre for Applied Legal Studies, University of Karlsruhe about Creative Commons. The interview covers a broad range of questions, asking among other things about possible limitations on the one hand and possible new application fields for CC on the other hand. As Thomas Dreier is an outstanding expert in the field and played a leading role in adapting CC to German we can provide you with a thoughtful and knowledgeable interview. The second interview is about the position paper on DRM by Bureau Européen des Unions de Consommateurs (BEUC) issued this month. *Cornelia Kutterer*, Senior Legal Advisor at BEUC, answered to all my questions – even those not strictly related to the position paper. As it is very important for INDICARE to understand and reflect the position of consumer organisations, the editorial above has chosen the BEUC position paper as its subject.

Four articles in this issue deal with new socio-technical DRM developments and form an interesting thematic block. *Stefan Bechtold*, University of Tübingen Law School, introduces the concept of value-centered design of DRM and outlines some approaches which are currently underway in this direction. *Niels Rump* and *Chris Barlas*, Rightscom Limited, reflect the potential impact of bi-directional Rights Expression Languages and the consequences of such a paradigm shift. *Gergely Tóth*, SEARCH Laboratory, Budapest, gives an introduction to Privacy Rights Management (PRM), an interesting approach to combine DRM systems and Privacy Enhancing Technologies (PET) on common grounds. *Roy Melzer*, Reinhold Cohn & Partners, Tel Aviv, analyses – from a consumer and legal point of view – the potential and risks of Rights Locker architec-

tures, a new approach to digital content delivery.

As in earlier issues of the INDICARE Monitor, we are happy to include a conference report on a hot topic. The overall question of

the event was if Digital Rights Management is the end of collecting societies? “Not yet ‘six feet under’” is the answer given by *Christoph Beat Graber, Mira Nenova and Michael Girsberger*, i-call, Lucerne.

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## Talking about the BEUC position paper on Digital Rights Management

**“DRM causes serious risks to consumer rights and societal rights and we urge the Commission to actively engage in exploring these risks”**

By: Cornelia Kutterer, BEUC, Brussels, Belgium

**INDICARE-Interview** with Cornelia Kutterer by Knud Böhle, ITAS, Karlsruhe, Germany

BEUC's 10 page position paper on DRM aims to “set out a clear consumer perspective”. This perspective comprises rights of consumers in a narrow sense and societal rights. While chapter one and two sets the scene presenting a general assessment of the current situation, the main part addresses seven issues of consumer acceptance: (1) recognition of consumer rights, namely the right to private copy, to fair commercial practices, and to be informed and refunded for faulty products, (2) a fair, competitive and balanced regime, (3) the right to privacy and private data protection, (4) right to free speech, (5) the Digital Divide, (6) right to maintain the integrity of private property (Trusted Computing), and (7) a chapter on the current levy system which is regarded as unfair. The paper finishes with a fourth chapter containing concluding remarks. The purpose of the interview is to better understand the motivations and arguments of BEUC, and to challenge their reasoning here and there.

**Keywords:** interview – collective rights management, consumer protection, consumer rights, European Commission, fair use, privacy, private copy – EU

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**INDICARE:** It is evident that the position paper of BEUC is kind of “minority report” with respect to the report of the HLG on DRM (cf. INDICARE Monitor Vol. 1, No. 2, 30 July 2004). It is clearly stated that no consensus of industry view and consumer view could be achieved, and that the HLG dismissed dealing with consumer acceptance and trust issues as scheduled at the outset. What are the main points where BEUC disents from the industry view?

**C. Kutterer:** We object both to the content and also to the omissions of the parts dealing with migration to legitimate services and levies. We feel that without the recognition of consumer rights and the wider public in-

terest these parts fall short of their purpose. The main points of disagreement are touched upon in our paper but take the example of the following statement: “the way forward is a system based on existing exclusive rights backed by technologies that ensure a secure environment where such rights can be licensed and enforced”. This is clearly not a balanced approach with recognition of consumer rights or limitations to the exclusive rights. Or look at the reference on the origin of the private copy in the 1960s in Germany. This omits that de facto non-enforceability of the reproduction right was based on a conflict with the inviolability of the private sphere. It further states “alternative compensation schemes or similar measures are clearly not the way forward for the dissemination of content in digital networks and for the development of new and innovative services”. We would not support DRM to the extent that it excludes even a discussion on alternative schemes. As for the paper on migration to legitimate service, we simply do not support the usual lamentation about private copying that ruins the entertainment industry. We also have clear doubts about balance as regards the industries' interest of

raising consumer “awareness” and “acceptance”.

**INDICARE:** Was the difficulty in achieving consensus in the HLG a result of the composition of stakeholders chosen?

**C. Kutterer:** A consensual approach to achieve appropriate conditions of digital rights – which meet the interests of all stakeholders – is a meritorious goal we share. We welcome the Commission’s attempt to offer stakeholders a platform for discussion in order to reach consensus on DRM. However, the more diverse interests are, the more difficult it becomes to achieve consensus and time constraints were not helpful. But we also must accept that where consensus cannot be achieved (without foreclosing further discussions) political decisions may be necessary.

**INDICARE:** Let me add a more general question about the configuration of stakeholders concerned with DRM and the relation of BEUC to them. We can imagine that parts of the industry sympathise more with BEUC and consumer interests than others. One could also expect that civil rights NGOs, scientific organisations are natural allies of consumer organisations. How would you characterize the formation or configuration of stakeholders and the position of BEUC in this?

**C. Kutterer:** Yes, I believe some parts of the industry “sympathise” more than others with our interests. More importantly, we find it regrettable that scientific organisations (for example cryptologists), civil rights NGOs or privacy advocates were not presented in the HLG. We do share many concerns with them but this does not make them dispensable. Within the group we were the only consumer/user representation.

**INDICARE:** I could imagine that there is more overlap of interests between BEUC and part of the IT industry than with copyright industries?

**C. Kutterer:** In delivering the devices for content distribution the IT industry seems to be more concerned with consumer interests. But we agree with the copyright industry that creative work must be adequately protected

and compensated. The main question is what adequate protection means.

**INDICARE:** As the position paper demonstrates, DRM it is not just about consumer rights, but about civil rights and societal concerns too. How does, let’s say a classical consumer organisation like BEUC define its spheres of competence in DRM matters? Is delineation of spheres a problem in the DRM field if we think e.g. of the overlap with data protection and privacy advocates, or civil rights organisations?

**C. Kutterer:** In the digital environment consumers are subject to privacy laws as much as they are part of the society; they may even become authors, editors, producers and distributors of informational goods (Wikipedia is a good example). There is no strict borderline in defending the rights at risk. Delineation of spheres is clearly not a problem.

**INDICARE:** When did BEUC first get concerned with DRM?

**C. Kutterer:** BEUC has been actively involved in policy making during the legislative process of the Information Society Directive. In that context we were very concerned about the extensive protection of technological measures. Obviously copy protection has been topical before.

**INDICARE:** What exactly is the purpose of this paper and why was it due right now?

**C. Kutterer:** The final report failed to address the fourth subject, that is “acceptance and trust by users with particular emphasis on security and privacy” and falls short of considering the broader interests at stake, in particular consumer rights which we defend. We are addressing the topic. DRM deployment is a key priority for us (and our members) and merits high consideration in the light of the ongoing implementation of the Information Society Directive as well as the forthcoming review process on the application of technical measures under the aegis of the Contact Committee. The Contact Committee represents competent authorities of the Member States which will examine the impact of the Information Society Directive on the functioning of the internal market, explore difficulties deriving from the applica-

tion of this Directive and assess the digital market in works, in particular private copying and the use of technological measures.

**INDICARE:** It will be impossible to cover all aspects you address in your position paper. Therefore I will just pick out some items which raised a special interest, and about which I would like to learn more. To start with, it was interesting to note that even with respect to the interoperability part of the HLG report where consensus was reached, the position paper now adds further interoperability requirements. Could you explain why the HLG report falls short even with respect to interoperability?

**C. Kutterer:** We felt it was necessary to refer to interoperability also in regard to future generations of devices.

**INDICARE:** Talking about interoperability leads inevitably to standards and standardization as addressed in the position paper. You put forward that consumers should participate at all levels of the standardisation process in order to ensure that privacy and data protection concerns become integral part of standards. How could this wish be put into practice and what role could BEUC play in this? I can imagine that the organisational embedding will be difficult, think of e.g. participation in DRM standardization efforts of the Open Mobile Alliance. I can also imagine that it will be very hard to gain the technical competencies to evaluate the different technical approaches like Rights expression languages etc.

**C. Kutterer:** We suggest that compliance with data protection laws and consumer rights should be verified as early as possible, at best when developed. Consumer organisations take an active role in standardisation bodies and provide technical expertise (ANEC, the European Association for the Co-ordination of Consumer Representation in Standardisation, is the European consumer voice in standardisation). However, this is clearly not the case when proprietary standards are set or developed by private consortia.

**INDICARE:** If we assume that participation and co-operative shaping of technology is a

very hard task for a consumer organisation, why has BEUC chosen this approach, instead of traditional lobbying?

**C. Kutterer:** This is not an approach instead but **in addition** to our efforts in policy making. "Shaping of technology" will surely not be enough to ensure that consumers have the rights they should have in the digital environment.

**INDICARE:** There are good reasons to centre the debate on DRM on the Copyright Directive. However it would be interesting to know from a consumer organisation, if and how far consumer protection rights could be extended in order to counter-balance the weaknesses of copyright legislation and to safeguard consumer interests?

**C. Kutterer:** In the first place, we call for enforceable copyright limitations which cannot be overridden by contract terms or deployment of DRM systems. We advocate a 'fruit of the poisoned tree' rule that would allow for legitimate circumvention of technical measures where that technology has been used to hinder or restrain usage that is not relevant under the copyright law (for example, personal appropriation of a work like cracking in the regional control mechanism of a DVD). This said, we suggest that consumer protection law should provide an additional tool to safeguard consumer interests in this context. This field must be further explored. Consumer law must be capable of restoring the disequilibrium that characterizes consumer contracts in the digital environment by ensuring balanced formation of consent, avoiding procedural and substantive ambiguity, and providing rules on redress and refund. Last but not least, competition law must ensure a competitive environment to deal with the likelihood of unlawful extension/leveraging of dominance into second markets through DRM deployment (think of printer cartridges and automobile electronics, or the announced acquisition of ContentGuard by Microsoft and Time-Warner).

**INDICARE:** BEUC asks for fair commercial practices and hints at some examples where this is currently not the case (e.g. the regional code of DVDs). Do you think that the proposed directive "concerning unfair

business-to-consumer commercial practices” COM (2003) 0356 will improve the situation for consumers with respect to DRM? Has BEUC been involved in the shaping of this proposal?

**C. Kutterer:** We generally need further discussion on contract law and consumer protection law in this context. The unfair commercial practise proposal is a key instrument for consumers (and consumer organisations) and will serve as a safety-net against rogue traders. The proposal may be relevant to digital distribution of content but mandatory information obligations on usage-impaired works and information on national copyright limitations must be set. We are also paying attention to the forthcoming revision of the directive on unfair terms in consumer contracts. The unfair terms directive could play a centre role in achieving a balance in the digital distribution chain to reduce illegitimate usage restriction of legally acquired works while maintaining the positive effects of the DRM model. What is necessary is that we look at the effects of application of certain contract terms.

**INDICARE:** In the US there is currently a debate about the proposed Digital Media Consumers’ Rights Act (DMCRA) put forward by Congressman Rik Boucher in order to re-establish fair use conditions. As “enforceable consumer rights” are high on the priority list of BEUC, you probably have assessed the American way to strengthen “fair use”. What can Europeans learn from the US and what should the European way look like?

**C. Kutterer:** Many of our demands such as labelling requirements for usage-impaired “copy-protected” CDs or the prohibition of foreclosing non-infringing uses through technological measures can equally be found in the proposed DMCRA. We fully support the intention of this proposal. Obviously, the legal frame provided by the U.S. presents relevant differences but some issues that are valid in both jurisdictions have been less explored in the European debate, for example the validity of contractual derogations. In the U.S. debate, much more attention is also drawn to efficiencies, which inherently take

the wider perspective, i.e., the benefits for society into account.

**INDICARE:** The issue of collecting societies and in particular levies is very controversial, while your statement clearly says that the current levy system is unfair and should be ended quickly. I would have expected this statement from device manufacturers, and was surprised by this clear-cut statement. In my feeling there is a slight contradiction in your reasoning, or I have simply missed the point: On the one hand there are many good reasons you mention why DRM systems should be deployed cautiously if at all, especially because the risk is high that usage rights like private copy will be undermined. On the other hand you are in favour of abolishing levies as soon as possible, because DRM systems are available. Their deployment of course would increase the risk that the right to the private copy will be undermined. Can you help me to get your argument right?

Let me add another remark before you answer: Is there enough empirical evidence for your reasoning? Supposed 80% of blank disks (price 50 Euro Cent or less) were used to copy CDs or downloaded music, wouldn’t it be fair to put at least a slight levy on them to compensate creators and rights holders?

**C. Kutterer:** We do believe in the need to compensate creative work. But we do not accept double payment. Most consumers are unaware that levies are embedded in the price of many products capable of recording music. Some European countries have opted for levies, which apply to blank media, reprographic equipment and equipment with a recording function, whilst others do not raise any levies at all. Does that seem to be reasonable and fair? These objections to the levy regime, however, do not make DRM deployment a solution without flaws and risks.

**INDICARE:** In your paper you ask policy makers to refrain from mandating DRM. The association coming to mind is of course the “broadcast flag”. Do you envisage that we soon will have a debate about the broadcast flag, and what will BEUC do?

**C. Kutterer:** We are not aware of any plans to mandate DRM. But we are concerned that in the context of the treaty “on the protection of the rights of broadcasting organizations” negotiated at International level (WIPO) this may become topical.

**INDICARE:** The position paper obviously addresses the European Commission. What are the next steps you recommend to policy-makers in order to make progress on the consideration of consumer concerns in DRM?

**C. Kutterer:** DRM causes serious risks to consumer rights and societal rights and we urge the Commission to actively engage in exploring these risks. We need a better solution in a highly dynamic Information Society to adequately take into account the public interest. We therefore urge the Commission to look at these risks when reviewing IP law and to strengthen the effectiveness of data protection laws. We suggest that the Com-

mission should convene a similar HLG on the dangers of DRM and refrain from becoming a promoter of certain industry interests or the promoter of “awareness” under the agenda of these industries. We call on the Commission to become aware of the contractual implications and consumer law aspects that are at stake and we support the use of competition law to encounter abuse of intellectual property by using technology and cross-licensing to foreclose entry to markets.

**INDICARE:** I think we can leave it at this for the moment. With your last answer summarizing BEUC’s policy recommendations we have reached a good final point, and now it’s up to INDICARE to see what will happen. Thank you very much for this very informative interview and your willingness to also answer questions beyond the position paper.

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## Value-centered design of Digital Rights Management

### Perspectives on an emerging scholarship

By: Stefan Bechtold, University of Tübingen Law School, Tübingen, Germany

**Abstract:** An emerging interdisciplinary scholarship does not take DRM systems as given constants that are exogenous to the policy process, but asks how DRM systems could be altered in a value-centered design process so that important policy and legal values are preserved. This article provides a short overview of this emerging scholarship. Examples of such scholarship may be found at the intersection of technology and copyright law, privacy law and competition policy.

**Keywords:** authorized domain, copyright law, DRMS design, fair use, privacy, rights expression language, rights locker, trusted computing

#### Introduction

Over the last few years, many authors have written about how DRM privatizes and replaces copyright law, how it undermines copyright limitations, threatens the interests of users and the public at large and inhibits creativity and innovation by unjustly extending intellectual property protection. Although the author shares many of these concerns, it is important to realize that DRM technology

is much more flexible and plastic than some DRM critics acknowledge.

An emerging scholarship therefore does not take DRM systems as given constants that are exogenous to the policy process, but asks how DRM systems could be altered in a value-centered design process so that important policy and legal values are preserved. While the idea to shape technology in order to accommodate it with public values is an



old one, it has only recently been seriously applied to DRM. This article provides a short overview of this emerging scholarship. As will be described below, examples of such scholarship may be found at the intersection of technology and copyright law, privacy law and competition policy.

### **DRM and copyright limitations**

DRM has been severely criticized for overriding various copyright limitations and for protecting content providers at the expense of legitimate interests of users and the public at large. Although this may be true for many current commercial DRM implementations, it is questionable whether such effects are inherent in the concept of DRM or whether they are just the outcome of a particular kind of implementation of DRM technologies. Four examples may illustrate this point.

#### *Rights expression languages (REL) and rights messaging protocols (RMP)*

First, whether a DRM system respects fair use and other copyright limitations or not depends on the design of its rights expression language (REL) and the supporting rights messaging protocol (RMP). Rights expression languages enable a DRM system to express a rich set of usage rules in machine-readable metadata that may be attached to content. With rights expression languages such as XrML, the permission to copy, delete, modify, embed, execute, export, extract, annotate, aggregate, install, backup, loan, sell, give, lease, play, print, display, read, restore, transfer, uninstall, verify, save, obtain, issue, possess, and revoke content may be expressed in a machine-readable form. If fair use privileges and other legitimate interests of information users cannot be expressed in an REL, such interests simply do not exist within the system. Therefore, it is of utmost importance that RELs include semantics to express not only the interests of creators and rights holders, but also of information users. In a paper from 2002, Deirdre Mulligan and Aaron Burstein from the UC Berkeley outlined changes to XrML that would create such a “symmetric” REL.

A DRM system does not only have to be able to express a wide array of rights in its rights

expression language. In order to enable bi-directional negotiations between rights holders and users about which rights should be granted under which conditions, a DRM system also has to include rights messaging protocols (RMPs) that support such bi-directional negotiations. Most current DRM systems do not allow the users to engage in extensive negotiations about usage rights. Although general electronic commerce systems that enable negotiations between contracting partners have existed for some time, researchers have only recently begun to develop DRM systems with such functionality.

Currently, it is unclear how to distribute the technological components that are required for symmetric DRM systems between the REL and the RMP. While some researchers attempt to integrate much functionality into the REL, others contend that such functionality should be located exclusively in the RMP. In general, research in this area is still very scarce. It is also quite complex since it requires intensive interaction between technologists and lawyers and, in the case of RMPs, transcends the traditional borders of DRM research.

#### *Fair use infrastructure*

Second, in an article from 2001, Dan Burk from the University of Minnesota and Julie Cohen from Georgetown University proposed, among other things, a ‘fair use infrastructure’ According to their ‘key escrow’ proposal, beneficiaries of copyright limitations could turn to external third parties in order to receive decryption keys for DRM-protected content so that they could benefit from copyright limitations. This is another example of an attempt to alter the design of a DRM architecture in order to solve the tension between DRM and copyright limitations on a technological level. It is interesting to note that this proposal has some similarities to the relationship between technological protection measures and copyright limitations as regulated by Article 6 (4) of the European Copyright Directive of 2001.

#### *Authorized domain architectures*

Third, DRM systems will increasingly include a so-called ‘authorized domain’ (some-

times also called ‘family domain’; a related concept is called ‘rights locker architecture’). The idea behind such architectures is to enable consumers to access content not only from one particular device, but from a number of devices they own. If a consumer acquires a music file, for example, he may then listen to the music not only on his MP3 player, but is also allowed to copy it to his hi-fi system, car radio or mobile phone. In an authorized domain approach, compliant devices are organized into home content delivery networks where legally acquired digital content can freely be played by any device part of the network. In such an architecture, digital rights are made portable among various platforms as permissions to use content are no longer bound to a particular device the consumer owns, but to the consumer himself.

Authorized domain architectures are an attempt to approximate a DRM environment to copyright limitations. They are an example of how engineers respond to consumer expectations and legal values enshrined in copyright laws. Of course, authorized domain architectures have their own problems and they are not a perfect solution to translate copyright limitations into the digital realm. However, they are an example of a value-centered design process that attempts to take extra-technological values into account while a DRM architecture is designed.

#### *Digital Media Project*

The Digital Media Project, which was started by Leonardo Chiariglione in summer 2003, attempts to lay the technical foundations of a successful digital media environment that respects the interests of creators, rights holders, consumers and various value-chain players. One part of the project includes the identification and specification of “rights and usages” which consumers have traditionally enjoyed in an analogue media environment and which should also be expressible in a Digital Rights Management environment. Although the project is still in its early phase, it has already produced interesting results and could considerably facilitate the development and implementation of value-centered DRM systems.

#### **Privacy-preserving DRM**

DRM systems use various mechanisms to identify and track users within the system. They have the potential to monitor what people privately read, listen to or watch. Although the tension between DRM and privacy has been recognized for several years, a clear regulatory approach as to how to reconcile DRM with privacy interests does not yet exist. In a recent paper, Julie Cohen (2003) from Georgetown University argued that part of the solution to reconcile DRM with privacy interests should be a value-sensitive design process. She argues that, in certain cases, the functionality of a DRM system has to be restricted on a technological level in order to preserve some flexibility for privacy-preserving private access and copying, while simultaneously protecting information providers against large-scale commercial copying. A value-sensitive design process would also investigate methods of building in limits on monitoring and profiling of individual users. Finally, it would consider the desirability of implementing limitations on self-help mechanisms used by rights holders to protect their interests. Such design approach should not be understood as to limit the functionality of a DRM system. Rather, it should be understood as a way to reconcile competing values – interests of creators, rights holders, and users – on a technological level.

#### **Trusted Computing and “owner override”**

Over the last two years, trusted computing platforms such as the “Trusted Computing Group” and Microsoft’s “Next-Generation Secure Computing Base” project have received a considerable amount of attention from technologists, lawyers, economists and cyberpolicy activists. Trusted computing architectures ensure that a computing platform always behaves in the expected manner for the intended purpose. In particular, such architectures provide evidence about the integrity and authenticity of the platform to both the platform’s owner and to arbitrary third parties. Thereby, this architectural approach attempts to increase trust in the computing environment. Many observers have pointed out that trusted computing architectures might be used by application, service

and content providers to create lock-ins and hinder competition in client application markets. Recently, Seth Schoen (2003) from the Electronic Frontier Foundation (EFF) has proposed to enable trusted platform users to send false integrity metrics to the remote application, service or content provider (so-called “owner override”). Thereby, the remote provider could no longer base his decision whether to interoperate or not on the particular client application that is running on the users’ trusted computing platform.

The relationship between trusted computing architectures and DRM systems is a very complex one and is beyond the scope of this article. Although the author is, ultimately, not convinced by EFF’s proposal for several reasons, it is just another example of how to influence technological architectures at the design level in order to incorporate legal and policy values.

### Conclusion

While the idea of value-centered technology design is not novel, it has only recently been explicitly applied to the area of DRM. Various researchers are exploring this idea in various areas, but no coherent research plan exists. However, the recent Digital Media Project could develop into an important platform upon which value-centered DRM systems are designed. Using a value-centered design approach is complicated by the fact that it requires close interaction between technologists and legal scholars or economists, leading to the usual advantages and limitations of interdisciplinary research. Technologists have to find ways to think about public policy, and lawyers and economists have to find ways to understand tech-

nology and its implications. Most importantly, as Barbara Fox and Brian LaMacchia (2003) from Microsoft have pointed out, technologists need appropriate incentives in order to engage in value-centered design research in the first place.

It is also important to note that a value-centered design approach towards DRM may have inherent limitations. Some policy problems may not be controllable on a technological level. Some legal doctrines are inherently flexible and vague, thereby making their technological implementation very hard. Furthermore, DRM policy problems always involve balancing various interests. Value-centered design processes may provide a very helpful tool to implement a certain balance of interest, but they do not offer any assistance how to find this balance. Finally, as John Erickson from HP Labs and Deirdre Mulligan (2004) have recently pointed out, automating policy enforcement by technology has fundamental disadvantages as enforcement has to be reduced to simple yes/no questions, which may not be feasible in all cases of policy enforcement.

### Bottom Line

Applying value-centered design processes to DRM systems is a promising and still largely unexplored field. In general, no one knows whether a balanced DRM system that protects both the interests of rights holders and of users as well as the society at large is ultimately feasible both from a technological and a business perspective. As all technology, DRM is malleable, and one should not miss the opportunity to engage in a value-centered design process that shapes DRM appropriately.

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## From couch potato to active consumer

### Potential impact of bi-directional rights expression languages

By: Niels Rump and Chris Barlas, Rightscom Limited, London, United Kingdom

**Abstract:** Today Rights Expression Languages are uni-directional: content providers declare *their* rules for Digital Rights Management Systems. The consumer has to agree and adhere to these rules if he wants to access the content. In principle, the same type of technology could also be used to express conditions under which a consumer would accept such “content rules” and what the content provider may do with the data collected from the consumer. This paper briefly investigates the consequences of such a paradigm shift towards a bi-directional use of rights expression languages whereby consumers could be empowered to actively shape the content commerce relationships they engage in.

**Keywords:** technical analysis – automation, business models, consumer empowerment, rights expression language, standards

#### Introduction

Digital Rights Management is a set of technologies to enable owners of information to control the use of that information in the digital environment. While the technologies are capable of being used to protect and mediate any kind of information, they have been

primarily developed with a view to the protection of intellectual property, such as published text, recorded music, movies and games. These technologies are the basis of most digital content offerings today. One critical technology – amongst many others – is a means to express the rules under which



information can be used, either by the legitimate owner's business partners (aggregators, distributors, retailers etc) or by end user consumers.

Examples of such languages are plentiful, ranging from very simple (sometimes even binary) expressions to govern access to content in very specific application domains, e.g. the "forward lock" mechanism in the OMA specification 1.0 (Open Mobile Alliance 2004), to complex and generic XML-based languages, e.g. MPEG REL (ISO/IEC 2004) or the Rights Expression Language in OMA's 2.0 standard.

### Uni-directional use of RELs

Currently, these languages are being deployed by content providers to express their business rules with respect to the content made available. These rules – often called "Rights Expressions" – are then associated with the content itself. When a user attempts to interact with the content the rules are then interpreted and enforced by a Digital Rights Management system, effectively constraining the end user's freedom of interaction: The end consumer has to agree to the rules if he wants to access the content.

Examples of such content services are plentiful, ranging from Apple's iTunes store via RealNetworks' services to MovieLink and Overdrive's services to support eBook library lending. Many of these services currently use their own proprietary rights languages. For instance Apple's iTunes – the leading commercial online music distributor today – using its own rules language, allows users to play the tracks on their PC or Apple iPod portable device but does not allow the content to be transferred to other users' devices.

While rights expressions are intended to enable information owners to set the rules under which content can be used, the two leading languages being deployed today (MPEG REL and OMA REL/ODRL) can also incorporate conditions, by which the creators of rights expressions can impose obligations on the user. These obligations may involve users, including end user consumers, in many different types of activity, such as providing

the content provider with information about the use of the content, so revealing patterns of usage, demographics and other consumer information. In the currently envisaged deployment of rights languages, users have to agree to such obligations in order to access content.

### Bi-directional use of RELs

However, it is possible to imagine a different scenario, in which the technical capabilities of Rights Expression Languages become available to both the owners of information and to its consumers so that the latter can also exercise control over their own information, such as the attributes of their identity or their commercial preferences. As such data is, from the computers' perspective, no different than the content data itself, it would be possible to govern its use using a Rights Expression Language. The terms "symmetrical Rights Expression Languages" (Bechtold 2003, Bechtold 2004) or "bi-directional Rights Expression Language" have been coined for this concept; we prefer the latter term as, for all practical uses, those rules set by the content owner and those set by the consumer will differ significantly, thus not creating real symmetry.

While DRM technology providers have long since recognised that digital rights management systems are capable of being used in such a scenario, commercial systems to actually implement this are still to emerge.

### From couch potato to active consumer

Envisage a scenario where a user retrieves a piece of content accompanied by a set of rules defined by the content provider. Using a rights language, it would be possible for the consumer to protect her own personal data, which could then be used to bargain with the content owner. In this scenario, the consumer wants access to the content and the content owner wants access to the consumer's data, which has a commercial value in terms of purchase patterns etc. So instead of just accepting the content owner's set of rules, the user starts a negotiation and sends back a rule set incorporating the terms under which he or she is prepared to do business. For example, she may want to have the ability to burn two



CDs instead of one and pay €1.50 more for this benefit; or she want not wish to provide any usage data.

After receiving the counter offer from the customer, the content owner can decide whether to accept the counter offer or to continue the negotiation. In either case he would send an updated rule back to his customer, who can also either accept or continue until an agreement has been reached or either side gives up.

In such a scenario, the customer would be enabled to become a more active participant in the content value chain and would move away from being the couch potato he is – or rather has to be – today. In total, the online content world would look more like today's physical world, where people have the ability to negotiate.

### Consequences of such a paradigm shift

Such a paradigm shift will, however, not be without substantial consequences for both technology deployment and business processes.

Technical consequences lie in two areas. Firstly today's Rights Expression Languages are not deployed with a view to bi-directional use (Bechtold 2003, Bechtold 2004). They can, however, be extended to cater for such needs, which would require the current uni-directional REL standards – notably by MPEG and OMA – to be extended. Secondly, the negotiation mentioned above will require some user interface tools to enable negotiation to take place, and to make the resulting rule sets readable and accessible to humans. But more importantly – mainly on the content providers' side – some automation is required. This, in turn, calls for "intelligent agents" that can read and interpret and compare REL rule sets and negotiate on behalf of humans.

Secondly, there are business process questions that arise from using bi-directional Rights Expression Languages. Not only

would the use of bi-directional Rights Expression Languages enable negotiations with consumers – which may tend to make content commerce increasingly complex and expensive, making it difficult to analyse in terms of cost/benefit – but questions of trust also emerge. When machines act on behalf of humans, there is a question about the extent to which they can be trusted (by both the party engaging the computerised agent and his potential business partner). And there is the additional question of what happens if there are known bugs in certain agents and some malicious party uses these flaws for their advantage – unknown to and unintended by their partners/victims?

Thirdly, there are questions relating to copyright legislation which is always implemented country by country. This would mean that the use of a bi-directional REL would require any negotiation between an owner and a user about rights be conducted on a strictly national basis. For instance, if a user were negotiating about copyright exceptions, which are defined differently in civil code and common law countries, the ability to negotiate would have to be strictly confined to a specific jurisdiction.

### Bottom line

Bi-directional Rights Expression Languages have been discussed for as long as Digital Rights Management systems have been in use. While today only uni-directional Rights Expression Languages either in use or are planned for commercial use, the introduction of a bi-directional language could give rise to new consumer behaviour. It has the potential to move the user from being a couch potato to become an active consumer. But before that can happen there are still many problems that would need to be addressed, ranging from purely technical issues to questions of cost/benefit, trust and even IP licensing for the use of technology in consumer applications.

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## DRM and privacy – friends or foes?

### An introduction to Privacy Rights Management (PRM)

By: Gergely Tóth, SEARCH Laboratory, Budapest, Hungary

**Abstract:** During the design and implementation of DRM systems consumers' privacy is often neglected or poorly considered. However with the growing understanding of core DRM requirements and functions it becomes more and more obvious that the same or similar techniques used to protect and manage rights in intellectual property could be used to govern personal information and thus better address privacy issues. Korba and Kenny (2002) have proposed a new approach, Privacy Rights Management, to combine DRM and privacy. In this article first the core functions of DRM systems and the mechanisms of providing privacy will be compared, before the new approach is presented and discussed and some common aspects are described. Afterwards PRM, (Korba and Kenny, 2002) is introduced as the result of the symbiosis between DRM and privacy-awareness.

**Keywords:** technical analysis – consumer empowerment, DRMS design, privacy enhancing technologies

#### Introduction

DRM (Digital Rights Management) techniques have been widely deployed in the digital world to enable only legitimate access to the intellectual property of rightholders. On the other hand customers require privacy, which creates a conflict with the currently deployed DRM systems that track consumer habits and personal information. However at a closer look we will realize that both DRM systems and privacy enhancing technologies share common goals.

#### Relationship: Privacy & DRM

DRM was invented by the content industries to manage rights to different intellectual properties, and to prevent consumers from illegal usage: e.g. consumers should only *listen* to music downloaded from on-line stores, they should not *distribute* the songs purchased. As the business incentive to enforce the interests of content publishers is strong, DRM systems nowadays use sophisticated cryptographic functions and are backed by legislation.

In order to compare them with privacy mechanisms later, let's draw up a simplified, common scheme of DRM systems:

*Rightholders* allow distributors (e.g. on-line stores) to control their intellectual property (e.g. songs). *Distributors* use DRM systems to protect the assets by means of secured

databases and cryptographic algorithms. Rights on the items controlled are well defined: e.g. consumers who have paid may listen to the songs, radio stations may even broadcast them, but nobody may alter them.

On the other hand *privacy* is a key concern of consumers. Furthermore, in Europe, privacy is defined as a human right under Article 8 of the 1950 European Convention of Human Rights and Fundamental Freedoms (ECHR 1950) and it is addressed by Directive 2002/58/EC of the European Parliament and the Council (Directive 2002). Among others, the following privacy principles are defined: usage and disclosure limitation (i.e. data collectors and processors may only use personal information under certain conditions), retention (stored personal information has to be disposed of after a given time) or safeguards (stored and processed data has to be protected from illegitimate use).

As current practice shows, during the utilization of their protective functions DRM systems are regularly at odds with privacy principles: they collect different kinds of personal information about customers (ranging from identification data, such as names and credit card numbers, to access patterns and habits, like how many times a certain video has been watched). Currently privacy issues are handled by privacy policies, but as business is using technology to protect and man-

age its interests, consumers become also more and more keen on using technological means to achieve privacy.

Ultimately, and quite surprisingly, we have to realize that both issues (DRM and privacy) share some common functions: in either case some assets (e.g. songs or billing information) are controlled by third parties, and have to be protected by these third parties from illegitimate use. Furthermore in either case different access rights might be defined and specified (e.g. only listen to music for 30 days or a one year retention period for shipment data).

### Privacy Rights Management

To define PRM, the similarities between DRM and privacy systems are further described: management by third parties, protection, and access rights. These make clear the basic functions of a PRM system which uses DRM techniques to manage personal information – according to the requirements of consumers and legal provisions.

- ▶ **Management by third parties:** In the DRM scenario control over intellectual property is entrusted to the distributors' DRM systems. The aim is to disseminate the property in a controlled fashion focusing on the interests of the rightholders (i.e. usage only if paid for). With privacy the scheme is similar. Personal information owned by a data subject is entrusted to data controllers (and indirectly to data processors). Data controllers need to comply with the privacy principles set out in the legal framework and the consumers' intents. This similarity illustrates why the two scenarios resemble each other in essence.
- ▶ **Protection:** In DRM systems assets are protected by several means: on the server side secured databases and controlled environments are used, whereas on the client side (i.e. the consumers') special hardware and software techniques ensure that only legitimate usage is possible. On the other hand data controllers are implemented to protect managed personal information. Considering the common requirements, it is trivial to ask why the

same DRM protection measures (e.g. encryption, protected content formats, controlled environment etc.) should not be used for personal information as well. For instance record stores offer songs in encrypted format that can only be decoded in special devices and only if required keys are present. The same technique could be used for private information as well: data controllers could also store data in such DRM-protected formats where access can be effectively restricted.

- ▶ **Access rights:** Finally to round up the whole scheme, in the DRM environment Rights Expression Languages (RELs, such as ODRL) are used to express what a consumer may perform with the property accessed (e.g. the REL describes that she may only listen to the song for 30 days). Such rights information is usually tightly attached to the protected format used to store the information. In the same manner access to the managed personal information also has to be controlled (by law and by the consumer), e.g. using RELs, the consumer may specify that, for instance, the provided e-mail address may be used to contact him by the data controller but it may not be handed over to other third parties (cf. the same restriction as purchased songs may not be shared with others).

### Discussion

Korba and Kenny (2002) propose the use of ODRL, the REL already used by different DRM systems, to express privacy expectations of consumers regarding personal information about them. In this way, with PRM, consumers could individually set their preferences against the different data collectors.

In current business models, however, companies use privacy policies to express how they process personal information. From this perspective the next step seems to be the uniformization of these privacy policies. The Platform for Privacy Preferences (P3P) Project, coordinated by the World Wide Web Consortium (W3C), aims to define a machine-readable language for formulating how a system processes private information. P3P

is currently gaining momentum and seems to be becoming the standard used by companies.

It is not yet clear if these two approaches are at odds, vital questions can be raised however:

- ▶ What if the preferences of the consumer are formulated stricter using PRM than in the P3P policy of a company? Could a compromise be achieved, and if so, how? Will the company accept the consumer's requirements, but raise the price?
- ▶ What if the PRM's settings are more forgiving? Could the company create revenue from using more personal information and thus, eventually lower the price?

Further research and a better understanding of privacy and business models is needed to come up with the answers. A similar problem

is explored by Rump & Barlas (2004) in their INDICARE Monitor article on bi-directional Rights Expression Languages.

### Bottom line

By analyzing the core functions of DRM and privacy mechanisms, Korba and Kenny (2002) point out that although the anticipated conflict exists, ultimately both share common functions: management of assets by third parties, requirement for protection and restricted usage governed by issued rights. By combining both, a powerful synthesis, Privacy Rights Management can be constructed, using DRM techniques to protect both intellectual property and personal information with the same elaborate techniques. It remains to be seen if PRM defines the next evolutionary step of DRM systems.

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## Rights locker architecture – the next step?

### Potential and risks of a new approach to digital content delivery

By: Roy Melzer, Reinhold Cohn & Partners, Tel Aviv, Israel

**Abstract:** The growth of bandwidth leads to the integration of new content distribution technologies and models. One example is the possible integration of right locker architectures. The article addresses this technology from a legal point of view and analyzes the possible advantages and impediments that might result from the integration of this model.

**Keywords:** legal analysis – broadband, business models, copyright law, digital contracts, interoperability, privacy, rights locker

#### Introduction

The digital content delivery is facing tremendous changes since the advent of the Internet. Those changes are primarily led by the constant expansion of the net bandwidth. Broader bandwidth enables various new web-based applications with different methods to disperse digital content efficiently. Those new possibilities alter the content industry and change the way people use and enjoy consumer electronic products, media, and entertainment. One indication of change in the consumers' consumptive behaviour is the increasing demand to access digital content from portable devices like laptop, PDA and mobile phone, a tangible manner in the shade of the third generation of wireless services.

Enabling the user to access digital content either from his home stationary or from his mobile devices raises some challenges regarding the traditional DRM model. In the current technology, users' digital rights are annexed to the protected content that is fixated in a particular device and can be accessed either directly, or from any other device that stores another private copy of the content. However, the user cannot access the purchased content from any other device, though he already acquired the right to use the content. Rights locker architecture technology presents a model that circumvents this content fixation problem.

#### The "Rights Locker" model

In this model, the content resides only on the rightholder's data server memory. The user practically purchases only the right to access

the content and not a physical copy of it. The user rights are stored on a server that was configured to hold authorization information. At the moment of purchase, the authorization server updates the user rights and stores them in accordance with the transaction contract.

Whenever the user desires to access the content, an adjusted application at the user device sends a request to the authorization server. After the server verified the request, the content is streamed to the user from the data server. The same procedure takes place irrespective of the used device, enabling the identified user to access content.

This is not a theoretical model. For example, Digital World Services (DWS 2004), a provider of software for secure delivery of digital content, implemented "rights locker" technology in its ADo2RA system, a content independent digital distribution infrastructure, that is designed to enable content providers and retailers to package, protect, and deliver digital content across multiple devices.

#### Customer advantages of "Rights Lockers"

Apart from the accessibility, rights locker architecture provides several additional advantages for the customers. The acquired data is backed-up safely, proofed from hardware failures or viruses hazards. Additionally, the user does not have to allocate new memory for the content, and therefore the hardware costs reduce.

Content supplier's can now offer new business models, based on access control: Differ-

ent contracts regarding the same data can suit different customers better than the current prevailing download model by offering variant prices, based on time periods or number of access permissions. The right to access the content can be sold not only to individuals but also to groups of people, reducing the price per capita (i.e. access is bought for a group of employees).

### **Drawbacks and uncertainties**

The adoption of the new technology still has to face several impediments. From the technological point of view, the current bandwidth is not sufficient to enable real time streaming in a quality that will satisfy the average customer. It seems that the “rights locker” model will only proliferate when bandwidth will allow streaming of content at the same quality of service known in today’s apparatus (i.e. supplying real time streaming of songs and movies at the same quality as playing them from the memory of the used device). However, reaching this quality threshold is just a matter of time. According to Edholm’s Law (Cherry 2004), in about five years third-generation wireless will routinely deliver 1 Mb/s, allowing audio streaming directly to mobile phones. Wi-Fi technologies will deliver 10 Mb/s wireless access for PDA and laptops, allowing video and audio streaming simultaneously.

From the legal point of view, the current European copyright legal frame is phrased in terms of usage, not access. An authorization is needed from the right holder to carry through actions like reproduction, communication to the public and making available to the public. The copyright directive defines the lawful use of the content and the usage exemptions in terms of “private copy” or “fixation of the content”. However, full integration of the rights locker architectures means that no physical copy of the content would be stored on the consumer devices. The user will “access” the content subjected to contract stipulations rather than “use” as in the sense of lawful use definitions and exemptions.

Even though, one can argue that the new technology is just a new way to handle DRM by mobilizing the digital rights rather than

confining them to certain data files, with other words: a way to adjust to the new broad wireless bandwidth surrounding. However, if rights locker architectures will be adhered, a re-thinking of existing terms and definitions in copyright law is required: Sharing files with friends is not “space shifting” anymore but sharing access to the same content, Peer-to-Peer phenomena might transpose into password sharing and “private copying” will be subject to the contract terms.

Moreover, the technology facilitates copyright enforcement. Firstly, this is because the supplier can encrypt the transmitted signals, and thereby impede the fixation of the content. The supplier can digitally tag each transmission of the content, enabling easy tracing of the origin of the fixated copy. Thirdly, the content supplier can easily monitor the use of content, regarding the frequency of use and the IP address of the user devices to enforce the purchase contract.

### **Open questions**

The integration of “rights locker” technology might have substantial implications on the current legal frame and therefore should be examined by copyright legislators. In regard to the access agreements, the contract frame should raise questions regarding access control: can a database owner criminalize a user who stores “private copies” on his hard-drive when the contract terms prohibit this? Can the supplier control the access to the content eternally or is he obligated to enable free access to content after the expiration of the content copyright? And even if the release of the content to the public domain is obliged, what are the incentives for suppliers to enable access for content that is in the public domain. From the customers’ point of view, basic rights should be secured. User’s privacy might be endangered because of the ability of content owners to monitor the central repository server and to document user actions. Dilemmas for possible legislation can be what are the limits of access data compilations? Who should hold the ability to access this information? And what uses of the data is the supplier entitled to? It seems that this problem is inherited in the technol-

ogy and will require a continuous monitoring mechanism to guard the users' human rights.

### Bottom line

It is still early to estimate in the light of the current bandwidth potential if rights locker architectures will succeed to enter the content

delivery market. The integration of the technology holds great advantages for customers especially by enabling various access possibilities from different devices. However, the impediments and dangers to customers' privacy should be kept in mind.

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## "Some rights reserved"

### Creative Commons in between unlimited copyright and copyright anarchy

By: Prof. Dr. iur. Thomas Dreier, M.C.J., Zentrum für Angewandte Rechtswissenschaft, University of Karlsruhe, Karlsruhe, Germany

**INDICARE-Interview** with Thomas Dreier by Bettina-Johanna Krings, ITAS, Karlsruhe, Germany.

Creative Commons (CC) as standardised licensing agreements for digital goods were introduced in Germany on 11 June 2004. Professor Thomas Dreier, the Director of the Centre for Applied Legal Studies (ZAR) at the University of Karlsruhe, played a leading role in adapting CC to German Copyright Law. The interview conducted by Bettina-Johanna Krings, ITAS, focuses on Creative Commons exploring the foundations of the CC, problems of adaptation to national law, the personal motivations of Prof. Dreier to support this new approach, limitations of CC, their role with respect to innovation, DRM and commercial interests, and finally scientific publishing.

**Keywords:** interview, business models, Creative Commons, creators, copyright law, libraries, preservation, Germany

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**INDICARE:** How would you describe the basic ideas behind Creative Commons in a few words?

**Th. Dreier:** In public, there is currently awareness that copyright is constantly extended in order to encounter the perceived loss of control over copyrighted material which is due to digital and networking technology. Moreover, technical protection measures are used to extend control over the exploitation of digital goods to maximise profits – intruding ever further into the private sphere, restricting use and preventing people from making creative use of them. There is a wish to counteract these developments with the help of Creative Commons seeking to ensure a pool of goods, i.e. a

growing number of creative works, from which anyone can essentially serve themselves.

**INDICARE:** Well, an increase of control and protection measures is part of the normal historical development of information technologies...

**Th. Dreier:** Yes, that is the normal historical development. CC mainly responds to the needs of those who consciously make use of someone else's copyrighted material in an artistic way. It started with what is called appropriation art, where the artistic statement in making an exact copy of a famous work and signing it as one's own consists in drawing our attention to the strange concept and the aura of "the original". Increasingly, we have people who make collages from existing material, for example film sequences. Those people consistently intrude with each snippet they use into existing rights. In these cases, licensing is often impossible because film copyright owners, Hollywood for example, have better things to do than licensing snippets, or, if they do license snippets, the price asked for its use is prohibitive to the artist. In such cases, the entire creative and economic transaction process collapses and this is what CC seeks to counteract by creating commons, a pool of free works. In the

framework of CC however, copyright is not completely abandoned. The creator can still exercise control by retaining or reserving certain rights for himself.

**INDICARE:** In this sense, do CC apply mainly to the artistic domain?

**Th. Dreier:** That is why they're called *creative commons*, commons for creativity. We're dealing first and foremost with the artistic field, mainly text, music and images. To better understand the origin of the CC we have to recall the following situation in the US: the legal scholar Lawrence Lessig attempted through a complaint at the Supreme Court to prevent the extension of the fifty year copyright following the death of the creator to seventy years. He was unsuccessful, and I believe that after failing to attack copyright from the outside, he now wishes to redesign it from within – a completely legitimate approach. By this approach he can on the one hand ensure legal certainty and on the other hand ensure that there are enough creative works available to build upon.

**INDICARE:** What does the creative process have to do with CC?

**Th. Dreier:** Historically seen, nobody has ever produced from scratch but always in their creative work built on the work of others. In the extension of copyright the proponents of CC see a threat to this principle. Against the background of certain creative strategies, they are moving against this. Apart from appropriation art just mentioned, think about the DJ culture which rests entirely on the use of parts of existing recordings, even if they are re-used as no longer recognisable sound sequences. If I scratch and perform this scratching publicly or mix it onto my own recording, I have of course used someone else's recording rights and these rights have naturally not been licensed by the producer of the recording since DJ culture is tangential to them. Hence, the whole artistic activity is threatened by the exclusive rights. This is indeed just being discussed intensively in the US. Someone known as DJ Danger Mouse has taken the Black album by Jay-Z and the White album of the Beatles and mixed them together to make a "Grey album" and was promptly

served with a cease-and-desist notice. It is situations like these that can be regarded as the starting point of CC. Of course, another starting point of CC is the model of open source software.

**INDICARE:** You took part in the project in Germany yourself. What were your reasons?

**Th. Dreier:** I was spontaneously fascinated by the way the CC-project used the new opportunities of communication technology to create contractual relationships. Of course, it was possible to conclude contracts over the net in the past and that could be quicker than using letters or faxes. Moreover, for some time technicians tried to integrate all of these differentiated user relationships into the data set of the respective works. For instance a model was developed in which these were included in the header of the dataset before the protected object itself. In this approach there is a need to ensure that the data were not removed or forged etc. That was fairly complicated and – in spite of legal protection against the removal of such rights management information – is still rather insecure. There is also the model of collecting societies. These hold the rights to the works, and a user can access not only the data but also the conditions of use via collecting societies. Lessig reversed this principle and said: All what has to be done is storage of the license in one place and this place is then signposted by each user who wants to place his or her work under this particular licence with small, simple icons as figurative pointers. Under the CC-approach, the licence does not travel with the work, but only the pointer.

This was the aspect that stood in the foreground for me. This development is in my eyes an example of how communication technology changes the structure of user relationships. There is a type of transaction emerging which would have been impossible or extremely difficult in that shape before. That fascinated me and at the same time it is good to help artists create an environment in which some of them obviously feel comfortable. Even if it is at odds with the rationality of the, let's say, commercially oriented system.



It should be added that the legal text and the symbol of each of the different CC-licenses is not all of CC. In addition, to all of the CC-licenses (attribution; non-commercial; no derivative works; share-alike; the founders' copyright-licence doesn't exist in Germany) there is a layperson's version, and a machine-readable version, which makes it possible to trace and locate works which have been placed by their authors under a CC-licence.

**INDICARE:** What is the relationship between CC and German Copyright Law?

**Th. Dreier:** The idea of the license is mainly American. In addition, if I as a German protect my work with an American license, there's naturally the question why I also need a German license. However, there are mainly two arguments for developing a parallel German CC-licence: one is the marketing aspect – a license can be truly popular only if it is written in local language. In addition, the Federal High Court (Bundesgerichtshof) requires all clauses to be comprehensible for users, which probably means that German users must have the opportunity to read the clauses in German.

The second aspect is that if we decide to issue a German license so that it may be understood in Germany, it has to be adapted to German law. For CC the main task consisted of keeping the basic idea and looking for ways to materialise and codify this basic idea in German law. For example, what we in Germany call "distribution" forms part of "public communication" under US law. Also, the German license had to be adapted to the surrounding legal context. To give an example, since the 1970s we have had consumer-friendly legislation controlling general contractual terms and conditions. If a clause of a particular contract is formulated in a way that transcends what is legally permitted, then it is a priori invalid. This is the incentive for those who draft standard contractual term and conditions to conform whenever possible to the limits as set by the law. As the CC define a set of business relationships by pre-formulated contractual terms and conditions, this requirement had to be fulfilled here too.

**INDICARE:** Does that mean that there is no need for internationally valid CC?

**Th. Dreier:** As I've said before, I don't see a real need. People always use their national license and in that way release the work world-wide. This is testimony to the cross-border nature of the Internet. Behind this are a whole series of legal matters of detail into which I won't go any further here. Just one important aspect: the German author cannot abandon all of his or her rights. Even if, in the license, the author promises that he or she will make no use of these rights, a user can never be certain that the author will not change his or her mind. That is something that cannot be regulated neither by an American nor a German license. But I don't believe that it will often lead to problems in the framework of CC because the people who use CC want their works to be freely available on the Internet, and to be accessible free of charge. All in all, an attempt is made to transform the ideas behind the American licenses 1:1 and to develop licenses with a similar structure. Of course, when it comes to legal fine-print, things look slightly different and a perfect 1:1 transformation is impossible.

**INDICARE:** Is the CC model accepted?

**Th. Dreier:** In the U.S. the model is well-accepted. The same goes in general for Germany, but I can't quote any up-to-date figures. But I was very surprised when I was approached by some of my law students at the University of Freiburg who told me that they have already used CC. Interestingly, awareness of CC is orders of magnitude greater among the technicians here in Karlsruhe or among students with an interest in technology in Freiburg than in the classical copyright community. In Germany the realisation that something new is emerging has not yet arrived in the copyright community. But I can't guess how big CC in Germany might turn out to be. I think that an interesting question in the context of CC is its non-commercial nature. CC is a model developed from A to Z for non-commercial use. There is deliberately no royalty.

**INDICARE:** How do you see the relationship between non-commercial and commercial use?

**Th. Dreier:** The idea is that CC enable free use, naturally in the restricted sense that rights are granted. If someone grants permission for non-commercial use, author credit and reciprocity under this license, he or she has merely granted permission for non-commercial use. If someone wishes to use the same work for commercial purposes, he is faced with normal copyright and would normally have to develop an individual contract with the owner. Here, CC would be of no use. That's exactly what it's all about: CC are somewhere in the middle between total exclusivity and copyleft. Lessig puts it nicely: they're somewhere in the middle between "everything is locked away legally and technically" on the one hand and "total copyright anarchy" on the other hand. It's not "all rights reserved" or "no rights reserved", it's not "copy left", but it's "some rights reserved" and in that way really a well-balanced medium approach.

For example there were problem areas in Germany since the libraries basically wished to take part in the project by providing the distance lending facilities of their archives. However, historically, scanning, transmission and maintenance of data usually takes places against fee payment. This was a source of income that the libraries didn't want to abandon. This wish of libraries cannot be reconciled with CC in their present form.

**INDICARE:** Do commercial users have any interest in participating in CC?

**Th. Dreier:** I'm not sure if commercial users really want to participate, but the example of libraries shows that a new user market is emerging in which everyone wants to take part. The mechanism does have a certain attractive function. But at the moment I don't see any way to home on the commercial use track. At least it's not foreseen in the basic concept. There are attempts being made to add further modules. For example, it would be possible to combine CC with a kind of micro payment. This is not unthinkable, but the original idea of CC is that use is free of charge. On the other hand you can say that technical protection measures, that is DRM, only make sense if I can, first, make money out of them and, second, diversify my prod-

ucts. It's only then that I can offer different qualities of use priced differently. If I leave away the staggered pricing there is little sense in selling one CD completely free of copy protection and the other with copy protection. You could thus say that CC integrate the non-commercial side and DRM the commercial side. In this sense they meet head-on, and to that extent the model of CC could be called the strategic attempt to counteract the all too rapid advance of DRM and its associated access to information only for payment.

**INDICARE:** Let's turn to the efficiency and limits of the CC approach

**Th. Dreier:** Before such considerations there is the big question: how do we organise the attribution of immaterial goods? From classical economic theory we learn that we have to make such goods artificially exclusive since they are not so by nature. There is thus no real sense in making an exception. In contrast, Lessig tries to cut the over-protection for these goods. I think whether this will ultimately be successful in any respect depends on many things, including problems which have not been researched thoroughly up to now.

**INDICARE:** Which problems?

**Th. Dreier:** Take for example the question of the preservation of these goods: Is access in the long run really easier if I put them freely on the net? The search engine now obviously tells me that it can find the goods. But who will guarantee that the search algorithm can still find my protected work tomorrow? Whose job is it to see that my data format is maintained? Today, on the other hand, the famous back catalogue of the record producers and the potential for centralised libraries archiving digitised works make it quite likely that my stuff stays accessible.

**INDICARE:** Is this a big question-mark in the framework of CC?

**Th. Dreier:** Possibly there is this uncertainty. Today by access we usually mean quick access via the Internet, a question of quantity. However there is also qualitative access: how do we store goods in the long run? This question of how to get access to

the goods is practically ignored. People assume that there will always be access on the net and as a result only concern themselves with the time – the average 0.14 Google seconds needed to get access seem fabulous – and the costs – which often seem prohibitive. Hence, a cost-free, quick access seems rather tempting at first sight. However, in my opinion qualitative access is a critical aspect which should be considered regarding Lesig's project.

**INDICARE:** In your work, you stress the innovative character of CC in the economic sense, but you also see some possible drawbacks. Can you expand on this point?

**Th. Dreier:** As I've said before, copyright had been invented in order to incite creation. Assuming that the assumption that copyright does indeed incite creation, then the incentive to create is diminished if you take away, or even limit the exclusive rights of copyright. The essential question is: is this assumption true, or to what extent is it true? Rightholders say yes it is; the generation in favour of CC, who sees the world as distorted by too many protective regulations, has its doubts. CC postulates that creative work grows and flourishes if artists are not bothered by alien intellectual property rights. On the other hand classical economic theory says people are only creative if they can be sure that they will be paid afterwards. The principle that the creator is to benefit from the revenue from the exploitation of his work is basically a cornerstone of our copyright law. The law maker can intervene in the freedom of contracts to protect the author. And now we have authors just coming forward and saying that doesn't interest us one bit, or at least only partly. The question is where and under what conditions this can work.

There are probably fringe areas in which you can have a first mover advantage, i.e. the first person to do something draws peoples' attention to himself. During a conference in Berlin it was a Swiss who put his film under CC license. He had wanted to market his film and discovered he couldn't find a distributor because all of the distribution chains were connected with the big companies, and be-

cause the small cinemas had to find ways to make money. There was no room for no-name products, so he uploaded his film freely on the net, and, to his surprise, got fabulous download figures. However, he just was the first to put a film on the net with a CC licence and that brought him much of the attention for a film for which financing had already been secured prior to putting it online. Moreover, the online-distribution didn't generate any additional direct income which this filmmaker might have used to produce his next film. More important, however, I presume that the second, third and any other people putting their films on the net will not gain the same degree of fame as the first. As long as not many people have used CC there might still be a myth associated with it. Once CC becomes day-to-day routine, this myth will fade and we will see what CC really means for an increase in artistic production. We might well see that the material placed under a CC-license is different in nature from what is being exploited commercially.

**INDICARE:** In which areas could CC work?

**Th. Dreier:** You can already guess that it won't work wherever people have to earn their living with creative work. For instance, in my opinion, in the field of classical journalism, CC won't work. There, the products, the texts, can't simply be given away, and if you give your texts away for free, it is no longer classical journalism but blog-culture. I always tell my students that a frustrated 17-year-old writes his love poems without giving copyright protection a thought because he has entirely different reasons for doing it. But for everyone else, even in the open source area, it works in the way that people who have gained fame and honours want to capitalise on it in other ways. That might be participation in conferences, it could be being given credit, but in the end most are looking at the commercial distribution area or at areas surrounding it and try to convert their fame into remuneration. In other words: the success of CC will depend on how many possibilities there are to earn money with related activities, unless we contend ourselves with works created by waiters, taxi-drivers and the jobless.

There is another important point: I strongly caution against seeing the word “free” as a panacea and pulling the carpet from under the feet of entire professions or simply dismissing whole branches into poverty (such as depriving journalists of their legitimate income). That can’t be openness nor is it democratic. As I’ve said before, CC will probably work better in some areas and less well in others, but it hasn’t been tested yet in which area it works which way. But CC are slowly gaining support and is obviously being greeted with open arms by several hundred of thousands of artists. If that’s a real need, why not supply it?

**INDICARE:** Can you think of other fields for CC than the artistic field?

**Th. Dreier:** Yes. Another area Lessig has been thinking about is the so-called scientific commons. These imply the question whether the CC structure cannot simply be translated to the field of scientific publications. This discussion is making massive progress over here as well. University libraries or other large libraries like the one here in Karlsruhe are increasingly feeling stifled by price increases being enforced by monopolistic publishers, mainly in the scientific, technical and medical (STM) field. And here there is much debate about reconstructing the model so that scientists, who are paid by the State anyway, put scientific results at general disposal. Of course, if such a decision were taken, STM-publishers wouldn’t completely disappear but they certainly would have to restructure their fields of activity. They could still organise peer review, and offer services that university libraries could not do, etc. They could work as portals and platforms opening the gates to, and drawing for their commercial publications from the wealth of articles deposited in huge pre-print archives. In this way, two markets could be created: the large, free pool and the commercially organised market. Publishers might not even suffer any losses, quite to the contrary. It would be a model that could give great relief to public research institutions as a whole, provided costs for organising preprint-servers are not too high. Again, CC could jump in to facilitate transactions. Of course, CC in the scientific domain would have to be further differ-

entiated. CC for physicists would probably look different than CC for legal people. I doubt if there could be a “fit all” for all fields, which really fulfils the needs of all disciplines.

**INDICARE:** In your work you often refer to the progress of technological development, which might unhinge valid legal provisions. How do you see the relationship of technology and law today?

**Th. Dreier:** I feel we don’t know. Somehow, we’re standing in the middle of it all. On the one hand we can see a nice continuity of technological development. This continuity goes from printing via music cylinders, gramophone records, wireless and television broadcasting to the Internet, in short, we see an ever-increasing improvement in the performance of reproduction and communication technology. On the other hand, we have, without noticing it, enormous discontinuity of copyright. For, if we look at the structure of copyright law, we see that it was conceived for books, music and paintings. If in the past we were dealing with individual transactions, today we are dealing with billions of simultaneous transactions and this brings with it an enormous enforcement problem. This is because the old model whereby an author secures his or her rights and then starts exploiting them obviously cannot work with these user numbers. If we took every single file-sharer to court, the courts would collapse. The problem is that law is increasingly becoming a mere set of guiding rules: people should behave in a certain way; if the rules are broken the potential sanctions are usually not enforced. If they are enforced and do have impact on individuals, as has been the case in a series of law suits in the US, they have exaggerated impact. This example hints to the pressing question: What can law really do?

**INDICARE:** Is DRM a possibility?

**Th. Dreier:** One basic problem of DRM is its acceptance. For DRM, the situation is that full-scale usage is inherent in the set of data, which has only been artificially throttled. And if people have the complete data set in their possession, I think it is difficult to explain to them that it has been throttled so that

they pay less. However, it is a basic assumption that DRM and product diversification must be built to enable economically sound digital markets. This assumption is however very controversial. Some economists say that more overall welfare is being destroyed in this way than we can win. Disregarding technical issues, this seems to me to be a major problem.

Otherwise, I quite like DRM as an option. I think the most desirable system would be one that allows the rightholder to choose what he or she wishes to do with his material, whether he or she wants to diversify and protect it against unauthorized, unpaid-for use by DRM, or whether he or she opts for a CC-license.

**INDICARE:** In this sense, could DRM be viewed as an alternative concept to CC?

**Th. Dreier:** I think so. DRM attempts to secure copyright on the one hand and on the other hand to take advantage of the potential of technology to enable product differentiation and price differentiation. In theory that way DRM will benefit both the producer and the user. The consumer must no longer buy a CD which he can infinitely listen to or copy many times but buy music having far lower scope of usages – either because it is copy-protected or because it is provided only as a stream roaring past the hearer's ear once. There certainly is a market for such product differentiation. For example, some record

shops provide the model of one-time listening: You can have a nice evening, a little uncomfortable maybe, but if you want, you can listen to music at will for a whole evening. At some point you'll no longer do that and use the system to get information and to decide which CDs to buy. In the end, you most of the time spend more money after having listened to some of the tracks of many CD's this way than you would have done in case you could only see the jackets of sealed-off CDs.

This is a point where legal reasoning and economic theory do not easily agree. From the legal viewpoint DRM and protective mechanisms seem more in the line of defence: the rightholder doesn't want consumers stealing his stuff! Economists, however, see it the other way around and say: all this money is being invested in defensive protective mechanisms to defend existing market shares. When you could instead be investing the same money and creative thinking in offensive strategies aimed at opening new market segments and getting consumers to buy more than they're doing now. In a way, the concept of DRM is just as fascinating as that of CC. However, it is much easier to apply CC.

**INDICARE:** I think we have covered many issues related to CC, and I thank you kindly for the interview.

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## Collecting societies – not yet “six feet under”

### A brief review of the international symposium “Digital Rights Management: The End of Collecting Societies?” at the University of Lucerne, Switzerland, June 24 and 25, 2004

Christoph Beat Graber, Mira Nenova and Michael Girsberger, i-call, Lucerne, Switzerland

**Abstract:** Despite ubiquitous digitisation and the advent of Digital Rights Management Systems, it seems that collecting societies are not quite yet “six feet under”. Even in a world of rapid technological developments collecting societies will keep providing services to authors, users and the public facilitating the management of rights and performing additionally certain important social and cultural functions. However, agreeing on the future of collecting societies and on the particular design of both individual and collective rights administration is not an easy task and the opinions of the major stakeholders are diverse and often conflicting.

**Keywords:** conference report – collecting societies, collective rights management, copyright law

#### Introduction

The moment for the symposium was well chosen – not only because visiting Switzerland in early summer is most charming, but mainly due to the fact that a forum discussing the future of individual and collective management of authors’ rights was genuinely needed in the face of intensified digitisation and the advent of Digital Right Management systems (DRMs). Responding to that need, as part of their general activities in communications and copyright law, the research centre i-call of the University of Lucerne Faculty of Law, organised in cooperation with the Swiss Federal Institute of Intellectual Property and with the support of the Mercator Foundation an international symposium on this highly controversial topic under the charged title “Digital Rights Management: The End of Collecting Societies?”.

The reason for the controversies in the field and for putting forward the above question is at least twofold. On the one hand, DRM systems provide a technological infrastructure that can be used for a multiplicity of purposes, ranging from clearing rights and securing payments to enforcement of those rights. These technological means that could provide business models with low transaction costs and if deployed extensively ultimately render the existing remuneration schemes obsolete, interfere directly with the established systems of rights management and

create a whole new reality. Considering the widespread digitisation and notably the pervasive nature of the Internet as information environment, “the legal framework for the protection of copyright and related rights ... has to match these realities”, as pointed out by the European Commission in a recent Communication.

On the other hand, the existing system of collective rights management, which was in the focal point of the symposium’s discussions, has admittedly come to play a special role in society. Besides facilitating the establishment of unified methods for licensing, collecting and dispersing royalties, over the time, collecting societies have indeed evolved to perform various *social* and *cultural* functions. Moreover, one should not forget that the very intrinsic objective of copyright protection, beyond the economic rationales, is to promote creativity and thus cultural diversity and cultural identity. DRMs cannot (yet) provide solutions to these general social necessities and indeed might seriously hamper them considering the possibilities of control of access that DRMs offer and the inherent content industry concentration.

#### The symposium programme

The programme was structured in two parts – stock-taking and analytical keynote speeches with following formal discussion on the one hand, and two podium discussions, on the

other. Against the background of the above-outlined problematic, the speakers were organised into three thematic modules that elaborated respectively on the *social and cultural policy*, *human rights* and *competition law* aspects of “rights’ management” trying to capture all its implications in a technologically dynamic environment. The faculty challenged with this intricate task comprised:

- ▶ Prof. Daniel Gervais, University of Ottawa,
- ▶ Prof. Adolf Dietz, Max Planck Institute for Intellectual Property, Competition and Tax Law,
- ▶ Dr. Alfred Meyer, SUISA (Swiss Society for the Rights of Authors of Musical Works),
- ▶ Prof. Christoph Beat Graber, University of Lucerne,
- ▶ Prof. Hugh Hansen, Fordham School of Law,
- ▶ Dr. Dorothea Senn, King’s College, and
- ▶ John Palfrey, Berkman Center for Internet and Society, Harvard Law School.

### The symposium discussions

If one thing has become clear and all of the speakers – from the “copyright” and the “copyleft” agreed on, if not with the same level of enthusiasm, is that collecting societies are still needed and that they will have to change in order to live up to the challenges of the moment and still be meaningful and efficient in the future. Prof. Gervais particularly stressed this point in his keynote-speech. While struggling with fragmentation of standards, laws and markets collectives will have to adapt their business practices if they want to survive. Their role would then in his view not diminish but rather *change*. In any future business model, be it only a DRM-based or one involving collectives as well, some forms of centralisation and standardisation would be key to an efficient trade in digital goods. Due to their governmental supervision, collecting societies might provide for more transparency than a DRM scenario and by employing centralised licensing, often referred to as a one-stop-shop, the efficiency might significantly improve. Prof.

Dietz agreed on the need for change in the rights’ administration mechanisms but called for protection of cultural diversity within the changed design. In that regard, he emphasised that the creation of one-stop-shops should only be permissible under the condition that tasks concerning cultural aspects are left to the individual national collectives.

The second thematic module looked at DRM from the unusual and rarely discussed perspective of human rights. Prof. Graber pleaded for using freedom of expression and information as essential point of reference for decision making (by the legislator rather than courts!) and for the further shaping of copyright law in the midst of the ongoing technological (r)evolution. As a foundation of any democratic society, freedom of expression and information is to be the basis for setting limits and granting exceptions of copyright both in the analogue world and in the digital era. As for the fate of DRM and collectives he argued in favour of finding synergies between the two systems and for safeguarding the important role of collecting societies as promoters of cultural diversity and cultural identity. Prof. Hansen responded by dismissing the claim for enhanced significance of freedom of expression and information and defended from a “copyright” standpoint the need for maximal protection of authors’ rights.

As usual when discussing copyright and digitisation, it is easier to focus on how the law should be rather than how it is. It was thus very refreshing to follow the DRM-focused elaboration of Dorothea Senn on the *Microsoft (MSFT)* decision, taken by the European Commission early this summer. She saw the case in issue as an example of DRM-market dominance with possible spill-over effects on other markets due to the inherent network externalities in the software market and the lack of interoperability among DRMs. With this first decision and the upcoming judgement on the MSFT appeal, the competition law complications of DRM have made it to the courts and one can be curious about the stance of the Community Courts on the “Microsoft” case in the light of the *Magill* and *IMS-Health* decisions on the “essential facilities” doctrine. The fact that the European

Commission is well aware of the risk of market dominance in the DRM solutions market has been recently proven again by the opening on August 25 of an in-depth investigation into the proposed joint acquisition of ContentGuard – a company that is active in the development and licensing of standards for the DRM-market – by Microsoft and Time Warner. Building upon Senn's legal analysis of DRMs, John Palfrey of the Berkman Center for Internet and Society wrapped up the first day's discussions stressing the need for a more open approach towards copyright and access and ultimately, a balance between public values and individual interests.

The podium discussions during the second symposium's day were more practice-oriented and addressed the problems posed by the implementation of the EU Digital Copyright Directive and the two WIPO Internet Agreements. Within the latter framework, several copyright lawmakers including H el ene de Montluc, Vittorio Ragonesi and Mih aly Ficsor, examined the concrete national situations and agreed – this time with almost equal level of enthusiasm – that easy, fast and fairly cheap lawful access to digital content is still lacking (most notably on the Internet). The representatives of the music and film industries were, neverthe-

less, quite as firmly fixed as the Alps surrounding the very conference venue in their pro-copyright position coming up once again with the slightly worn-out argument of “the industry is losing money...”. Insufficient willingness for compromise was shown in that sense and the bargaining will surely continue.

### Bottom line

In their present status of technological sophistication and implementation, DRMs do not present a policy solution to ensure the appropriate balance between the interests involved, be they the interests of the authors, other right-holders or those of the users. DRM systems are not in themselves an alternative to copyright policy in setting the parameters either in respect of copyright protection or the exceptions and limitations that are traditionally applied by the legislature. Although they might facilitate to an extent the management of rights in a digital networked environment, they do not have the potential to cater for the cultural and social implications of rights' administration and might indeed constrain cultural diversity. In that sense, it seems that collective societies are not rendered obsolete by the advent of DRMs but will most certainly have to adapt.

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**About the Authors:** The authors are members of i-call. i-call, founded in 2002, stands for International Communications and Art Law, Lucerne. It represents a research centre of the Faculty of Law of the University of Lucerne formed under the Chair of Prof. Dr. Christoph Beat Graber. i-call's field of research is focused on the interplay between technological, economic, cultural and particularly legal developments of international markets for media and communications that occurred in the last couple of decades and are still unfolding. Contact: [christoph-beat.graber@unilu.ch](mailto:christoph-beat.graber@unilu.ch) / [tihomira.nenova@unilu.ch](mailto:tihomira.nenova@unilu.ch) / [michael.girsberger@unilu.ch](mailto:michael.girsberger@unilu.ch) / <http://www.i-call.ch>.

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## Mobile Music is Hot

By: Thorsten Wichmann, Berlecon, Berlin, Germany

**Abstract:** The first INDICARE workshop on “Business Models for Mobile Music and DRM”, took place in Berlin on September 30, 2004. There was huge interest in the event, which indicates that mobile music is currently an important topic in the industry. The workshop provided some interesting insights into the role of DRM and business model issues for the development of the mobile music market and into the understanding of consumer wants and needs by industry players.

**Keywords:** editorial, market analysis, conference report – business models, consumer expectations, mobile networks, music markets, standards

### Introduction

Mobile music is hot. We figured that out pretty fast, when we started organising the first INDICARE workshop on the topic of “Business Models for Mobile Music and DRM”. The workshop took place in Berlin on September 30, 2004 at the same time as the Popkomm music fair (Dufft 2004). Almost everybody we approached immediately agreed to come and to present his or her ideas on this topic. In the end around 70 experts from industry, academia and policy spent a whole day packed with presentations and discussions in the stimulating atmosphere of an 18th century palais in the centre of Berlin. Fitting the workshop topic, the last fierce DRM discussions ended around 4 o'clock in the morning in a well-known Berlin music club.

We have chosen this workshop topic, because mobile music is a more limited field than DRM in general. This enabled us to discuss very specific DRM and business model issues without running into the danger of simply exchanging general positions. What we wanted to know were basically two things: What is the role of business models and DRM for the development of a mobile music market? And second, what does the industry know about consumer wants and needs and how do the players involved treat these?

The workshop was organized in four sections focusing on “mobile music standards and DRM”, “content protection beyond technology”, “mobile operator strategies”, as well as

“chances and challenges for the music industry”. The following selection of issues raised and insights gained is a rather personal “best-of” list. Depending on personal background and professional role, each participant took home a different set of insights.

### Mobile Music Standards and DRM

The first block of presentations discussed the role of standards for the development of the mobile music market. As in most emerging technology markets, several open and proprietary standards compete in the field of mobile music distribution. Things are even more complicated here than in other markets because different technologies overlap: there are competing operating systems for mobile devices, competing standards for DRM systems, and even competing standards for such simple music formats as ringtones. This situation was generally seen as an obstacle to market development. It raises costs – somebody has to transform each piece of digital music into all the different formats necessary – and it slows down investment – nobody wants to invest in a DRM system that might not survive the standards competition.

Although it is well understood that this current situation is not satisfactory, it might not improve soon. Quite on the contrary, it was pointed out, there might be further trouble ahead: There exists the threat of lengthy intellectual property disputes involving the rights expression language chosen by the Open Mobile Alliance, since the company ContentGuard claims to have rather broad

patents on rights expression languages in general. As one participant put it, this might be “a bomb waiting for an explosion”.

If the industry is unable to solve these issues, one discussant pointed out, the outcome might be that consumers decide to stick with MP3 and other unprotected formats for digital music. As mobile devices become more powerful, and as it becomes easier to transfer music from a PC onto a mobile phone or between mobile phones, consumers are able to obtain many of the benefits of mobile music consumption without the help of mobile operators. While there was much debate on this conclusion, it was not generally rejected as being unrealistic.

### **Content protection beyond technology**

The second block of presentations dealt with legal and economic aspects of content protection. One very basic question turned up at the workshop: Where should the line between illegal and legal activities be drawn and who should be able to draw it? Obviously, there are different approaches to answer this question. One approach is to discuss the issues in principle. For example, one position, often heard in the public discussion on DRM and also presented at the workshop, is that copyright owners should be able to draw this line wherever they want to draw it. After all, so the argument, intellectual property should be treated just like any other form of property. There do exist a variety of equally fundamental arguments against this position, and these are exchanged intensively in the public discussion on DRM. However, in the end it is very difficult to reconcile the opposing world views behind the different positions.

Luckily, much of the industry already seems to be beyond this fundamental discussion. At least this was an impression from the INDICARE workshop as well as from discussions on the Popkomm, where a pragmatic view prevailed. This pragmatic view is to a large extent a business view: On the one hand, there has to be some form of protection, otherwise there is no viable business model, but on the other hand the protection does not have to be perfect for a business model to be viable. One presenter pointed out Apple’s Fairplay DRM as a good example for such a

design: The line between disabled and allowed activities is the line between scalable and non-scalable copying. Copying that does not scale, such as making copies on a limited number of machines or burning playlists to a limited number of CD-ROMs is OK, but sharing files with an unlimited number of other users is not.

This pragmatic view goes along with a blurring of the lines between commercial distribution of digital music and P2P networks. Some presentations at the workshop showed elements of P2P networks moving into commercial music distribution. For example, a restricted form of music sharing among peers forms the basis for the concept of superdistribution, where mobile phone users can transfer music files from phone to phone, can listen to them a few times but then have to purchase the right for unlimited usage. Another P2P element in commercial services can be personal playlists or a restricted access to the digital music collected by friends. Such P2P elements help users to discover new artists and may be a rather efficient recommender system. In such services DRM systems are understood as enablers of new service offers, not any more as “Digital Restriction Management”.

### **Mobile Operator Strategies**

In the third block of the workshop, mobile operators from Europe presented their mobile music strategies. Of all industry players, mobile operators are probably those mostly concerned with consumer preferences, although more in the sense of Hayek’s “competition as a discovery procedure”. Since they have spent billions on 3G licenses, mobile operators are under strong pressure to offer additional valuable services to consumers that provide additional revenue streams. Mobile music is seen as one of these.

Consequently, operators have spent quite some effort on understanding the wants and needs of consumers to get it right this time – after a disappointing success record of WAP, MMS and a variety of mobile content ventures. One could probably say that mobile operators understand digital content distribution much better than they did a couple of years ago.



One belief coming from this research and shared by most workshop participants is the necessity to enable transferability of digital music. It is generally assumed that buyers of mobile music want music to be transferable between different devices, not only mobile devices (including future generations), but also including home and car stereos, for example. Obviously this has significant implications for DRM systems: It requires that DRM systems work across different types of devices and be in some way upward compatible. Establishing such systems will be difficult and will also pose a variety of challenges for competition policy.

### **Chances and challenges for the music industry**

The final session discussed mobile music from the point of view of the music industry. The presentations showed that mobile music is much more than simply selling digital music files.

One presenter showed that mobile music can also be used as an additional marketing instrument. For example, by making available new songs as mobile music downloads right before the release of new records, mobile music can help to create additional buzz and push songs quicker and higher into the charts, which in turn leads to additional purchases.

Another presenter showed that the mobile phone can also be used for streaming music. Such streaming services pose fewer problems in terms of copy protection, and they might be an interesting alternative to mobile music downloads. This newly launched service also coincided with a variety of new streaming services announced at the Popkomm music fair. It may well be the case that the success of iTunes and everybody's familiarity with downloading digital content have made people to overlook the opportunities of streaming music onto a mobile device.

### **Bottom line**

Overall, my general impression of the workshop discussions was that of an industry that tries hard to understand what type of mobile music products and services consumers want. While the success is far from guaranteed,

business models and understanding of consumer behaviour seem to be much better than in the mobile euphoria era around the year 2000.

However, in addition to understanding consumers' demand for mobile music, there do exist a variety of challenges involving DRM issues as well as consumer acceptance of DRM. Missing standards, intellectual property issues and the task of creating device-independent DRM systems are only some of these challenges. What this workshop showed, however, was that most of these DRM issues can be analysed and discussed in a pragmatic way without too much ideological ballast. This is in stark contrast to the fundamentalism often found in other public DRM discussions.

My conclusion would be that workshops like this one, where participants from an industry can meet on neutral ground to exchange their views and to learn from each other, are a good tool to come to a common understanding about crucial DRM-related issues. It probably helped much that the topic of the workshop was rather specific.

### **About this issue**

As the INIDICARE workshop has shown, digital music distribution is intensely discussed by the representatives of industry, policy and academia alike. Therefore the INIDICARE Monitor Vol 1, No 5 is dedicated to digital music as an important issue within the DRM debate. In order to raise 'hot discussions' as well, the articles are dealing with digital music distribution not only scientifically but also historically and personally.

Starting with an article on "Net Music the Danish way", where Kurt Westh Nielsen from the magazine *Ingeniøren* describes the choice of DRM protection the Danish project Netmusik made as well as the implications this choice had for users. The Danish case of Net Music shows well the different interests of players within the process of implementing DRM. Marc Fetscherin from UC Berkeley and Cristina Vlietstra from the University of Bern present the results from an empirical analysis on the relationship between different usage rights and prices for online music.

Based on personal experiences with digital music Ulrich Riehm, ITAS, describes his attempts to find the music of Greg Koch online. More optimistic are in contrary the results of the Popcomm music fair in Berlin. Nicole Dufft, Berlecon, who organized the first INDICARE workshop, also spent quite some time on the Popkomm and summarizes her insights.

Natali Helberger from the University of Amsterdam, IViR makes one thing clear about the “right” to make private copies of digital products: It’s not a right, silly! Michael Rader, ITAS, continues this topic and asks “What is ever a right?”. He has examined record labels from the last decades for infor-

mation about the rights granted to consumers.

Last but not least Frederick J. Friend, consultant for the Joint Information Systems Committee (JISC) and OSI (Open Society Institute), UK, comes to the interesting conclusion that open access publication, e.g. freely available academic content on the web, needs DRM to protect the interests of the authors. Related to this subject, Ulrich Riehm, ITAS, reviews the DRM study by Intrallect on behalf of the JISC, which analyses DRM needs of the educational system in the UK.

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## Net Music the Danish way: Locked down and easily cracked

By: Kurt Westh Nielsen, Ingeniøren, Copenhagen, Denmark

**Abstract:** The ambitious Danish project Netmusik, which intends to make music available online for users of public Danish Libraries was launched September on 1st, 2004. However a week after the launch it was discovered, that the Digital Rights Management system could easily be circumvented. More importantly in the wake of that breach both the Danish Consumer Council and politicians expressed concerns regarding the chosen technical solution. It was criticised for being biased and leaving consumers with no choice.

**Keywords:** consumer expectations, interoperability, libraries, music markets, public sector – Denmark

### Introduction

The Netmusik project launched September 1st 2004 by the public libraries in Denmark is financed by the Danish Ministry of Culture with approx. 4 million Danish kroner (550.000 Euro). The intention of the project is to make a large part of mostly Danish music freely available to citizens by launching an internet portal called Bibliotekernes Net musik (Net Music of the Libraries). From the start most local libraries participated in the

project making some 35.000 music tracks available for public download. The collection of tracks primarily contains popular Danish music but also includes classical music as well as foreign artists. The selection available reflects what could be negotiated as downloadable with the involved record companies. It is expected, that during its trial phase of two years the project will cover all public libraries as well as the selection of music will increase. Access to the system

allows users to download music that can be played on one computer for a limited period of 24 hours or one week. The system is based on download quotas allowing the local public library to set up individual quotas for its users (see Bisbjerg 2004, and the Netmusik website).

The musical content is based on a digitalisation project previously carried out by Statsbiblioteket i Århus (State Library of Århus) where most of the music published since 1982 in Denmark was digitally stored retaining full quality. Close to 400.000 tracks were stored and a portion of the tracks consequently used in the Netmusik system.

The project team behind Netmusik consists of two parties: Statsbiblioteket in Århus, who designed the user interface and implemented the access control, that makes the system available for citizens through the public libraries who participate; the other party is Phonofile a consortium of record companies and owners of the rights to the music, who reused an existing system for sale of online music and its digital rights management system in the Netmusik solution. The Danish minister of Culture, Brian Mikkelsen, in a press release at the launch, characterized the project as an ambitious effort to legally and freely make music available online for citizens. However the launch of the system was not to be without its troubles.

### **Breaking the copy protection**

A week after the introduction of the system it became apparent that the copy protection scheme behind Netmusik was not immune to circumvention. The project team had themselves described the DRM system as the "most secure in the world" making use of the Microsoft sound format WMA implementing DRM key-based protection, that locks a downloaded tune to the target PC, where the time limit and PC identification and verification is obtained by an online exchange of security keys the first time a track is to be played. Though this system relied on and required users to access the music through a combination of the Windows operating system and the Windows Media Player it was possible to access the music with a combination of another media player Winamp and a

special plug-in obtained through the internet. This allowed for saving the musical content in an unprotected sound file.

The technical solution chosen is in contrast to an online sale system which has been on the market for a year in Denmark. It is also originates from Phonofile. Here users are able to download mp3-files which are digitally watermarked making illegal copies traceable. However this solution was not chosen for Netmusik, presumably because the time limitation for listening to the tracks in Netmusik was a vital feature that could only be implemented with a DRM enabled system.

The news of this security breach caused surprised reactions from the project team behind Netmusik. Said Jens Thorhauge, director of the Danish Library Department under the Ministry of Culture: "That's really disappointing to hear. It has never been an item of debate that the music industry was to deliver the secure solution. We have not had any influence on the choice of the protection scheme. The music industry demanded that the distribution should take place using Microsoft's copy protection. As far as I understand that decision has been taken by major multinational record companies" (Nielsen 2004a).

The reaction from Phonofile, representing the music industry, was brief. Simon Munch-Andersen, head of IT operations commented: "It surprises me that it can be done. Windows WMA is the most secure format and I have never heard of this before. But it doesn't really make any impression on me, we're just using technology approved by the record companies" (Nielsen 2004a).

Meanwhile a Danish grass roots organisation advocating strongly against the use of copy protection, Piratgruppen.org, issued a detailed explanation on their website to be used by anybody wanting to circumvent the copy protection. One of the driving forces behind the Netmusik project, section leader Ole Bisbjerg, Statsbiblioteket I Århus, stressed that the circumvention of the protection was be considered as an illegal action infringing the Danish copyright legislation. He also stated, that the techniques involved would

not be possible for the ordinary user (Nielsen 2004b).

Still, the breaking of the copy protection did not lead to any swift changes in the protection scheme nor did it result in closing down the system. But the use of a proprietary DRM solution was to meet criticism from other sides.

#### **The limitation of choice for costumers**

The Danish Consumer Council, Forbrugerstyrelsen, commented the proprietary nature of the Netmusik project in a very direct way, stating that choice of Microsoft technology was a serious impediment of the free choice for costumers and citizens. Said Grit Munk of the Danish Consumer Council:

“It is an obvious problem, that the Netmusik solution demands the use of a particular operating system and media player software. Public libraries serve the population as a very important point of access to culture. Consequently libraries have at least the same obligation as other public bodies to deliver solutions that don’t require particular software or operating systems of the users” (Nielsen 2004b).

Member of the Danish Parliament, Morten Helveg Petersen of the centre party Det Radikale Venstre stated his intent to confront the Minister of Culture, Brian Mikkelsen, from the right wing party Venstre with the content of the publicly funded Netmusik project: “Publicly funded information technology projects must contain freedom of choice, so citizens are not forced into a specific software solution” (Nielsen 2004b).

#### **EU demands for open standards**

Presently the EU Commission is trying to develop a European policy on DRM. The work is taking place in the “High Level Group on DRM”, a working group consisting of participants mainly from the European consumer electronics sector but also joined by BEUC, the European Consumer Union (regarding the BEUC position see Böhle

2004, Kutterer 2004). In contrast to the Danish project, the preliminary recommendations from the working group advocate the development of open standards for DRM solutions. A work that should ideally be left to international standardisation bodies, the working group stresses in a recent report (High Level Group on DRM 2004, see also Orwat 2004).

#### **Bottom line**

The Danish project Netmusik exemplifies the present challenges involved in moving musical content online while maintaining a proper balance between the users’ right to consume music and respecting the rights of the owner of the artistic work. The technical solution chosen by the participants in the project was a given fact. The solution was insisted on by the international music industry, the participants confirm. However the practical evolution of the project has clearly revealed that the technical implementation does not work. It has flaws that make undesired copying possible. Additionally, and more important, it imposes a series of demands and restrictions for the legal users. They are tied to playing the music on a single computer; they are forced to use a specific operating system and media player software. Users that for various reasons don’t adhere to the technical requirements are left out in the cold. The use of proprietary technology is also in conflict with guidelines issued for information technology projects by the Danish Ministry of Science Technology and Innovation, as the independent think tank Cedi confirms (Nielsen 2004b). Furthermore the model for compensating the artists economically is tied to the number of downloads. Popular artists receive compensation based on use whereas artists whose work is not being downloaded are not compensated. Though this may sound fair, it leads to a partial departure from earlier practices where public libraries also invested in cultural items that were not of popular but of cultural significance.

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## DRM and music: How do rights affect the download price?

By: Marc Fetscherin, University of California (UC) Berkeley, United States and Cristina Vlietstra, University of Bern, Switzerland

**Abstract:** The aim of this article is to better understand the business models of online music providers by specifically focusing on the factors determining the download price for music and the role of rights in the price determination. For that purpose an empirical study was conducted. The results show that there is a huge price range for music downloads. Furthermore, the authors developed a regression model which can explain 88% of the download price. The study also shows that the downloading price is not only impacted by user rights such as the right to copy, burn and move to portable players, but also by other factors, such as the market segment of consumers in terms of geographical location or the music label of the song. Finally, the article provides possible indications for the success of iTunes, the most known and successful music provider so far.

**Keywords:** economic analysis – business models, consumer behaviour, consumer research, copyright law, music markets, survey

### Introduction

From a consumer's perspective the price of a product is one of the key buying factors. This is also true for music downloads. However, it seems that another important one might be what a consumer can do with the song once acquired. In that respect, an empirical study

was conducted taking into account the 19 best known and widely used music providers. The authors evaluated their business models with a focus on the price per download and the user rights granted to the download. In order to gather empirical data, the authors took the Top 20 World Charts and gathered various data for each song at each music



provider's site. In total, there were more than 3400 data points collected and analysed in this study (19 music providers x 20 songs x 9 data points per song).

### Huge Price Differences

Table 1 illustrates the different prices demanded by the different music providers.

Title	min	max
Amazing	0.99	3.57
Behind Blue Eyes	0.79	2.67
F**k It (I Don't Want You Back)	0.79	2.99
Hey Mama	0.79	2.67
Hey Yal	0.99	2.99
I'm Still In Love With You	0.79	2.67
It's My Life	0.79	2.67
Just A Little While	0.99	2.67
Left Outside Alone	0.99	3.57
My Immortal n/a n/a Not In Love	0.99	2.67
Red Blooded Woman	0.99	2.67
Shu Up	0.99	2.67
Slow Jamz	0.99	0.99
Superstar	0.99	2.67
The Way You Move	0.99	2.99
This Love	0.79	1.04
Toxic	0.79	2.99
Turn Me On	0.99	2.63
Yeah!	2.38	2.99

**Table 1:** Price differences of the Top 20 of the World Charts between 19 online music provider (US-Dollars)

Table 1 outlines for each of the 20 songs the minimum and maximum price demanded by the various music providers. This study does not take into account the download price in the case of a subscription or the download price in the case of pre-payment.

In the first column of Table 1 is the name of the song, where column two shows the minimum and column three the maximum price demanded by one of the music providers. Taking the example of the song "Red Blooded Woman" by Kylie Minogue: The song was available from 75% of all music providers analysed. It can be observed that the price ranges from USD 0.99 cents at iTunes and MusicMatch to USD 2.67 at Freeserve and HMV. The price difference between the cheapest and the most expensive is almost three times as high (i.e., 260%). There are even some music providers which did not offer this song as a download at the

time the study was conducted. Examples of this are the music providers Bymusic, Liquid, MSN, Skynet, and Virgin.

### Impact of Rights on Download Price

One of the main arguments the music industry uses is that download prices depend on the rights granted to the consumer. User rights are most of the time controlled and executed by so called Digital Rights Management Systems (DRMS) which not only control the access to digital music, but also its usage. In order to achieve their goals, they employ a variety of technologies such as password, encryption, watermarking and digital fingerprint. DRMS not only define which rights are granted to a consumer for a specific digital content, but also the limitation to these rights. In that respect, we collected the artist's name, the title of song, the label, the download price as well as the rights granted to the song and its limitations.

Through multiple regression analysis, the authors developed a model which explains 88% of the download price (R-Square 0.885) and shows that the rights granted to the consumer, such as the right to burn the song onto a CD or the right to move the song to a portable player, have an impact on the download price. On average, a music download from a US music provider costs 70 cents, giving the user the right of unlimited playing. A music download costs 15 cents more if the unlimited right to burn the song onto a CD is given to the consumer. Furthermore, the right to move the song an unlimited number of times to a portable player is valued at 24 cents on average per download.

However, the study also shows that there are other factors which explain the downloading price such as the market segment served in terms of geographical location. European music providers are on average USD 1.60 per song more expensive than their American counterparts. Furthermore, the study shows that the music label also plays a significant role in determining the download price. For example, songs from BMG and Sony are 12 cents, respectively 40 cents on average more expensive than those from Universal. Finally, the study shows that on average iTunes is one of the music providers restricting the

consumer the least in terms of copying, moving and burning songs.

### Conclusion

The aim of this article was to look at the business models of the various music providers with a special emphasis on the prices and the user rights of music downloads. The provided results are based on an extensive data set, taking into account 19 of the biggest and best known music providers, 20 Top world charts, 9 data points for each song resulting in total of more than 3400 data points. Our results have shown that the price range demanded is huge between the various music providers where some are between three and nearly four time more expensive than their competitors. Through multiple regression analysis the authors developed a model which explains 88% of the download price. They have shown that the download price is not only impacted by user rights, but said price is also influenced by other factors such as the market segment served or the label of the song.

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### Bottom line

Consumers have various methods and channels through which to access digital music. They can either illegally download music from peer-to-peer networks or legally access music through legal music providers. This article has shown that there might be possible explanations why consumers seem to prefer iTunes music store over other legal music websites. iTunes not only demands the lowest price per download on average but also least restricts the consumer. Thus price and user rights seem to be key buying factors for consumers. Or would you subscribe or revisit a music provider's website which demands a higher price than its competitors and restricts you more in the usage than other music providers? However, further analyses are required in order to better understand consumer purchasing behaviour for digital content such as music.

## In search of Greg Koch. A hands-on iTunes experience

By: Ulrich Riehm, ITAS, Karlsruhe, Germany

**Abstract:** This is a personal exploration of the online music service iTunes and some of its digital and tangible competitors. It deals mainly with the up-to-dateness and variety of products offered, in principal one of the key benefits of online music stores. The conclusion is, that iTunes is not as good as it could or should be, and in this case the surprising winner is a local branch of a big German media chain. These results are based on personal experiences. But a comprehensive test, done by German consumer journal "Test", confirmed them quite well.

**Keywords:** hands-on experience – consumer expectations, file sharing, music markets, P2P – Germany

### This is a story about Greg Koch

You don't know him? Nor did I, until a hot evening at the end of July this year, when I was driving my car from the office back home. Thanks to German public broadcast I listened to one of the rare programmes not only playing music, but also introducing music in an informative and critical manner. This programme, called "Blues Live", offered its audience a live recording of a concert by the versatile, US-American musician and guitar player Greg Koch. Sounds very good, what an intensive feeling, what a weeping guitar, what a sweeping drive. Maybe it's music for the 50-something, persons who know from their youth the Almond Brothers, Johnny Winter and, last but not least, Jimi Hendrix.

### This is a story about iTunes too

The iTunes service came to Germany on 15 June 2004. The hype about its excellent service and new horizons for legal music downloading was amazing (see Dufft 2004). I'm at an age where I have lost most of my hair and I feel no longer so enthusiastic about every new technology coming to the market. I have seen too many flops. But I'm still enquiring and curious. So I became member of iTunes in Germany. In fact I've paid money to Apple for music I'm interested in, burnt CDs, shared the music with colleagues and had some good and some bad experiences.

### Looking for Greg Koch at iTunes and other online music stores

After listening to Greg Koch on the car radio I wanted to hear more of his music. So I

started my iTunes software, linked to the German iTunes store, and searched for "Koch" – and got 155 tunes. But looking somewhat closer at this list, there was no "Greg", but "Fred" (children's songs), "Jil" (easy listening), "Lisa" (jazzy pop), and "Thomas" (German Schlager), and above all "Der Hölle Rache kocht in meinem Herzen" (The revenge of hell boils in my heart) an aria from Mozart's opera "Zauberflöte". Nice to hear, but at that time in July I wasn't in the mood for all this stuff.

But I've learned not to give up immediately. So I turned my mouse from the German to the American iTunes store, searched again for "Greg", and I really found two of his most recent albums "The Grip" and "Radio Free Gristle". Really enjoyable music, I thought, after hearing some of the 30 sec samples. Let's buy some of them. The answer was as follows:



(Besides the strange German the meaning of this message in English could be: "Invalid store. You are registered with an account, which is not valid for use of the US store. With this account you can only buy in the music store for German music.")

Only German music? Is it forbidden to buy in the USA? Hey, I thought we are living in the

21st century, in the era of globalisation and not in the 18th century with sectionalism, we call it “Kleinstaaterei”.

To heck with Apple, there are competitors. Let's try there. I must admit, that at that moment, I didn't know where to go. (“It's just a mouse-click away”, I heard a little demon singing). What are the names and the addresses of those online competitors? Hm. Google didn't help me, but I remembered a famous music portal from former times: mp3.com. Yes they are still alive, provided a little informative textual entry on Greg Koch, a list of his key albums, and their availability for download. That was what I was looking for. Mp3.com showed me, that Greg's tunes are available at iTunes USA, and from RealPlayer (downloads) and RealPlayer-Rhapsody (streaming). Why not go to RealPlayer? Same sectionalism: “Currently, we are only able to offer RealRhapsody to customers within the US”.

#### **There is a life outside the Internet**

It was getting autumn. The leaves were falling and I still missed Greg Koch. Forget downloading and try to get a tangible CD, I thought. At German Amazon they offered four albums. But every time I want to order an item at Amazon, I don't know my password. So I remembered, there is a life outside the Internet. A friend of mine told me that in his town, there is a really good CD store, with a huge rock, blues, and jazz department. I phoned them, and the answer was disappointing. No Greg Koch, but they can order it for me. Next day I had some business in my home town. We had a really good media ware house with an excellent CD department and competent salesmen. But they went bankrupt some years ago. So I was not very optimistic when I entered the branch of one of the big electronic media chains in Germany. I headed directly for the information desk. What a surprise! The salesman looked in his computer and told me, there must be two albums from Greg Koch. OK, he found one of them, and I bought it. Good end to a long story, isn't it?

#### **Please forgive me music industry, I also tiptoed to the dark side of the Internet**

Some days ago we had an INDICARE meeting. The younger colleagues argued, that you can not discuss DRM and copyright issues in the age of digital media if you have never used a P2P network. I had to confess, that I never had done this precarious thing. I have to try it. But how to do this? And what happens, if I install such illegal (?) software on my office computer? Would I risk losing my job or going to jail? So one morning I visited a good friend of mine, took an espresso and a croissant for breakfast and searched one of the P2P networks for Greg Koch. Yes we found “Heute ein König” by Hans-Uwe Koch, we got Tim Koch, and some titles, which sound similar to tunes from Greg Koch's albums. But after 45 Minutes we gave up.

#### **Is the whole story only of anecdotal relevance?**

This is a very personal story. I have not done a systematic and scientific exploration on the up-to-dateness and comprehensiveness of iTunes offers. Such a systematic test has been undertaken by the German consumer journal “Test”. They support my results: From a pool of 100 current music titles, they only found 47 at iTunes (Test 2004).

#### **Bottom line**

Although usage of iTunes isn't as self evident as some tell us, all in all, iTunes give you the feeling, that you can become familiar with it. But user friendliness is only an essential not a sufficient condition. There are two typical benefits of legal online music stores in comparison to street stores: The offerings could be more up-to-date, because some stages of the production process are no more necessary (like pressing the CD, doing printing work). The offerings could be more complete and more comprehensive, because there are no real space limits.

This opinion article presented a single story in which these expectations were frustrated. Is this the case, user friendliness alone will not bring this service to a success. Consumers have a lot of other choices. They can use P2P-networks – this is not in every case a

successful and convenient way –, they can use CD stores on the Internet, mail order or street stores. The new online distribution channels will only win with better service and content.

p.s. At the end of September iTunes Germany added to its assortment two albums by Greg Koch. Yes, now you can buy “The Grip” (not the album for €9,99 but the 17

tunes each for €9,99) and “Radio Free Gristle” (the whole album for €9,99 and the 27 tunes each for €9,99 – some last only a few seconds). But it’s too late. I have made my choice. And for those who interested in Greg’s music: He offers on his web site some free goodies like Jimi Hendrix’s “Red House”.

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## The music came to Berlin: Popkomm 2004

By: Nicole Dufft, Berlecon, Berlin, Germany

**Abstract:** The Popkomm music fair took place in Berlin this year from September 29 to October 1. In previous years, the ailing music industry had used the Popkomm to whine about decreasing music sales and to blame Internet piracy for its bad health. Which direction did the discussion about consumer’s acceptance of DRM, standardization, privacy concerns or DRM-related legal developments take at this year’s Popkomm? This article gives a summary of the discussions.

**Keywords:** conference report – consumer expectations, music markets, privacy, private copy

### Introduction

From September 29 to October 1 2004 the music came to Berlin: “Popkomm”, an international music fair and congress, which had formerly taken place in Cologne, opened its doors in Berlin to 663 exhibitors and more than 1.600 participating companies from 41 countries. For 16 years now, Popkomm has been an important meeting point for the music industry. In previous years, the ailing music industry had used the Popkomm to whine about decreasing music sales and to blame Internet piracy for its bad health.

This year, Gerd Gebhard, chairman of the German Phonographic Association, announced that the worst is over for the music industry: sales of music DVDs continue to grow, sales of online music services are on the rise, sales of ring tones are mounting, and overall music sales are decreasing at a slower pace than over the last three years (Gebhard 2004). And what about piracy? Which role did the discussion about copyright infringements, DRM and the consumers’ acceptance of DRM play at this year’s Popkomm?

DRM was an important topic in several ways: DRM was present wherever the digiti-



sation of music was at the agenda – and this was very often the case in the booths of the exhibition hall as well as on the congress. In addition, two of the 42 panels of the Popkomm congress explicitly dealt with DRM and consumer acceptance of DRM. And last but not least, the reform of German copyright law, and with it “the right to private copying”, was intensely discussed during the Popkomm congress.

#### **DRM acceptance: “No consumer wants a DRM”**

Keynote speaker of the congress was Eddie Cue, Apple’s Vice President Applications. He claimed that iTunes is so successful, because it was designed from a consumer’s perspective. He regards seamless integration and good user experience as the key reasons for iTunes’ success, because they allow iTunes to effectively compete with Internet piracy. “iTunes offers better user experience than Kazaa” said Cue.

According to Cue, the consumer’s perspective on DRM is very simple: “No consumer wants a DRM,” he stated. “Most people are honest, if you give them a great product”. Apple’s official approach to the problem of digital piracy is to give consumers good products they are willing to buy. However, as we all know, the result is not that Apple doesn’t make use of DRM systems. Rather, Apple doesn’t talk about DRM as much as others. They call it “Personal User Rights”. And, as Alex Luke, Director of Music Programming and Label Relations at Apple, added, “consumers shouldn’t recognize that a DRM system is working in the background”.

#### **DRM standards: private party or open house?**

On the panel “DRM: private party or open house? Proprietary systems vs. open standards” the importance of DRM standardisation was discussed. Pierre Emmanuel Struyven, Senior Vice President at Universal Mobile International, stressed that the lack of standardisation in DRM systems implies higher costs for content distributors, because it makes encoding in many different formats necessary. Opinions differed, though, about how to achieve better standardisation. While Willms Buhse, Vice Chair of the Open Mo-

bile Alliance, sees open DRM standards as the ways and also as an absolute necessity to enable innovative content services such as superdistribution, Cyrill Glockner, Senior Business Manager at Microsoft, believes that proprietary systems should form the basis of DRM systems. In his ideal world, different proprietary DRM systems should be able to talk to each other to enable interoperability and ease of use for consumers.

The issue of using DRM for CRM (Customer Relationship Management) was raised from the audience. It was stated that for the first time, DRM enables the music industry to get to know their customers and their usage behaviour in detail, without spending significant sums on market research. However, it was pointed out that this could raise significant privacy concerns for consumers. Therefore, DRM issues should strictly be separated from CRM issues to not further weaken customer acceptance of DRM.

#### **DRM acceptance: Control phobia vs. megalomania?**

The panel “Hot potato rights management – control phobia vs. megalomania?” explicitly discussed how far consumers accept DRM systems. It became clear that DRM needs to impose as few restrictions as possible in order to be accepted by consumers. However, simple watermarking techniques, which allow the tracking of content files back to the original user, cannot replace far-reaching DRM solutions the panellists from Microsoft, Musicnet and Apple agreed. Most large content providers would not accept such solutions to protect their content. Only some smaller, independent labels would be willing to rely solely on watermarking or fingerprinting for their digital music offerings.

All panellists agreed, though, that DRM is not only about copy protection, encryption and usage tracking. Rather DRM should be used as a new marketing tool, to offer new features, new products, and invent new ways to offer content.

#### **A basket full of questions: The new copyright law**

On the panel “A basket full of questions: The new copyright law – politics and music biz in harmony?” politicians from all larger politi-

cal parties in Germany discussed the recently published draft of the second basket of the German copyright law. Special focus was given to the question of private copying. The new law intends to allow private copying, given that copies are not made from illegal sources and that the copied content is not copy-protected by technology.

The representatives of the SPD (Social Democratic Party), Dirk Manzewski, and of the FDP (Free Democratic Party), Hans-Joachim Otto, supported the recent draft and the private copying exemption. The representative of the Green party, Jerzy Montag, even regarded private copying as a consumers' "right" that needs to be protected against technical limitations. On the contrary, the representative of the CDU (Christian Democratic Party), Günter Krings, stated that consumers do not have a right to private copying and that the law needs further modifications in order to fully respect the interests of copyright holders. In his view, there even needs to be an obligation for ISPs to make personal data of clients accessible to copyright holders, to enable prosecution of copyright infringements under civil law.

However, Germany's economics minister, Wolfgang Clement already stated in his opening speech that meeting their clients in the courtroom would not really help the recording industry. Rather the industry has to understand that new technologies are changing the usage behaviour of consumers and has to pick up consumers from there. Accordingly, copyright law has to respect not only the interests of the music industry, but also those of consumers and technology manufacturers (Bundesministerium für Arbeit und Wirtschaft 2004).

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#### Bottom line

Popkomm showed once again: The music business is not only about music anymore. In the digital world, technology is playing an ever increasing role for the creative and cultural "industries". Accordingly, technology providers were more present at this year's music fair than in previous years. Downloading platforms, music search engines, ringtone providers and particularly various mobile technology providers did not only have a strong presence in the exhibition hall. They also dominated the discussions and panels of the Popkomm congress.

In parallel to this trend towards an ever increasing role of technology, a rather pragmatic view of DRM and content protection could be found in presentations and discussions. This view, which puts the consumers and their wants back into focus, was in striking contrast to the strongly expressed positions characterising many previous discussions about DRM. It seems that many technology and music firms have accepted that consumers want to buy good, integrated music products and services that respect new usage habits resulting from the digitisation of music. And only if technology providers and the music industry work together to fulfil these expectations, will the future of the music industry look bright again.

As Germany's economics minister Wolfgang Clement stated: "I ask the music industry to win back music lovers, by offering an attractive and broad range of legal products to them!"

DRM. Currently, she works in the field "digital consumer". She is a member of the INDICARE project team.

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## It's not a right, silly!

### The private copying exception in practice

By: Natali Helberger, IViR, Amsterdam, The Netherlands

**Abstract:** Not all consumers are willing to accept DRMs. This article tells the story of two consumers who were not, and who went before the courts to claim what they thought was their good right – the "right to private copying". It tells the story of their cruel awakening, and why it had to come like this.

**Keywords:** legal analysis – consumer rights, copyright law, EUCD, private copy – Belgium, France

#### The case of Stéphane P.

Mr Stéphane P. in France bought the DVD of Mulholland Drive. As he realized later, it was a purchase with consequences. Mr. Stéphane P. was about to make a copy of the DVD for his personal use, perhaps he wished to copy the DVD on to his computer hard-drive so that he could watch the film the next time he was on the train. But then, suddenly, he realized that this time the copying did not work. What he did not know when he bought the DVD was that it was electronically protected against copying. He could not have known either – the fact that electronic copy protection was employed was not mentioned anywhere on the DVD.

Mr. Stéphane P was annoyed. Understandably, one may add. In fact, he was so annoyed that he decided to sue both the production companies and the distributor in France. He found an ally in the French consumer organization L'Union fédérale des consommateurs "Que Choisir" (UFC). Together, they started proceedings before the Tribunal de grande instance de Paris 3ème chambre (Tribunal Paris 2004). The plaintiffs claimed, among others, a violation of Mr. Stéphane P.'s "right to personal copy" under the French copyright act. In addition, they also claimed that according to French consumer protection law there was a duty for the seller of the product

to inform the consumer about the substantial characteristics of a product.

#### The court's decision

The court was not impressed. It took one sentence to correct an error that Stéphane P., and, together with him, probably the majority of consumers had maintained all these years: there is no right to personal copying. The personal copying exception in French copyright law, so the court says, has not the quality of a "right". Instead, the personal copying exception describes the (exceptional) case that consumers who want to make a copy for personal use are not obliged to acquire the rightsholder's permission before doing so. The court went further and argued that nothing different could apply once France had implemented the European Copyright Directive. The Directive left it to member states whether they would provide for a personal copying exception. But even if France decided to do so, the personal copying exception must, according to the Directive, not conflict with the normal exploitation of a work or unreasonably prejudice the legitimate interests of rightsholders. The court then decided that the selling of copies of DVDs was a case of normal exploitation, and rightsholders had a legitimate interest to recoup the investments made. Voila. But it got even worse. Not content to reject the claim, the court ordered Stéphane P. and UFC to

pay damages of 9,000 Euro to the defendants.

#### The case of Michel D.

A decision in Belgium before the Tribunal de Première Instance de Bruxelles went in a similar direction (Tribunal Bruxelles 2004). This time, it was Michel D. who bought a CD that could not be copied, again because electronic copy protection was in place. And similar to the court in France, the Belgian court concluded that the personal copying exception is not a right that can be invoked by consumers. Instead, the court called the personal copying exception a “legally granted immunity against prosecution”. From the perspective of the consumers, the most significant difference between both decisions was that this conclusion turned out to be less costly in Belgium – less than 1,000 Euros.

#### Discussion

These two (rough) sketches of recent pieces of case law in France and in Belgium may illustrate a particular feature of copyright law: copyright law defines rights of the rightsholder with respect to the use of her work. It does not define rights of users in relation to rightsholders. Insofar, copyright differs from other property orders that have carved out clear rights to protect the interests of the public (e.g. rights of way, rights of inhabitants of rental flats, access rights in information and telecommunications law, etc.). On the contrary, consumers have no clear legal standing under copyright law. This might sound at first surprising: scholars, policy makers and legislators emphasised often enough not only the need for adequate copyright protection, but also the importance to limit ownership in intellectual resources where the interest in free use of such resources has precedence. And, after all, copyright law does define limits to what rightsholders are entitled to do, respectively the duration of exclusive rights, the sorts of uses of intellectual works that are considered desirable where exclusive rights are granted or the kind of intellectual resources that shall not be made subject to copyright protection at all. Once a right has expired or an exception applies, consumers are entitled to use that piece of film, music, literature etc. The

rightsholder has no legal standing to prevent this. And the concept worked – until DRMs entered the scene.

#### *Copyright exceptions and electronic fences*

DRMs are a technology to manage and enforce rights and interests in digital works. This can be copyrights. But it can also be more generally economic interests to recoup investments, or to control forms of usage that, so far, could not be easily controlled. Copying for personal purposes is such an example. Whether or not users of DRMs may override existing limitations and exceptions in copyright law is one of the prominent questions in the recent copyright law discussion. An introduction to this controversial discussion would lead too far (for an overview of the discussion see Helberger 2004; see also Lambers 2004). But let's assume for one moment that the following was true (needless to say that the matter is far more complicated (see Guibault 2002): If someone was to fence in a piece of land (or information) that does not belong to him, or if someone was to exercise control to which he is not entitled, he would be acting contrary to the law, and therefore such behaviour would be simply not permissible. Provided, thus, an electronic fence would prevent a consumer from benefiting from a personal copying exception, such a behaviour cannot be permissible. Or would it?

#### *Why the Copyright Directive does not solve the problem*

Article 6 (4) of the Copyright Directive addresses the case that DRMs overrule exceptions and limitations of copyright law. In simple words, the Directive does not declare explicitly if such behaviour is permissible or not. It only suggests that rightsholders should take – voluntarily – measures to make sure that consumers could benefit also in the future from exceptions. And maybe the makers of the directive already suspected that DRM controllers might have few incentives to do so, because if rightsholders fail, member states are to take appropriate measures to make rightsholders do so. Meanwhile, member states had to implement the Directive, and with it, Article 6 (4) of the Copyright Directive (for an overview see <http://www>.



[euro-copyrights.org/index/14/49](http://euro-copyrights.org/index/14/49)). What is interesting to notice for the given context, is that, generally, a tendency can be observed to pass on the difficult decision further to courts and/or specialized arbitration bodies. In other words, if a consumer cannot benefit from a national personal copying exception, he is often expected to seek agreement first. If negotiations fail, the next step would be to initiate proceedings and let a third party, a specialized arbitration body or court, decide.

How will the concept work out in practice? A first hurdle is the decision with whom to negotiate. The shop assistant? David Lynch? Studio Canal? Universal Pictures? Note that the rightholder is not always identical to the user of the DRM (for example, DRMs can be used by the production company, even against the will of the rightholder). Provided that the consumer found somebody to negotiate with and negotiations failed, will the consumer initiate proceedings? Cases such as the case of Stéphane P. are not very encouraging. Who else would be willing to risk paying almost 10,000 Euro because of one film? And in some countries consumer organizations do not even have a right of action. Will the consumer know that he can complain, or where? And as if the “happy end” was not unlikely enough, provided a consumer man-

aged to take all the previous obstacles: was that not exactly what Stephan P. and Michel M. did, with so little success?

### Bottom line

A property order is not static but develops together with societal, economic and technological developments. With the introduction of Article 6 of the Copyright Directive (protection of technological measures), copyright law has taken a step into a new direction. Before, it was up to the rightholders to initiate proceedings against consumers who did not respect the rightholder’s rights. Since the implementation of Article 6 Copyright Directive into national law, it is up to consumers to start proceedings against rightholders who do not respect copyright exceptions. But, unlike rightholders, consumers, so far, have no legal standing. Unless there is a provision such as in the German Copyright law, saying that the beneficiary of an exception can compel the DRM controller to make available the means to benefit from that exception (Article 95b (2) German Copyright Act). In all other countries consumers risk a similar answer as Stéphane P. or Michel M.: It’s not a right, silly!

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## Was it ever a right?

### What record labels tell us about consumer rights

By: Michael Rader, ITAS, Karlsruhe, Germany

**Abstract:** The right to private copy has recently been denied in two court cases initiated by the music industry. In both cases, the consumer believed he had the right to this copy which is at least suggested by the acknowledgement of similar rights related to computer software. The article examines information to consumers provided with respect to their rights on record labels. Copying has only really become an issue since the widespread availability of suitable devices. Even then, it has at times been tolerated and only seriously been prosecuted when the economic health of the industry has waned. More systematic research is needed to explore the hypotheses based on visual evidence.

**Keywords:** legal analysis, historical analysis – consumer rights, copyright law, first sale doctrine, music markets – USA

#### Introduction

This article was inspired by Natali Helberger's article on two court cases in different European countries denying purchasers of recordings (CDs or DVDs) the right to private copy (Helberger 2004). While certain popular magazines have been arguing that consumers have such a right and urge purchasers to return copy-protected recordings to the stores, the industry is arguing that it is not actually selling copies of recordings for consumers to do what they want with them, but only the right to listen to or view the recordings under terms usually determined by the industrial partner in a contract concluded through a purchase. A question which readily comes to mind is whether this position really represents a change. For this purpose, it is instructive to read the information provided to customers on record labels (See the gallery of record labels from 1920 until the present). This information does obviously not completely tell us about the real legal situations – laws, the frequency of copyright-related law suits etc. – but it does provide leads which could be explored at greater length by legal specialists. The critical variables seem to be available technology for copying and the overall state (health) of the music industry at any time.

#### Early days – fights over technological patents

The very earliest recording physically inspected for this purpose was a one-sided

recording by the Italian tenor Enrico Caruso, published in the early days of the twentieth century. This has no information regarding consumer rights at all. While there were machines for home recording available, these were costly and the results of dubbing a professionally recorded performance on such a machine were likely to be highly unsatisfactory since they were designed mainly for recording speech (Dictaphones) and the costs were prohibitive.

Most information on things not related to the performance contained on early records was on the manufacturer and any patents on the technology applied to make the recordings or to produce the records themselves. This to some extent reflects on the situation in the courts, where rival manufacturers sued each other over such things as material, types of recording (e.g. double-sided recordings, vertical vs. lateral grooves, cylinders vs. flat discs) etc..

#### The first real challenge – wireless

A major challenge to the recording industry as a whole first came from wireless broadcasting in the 1920s. The initial reaction of the industry was to draw up contracts with their major artists forbidding these to work in the rival medium. Even so, as the fidelity of broadcasting improved, record sales declined, forcing the industry to improve its own audio standards. This resulted in the introduction of electronic recording and

playback. While this revived the fortunes of the record companies for a while, the economic depression following the 1929 stock market crash put sound recordings in the luxury category so that sales again plummeted, causing a major crisis in the industry.

In this situation, radio gained popularity as a means of entertainment – from the nineteen thirties until the mid-fifties, radio was perhaps the major domestic source of entertainment until it was replaced by television. The music industry reacted by offering resistance to such things as sound quality improvement, by delaying the introduction of FM radio and imposing restrictions on its outreach. Recordings from the 1930s (and possibly the late 1920s) bear the caption “Not licensed for broadcast”. Broadcasting licenses were the subject of a separate agreement between the broadcasters and performing rights organizations, such as ASCAP (American Society of Composers, Authors and Publishers) or BMI, although it has also been pointed out that licenses were sometimes given free of charge once it was realised that broadcasting was also advertising and boosted sales of recordings.

While home recording technology was available, it was not widespread and probably chiefly used to make so-called airshots – off-the-air recordings of live performances. Of greater concern to the industry during this period would seem to have been the re-sale of records (the second-hand market). Recordings from the later 1930s and thereafter bear the statement “Manufacturer (or some abbreviation thereof) and original purchaser have agreed this record shall not be resold or used for any other purpose”. Presumably this restriction was introduced because the music industry felt it could boost sales by forcing people to buy new records if they wished to hear them. Some records also prohibit selling “below price fixed by the patentee” (meaning the record company). The “first sale doctrine” in the US and parallel rights in other countries, such as the “exhaustion of rights” in the UK, now acknowledge the right of owners of legally purchased copies of recordings to re-sell these. Keeping a private copy is forbidden under this doctrine.

Another common restriction prohibits “public performance” without license, indicating that there were such things for record recitals or dances to recorded (rather than live) music. Towards the end of the Second World War, some recordings bear the simple message “Licensed by manufacturer only for non-commercial use for phonograms in homes”.

### Enter the tape recorder

After the end of the Second World War also, tape recording achieved sufficient maturity to be used at first within the industry itself to make recordings and significantly later for home use. Some time in the late 1950s or early 1960s, long playing records, which had emerged by this time, included in their message to buyers a ban on unlicensed copying.

Strangely, many records from the 1960s or 1970s had no information on restrictions at all. Information on labels and sleeves usually advertised the virtues of recording technologies employed, although one sample inspected ruled out copying, public performance and, additionally, hiring.

The 60s and 70s in retrospect seem to have been the heyday of the recording industry with claims by artists (Crosby, 2004 – yes the David Crosby of CSNY and Byrds fame) that they had great freedom at the time, and that the record companies were run by people who loved the music and not just the money. It was during this period that the cassette tape and a range of devices suitable for its recording and reproduction entered the scene, making home copying a viable proposition for virtually anyone. In 1971, there was a “sound Recording Amendment” to the 1909 US Copyright Statute. While this was aimed mainly at curbing bootlegging of vinyl LPs, it also applied to cassette recordings. A tax on blank cassette tapes was proposed by industry at this time, but not granted until the 1980s. The reason for lack of pressure was a period of continued growth of music sales. What is seldom remembered now is that the economic situation of the industry was actually boosted by sales of cassette recordings: for a brief time sales of music on pre-recorded cassettes exceeded those of vinyl LPs. At around this time, LPs sometimes

included the information that copying for personal use was tolerated. This is probably the origin of the perceived right to private copying. It was possibly a concession to habit (so-called “party mix” tapes compiled from personal collections) and also due to reservations about criminalising the customer in an otherwise healthy climate, apart from the problems in seriously prosecuting infringements.

However, a 1980 Amendment to Section 117 of the US Copyright Act of 1976 acknowledges the right to make backup copies of computer programs for use in the case of destruction. It is this right which forms the basis for recent claims to the right to personal copies.

The advent of the standardised compact disc in the early 1980s stopped a beginning downward trend in sales by the music industry since many consumers made a complete switch to the new medium. Cassette machines were still used for copies, which were now clearly inferior to the original recordings. Digital Audio Tape would have provided the means for quality copying but never achieved any breakthrough due to built in “serial copy management” and lack of backing from the industry as an alternative medium for sale of pre-recorded music.

### **Digital technology brings the issue to a head**

CDs from the 1990s until the present bear the legend, “All rights of the producer and owner of the recorded work reserved. Unauthorized public performance, broadcasting, copying and hiring of this record prohibited.” With the advent of cheap CD burners and even cheaper blank CDs, it became possible to produce virtually identical copies of the original recordings. Digital compression techniques have even made this unnecessary, since the vast majority of listeners is completely satisfied with good compressed versions.

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The reaction of industry has been the introduction of restrictions to use programmed into the media themselves. Instead of describing conditions of use, the media bear warnings that they are copy controlled and might not function in certain devices. There is certainly no acknowledgement of any right to make copies for personal use or as “back ups” in case the medium itself is damaged or destroyed.

Restrictions on use throughout the history of recorded sound thus appear to reflect technological developments posing alternatives to commercial recordings to copy recordings bought by others, or to provide the opportunity to listen without prior purchase (public performance, hiring, to some extent also resale). With the industry arguing that buyers do not actually own recordings, it could be argued that sales of used sound recordings has never been legal. While consumer information indicates that this is contentious, the first-sale doctrine has acknowledged the right to resale. The general situation also seems to have been no different in the US than it is throughout Europe. These are obviously hypotheses based on the information provided to customers of the recordings. Only serious legal research can provide the facts.

### **Bottom line**

Apart from a brief period of tolerance starting in the mid-1970s, copying always seems to have been prohibited, or at best subject to some kind of authorisation. There is also some doubt on whether consumers have actually ever “owned” the physical recordings or whether these were simply a means to transmit rights for a limited period. The restrictions on public performance and resale would seem to imply this position on the part of industry, which is perhaps entirely encapsulated in the statement “Licensed by manufacturer only for non-commercial use for phonograms in homes”.



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<http://www.pbs.org/wgbh/pages/frontline/shows/music/inside/cron.html>
- ▶ Gallery of record labels from 1920 to the present



**Figure 1:** A c. 1920 recording only referring to the trade mark on the (long defunct) label's name. (The rights are probably still claimed by BMG-Sony, Time-Warner or someone else).



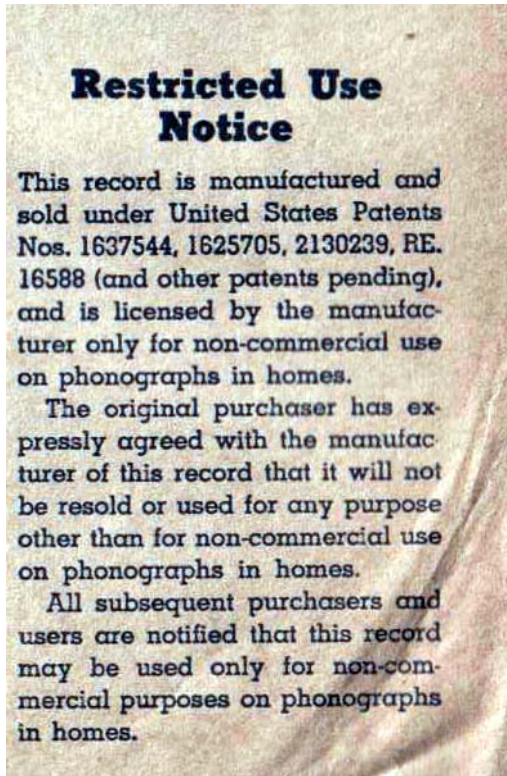
**Figure 2:** A record issued by a subsidiary of the well-known independent label, Blue Note. This only states that the record may not be broadcast on the radio.



**Figure 3:** This US recording contains a lot of information including patents going on to state that it is licensed only for non-commercial use for phonographs in homes. The second line tells us that “Mfr. & original purchaser have agreed this record shall not be resold nor used for any other purpose...” (Making flower bowls of unwanted records was popular in the 1950s).



**Figure 4:** This 1952 British recording prohibits unauthorized public performance, broadcasting and copying.



**Figure 5:** Record bags sometimes contained information to consumers. This 1950s sample tells us all.



**Figure 6:** Now we're in the LP era. This German release on the then independent Atlantic label has no restrictions at all. There is also no information on the cover or inner sleeve. The 1960s and early 1970s were regarded by many as the heyday of the recording industry. American records bore no different information.



**Figure 7:** This early British recording (1970) by Superstar Elton John prohibits copying.

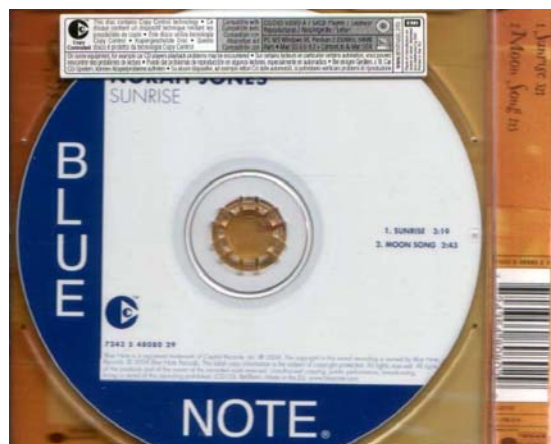


**Figure 8:** A 1975 German issue states that copying (except for personal use) is prohibited. This kind of information is included on recordings from other labels in Germany around this period. Polydor labels are more boring than this one.





**Figure 9:** In the CD era now, this German recording makes no exception to the ban on copying. This one states that copying without permission is prohibited. An innocent customer might assume (s)that he has to ask for permission. Otherwise the record company assumes that customers know which rights they have.



**Figure 10:** A new, copy controlled CD. Not only is unauthorized copying, public performance, hiring or rental prohibited, but the label contents are also copyrighted. In addition the medium is copy-controlled and the label at the top of the picture bears the warning: "On some equipment, for example car CD players, playback problems may be encountered". The album from which the single CD is taken contains a compressed version of the music and a special player which installs itself when the CD is inserted in a computer drive. It didn't work when I made an attempt to play it on my Sony computer and there is a rumour that HMV's player contains a virus. At any rate, Blue Note is no longer independent (see figure 2) but belongs to EMI.

**About the author:** Michael Rader studied sociology, psychology, political science and economics. He joined ITAS' forerunner AFAS in 1979 and has since worked mainly on the impacts of information and communication technologies. He has led several ITAS projects and is currently involved as workpackage leader in FISTERA (Foresight on Information Society Technologies in the European Research Area). In INDICARE, he mainly plays the role of an unobtrusive copy-editor. His own record collection, accumulated over almost 40 years and including items from the beginning of the 20th century to the latest copy protected CDs, forms the basis for this article.

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## Who protects the un-protected?

### Open access publication needs DRM!

By: Frederick J. Friend, Consultant, High Wycombe, United Kingdom

**Abstract:** Increasingly copies of journal articles and other academic content are made freely-available on the Web under an open access publication model. The benefits to readers, to authors and to society from toll-free access to research publications are being realised. Protection measures are still required to prevent abuse of authors' rights through plagiarism or unauthorized changes to the content, even though such abuse may only occur infrequently.

**Keywords:** policy analysis – open access, public sector, scholarly publishing

### Introduction

A revolution is taking place in scholarly publishing, particular in academic journal publishing. The availability of the Internet and of common access to word processors has made possible a radical change in the way in which research reports can be read. The change is not simply one of technology – although search engines do open up a new world of information for many students – but alongside the technical changes authors, funding agencies and governmental bodies are taking a new look at the structures within which taxpayer-funded research is made available. Why should publicly-funded libraries have to buy back the journal articles authored by academic staff in their own university? Why should academic authors have to sign away all rights to a publisher and have to ask for permission to make multiple copies of their own work for teaching? Asking such questions has led many in the academic community to realise that better ways of making research available are feasible in an Internet environment.

### The Budapest open access initiative

Freely-available journal articles have been published for many decades, but much of the recent interest in the possibilities of open access publication derives from a meeting in Budapest in December 2001. This meeting, sponsored by the Open Society Institute, resulted in the Budapest Open Access Initiative (see BOAI). The BOAI manifesto describes the benefits to humankind from toll-free access to research results and sets out two strategies to achieve open access to jour-

nal literature. The first strategy is to encourage the deposit by authors of preprints or postprints of journal articles into websites known as “repositories”, managed either by a university or by a research organization. Many publishers now permit authors to make such “selfarchiving” deposits (see SHERPA). The second BOAI strategy is to encourage the development of new journals on an open access business model or the conversion of existing journals to such a model. The open access business model moves the cost of publication from libraries and users to authors and funding agencies, treating publication as part of the research process. High subscription costs imposed by publishers to protect their income have restricted access to the results of publicly-funded research for people across the world, and the new open access model allows unlimited barrier-free use. It is also good for authors, leading to higher use and more citations of an author's work.

Both BOAI strategies are proving successful, with many universities and funding agencies across the world setting up repositories and encouraging their authors to deposit preprints or postprints, and around 1220 peer-reviewed journals are now available on an open access business model (see DOAJ). Most of these new journals are being managed on a smaller budget, at less cost to the academic community than subscription journals, without sacrificing quality. Much remains to be achieved, however, before it can be said that access to the world's research output is able to generate the benefits to human personal, medical and economic development it has the poten-

tial to do. The political move towards open access to UK research has been given an impetus through the publication of a Report of the House of Commons Science and Technology Committee (Committee on Science and Technology 2004) and in the USA the National Institutes of Health is seeking political approval to require authors to deposit articles based upon the research it funds in the PubMed Central database. Both these initiatives are being watched closely by authorities in other countries.

### Copyright and open access

Over the past few decades copyright ownership has been used by publishers of scientific journals to protect their revenue, as they have required authors to assign copyright. Constructive dialogue between authors, publishers and academic leaders has taken place, for example through the work of the Zwolle Group, looking at the rights each group of stakeholders might need (see Zwolle Group). The publishers of open access journals have adopted a very different approach, encouraging authors to retain copyright. For users of open access content, whether in repositories or in open access journals, there have been no limits on the number of copies they can make, so that to the user copyright has ceased to be a restriction upon their academic work. This is not to say, however, that copyright is unimportant in an open access publishing environment. When users of journal articles no longer have to register to read or to copy the content, the protection given by copyright legislation *appears* to disappear. In reality the protection is still there. The author still owns copyright and the copyright legislation in force in the author's country still protects her or his copyright, but the protection is less visible to the reader, who may think that because the content is available

without charge, anything can be done to change the content.

The risk authors run under an open access publishing system is that a reader will plagiarise their work to the extent of claiming that it is their own, or change the content electronically to the extent that the research results appear very different to those results the author recorded. The risk of such malicious abuse is very low, and the risk exists with subscription content as with open access content. Nevertheless the managers of repositories containing selfarchived content and the publishers of open access journals need to take the risk seriously and put in place copyright management procedures to minimize the risk. Copyright cannot be ignored in an open access environment. The means adopted to protect authors' rights can be a mix of legal and technical measures. The most important measure is to give the reader a clear indication of what can or cannot be done with the content, e.g. that any number of copies may be made but that the author must be acknowledged and the text not changed. The Creative Commons Licence is used by some open access publishers, and the responsibility to respect the rights of the author identified in that Licence must be made clear to the reader of the journal article. The Digital Rights Management approach has been used under the subscription model but equally it will be very useful under an open access publishing model, not to restrict the reader unduly but to set the limit to readers' privileges at the prevention of abuse. This is not so much a question of technical protection measures as of good management of open access sites. Open access content could be described as unprotected by copyright. It is not unprotected, but measures need to be put in place to ensure that it is seen to be protected.

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## Approaching the DRM needs of the educational system in the UK

### A review of Intrallect's DRM study on behalf of JISC

By: Ulrich Riehm, ITAS, Karlsruhe, Germany

**Abstract:** DRM issues are increasingly reaching attention in the educational system and decision makers have started thinking about the strategy to adopt. In the UK the study carried out by Intrallect on behalf of the Joint Information Systems Committee is an interesting piece in this process. We will briefly describe the structure of the report and its main assumptions before we turn to the "use case methodology" applied to gain insights into the goals and actions of the different stakeholders in the educational sector – independent of technology matters. Knowing what people want is then the basis to define what the technical requirements are – in this case of DRM systems for the educational system. We regard the approach as very interesting, do however have mixed feelings with respect to the presentation of the outcome.

**Keywords:** review – higher education, libraries, public research, public sector – United Kingdom

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#### Background

On its website JISC, the Joint Information Systems Committee of the United Kingdom, describes its role as follows: it "supports further and higher education by providing strategic guidance, advice and opportunities to use Information and Communications Technology (ICT) to support teaching, learning, research and administration. JISC is funded by all the UK post-16 and higher education funding councils." Recently a study on DRM was commissioned by JISC to Intrallect Ltd, Linlithgow, Scotland (Duncan et al. 2004). The objective of the study was "to make recommendations on the best approach for JISC and the UK education and research communities to adopt in relation to Digital Rights Management" (p. 5). The study started in February 2004. An interim report was presented in June and three

months later the present final report was published. The work consisted of a literature survey, a series of workshops and interviews as part of the use case methodology, and finally an analysis of requirements and an assessment of options for DRM in UK's higher and further education system.

The structure of the report is straightforward: a first chapter gives a short introduction to how DRM is understood and an overview on "Digital rights in UK Higher and Further Education". The "use case methodology" is explained then in the next chapter. The largest chapter deals with the "Outputs" including a discussion of the results from the "use cases" and the requirements derived from them. The report finishes with "Conclusions" and "Implications".



## DRM in the context of teaching, research, and libraries

There are three main sectors the report is dealing with: teaching, research, libraries. What does DRM promise for these sectors? According to the authors DRM could be a key factor in the teaching and learning communities for the development of a learning object economy, for the developing practice of self-archiving of research-publications, and for the licence agreements between commercial publishers and libraries (p. 5). So DRM is needed 1) to allow staff and students in the education sector to make use of digital resources in the confidence that they are complying with law and respect the right-holders' policy, 2) to enable self-publication by the declaration of permitted uses, 3) to enable users to work within the confines of copyright, and 4) to ensure that all of the above can operate in an internationally connected, digital environment (p. 6).

In general, as Duncan et al. stated, DRM should be an "enabler" and not a "preventer": "Its purpose is to let people work as freely as possible in the knowledge that they are both working within the bounds of the law of copyright and respecting the rights of others" (p. 8-9).

### Defining and modelling DRM

Duncan et al. develop a definition of DRM inspired by LaMacchia (2002). The definition is as follows: "The ultimate goal of a distributed DRM system is for content authors to be able to project policies governing their content into remote environments with confidence that those policies will be respected by the remote nodes" (Duncan et al., p. 6). The perspective of this DRM definition is an interesting one. The main actor is the author. He or she should be able "to project policies governing their content". The kind of "policies" is open. DRM is not in a first instance about "control", "watermarking", and "tracking", but about confidence, "that those policies will be respected". The focus is not on achieving (technical) total security, which, in my opinion, we will never get.

It is interesting to note that Duncan et al. interpret this definition in a quite non technical manner. The policies about the objects

over which rights exist, what those rights are, and who owns them could be done in the form of a legal license (p. 6).

In preparation of the use cases (see below) the project team has developed a model of six DRM stages within two main parts. The *creation part* is composed of the stages: *recognition*, *assertion*, and *expression* of rights. The *projection part* consists of the stages *dissemination*, *exposure*, and *enforcement* of rights (p. 9-10).

### Use case methodology

The "use case" methodology (derived from Cockburn 2001) is a way of defining what people want to achieve, abstaining from any assumptions about technology, architectures, or systems (p. 22). And although this methodology is derived from the discipline of software engineering it is also used to develop business processes or in this case digital rights policies.

We will just give a short impression how the "use cases" are developed without going into much detail. A use case is a description of a piece of work in the mentioned environments. To give an example of a use case summary: "A researcher wants to compare and criticize the approaches of two other researchers on personality development by publishing an eprint that hyperlinks to papers by these researchers that are published in the e-journal collections of two commercial publishers" (p. 24). The use case is based on the goals of the key participants (or actors) and the authors of the use case to develop main success and alternative scenarios. Such use cases were the sources for Intrallect's research group to analyse the requirements on DRM.

### Results

The results are presented for each of the six DRM stages: *recognition*, *assertion*, *expression*, *dissemination*, *exposure*, and *enforcement* (see "Defining and modelling DRM" above). Each of these sections is organised in a similar way: First the requirements derived from the use cases are described, second, options to fulfil the requirements are discussed, then a "cost-benefit-risk analysis" on these options is added. To give a rough im-



pression of the outputs, the first and last section on *recognition* and *enforcement* will be sketched.

The first stage of the management of digital rights, *recognition*, is divided into five requirements: define ownership, control of own material, control of third party material, plan use, and record clearance information (p. 28-35). Derived from the use cases examples of concrete requirements to define ownership are the clarification of the ownership of resources by academic employees or the resolution of a conflict between an employment contract and individual rights. Options discussed by the authors to meet these requirements are, for example, that in the employment contract there should be explicit clarification that the higher education institutions have ownership of lecture notes. Several model contractual clauses exist which could be used. The authors consider in the cost-benefit-risk analysis that the cost of establishing ownership has to be related to the value of the resources to be protected (p. 63).

In the *enforcement* stage of digital rights management three requirements are distinguished: authentication, authorisation, and tracking/accounting (p. 60-62). While tracking seems not to be a core requirement, authentication and authorisation are well established in the UK higher education community, according to the report. Beyond these measures, the authors state that technical enforcements are not a priority.

Concluding their study, the authors argue that to *define* a DRM policy (the first three stages of the DRM stage model) established procedures and good recommendations exist. There is a substantial base of licence information available and the use of digital rights expression languages is increasing. Only the processes for clearing digital rights and for

creating and quality controlling rights meta-data are not well recognised (p. 69). Regarding the *projection* of DRM policy (the last three stages of the used DRM model) dissemination and enforcement methods, particularly authentication, are becoming well established. For exposing rights information recommendations are available but good practice is not yet established (p. 70).

### Bottom line

The use case methodology applied in this study has the advantage of not following a technology driven approach. To implement DRM, so the study argues, does not automatically have the implication of implementing a complex piece of software called DRM system. To manage digital rights in the sector of teaching, research and libraries there are in many cases contracts and organisational and technical procedures available which are and could be used.

I very much appreciate the view of the authors that different subject areas have different codes of practice (p. 34). This has to be reflected in different requirements and solutions. Detailed analysis must be carried out in the context of a specific organisation and its priorities (p. 62). There is no overall solution.

Sometimes the discussion of requirements and options along the DRM stages seems a bit schematic. In some instances the reader's interest could be better served if main results were more focused and clustered. A revised version of the report, scheduled for November, will account for this criticism, which was also expressed in a public review process in the UK. But nevertheless these detailed results deliver a wealth of information for the interested reader in the aforementioned communities.

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**About the author:** Ulrich Riehm is sociologist, who has worked on and led Technology Assessment (TA) projects in the field of IST for 25 years at ITAS. Recently he led a TA project on E-Commerce and its political, economical, and social implications on behalf of the Deutsche Bundestag (German Parliament). Currently he is involved in the EU foresight project FISTERA and the eContent project INDICARE.

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## INDICARE's first state-of-the-art report available – food for thought?!

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** This week INDICARE released its first state of the art report (Helberger et al. 2004). As you won't expect an unbiased review by one of the members of the project team, I won't even try to review the report here. Nevertheless, as I am not one of the eight authors who jointly produced the report, I feel free to share some impressions with you.

**Keywords:** editorial, review – INDICARE, consumer expectations, foresight

### Introduction

I would like to start writing about my reading experience making four general remarks: Eight authors from different disciplines and from different countries have provided the results of their “multi-disciplinary” discussions on consumer concerns with respect to DRM. One of the really interesting effects of the joint discussions is obviously that lingo has been filtered out and what remains is a good reading for a broader public.

Another characteristic of the report is its strong recourse to real-world examples of initiatives, products, and implementations. This grounding is a good remedy for high flying abstract discourses. I also liked the basic conceptual decisions to always use a pair of concepts in order to grasp the narrow perspective of actors and a broader one of social concerns, e.g. acceptance and acceptability are distinguished, the consumer appears as consumer and citizen, and in economics the business perspective is distinguished from a welfare perspective.

At the general level a fourth property of this INDICARE effort is worth mention, its character as a “living document”. You should be aware that you have received just the first state of the art report, and that two updates will follow. This report, as all INDICARE deliverables, has the purpose of stimulating debate and INDICARE aims to be responsive to input and suggestions we receive. Therefore it depends to a certain extent on your feedback what the second and third state of the art reports will take on board.

### Lessons learnt and new questions

The philologist Ivor A. Richards once said, “A book is a machine to think with”, and I would hold that this is true for the present INDICARE report too. To give just a few examples:

1. The second chapter outlines the European Commission's initiatives on DRM and European research projects on DRM. This historical view, with a time horizon of c. 10 years, shows that the European Commission started early on to involve stakeholders, and also the issue of “acceptance” appears relatively early. In the field of research it is interesting to see a remarkable continuity in the research efforts with many projects building on former ones. Two questions came to my mind: first, I wonder why there is apparently a lack of political activities in this field from the Health and Consumer Protection Directorate General. Secondly, with respect to the EU funded DRM research, I would like to raise the following question: Do we find the good research results implemented in real-world products available in the market? In other words, does the “European paradox” apply to DRM research too?
2. The third chapter about “consumer concerns” follows a convincing approach as it does not simply address the single average consumer, but tries to take into account also customers with disabilities and institutional customers such as libraries, science, and education. This makes sense, because this way more or less all groups are covered which have

benefited so far from copyright limitations. This broader perspective including institutional customers smoothly leads to the more general question of public sector information (think of historical archives, museums, press archives, the collections of radio stations etc.). While we may be sceptical about DRMs in the private sphere, the need for content management systems in the field of public sector information seems to be rather obvious. In other words, the DRM debate should take into account both fields and investigate the specific pros and cons of DRMs in each area.

3. The fourth chapter about legal aspects creates awareness that a focus on Copyright and the European Copyright Directive is too narrow. Exaggerating, one might take a narrow focus on “Copyright” as the “McGuffin” of the debate. The debate about copyright limitations is important, but discussants should also turn to “access”. The “age of access”, to use this expression coined by Jeremy Rifkin, washing out “copyright” is the second front.
4. As the report (chapter four) demonstrates, consumers can hardly rely on the European Copyright Directive as a legal instrument to protect them. It seems as if consumer protection laws and data protection laws are closer to the heart of consumers and the question is, if a particular legal corpus is needed to cluster and specify user demands towards DRM-protected content.
5. The fifth chapter on technical aspects – explaining among others rights locker architectures, symmetric rights expression languages, superdistribution, privacy enhancing technologies, privacy rights management –, makes clear that what we see is rather the beginning. We ain’t seen nothin’ yet. This leads to question the relation between technological developments and market development, and may also call for a technology foresight in the field of DRM-related technologies.
6. The sixth chapter about business aspects shows DRM as a kind of dual use tech-

nology: it can be used to lock up content or to unlock it. The chapter also puts into perspective DRM-based business models as just one path to generate revenues for digital content. Last not least the chapter brings to mind two paradoxes of DRM-protected content, which form a real challenge: a “productivity paradox”, i.e. higher product costs/less value proposition, and a “hit-the-one-you-win-paradox”, i.e. burden for legal users / illegal users out of reach.

7. A cross cutting issue are standards and interoperability. To describe the abundance of want-to-be-standards and standards initiatives is the first step. The state of the art report takes up the issue in different chapters which complement each other well. Evaluating the importance of standards however is a very different and difficult task going beyond the present report. On the one hand you have to see through statements which are often just lip service in favour of e.g. “open standards”, “interoperability” and so on. On the other hand the complexity is hard to cope with as data formats, distribution channels, devices, media types, metadata, application areas, types of clients, regions, power of players, patents, etc. have to be taken into account. This debate needs a turn from descriptions and declarations of best intentions to strategic analysis – application area by application area.

The basis for all the questions I have raised is the state of the art report. In the best sense I hope to have shown that the report not only covers a lot, but is thought provoking too.

#### **About this issue**

The issue starts with the excellent analysis of Bill Rosenblatt of a mutual learning process between P2P networks and protected online-content. I hope we will see more of Bill’s analysis in the INDICARE Monitor in 2005. Next you will find an INDICARE interview with André Beemsterboer, director of a Dutch Collecting Society. In this interview by Natali Helberger we learn about the future of Collecting Societies and the rather important role of DRMs within. The next topic

“Mobile music in Japan” is a welcome complement to the Berlin Workshop on Mobile Music, which mainly looked at Europe. Find out, if Jan Michael Hess is right, who claims “Japan’s reality is our future”.

The next three contributions are dealing with technical issues. Ernő Jeges from SEARCH, our Hungarian partner, reviews a new approach to anti-piracy, which seems to work best with computer games, e.g. for illegal users of a game swords turn into pigs making fighting rather difficult – thus spoiling the party. The following interview with Leonardo Chiariglione is about the Digital Media Project and his intriguing vision of an inter-

operable DRM platform. In the conference report by Kristóf Kerényi from SEARCH about the Fourth ACM Workshop on Digital Rights Management cutting edge research in DRMs is presented. Kristóf, who was on tour in the US for INDICARE, has written a further report about the DRM strategies 2004 conference in Los Angeles. The issue closes with announcements of the two most recent INDICARE reports.

We wish you the very best for the holidays to come and the next year

**the INDICARE team**

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## Learning from P2P

### Evolution of business models for online content

By: Bill Rosenblatt, GiantSteps Media Technology Strategies, New York, USA

**Abstract:** Online content services using DRM have been seen as antithetical to file-sharing services based on the peer-to-peer (P2P) model. But over the past year or so, more and more copyright-respecting services have appeared with features appropriated from P2P networks, while at the same time, P2P networks with some copyright-respecting features have also been introduced. The truth emerging is that DRM and P2P are orthogonal sets of capabilities, which can be complementary as well as antithetical (Einhorn and Rosenblatt 2005). From consumers’ perspective, the differences between “P2P” and “DRM” based services are gradually shrinking.

**Keywords:** economic analysis – business models, P2P, superdistribution – USA

### Introduction

In this article, based on a presentation given by the author at the First INDICARE Work-

shop on Business Models for Mobile Music and DRM, 30 September, 2004, Berlin, we examine the features and advantages of P2P



networks with respect to major constituencies in digital content value chains: consumers, the law, content owners, and technology developers. We then show how early, mostly US-based legitimate online content services have grown to appropriate some P2P features (and vice versa – how some P2P-derived services are emerging that purport to respect copyright).

We go on to analyze the likelihood of various P2P features making it into copyright-respecting services, and we assess features of P2P that are likely to remain largely absent from legitimate services, and by suggesting trends that will persist into the future.

### The good and bad of p2p

Consumers are attracted to P2P file-sharing services for a host of reasons, in addition to the obvious one (from consumers' perspective) of not charging for content. P2P has several advantages, including these:

- ▶ **Anyone can participate:** P2P networks do not respect boundaries, national or otherwise.
  - ▶ **Render on many devices:** P2P networks provide content files that can be rendered on a wide variety of user devices, e.g., MP3 files for music.
  - ▶ **Permanent files:** files available on P2P networks do not “expire”; they are playable indefinitely.
  - ▶ **Share with friends:** there are no restrictions on sending copies of files from P2P networks to friends or acquaintances.
  - ▶ **Tastemakers:** many P2P networks enable users to act as recommenders or tastemakers who can acquire followings among users.
  - ▶ **Otherwise unavailable content:** P2P networks are natural havens for content that is unavailable elsewhere, such as digital “rips” of tracks from out-of-print or obscure music albums.
  - ▶ **Optimized delivery:** some P2P networks, such as BitTorrent, exploit the power of machines attached to the network to divide up the task of sending large files around.
- ▶ **Free content:** P2P networks can make content available at no charge.
  - ▶ **Superdistribution:** P2P networks can conceivably support Superdistribution, as described below.

At the same time, P2P networks have certain disadvantages, aside from the fact that their use lays consumers open to infringement liability. They are plagued with spoof files, which record companies and other content owners put there in order to degrade the overall service quality. Other files may be incomplete or have poor sound quality. Some file-sharing services make their money by forcing users to view ads or by installing intrusive “spyware” onto their machines. And file-sharing services generally have very limited information about artists and content.

Copyright-respecting services tend not to have any of these problems: they offer guaranteed, complete content with audio/video quality that ranges from decent to excellent, few or no ads, and no spyware. And many copyright-respecting services offer a wealth of artist and content information, recommendations, links, and so on.

Surely there ought to be a way to incorporate some of the desirable features of P2P while still ensuring that copyright owners are compensated – either by adding P2P-like features to copyright-respecting architectures or by adding copy controls onto P2P network architectures.

One general approach to bridging the gap between P2P and existing paid services is known as *Superdistribution*. Although this term was popularized after the rise of the Internet (Cox 1996), it dates back further (Mori and Kawahara 1990). In this context, it means multi-tiered distribution that starts with the owner of the content and enables entities at each step to redistribute content under their own business terms. Some of the earliest DRM technologies, such as IBM's infoMarket, attempted to implement multi-tiered distribution with e-commerce, but it was found to be too complex, especially in the days before e-commerce components (e.g., online payment processing) were commonly available.

Yet as we will see, Superdistribution is beginning to experience a comeback as the ramifications of the model for certain types of content are explored. Among other things, Superdistribution can provide a framework that enables tastemakers (see above) to get paid. With general-purpose e-commerce software easily available, it is conceivable to layer Superdistribution on top of P2P network architectures.

### Adding p2p features to legitimate services

We can speculate on the likelihood of various features of P2P being added to copyright-respecting networks by looking at how attractive they are to various constituencies:

- ▶ Consumers: is the feature desirable or uninteresting?
- ▶ The law: is it legal or illegal?
- ▶ Content owners: does it make sense from a business perspective or not?
- ▶ Technology: is it easy or difficult to implement with DRM and related technologies?

Table 1 summarizes many of the salient features of P2P networks with respect to the above four constituencies. The salient features are explained below.

**Table 1:** Salient features of P2P networks with respect to four constituencies.

	Desirable for Users	Legal	Acceptable to IP Owners	Easy with DRM	Likelihood in legitimate Services
Anyone can participate	G	R - National boundaries	G - In theory...	G	R - Not worth the trouble
Render on many devices	G	Y - EU private copying laws	Y - Within limits: products vs. content	O - Hardest technology problem	Y - Legal or via 3 <sup>rd</sup> party solutions
Permanent files	G	G	Y - Depends on business model	G	Y - Some business models
Share with friends	G	O - Generally restricted	Y - Within limits	G	Y - Within limits
Tastemakers	G	G	G	G	G
Otherwise unavailable content	G	R - Licensing obstacles	Y - If they can get paid	G	R - Unlikely
Optimized delivery	Y - Marginal importance	G	Y - Marginal importance	Y - Complex but feasible	Y - Through CDNs
Free content	G	R - No!	R - No!	G	R - No!
Superdistribution	Y - Remains to be seen	G - Licensing contracts	Y - Only in certain cases	Y - Getting easier	Y - Remains to be seen

*Legend:* G = Green means attractive, Y = yellow denotes reservations or limitations, O = orange denotes serious reservations/limitations, and R = red means unattractive or impossible. The rightmost column represents an assessment of how likely a feature in each row is to make it into copyright-respecting content services.

Let's examine some of the most noteworthy issues implied in the above table.

- ▶ **Anyone Can Participate:** The obstacles to anyone participating in a copyright-respecting P2P network are national boundaries that govern e-commerce as well as content licensing agreements. This type of problem is likely to be judged too complex to be worth solving;

services will need to remain specific to countries. This is the case today with services that are available in multiple countries, such as Tiscali Music Club, Vodafone live!, iTunes, and Napster.

- ▶ **Play on Many Devices:** Technology is the biggest hurdle to a copyright-respecting service providing content that plays on many different devices. Interop-

erability among formats and DRM schemes is elusive. At this time, attempts at interoperability are coming from various different sources, including putative de facto standards (Microsoft Windows Media), open DRM standards (Open Mobile Alliance Download and DRM, see OMA 2002), open interoperability standards (Digital Media Project, see DMP 2004, Coral Consortium, see Coral 2004), and ad-hoc interoperability (RealNetworks' Harmony, which is part of its RealPlayer Music Store service). Even more basic problems like interoperability of consumers' online identities have not been solved yet.

Apart from technology problems, there is a real question of whether content owners are even interested in making their content available on any device. For centuries, content owners have been in the business of selling products, and there is a general mentality among them that users must buy a new product each time they want to consume content on a different device.

- ▶ **Permanent Files:** Although consumers are slowly starting to understand the value of subscription services (at the right price point, of course), consumers are still very much behind the idea of "owning" content. Content owners will need to provide permanent downloads for the foreseeable future; many will do so.
- ▶ **Share with Friends:** This one is rather ironic. For the most part, the law says that sharing content with "friends" without compensating rights holders is infringement. Private copying laws in some EU countries allow consumers to make copies for the use of themselves or family members, while fair dealing law in the UK (UK Copyright, Design and Patents Act, s. 29, 30 (1988)) empowers courts to render decisions on such matters according to factors like the type of usage and its effect on the overall market for the content. The fair use laws in the US are similar (17 United States Code § 107 (2000)).

Yet laws may well end up not being the limiting factor in this case – because most online sales of content are not really "sales" at all, but rather are license contracts, and thus are not necessarily subject to fair dealing or private copying law restrictions. Moreover, consumers have come to expect some freedom to make copies of content (usually in analogue) for friends and family; therefore, as we will shortly see, expectations are driving market forces so that more and more legitimate online content services support some carefully circumscribed notion of "sharing".

- ▶ **Tastemakers:** While some people in the P2P community are under the impression that this idea was invented there, legitimate content services have been making user recommendations available for quite some time.

Perhaps the first successful "tastemaker" implementation in the media industry was the affiliate network feature of Amazon.com, which enables "affiliates" to create websites (or email messages) with specially coded links to products on Amazon. If a user clicks on such a link on an affiliate website and buys the product, the affiliate earns a sales commission. More recently, Amazon implemented a variation on this theme called Listmania, in which users can create themed lists of recommended products that appear on the site as users browse related items. Earlier this year, iTunes created its own affiliate network through an affiliate network provider called LinkShare.

P2P tastemaker functions do go beyond the above capabilities by providing built-in ways for users to search and browse other users' collections or recommendations. Yet the larger point is that it is eminently possible for copyright-respecting online content services to offer "tastemaker" features.

- ▶ **Otherwise Unavailable Content:** One of the truly great things about P2P file-sharing services is that they give collectors of the rare and obscure chances to

show off their collections, so that the material can become less rare and obscure through exposure. Unfortunately, however, many of those rarities are likely to be still under copyright, in which case such aficionado altruism is likely to run afoul of the law. Unfortunately, it is impossible in the general case to solve the nightmarish licensing problems that would come up in this case; such problems are very difficult to solve even in the analogue world.

It is possible that a government might pass a compulsory licensing law that requires content to be made available online under reasonable and non-discriminatory terms, or at least provides fallback terms for content that is not licensable through conventional methods. This would help in many cases, exceptions including those for which the publisher or artist cannot be identified.

- ▶ **Optimized Delivery:** This feature is marginally important for music files as broadband connectivity and content delivery networks (CDNs) become more and more ubiquitous, although it should be valuable for large video content for some time to come. Many DRM technologies can, with some effort, adapt to file-splitting schemes. This will be a nice-to-have feature on all kinds of online content services.
- ▶ **Free Content:** This, of course, is not going to be possible on a copyright-respecting service. The continued presence of non-copyright-respecting networks should provide “ballast” in the market that induces copyright-respecting services to make their offerings more consumer-friendly, but (as implied above) there are many ways to do that based on features rather than price, and that trend should continue, even after any legal action takes place that puts the free file-sharing networks out of business.
- ▶ **Superdistribution:** As mentioned above, the ready availability of e-commerce software components for such functions as payment processing, along with highly configurable DRM technology, can make

Superdistribution a reality (see Rosenblatt 2003). The biggest question is whether consumers will be interested in it – i.e., interested in making the effort to resell content.

Ironically, the idea appeals most for curiosities and rarities, but if they were made available digitally, their rareness would essentially disappear. Of course, this does not take into account those who care more about collecting the physical artifacts than the actual content.

Otherwise, Superdistribution for widely-known content makes limited sense, because its only real value is as a “viral marketing” or recommendation service, in the same vein as affiliate networks like those used by Amazon.com and iTunes. If multiple participants offer the same widely-known content, then the situation devolves into one of competitive pricing, which is already the case among the many online music services that essentially offer the same products for similar prices.

### New Services with P2P Influences

Even though they came into existence after the advent of Napster (the original, non-legitimate one), early copyright-respecting content services incorporated virtually none of the advantages of P2P, even when factoring out “free” vs. “pay”. Services like the US-based pressplay and the original MusicNet on RealOne featured monthly subscriptions, downloads that expired, mediocre sound quality, anemic search and browse features, no sharing, and Byzantine pricing plans seemingly borrowed from the early days of the mobile telecoms industry. Coupled with a “build it and they will come” approach to marketing, it is no wonder that critics panned these services.

Yet newer services have begun appropriating features from P2P networks. Apple’s iTunes started the trend towards offering controlled sharing. iTunes allows users to copy files onto other machines and burn MP3 versions of files onto CD limited numbers of times. US-based MusicMatch significantly raised the stakes on sharing in August 2004 by in-

roducing a “share with your friends” feature. With this, users can send emails with playlists to as many “friends” as they like; when the friends receive the playlists, they can play the songs on them, in their entirety, up to 3 times before having to purchase them as individual downloads or subscribe to MusicMatch’s On Demand service. More recently, FNAC in France introduced its Fnacmusic download service, which raises iTunes’s 3 CD burns to 10.

Although no copyright-respecting service gives content away for free, there are a few innovative approaches to pricing in existence today. One is that of charging users a flat monthly (or annual) fee for the right to permanently download as much content as they want. One current practitioner of this model is UK-based Wippit, which is more like a modified P2P file-sharing network. Wippit maintains a list of files that are approved for sharing on the network; it enforces this not by encryption-based DRM but by a technology known as *fingerprint filtering*. Before a file is approved for use on the network, it is examined by a program that extracts various psycho-acoustic parameters from it in order to come with a “fingerprint” of the music in the file. The technology then searches for an instance of that fingerprint in a database of fingerprints of approved works, and if it finds a match, it lets the file go onto the network; otherwise it blocks the file.

Another alternative approach to pricing is to get users to view ads in exchange for the right to download music. Hong Kong-based Singwell International is attempting to build this type of network, which it calls Qtrax. Singwell expects to pay licensing fees to copyright holders but make revenue through its ability to sell ads that are highly targeted to users based on the kind of music they download.

A handful of new services, all US-based, are experimenting with limited forms of Superdistribution. One is Weed, a service of Seattle-based Shared Media Licensing Inc. Weed licenses independent-label music content and makes it available for purchase and eventual resale. Users can listen to Weed files up to 3 times before having to purchase

them. After purchase, they can put them on websites, in emails, on CDs, or anywhere else, and pass them on to others, who can then listen to them with an option to purchase. This process can repeat arbitrarily many times. The commerce model is fixed, and it is three tiers in depth: a seller earns a 20% commission on the sale price; the user who sold it to the seller earns 10%; and the user who sold it to *him* earns 5%; Weed itself earns 15%, and the remaining 50% goes to the artist. Weed uses Windows Media DRM plus its own software to control this process.

Two services with multi-tier commerce models that are roughly similar to Weed are in beta at this writing. One is Bitmunk, from Virginia-based Digital Bazaar; the other is Peer Impact, from Saratoga Springs, NY, based Wurld Media. Bitmunk differs from Weed mainly in that it normally uses non-invasive watermarking instead of encryption-based DRM, which enables users to catch pirates forensically rather than preventing piracy proactively. (As is the case with some other P2P networks, Bitmunk allows users, at their own option, to put up files that are packaged with DRM.) Peer Impact combines a Weed-like commerce model with optimized content delivery (see above) a la BitTorrent. Peer Impact is unique among these services in that it has licenses, at this writing, from three of the four Majors.

### Bottom line

While some features of P2P (such as free content) will never make it into copyright-respecting services, and other features (such as transnational usage and availability of rarities) seem highly unlikely to make it, the gaps between historically free and infringing P2P services and DRM-based copyright-respecting content services are rapidly shrinking. Over the next year or two, the boundaries of and gaps between them should become clearer through market forces and legal decisions. At the same time, the trade-offs among new services that incorporate P2P-derived features should become more and more subtle. Content owners will need to carefully examine these services’ features as well as market forces to determine where to license their content.



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## If you can't beat them, join them

### DRM as the future for collecting societies

By: André Beemsterboer, CEDAR, Hoofddorp, The Netherlands

**INDICARE-Interview with** André Beemsterboer by Natali Helberger, IViR, Amsterdam

Some say that DRM is the last nail in the coffin of collecting societies. Not so André Beemsterboer, director of CEDAR (Centrum voor Dienstverlening Auteurs- en anverwante Rechten), one of the major Dutch collecting societies. In this interview, Mr. Beemsterboer explains his vision of the future of collecting societies – collecting societies as users of DRM.

**Keywords:** interview, collective rights management, collecting societies, content flatrate, Creative Commons, DRM users, The Netherlands

**André Beemsterboer** is director of CEDAR. CEDAR stands for the center for services for the management of copyright and related rights. CEDAR offers facilitative services to holders and licensees of copyrights and neighbouring rights, including the collection and distribution of licence and other fees, advice and a one-stop shop for multimedia producers. Seven Dutch collecting societies are clients of CEDAR. You can contact him via the CEDAR website at: <http://www.cedar.nl>

**INDICARE:** Mr. Beemsterboer, supposed I am an author and member of a collecting society, and I decide to switch from collective rights management to individual rights management, using DRM. Am I free to do so, or does the collecting society also has to have a word in this?

**A. Beemsterboer:** If you are member of a collecting society, you will usually have to consult with the collecting society first before managing your rights individually. Of course, this also depends on the kind of collecting society, the category of works and the

kind of relationship between collecting societies and authors. With some collecting societies, authors have the possibility to keep some rights and manage them individually, with others not.

In general my feeling is that collecting societies should create a possibility for individual authors to have categories of exploitation which they would like to do themselves. We should be aware, however, and I already know that this is not a popular subject, that there are still major user groups that take disadvantage of authors. They pressure authors who manage their own rights, to give away a licence at unfavourable conditions, or even for free. In principal, collecting societies have developed as safe havens for individual authors. Authors should be aware of the fact that if they step out and manage their rights individually this can have advantages, but it can be also dangerous for them.

**INDICARE:** If I decided instead to use a Creative Commons (CC) licence, would you warn me, too?

**A. Beemsterboer:** I think that CC is very good as a principle. I do not think that CC is an important instrument for usage on a large scale. One of my points of criticism is that CC creates the feeling that no authorisation is needed at all. And I don't agree with that. Also with CC, you still need authorisation from the owner, because also with CC, the author still wants to maintain a certain degree of control over how his work is distributed, and that his name is mentioned. This means that there are certain licensing conditions in the CC that need to be maintained and monitored. To put it very bluntly, the only difference between a collecting society and the collective use of CCs is money. With one, you get money, with the other not. CC lacks a monitoring mechanism. Who is going to check whether the licensing conditions are met, and who is going to pay for the costs of monitoring? The author?

**INDICARE:** I see. Let us return to DRM. I currently have the impression that is often not even the author who would like to use DRM, but the music publishers or producers.

**A. Beemsterboer:** That is correct. In many cases it is the record company or the producer who will invest in DRM, not so much the author. Actually, I do not believe that the individual author is willing to deal with multi-usage of his works through DRM. What authors want to do is to create, to write, to paint or to photograph. Rightsholders are not in the business of using DRMs for the administration of their rights. That is why they created collectives.

**INDICARE:** One could go even one step further and claim that there are situations in which the use of DRM is not in the interests of authors at all. I am thinking, for example, of the case of the new CD from Beastie Boys "The Five Boroughs" that was distributed by EMI with DRM protection. The result was that Beastie Boys received angry criticism from their fans, and judging from the discussions on their site they probably lost a number of dedicated fans, too.

**A. Beemsterboer:** I agree with you on that.

**INDICARE:** Then let me ask you this: suppose, an author comes to you and tells you that he does not wish that DRMs are used to protect his work. He asks you to, please, consider this when you make a licence deal with a producer or record company. What will you answer him?

**A. Beemsterboer:** If an author would say that he does not want individual users to be hunted down for illegal use that is fine. But I would ask the author why? If we do not hunt down the first illegal user, we will be confronted with many more illegal users in a month's time. I am not going to say that I will hunt users down and shoot them. But collecting societies can only maintain their position if they have the possibility to say that if something goes wrong we have the right to sue. If we did not have any power at all, collecting societies would not exist. Also authors have to accept the principle of copy-right, which is: if I have created something I am the one to decide what to do with it. In the end, it is the author who must decide what others can do with his work. If he wants everybody to use his work as long as his name is under it, that is fine. But how will

the author control that his individual conditions of usage are met?

**INDICARE:** On the other hand, this still does not solve the problem of the author that he risks imbalances between his interests in not using DRM, and the interests of record companies or producers in using DRM.

**A. Beemsterboer:** There is certainly an interesting relationship between record companies, producers, broadcasters, who are rights-holders themselves, and between the creative author and the collecting societies. It has always been a very feeble balance between the three parties. DRMs and the internationalisation of the distribution of entertainment products will have a major influence on that delicate balance. And I am absolutely positive that there will be an imbalance for a certain period. After that a new balance will be found. This balance will involve the same players, but they might have changed roles. Some of these newly found balances will go to the detriment of the structure of some collecting societies, but also to the detriment of the position of some of the major publishers, bigger record companies and film producers. I think they will lose influence in certain markets and in certain areas. Authors, or rather: groups of authors, will gain. And collecting societies have a role to play there. Otherwise, authors will turn away from collecting societies because they feel that collecting societies belong to the old world.

**INDICARE:** Could you go a bit more in detail what you mean when you say that the balance will change?

**A. Beemsterboer:** One of the elements of the changing balance is that for certain usages, there will not be a collective that represents the whole world repertoire. The repertoire will be split up, and groups of authors will manage it. This means that the ones who want to use the music will be confronted with many different parties and different rates. In the future, there will be more differentiation for certain works and certain forms of usage. Contents will be produced and marketed in a different way. It is going to be a fascinating time.

**INDICARE:** This means: more collective societies offering more differentiated services?

**A. Beemsterboer:** Yes. Of course, there is the risk that the variety of all these different platforms will be inefficient. But because the collectives will use DRM and other technologies, their services will be easy to access and the works easy to license.

**INDICARE:** This is interesting. So far, the discussion of collective and individual licensing concentrated primarily on the question of what will it be in the future: DRM or collecting societies. You seem to suggest that there will be a third option: collecting societies using DRM?

**A. Beemsterboer:** That is exactly what I think. In my view, collecting societies need to develop new services. The basic service now is the collective management of large portions of repertoire for big users. If collecting societies want to stay alive in the future, they will need more flexible services. Let us take the case that someone comes to me and says that he wants to develop a website with this logo, with audiovisual content, a background and news articles. Usually, he would need to go to several addresses to do that. What I want to do as a collecting society is to be a broker in licenses. And in order to be a broker in licenses I need DRM so that I am able to identify works and identify rightsholders. This does not mean that authors would necessarily have to assign exclusive rights to the collecting society. Instead, the author could give the collecting society a mandate to play the broker role. The broker role will be in the future an additional role for collecting societies, next to the existing basic services. If collecting societies do not develop this broker role, authors will go away and do it themselves. Or they will organise themselves in other collectives.

**INDICARE:** In other words, collecting societies would act as a sort of intermediary between the author and the market?

**A. Beemsterboer:** Yes, next to anybody else who wants to play the same role, like distribution companies or authors themselves.

**INDICARE:** Is this already the reality, will it become the reality or are we talking science fiction?

**A. Beemsterboer:** It is not a reality yet, but we are also not talking science fiction. At the moment, we are developing that broker role. In the course of next year, the first products should be on the market. Collecting societies will then offer not only licensing services, they will extend their range of activities and take also the role of, for example, a distributor of digital content. One can imagine this like a portal or a platform for authors to meet with users: authors can join the portal and use its distribution infrastructure. They can also decide to commission collecting societies to collect the money for them, or to use DRM, or to maintain their moral rights, or to negotiate for them. Rightsholders can then choose from a whole range of services.

**INDICARE:** Have you already decided on a particular DRM? Will you choose an open or a proprietary standard?

**A. Beemsterboer:** Not yet. But I also do not want to be bombarded with all kinds of different systems and software packages. I will seek the advice from an expert without being brainwashed for two hours about all kinds of software.

It is also too early for me to say whether I will choose an open or a proprietary standard. Of course, I will use the DRM technology that will ensure that the market coverage is high enough, and that the licensing conditions for using that technology are fair.

**INDICARE:** If collecting societies embrace, as you say, DRM, do you see a future role for collecting societies in standardisation, or in making DRM solutions more acceptable to consumers?

**A. Beemsterboer:** No. I, as collecting society and future licence broker, will not develop DRM solutions by myself; this is not my core business. And I do not have the money for that because the money that I have to invest is the money from authors. I will use the existing technology as it is provided by the market.

**INDICARE:** Still, the problem remains that at present many consumers are reluctant to accept DRM protected products and services. The lack of acceptance has various reasons, beginning with the lack of interoperability solutions, the position of consumers if they want to make private copies, or when they conclude contracts about the use of digital content. For record companies or producers who want to use DRM the lack of acceptance is a problem. If collecting societies step into the role of a distributor and user of DRM, will this problem not become the problem of collecting societies, too?

**A. Beemsterboer:** I would like to make a distinction here. Protection of consumer interests and using DRM technology for efficient licensing are, in my opinion, two separate subjects. I also distinguish two types of consumers. Institutional or commercial users, and private users. There will be different set of rules for each of them. For the rest, I have not yet any deeper knowledge of the legal position of consumers. I see their legal position as a problem. This is an issue that needs to be tackled. It already is being tackled to some extent by collecting societies, but even more by the industry, the distributors and the ones who maintain the infrastructure.

**INDICARE:** There have been a number of cases in France and in Belgium where consumers complained that the usage of DRM prevents them from listening to CDs or DVDs in car radios, or from making copies for their personal use. Are you aware of these cases?

**A. Beemsterboer:** Yes. And what I think is that as long as the consumer knows from the start what he is buying and what he can do with that product then there is no problem. If the consumer goes to a website to download music under a DRM system which will not allow him to make more copies, and this is a condition that is clearly marked when he is buying the product, there is no case. In this respect I agree with the statement from the Dutch minister of Justice during a debate about the implementation of the directive. He said that the main issue at stake in the French and Belgium cases was product liability. If I go to sell a car without a motor and that is

mentioned clearly, no one can complain later that the car does not drive away. The same is the case with a CD that is DRM protected. I do not see any reason to prohibit that, as long as the consumer is aware that he is buying a CD which he cannot copy.

**INDICARE:** If you wanted to buy a CD by your favourite band and it was electronically copy protected, would you still buy it?

**A. Beemsterboer:** No, I wouldn't. And if all consumers did not buy the record, then the artist and the record producer would say: 'My god, what are we doing? We are not selling any records any more.'

It is the other way round: the consumer must make the producer and the distributor of the record aware that the market wants a product that can be copied for private use. It is up to the consumer to say what he wants. And it is up to the producer, the distributor and the creator to say: 'I am not going to do that.' or: 'Of course, you are right.' If I was a producer or creator I would try to find out what the consumer wants, and then decide whether I can deliver that or not, and if it is strategically wise to do that or not. In my view a record producer should sell records with a limited possibility for copies. Only then he will sell products that fit the consumer demand.

**INDICARE:** Would it be, in your opinion, an acceptable option for a record distributor to offer more differentiated pricing models, i.e. to sell a record at a lower price and without the possibility of making copies, as well as at a higher price with unlimited copyability?

**A. Beemsterboer:** Exactly. That will be the future.

**INDICARE:** As a final question, I would like to ask your opinion about an alternative proposal to solve the private copying dilemma. Some scholars and cyber right activists suggest the introduction of a so called broadband content flatrate. The idea is to

compensate rightsholders for the downloading of their works in p2p networks. This idea was brought up, for example, in the Berlin declaration (Berlin declaration 2004), which was also signed by Lawrence Lessig.

**A. Beemsterboer:** I do not believe in free access for everybody. I think that the private copying regulation as we have it now is a poor alternative for individual exploitation by the author. Still, it is a fair alternative. Abolishing all manageable individual exploitations is in my view the end of creation. Also, investors will not be willing to invest in large creative products any more, if they get in return just some basic fee from some institution as a sort of tax compensation for the fact that the works are being used. An investor wants to be able to say that he first will sell the product to cinemas, then half a year later to the video market, then to the DVD market, and one year later to a broadcaster. With the flatrate proposal there is no segmentation of marketing. It does not fit the way digital content is marketed. And it will endanger the development of creative content.

**INDICARE:** This is a remarkable statement, considering that the flatrate was proposed in order to stimulate creation and wide-spread use of works.

**A. Beemsterboer:** The flatrate could work in certain areas where the author is not dependent on the income from his works, for instance in the case of scientific authors. They are scientists and they want their works to be distributed as widely as possible. They also want their works to be copied because this will promote their status as scientists. For them the Berlin declaration could work.

**INDICARE:** I will pass this on to my colleagues from the institute. Mr. Beemsterboer, thank you very much for taking the time and for giving us this interview.

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## Mobile music in Japan – Japan’s reality is our future

By: Jan Michael Hess, CEO, Mobile Economy GmbH, Berlin, Germany

**Abstract:** This article takes a close look at the world-leading Japanese mobile data market which is all about migrating users to 3G (third generation of mobile communication technology) and offering new cutting-edge services driven by more powerful 3G networks and devices. Its special focus is on the mobile music market which generates 50 % of mobile content premium revenues. Learning from Japan makes sense as there are basically no differences between end user cultures in Japan and other countries, but there still are many differences between management cultures.

**Keywords:** economic analysis – business models, competition, e-payment, innovation, mobile networks, music markets – Japan

### Mobile Kaizen management is good for Japanese consumers

Next to South Korea which enjoys the highest fixed and mobile broadband penetration – counting relative DSL connections and 3G-enabled mobile phones – Japan continues to be the leading mobile data market in the world. Having analysed the Japanese mobile market since 2000 I do believe that Japan is still far ahead when it comes to managing the mobile economy and maximizing value for consumers. I like to call the Japanese management approach “Mobile Kaizen”, i.e. the art of continuously improving the mobile economy.

In Japan, there are 3 mobile network operators that all launched their first mobile Internet services back in 1999 and, since then, have competed heavily among each other for the mobile communications budget of Japanese consumers and businesses. The Japanese market is driven by consumer demand and managed in a carrier-centric way. The carriers control the market and specify all the functionality of the mobile handsets that are built to their orders mainly by Japanese handset makers (only now Vodafone tries to sell devices made by Nokia and Motorola in Japan).

Japanese carriers don’t lose time to wait for global standards such as MMS (Mobile Mul-

timedia Messaging) or OMA DRM (Digital Rights Management Standard set by the Open Mobile Alliance). They order the technologies that they believe will drive the ARPU (Average Revenue Per User) or the sales of new handsets. Japanese carriers know very well how to continuously improve their offerings with the aim of delivering more value for money to their customer base. In my view, the carrier-centric model for managing the mobile economy is better suited to deliver mobile data services that consumers pay for than the device-centric model – favoured by Nokia – which is still dominant in Europe. This is a key reason why Japan leads the pack.

While the Japanese market is getting more saturated, the level of competition increases. All three carriers have introduced mobile data flat rates now after KDDI started their flat rate attack in November 2003. NTTDoCoMo publicly declared that they had no choice but to follow the first mover – they would have rather done it at a later point of time. Fortunately, the result of this fierce competition is lower mobile data prices which Japanese keitai users (keitai = Japanese word for mobile phone) definitely enjoy.

### Carrier statistics and 3G migration status

At the end of each month, the Japanese Telecommunications Carriers Association announces the latest mobile subscriber statistics: As of 31 October 2004, there were 84.6 million mobile subscribers in Japan resulting in a mobile penetration of 67 % – 127 million inhabitants make Japan a rather crowded island.

The market leader is NTTDoCoMo with 47.5 million customers and a market share of 56,1 %. Having launched i-mode in February 1999, NTTDoCoMo now serves 42.5 million i-mode users in Japan who have access to over 4,400 official i-mode content sites and over 70,000 unofficial content sites which are neither listed on the operator's portal nor able to use the operator's billing system. In fact, the unofficial content market is very important since it accounts for 50 % of the mobile data traffic in Japan.

From the beginning, NTTDoCoMo was motivated to create a mobile ecosystem enabling mobile content providers to make healthy money by passing on a very fair share of the premium content revenues (no data transmission revenues are shared in Japan): NTTDoCoMo only keeps 9 % and passes on 91 %. This 9 % is modelled to compete with other payment systems rather than maximise revenues on a short-term basis by overemphasizing the marketing power of the official portal. At the same time, NTTDoCoMo does not invest in content development and would never license music rights as in the case of Vodafone in Europe.

NTTDoCoMo's 3G service called FOMA (Freedom of Multimedia Access) is based on W-CDMA (Wideband-Code Division Multiple Access; 384 kbps downlink peak data rate) and the current number of 3G FOMA customers is 7.1 million. This means that DoCoMo have already migrated 14.86 % of their customers to 3G. The monthly 2G ARPU of DoCoMo is YEN 7,700 (€52.32) with 24.75 % data revenues. The monthly 3G FOMA ARPU is YEN 10,030 (€74.22) with 34.20 % data revenues. These numbers prove that 3G handsets and networks are well qualified to make customers spend more on mobile voice and data. However, 3G ARPU

will eventually go down by the time the mass market will have adopted 3G – this is the typical effect when more low value customers come on the network. In Japan, early 3G adopters are heavy data users who want to reduce their packet fees.

Number 2 in the market is KDDI with 21.9 million subscribers and a market share of 25.91 %. KDDI has 17.1 million customers subscribing to their mobile portal called EZweb. Surprisingly, KDDI is number 1 in the 3G market as they have been very smart in migrating to 3G by using CDMA2000 1x from Qualcomm offering a 144 kbps downlink peak data rate. Now, KDDI already has got a total of 16.1 million 3G subscribers which means they have successfully migrated 73.66 % of their customer base to 3G. KDDI also keeps only 9 % of mobile premium content revenues and has the same approach to enabling the mobile content ecosystem.

Recently, KDDI launched the new service called WIN (We Innovate the Next) which is the highspeed 3G service based on CDMA2000 1x EV-DO (Enhanced Version-Data Optimised) with a 2.4 Mbps downlink peak data rate. KDDI's ARPU is YEN 7,300 (€54.02) and the WIN ARPU is YEN 11,190 (€82.81).

Only the increased bandwidth of WIN enabled KDDI to introduce a 2-tiered flat rate called "Double Teigaku" which costs YEN 2,000 (limited packets) or 4,200 (unlimited packets). KDDI now counts a total of 1.19 million WIN subscribers of whom 81 % are flat rate subscribers. KDDI targets 3 million WIN subscribers in March 2005. NTTDoCoMo responded to the flat rate challenge from KDDI by introducing "Pake-Houdai" ("all you can eat") priced at YEN 3,900 for their heavy users who spend at least YEN 6,700 for their voice plan (a voice tariff including free voice minutes per day). The number of flat rate FOMA subscribers is not available though.

Vodafone Japan has fallen behind to the third position and when it comes to 3G they are even more behind. Vodafone Japan also uses W-CDMA for 3G and waited for a later release of the standard to enable global roam-

ing. Now, Vodafone Japan serves 15.2 million subscribers which results in a market share of 17.95 %. 13 million customers use the Vodafone live! portal but only 274,400 of Vodafone's subscribers are 3G-enabled – a mere 1.81 % of their customer base. This is especially disappointing for Vodafone as the Japanese market still contributes the most revenues of all Vodafone companies due to the high ARPU in Japan. Vodafone Japan's ARPU is around YEN 6,500 (€48.10) while separate 3G ARPU figures are not yet disclosed. Vodafone keeps 12 % of mobile premium content fees and passes on 88 %.

As pointed out above, Vodafone hopes that in the long run their global strategy will enable them to fight back on the Japanese market. But NTTDoCoMo and KDDI don't have to wait for go decisions from Europe and thus are extremely fast with launching new services. Just take a look at the contactless IC smartcard technology called FeliCa that NTTDoCoMo now incorporates into most new phones. NTTDoCoMo has got already over 600,000 FeliCa-enabled handsets in the market which offer mobile payments and membership card applications that are extremely convenient for users. While KDDI announced the adoption of FeliCa in the second half of 2005, Vodafone is still struggling to define their FeliCa strategy.

### **Chaku-uta drive 3G**

Mobile music is still the hottest segment in mobile Japan. In 2004, the Japanese ringtone market (polyphonic ringtones called Chakumelo) will be YEN 100 billion (€750 million) and the ringtone market (CD-quality 30 second music clips called Chaku-uta) will be at least YEN 20 billion (€150 million). Ringback tones – “waiting music” played to the caller while waiting for the phone to be picked up – are still small in Japan but will be successful, too.

In 2003, a total amount of YEN 180 billion was spent for mobile premium content and 50 % was music-related business. This is really massive if you compare it to a still declining CD industry in Japan with a mere value of YEN 400 billion (€3 billion).

During the “Mobile Intelligence Tour” to Tokyo, which I organised in April and October 2004, we enjoyed meetings with Masakatsu Ueda, president of Label Mobile. Label Mobile was established by 5 record companies in 2001 and now it has 11 labels as shareholders. While Chaku-uta were introduced by KDDI in 2002 they are now offered by all 3 carriers. For their new FOMA handset series NTTDoCoMo just increased the file size for Chaku-uta to 500KB. Chaku-uta uses the file format AAC+ (Advanced Audio Coding). In fact, Chaku-uta is now the most important 3G service in Japan.

Most Chaku-uta tunes sell at YEN 100 (€0.75) but prices vary from YEN 50-200 (€0.34-1.50). A standard ringtone sells between YEN 10-20 (€0.08-0.15). About 150 million Chaku-uta downloads are expected from the various Label Mobile sites in 2004, out of a total market forecasted to reach 200 million Chaku-uta downloads. These figures are very promising, given that only 15 million phones in the market were enabled for Chaku-uta in August 2004.

The most important factor for the record companies about Chaku-uta is the following: Anybody in Japan can provide ringtones as long as they pay YEN 5 (€0.03) royalty fee per ringtone download to JASRAC, the Japanese equivalent of GEMA (GEMA is the German “Gesellschaft für musikalische Aufführungs- und mechanische Vervielfältigungsrechte” or society for musical performing and mechanical reproduction rights). For the normal ringtones no rights have to be negotiated. So ringtones have become an absolute commodity while the main business bypassed the labels.

However, permission is needed in the case of Chaku-uta from the master right holders which in Japan are the record labels. By co-founding Label Mobile the major labels in Japan have decided to disintermediate ringtone providers and do the business on their own. This trend will happen in other markets, too, and classic ringtone providers will have to adapt early enough to record labels and publishers doing direct business again with the music fans. Moreover, production costs for Chaku-uta are quite low as encoding mu-

sic into AAC+ can be done automatically while ringtones have to be composed and optimised manually.

The copy protection of Chaku-uta is very high: Only the official files can be set as ringtones and they cannot be taken out of the phone. This is a direct result of the carrier-centric model where each of the 3 operators defines the functionality of handsets including the rules for what can and cannot be done with paid content.

I assume that most Japanese consumers accept the fact that they cannot move content they paid for because they have had no other choice so far. But I am quite sure that over time this might change.

#### **KDDI's Chaku-uta Full will rock 3G to the next level**

KDDI announced their ultimate mobile music service called "Chaku-uta Full" (full track downloads) in October and just launched it on 19 November 2004. Now the labels don't have to dream anymore about the keitai becoming the new walkman. It is already a reality, though only for some early adopters at this stage. You can only buy Chaku-uta Full if you are a KDDI WIN highspeed customer with a flat rate. This makes perfectly sense as avoiding extra packet fees is a prerequisite for launching full track download services – even with AAC+ the file size averages 1-2 MB.

At the launch of Chaku-uta Full only four handset models support the service: W21CA (manufactured by Casio), W21T (Toshiba), W22SA (Sanyo Electric) and W22H (Hitachi). One Chaku-uta Full song will cost between YEN 200-300 (€ 1.50-2.25) and users can choose from a catalogue of 10,000 songs in the beginning. But KDDI wants to grow the size of the catalogue and invites other labels to produce and sell full tracks.

Of course, users can set a Chaku-uta Full as ringer, too, usually at three positions in the full song. And given the increased convenience of shopping for mobile music anytime and anywhere I am very confident that this service will make a lot of money. At least, it is the core mobile data strategy of KDDI for 2005.

#### **Mobile DRM is suboptimal in Japan, too**

As pointed out above in the case of KDDI, the DRM situation in Japan is the following: Due to the fact that the Japanese market is carrier-centric each carrier has so far defined its own content protection system. Today, users are not able to forward or save to the removable memory card any content they purchased for their mobile phone. As far as I know, the new 3G handsets of Vodafone will support OMA 1.0 which does not enable superdistribution (OMA 2.0 will support superdistribution; see Buhse 2004). It remains to be seen which operator pushes superdistribution first as a competitive weapon in the future.

Thus mobile DRM is suboptimal for the users in Japan, too: It is impossible to continue using your paid content on your next phone for the time being. The more you have spent for buying mobile premium content such as ringtones, games etc. the more it will hurt you. While Japanese operators are starting to implement device management tricks for easy back-up of personal information data such as contact and calendar information, they still have to improve on their server-based know-how about their customers' access rights to content they paid for in the past. Especially, in the age of mobile data flat rates there is a marginal cost of zero associated with redistributing premium content again.

Given these limitations, mobile consumers still love mobile music. On a global level, mobile music already generates 10 % additional revenues to a global music market of € 30 billion. And the mobile music market is forecasted to double until 2008 to €6 billion.

#### **Bottom line**

To sum up, I am very sure that Japanese keitai users get more value for their money and that's why I like the mobile ecosystem in Japan very much. I do strongly recommend visiting Japan to study the Japanese market. Learning from Japan makes sense as there are basically no differences between end user cultures in Japan and other countries, but many differences between management cultures.



The mobile music market segment drives 3G and generates around 50 % of the mobile premium content revenues. The current mobile music highlight in Japan is the recent launch of Chaku-uta Full, the full track

download service of KDDI. It will be exciting to watch how quickly European operators will manage to make their mobile music shops successful, too.

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## Turning infringing users into paying customers – A new trend in anti-piracy

By: Ernő Jeges, SEARCH Laboratory, Budapest, Hungary

**Abstract:** Copy protection of digital content is moving from a concept of inhibiting consumers from making copies (or at least trying to do so) by technological protection measures (TPM) towards a concept of detecting illegal use. In case illegal use is detected, a type of “punishment” may follow: the content may suffer quality degradation, or – in the case of software – it may behave in a strange, annoying manner. In the best of cases the infringing user facing this kind of punishment is at the same time encouraged to obtain a legal copy. The article reviews the present state of this new concept in the area of game software.

**Keywords:** consumer behaviour, DRMS design, games, piracy, software

### Introduction

Up till now anti-piracy measures have been attempting to prevent users from making copies of intellectual works. Most of the introduced technical solutions have been cracked quickly. In addition legitimate users

have complained since the used techniques have restricted them in several ways. The market has finally realised that this concept does neither protect intellectual property nor is it accepted by customers, who do not want



to spend money on something they cannot use in the way they want.

This insight has led to a new approach: detecting illegal use and make the infringer feel uncomfortable. We can find examples of such anti-piracy measures in a number of recent software releases, especially in games both for personal computers and mobile phones. The present article will introduce some ways used in practice to annoy infringers and to make them feel uncomfortable.

The expectation is that this kind of penalty imposed on the consumer can achieve more than just annoying infringing users. With smart prodding, users are to be pushed to buy the product they have illegally used before. Thus vendors want to make illegal copies work for them. It is assumed that consumers, who have got into the habit of using a certain product, will possibly be ready to pay for it, when their user experience becomes disappointing due to the anti-piracy measure employed.

### Some history of annoyance

As a matter of fact, the concept is not as new as it may seem. Similar measures have been used by shareware programs since their existence, as their developers had no other chance to recover at least some fraction of their expenses. Nag screens were the first implementation based on the new concept: annoying users in order to make them pay for the software.

In the simple case a screen pop-ups at the application start or while using the application. More sophisticated cases need the interaction of the user, for example unregistered Total Commander (Total Commander 2004) users have to push one of three numbered buttons at the start of the application – the correct button is chosen randomly each time by the program itself, thus preventing the user to do this subconsciously after a certain period of usage time.

Besides nag screens, punishment can also mean some degradation of functionality. In this case the user can do almost anything with the application for a while, but sooner or later he or she comes to a point, where some functionality is missing, or becomes

faulty. A good example of this is the *Adobe InDesign* desktop publishing application (America 2003), where files saved with a cracked beta version of the software can not be opened with a legally purchased release. Not only are the users of the unlicensed copies punished this way, but anybody who wants to use the document.

Nowadays, as network bandwidth of the Internet increases, the spread of illegal content is made extremely easy via P2P networks. One of the obvious methods to prevent users from downloading and using cracked games is to require the original CD to be in the drive while playing the game, as for example the *Warhammer 40k Dawn of War* game release (Kobrano 2004). This measure is much about preventing the copying. However, illegal copies are often available on P2P networks as downloadable ISO CD images, that one can burn to a blank disc directly, having a spitting image of the original media. Furthermore, there are some utilities that can simulate an optical drive; thus users can play the games directly from their hard discs without having to copy the ISO image to a CD. To avoid this vendors use an anti-piracy method, in which these utilities are removed automatically, or the disc burning software or hardware is disabled while the game is running. We can interpret these measures as a very weird way of punishing infringing users. Some consumers even complain that doing this automatically is nothing else but a Trojan horse, and they might be right.

### Punishment to push purchases of legal copies

The most sophisticated and most promising measures are those where the developers introduce slight differences in the application's behaviour once the illegal copy is detected, which from the point of view of the user's playing experience make a big difference.

One of the first titles that involved this kind of anti-piracy measure was the second release of the strategic game *Settlers*. The playing experience was reduced near to zero when playing an illegal copy, as the player's gunsmiths produced pigs instead of swords.

It is not hard to imagine, what the combat strength of soldiers strapped with pigs is against the computer driven and well-equipped armies.

Another, recently released title using this kind of protection was the first-person-shooter game *Operation Flashpoint* from CodeMaster, which used Macrovision's *Fade* anti-piracy solution. The player had to face some strange things after a certain time when playing an illegal copy: not only that sometimes the empty clip could not be filled with ammunition, but the controlled character seamlessly dropped down dead occasionally. Some other game releases based on *Fade* technology involve progressively decreasing gravity on a snooker table, cars that do not steer, footballs flying away into space, or army units exploding without warning (Fox 2003). These behaviours are of course not documented. Keeping them secret means that crackers can never be sure, whether they have found all of them.

As the market for mobile platform games is increasing, it is facing the problem of piracy more and more. However the hardware environment is different from home computers. An illegal copy can be easily detected, as every game issue can be linked to its carrier media, the memory card (MMC). A release of the *Athena Space Impact* game for *N-Gage* utilized the described anti-piracy measure. The game became too hard to play, e.g. the player could not collect bonus items providing some special functionality, or the enemy aliens could be destroyed only with many more shots than required when using a legally purchased copy of the game.

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Vendors can think about this new method in terms of a "demo version" of their product, which is *almost* perfectly beneficial to spread freely. The software is the promotion tool for itself, as people, who have got crazy about a game, are more likely to buy the legal copy, as they want to have a version without those annoying things happening (Fox 2003).

"That's the beauty behind it – if you make a copy of a CD protected with our technology, there's no sign that you haven't been successful," said *Bala Vishwanath*, the chairman of *Smarte Solutions*, a company that deploys anti-piracy solutions (Willem 2002). "The pirate user all along thinks they made a copy, until they reach the point you decide to stop them. That's the optimal moment to capture that pirate user and turn them into a paying customer."

The "tried and liked" experience is probably also of advantage for consumers, as the new concept offers them more freedom of choice.

## Bottom line

Until now, anti-piracy mainly aimed to prevent illegal copies from running. This made the work of crackers relatively easy: they were successful if they managed to make one illegal copy run. Following the new approach of "slight modifications", a cracker can never be sure, whether he has found them all. The approach described above seems to hold some promise in the field of computer games, where playful measures meet playful users. However, how much of this approach can be extended to cover other types of digital content, like music or video, remains to be seen.

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## Chiariglione's vision: An interoperable DRM platform to the benefit of all

By: Leonardo Chiariglione, Digital Media Project, Geneva, Switzerland

**INDICARE-Interview** with Leonardo Chiariglione by Knud Böhle, ITAS, Karlsruhe, Germany.

The purpose of the interview is to get a better understanding of the project's work, and to find out how consumer concerns are addressed within the project.

**Keywords:** interview – consumer rights, Digital Media Project, DRM users, interoperability, standards

**Leonardo Chiariglione** is a renowned expert in the standards setting community, most notably as convenor of ISO's Moving Picture Experts Group (MPEG) and as first Executive Director of the Secure Digital Music Initiative (SDMI). He worked for more than thirty years for Telecom Italia within CSELT, the corporate research centre of this group, which was later named Telecom Italia Lab, of which he became Vice President Multimedia in 2001. In 2003 he left Telecom Italia to run his own consulting business. In December 2003 he spearheaded the establishment of the Digital Media Project, a non-profit organisation promoting the take-off of Digital Media on the basis of interoperable DRM systems considering the interests of all actors.

**INDICARE:** The Digital Media Project (DMP) has been under way (publication of the "Digital Media Manifesto" 30.9.2003; established as organisation 1.12.2003) for a year or so. The mission of the project and the work done are well documented (see DMP website and document list). Therefore to start with, let me briefly summarise the rationale of DMP as derived from public sources. DMP advocates standardised and interoperable Digital Rights Management (DRM) – as opposed to common practice – to enable a real take-off of digital media. The initiative aims at developing technical specifications for Interoperable DRM. As a necessary com-

plement to a successful deployment of these specifications DMP also intends to recommend actions to policy makers, legislators, and other authorities. In the Manifesto, the need to agree on end user rights in a digital environment is highlighted; further issues are the phasing out of legacy systems (in particular levy schemes), the need to remove the obstacles to broadband access and to enable a "full-blown digital media market", the reorganisation of the standards making process maintaining fair access to intellectual property, the need for DRM platforms to be interoperable along the entire value chain, accordingly new B2B relationships, and interoperable end-user devices and competitive consumer markets. Please correct me if I am wrong.

My first question is if new issues arose during the last year and what topics you are currently focussing on?

**L. Chiariglione:** In the past year DMP has held four General Assemblies, reviewed and confirmed the outcome of the Digital Media Manifesto, progressed the development of requirements for the Interoperable DRM Platform (the name of the DMP specification, IDP for short) using inputs from a large number of sources, issued a first Call for Proposals, received and reviewed a large number of responses and created a first

working draft of the IDP specification with the goal to publish it in April 2005.

On the policy side DMP has identified and described a sizeable number of Traditional Rights and Usages (TRU) and is in the process of issuing a Call for Contributions on that work. These will be used to draft a TRU Recommended Action. On the other policy issues DMP has already started work by organising two workshops on “Development of and access to standards” and on “Analogue legacies in the digital space”. A workshop on “Deployment of Broadband Access” will be held at the January meeting.

**INDICARE:** What’s particularly interesting for INDICARE is the claim that your approach will favour consumers. What are the benefits of DRM you envisage for consumers, and to what extent are consumers and consumer organisations involved in DMP?

**L. Chiariglione:** The basic DMP position, inherited from the Digital Media Manifesto, is that digital media technologies are an asset of mankind and that everybody in the value-chain – creators, end-users and all other intermediaries offering services in between – should benefit from them. But we have seen enough of the results of the wild use of digital media technologies to understand that this is not happening. DRM is the technology that can, on the one hand, let rights holders receive a just remuneration for their efforts and, on the other, let end-users fully exploit the potential of digital media.

DMP keeps working contacts with its grass root base developed at the time of the Digital Media Manifesto. Participation in DMP meetings was open to anybody until October and e-mail reflectors are also open with the exception of those dealing with technology choices. It has also started a dialogue with BEUC, witness the BEUC speaker who attended the Analogue Legacies workshop held in October.

**INDICARE:** Taking a look at the DMP member list the support by grass root organisations and consumer organisations is not apparent...

**L. Chiariglione:** As I said the dialogue with consumer organisations has barely started.

There are several very active individuals populating our email reflectors, some of them even attending our meetings.

**INDICARE:** One intriguing strand of work within DMP is in my view the analysis of traditional rights and usages (TRU) in order to figure out in which way they may survive in the digital environment. Are there rights which won’t survive in a digital environment, e.g. the right to private copy, so fiercely debated in public?

**L. Chiariglione:** The analysis of how TRUs can be mapped to the digital space is still ongoing, but a priori there is no reason why a TRU listed on the DMP web site cannot be preserved in the digital space. In most cases it cannot be, however, an automatic translation.

“Copy” is not necessarily a major concern for DMP. If you call “TRU to copy” as “TRU to access”, you have started to clear the ground.

**INDICARE:** That’s a delicate point. Digital media consumption and use requires again and again technical access and this fact can be exploited to generate streams of income – in a way that’s a basic function of DRM. In addition new techniques are developed (e.g. streaming, rights lockers) which might even render copying obsolete. Nevertheless good old purchasing and enjoying traditional rights like making copies for friends or the right to resell may remain important. Maybe my reasoning is going astray, so please continue to clear the ground a little bit further...

**L. Chiariglione:** I see no reason why purchasing physical media should not continue to be possible. This, however, is not a technology issue, because what you ask can be easily achieved. The point is again the collision of technical possibilities with TRUs. As I said before DMP is preparing a document that will be published with a Call for Contributions. Anybody can join the discussions on this document now and can respond to the Call when it is published.

**INDICARE:** Mhm, I was thinking of the purchase of digital online media in first place...



**L. Chiariglione:** Copy still makes practical sense when you buy something physical with digital media on it. In that case it is understandable that some people may want to be able to do the same that they did with analogue media. If we talk about digital online media, however, then “copy” is a solution, while the problem is, as DMP has identified it with its TRU #19, “ability to make continued access”.

**INDICARE:** Consumer organisations like BEUC and experts ask to clearly state what consumer rights are and to declare these user rights explicitly in legislation. I can imagine that you support this idea, but I am not sure...

**L. Chiariglione:** Making pompous statements a priori on rights and wrongs will not take us very far, as we will immediately be bogged down in discussing first principles. We have to concretely see on a case-by-case basis how individual TRUs can be mapped to the digital space.

**INDICARE:** There is an interesting statement (see Essentials of DMP) that end-users now have at their disposal manifold means to acquire digital content media inexpensively or even for free, and that common sense suggests that some of those means should be illegal. What exactly do you mean by “common sense” here? Common sense might be a difficult concept when common practice differs from common sense. You also say law clashes with common sense? But again, many scientists and civil rights advocates are unhappy with e.g. the anti-circumvention provisions of the EU Copyright Directive. Are there two types of common sense?

**L. Chiariglione:** Getting thousands of music or video files for free, when they are supposed to be on sale, clashes with my sense of justice. Bringing 12 year old kids to court is a shame for a society that lets this happen. My article that you quote above has nothing to do with the EU Copyright Directive.

**INDICARE:** Let me turn to another subject. In the INDICARE Monitor we published an article by Stefan Bechtold about “value-centred design” of DRM, i.e. a DRM solution able to balance interests of all actors along

the value-chain and also of end users. Do you as a technical expert think that this concept can be implemented? How can content protection by DRMs and the granting of exceptions be put under one hat?

**L. Chiariglione:** You seem to assume that there is a DRM technology with nuts and bolts that is designed in such a way that every business in the value-chain has its turf protected against intrusions. This can hardly be the case. Digital technologies have intrinsically disruptive effects as much as past waves of technologies, starting from Gutenberg’s, had disruptive effects, actually more. What should be done – and that is indeed what DMP is doing – is to design a DRM platform that provides a level playing field. The most important feature of such a platform is interoperability. This is good for business players in the value chain but for creators and end-users as well.

**INDICARE:** DRM means different things to different people. Some think of “forensic DRM”, of Light Weight DRM, others of Trusted Computing (TC) platforms as a prerequisite for efficient protection of digital content. What is your definition of DRM systems, and what do you think of the potential of Light Weight DRM on the one hand and TC on the other hand. How are these options reflected in the work of DMP?

**L. Chiariglione:** Your question gives me the opportunity to give more details about the approach that DMP is following in designing the Interoperable DRM Platform specification. As I said before, and because value chains are so diverse and business player attitudes are countless, it is impossible to design a “one size fits all” monolithic DRM solution. So what DMP is doing is to develop an Interoperable DRM Platform specification that is a toolkit. Those who want a lightweight DRM solution can find it in the toolkit, those who need a heavyweight solution can find it there as well.

I believe that this possibility of building DRM solutions “à la carte” is one of the most promising aspects of the DMP Interoperable DRM Platform specification. This entails a number of technical problems that affect interoperability, but is the only way to create



a DRM solution that is not going to be forced on users against their needs and is future proof.

**INDICARE:** Another interesting interoperability issue which you raise is interoperable end-user devices and your demand for competitive markets for these devices. I do not see very clearly what you have in mind. If I think of the MP3-player market, it seems to be quite competitive, and with regard to the proprietary portable music players (iPod, Sony, etc.), can't we be confident that market dynamics will achieve interoperability in the mid term.

**L. Chiariglione:** Yes, the MP3 player market is very open and competitive. So, would it not be great if we could have a market for players of governed content that is as open and competitive as the MP3 player market? This is what DMP intends to achieve with its end-user device specification.

Your hint that "market dynamics will achieve interoperability in the mid term" has value as a hope, but is not substantiated by any proof. Just see what has happened to the market of pay TV set top boxes. Ten years after it started it is still very closed and controlled by the service providers (who, BTW keep on losing money 10 years after they started this type of business).

**INDICARE:** In many respects I see your vision close to the official EC policy, thinking of the new EU Copyright directive and its commitment to DRM, the phasing out of levy systems, the eEurope 2005 Action Plan pushing broadband. What actions would you rec-

ommend the European Commission to better meet your vision of the digital media market take off?

**L. Chiariglione:** My philosophical position is that public authorities should not impose standards, with the exception of very special cases like safety etc. On the other hand if standards do not appear by themselves public authorities should promote their establishment. So, if the European Commission is serious about Interoperable DRM – as the Final Report of the High Level Group seems to confirm – and no other body – but DMP – is working on an Interoperable DRM standard ...

**INDICARE:** OK, last question, anyone will wonder what an impact a non-profit organisation with c. 20 members might have in a world of transnational corporations, media and software giants, think tanks, and powerful lobbies... .

**L. Chiariglione:** One year after its establishment MPEG had about the same number of members as DMP today and MPEG succeeded in doing what other well-established and supported organisation had failed to achieve.

**INDICARE:** Time will tell. In any case, I have learnt about the importance of DMP for all concerned with DRM standards and interoperability. I am also looking forward to the envisaged Recommended Action documents and expect that they might also stimulate the discussions at INDICARE. Thank you very much for this interview.

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## Content protection comes first

### A report about the Fourth ACM Workshop on DRM

By: Kristof Kerenyi, SEARCH Laboratory, Budapest, Hungary

**Abstract:** This year's ACM Workshop on Digital Rights Management, which took place in Washington, DC, was an opportunity to find out what is going on in the technical field and what the research priorities of DRM specialists are. The following report points out the issues I found most interesting for INDICARE. It is telling that neither privacy enhancing technologies nor end user centred design of acceptable DRM systems were among the issues dealt with. The primary and enduring concern was still, and for obvious reasons, content protection technologies.

**Keywords:** conference report – content protection, DRMS design, security, standards, trusted computing – USA

#### Introduction

The ACM (Association for Computing Machinery), the foremost society in computing, organised its eleventh Conference on Computer and Communications Security on October 26-27, 2004, in Washington, DC. In conjunction with this conference, several workshops were held on hot topics of applied computer security, one of them focussing on DRM. The vast majority of attendants were IT experts from the United States investigating more secure ways of digital content protection. There were only few researchers from other countries and with a different focus of research.

#### Trusted hardware solutions for better protection

Most speakers aimed to contribute to higher security for content protection. So far, technology has contributed very little to reduce piracy, and on open system architectures it is very difficult to achieve high-security DRM solutions. Software-based protection is not enough. What seems to be required are therefore either “unbreakable”, tamper-resistant devices, or advanced protection methods.

Most participants even shared the belief that in order to achieve secure systems, trusted hardware solutions were needed. In the following, I will touch upon a range of suggestions made during the workshop on how to improve content protection.

*Bertrand Anckaer* from Ghent University, Belgium, came up with the idea of diversification of software upon distribution, before and after installation, upon software activation, and of course with the help of tailored updates. *Weidong Shi*, a researcher from Georgia Institute of Technology, claimed that today's microprocessors are already “too powerful”, and if the pace of development continues, in fifteen years they will be thousand times faster than today, and he asked: What are we going to do with the computational power then? He suggested incorporating PKI into trusted computing: software (and content) should be encrypted with public-key cryptography characteristic to the particular microprocessor, so that software running on one computer wouldn't run on another computer. Of course, security and performance are opposing things, but future chips – as the speaker pointed out –, will

have the power to achieve this higher level of security.

Global record keeping of secure devices and revocation of tampered devices was proposed by *Bogdan Popescu* from Philips as another way to achieve higher security. Philips' system of "anytime anywhere" home networks is a case in point, in which content can only be played by online authenticated compliant devices. A similar approach including secure key handling also underlies AACMS (Advanced Access Content System), the content protection system of the "next generation DVDs", aiming to enhance the current movie protection which can easily be circumvented. I am sure many INDICARE Monitor readers will remember that the person, who had cracked the first generation DVDs' copy protection system (CSS), argued that he did it, because Linux and other open source operating systems had been excluded from media consumption by content industry before. So I asked about open-source software and the play-back of next generation DVDs, and *Jefferey Lotspiech* from IBM Almaden Research Centre replied that IBM was going to provide an open-source implementation of the key handling for Linux. This seems to me a very welcome development holding the promise of more acceptable systems.

Virtual machines (software, which behaves like a computer able to run programmes) are also of high concern. Today, more and more hardware and software emulators can be found for personal computers, which can in many cases render copy protection measures useless: A computer with a DRM system integrated at the operating system level may "think" that it has implemented secure copy protection, while in fact the whole operating system might just run as a process of another operating system, which eventually extracts digital content from its protected form. All that is needed to rip protection measures off is a right for a single play-back on the virtualised device, possibly a try-before-you-buy right. During this single play-back the digital output, which passes through the underlying virtual machine, can be captured by the host operating system. This exploit is similar to the analogue hole, but more efficient. The speaker even claimed that a "Trusted Com-

puting Base" would be "virtualisable". In this sense not even Trusted Computing is sufficient to resolve this problem – food for thought for its advocates.

### **Digital fingerprinting and watermarking**

Before the workshop it was my belief that fingerprinting and watermarking can only be used to trace copyright infringers ("forensic DRM"), I learnt however that these technical means can have a wider use and can also be used to prevent illegal content use. At the workshop fingerprinting methods were shown, which are e.g. immune to rotation and recompression of digital movies. Fingerprinting, as demonstrated, can also be used to detect illegal copies and request removal, or even to filter internet traffic containing potentially copyright infringing material.

Watermarking, as one speaker claimed, can be so effective today that watermarked information can even be recovered from a camcorder-captured and recompressed movie. Watermarks can also be used to ensure data integrity. *Huiping Guo*, from George Mason University in Fairfax, Virginia, talked about so-called "fragile watermarks", which unlike robust watermarks, used for ownership verification, can detect tampering of digital data. When for example a database is kept at an insecure server of a service provider, the owner of the database has to be able to verify the integrity of the data. Tamper detection by means of fragile watermarks is a way to do so, and it is a better way compared to just digitally signing a database to detect the fact of tampering, because fragile watermarks allow the localisation of modifications in the database. This way the intact parts of the databases can still be trusted.

### **Standardisation**

The importance of standardisation was emphasised in several speeches. It was noted that it is unlikely that the whole industry will come to a common conclusion, and accept a common standard. Instead, market needs will determine compatibility – or incompatibility – of devices and services, and vendors and manufacturers will not heed much the interests of their competitors.

Two possible solutions were outlined, which could solve the question of interoperability, or at least provide a means to reduce the negative effects of device incompatibility. *Gregory L. Heileman*, professor at the University of New Mexico, recommended a completely new way to look at DRM systems: just like all telecommunication systems more or less follow the ISO/OSI seven-layered system, the functionalities of DRM should just as well be divided into layers, governed by the International Organization for Standardization. The top and bottom layers could vary from application to application and for each method of content distribution, but there should be one middle layer, namely the rights expression and interpretation layer, which would need standardisation to achieve interoperability of different systems.

The other suggestion is based on a scenario in which no common industry standard exists: it was about creating an import/export functionality for each DRM solution, by means of which users could exchange content between different devices. If a common format can be agreed on, then most manufacturers could create an export function which would transform the usage rights and content to this common format, and the other device could import content in this form to achieve interoperability of devices. *Reihaneh Safavi-Naini* from the University of Wollongong, Australia, investigated two current, widespread DRM solutions, and concluded that they were basically compatible, and import/export functionality would be achievable.

### Other suggestions

*Boris Margolin* from the University of Massachusetts introduced a very interesting suggestion about using financial incentives to discourage consumers from exchanging content with each other. He focussed on valuable content to be shared between just two parties only, which needs to be protected for a limited amount of time. Examples given include passwords to a subscription service, prerelease of media for review, or content bound to nondisclosure agreements. The idea is to have a deposit of money from everyone who

legally obtains some form of permission to do something with a given content. When “returning” the token of authorisation, the deposited amount of money will be given back. If someone shares his or her permission with others, then the deposited amount will be divided between all those who can present such a token: this way the incentive to share is discouraged. The interesting thing is that this solution does not use watermarking or any other form of DRM to prevent sharing.

### Bottom line

From the point of view of technology the ACM workshop on DRM was very interesting and informative. Several new suggestions were made to better protect content from unauthorized use. However, if we consider consumer interests, we have to conclude that the end users of content are still looked at as “the enemy” by technicians. Their major problem is still how to achieve better content protection, and as long as this central question is not solved, little effort will be put in making DRM systems more consumer friendly, implementing more privacy or respecting the interests of disadvantaged groups.

This, however, is not a purposeless proceeding. The development of DRM, as everything else, must be a market-driven process in order to ultimately achieve consumer-friendly systems. For the supply side of the market, namely content providers, the most important thing today is safe content, which guarantees their financial compensation. Content providers will not flood the market unless better and more secure copy protection is implemented. Then, in a next step, the fight for customers will shift the focus of development to create more acceptable and consumer-friendly systems.

That is my conclusion from the workshop leading to the intriguing question about the real use of approaches like “user-centred design” of DRM.

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## DRM strategies debate in the US

### A report from a JupiterMedia Conference

By: Kristóf Kerényi, SEARCH laboratory, Budapest, Hungary

**Abstract:** JupiterMedia's Digital Rights Management Strategies Conference was announced as "the most comprehensive event on DRM business and technology issues ever held". This statement weighs even more as the US DRM market is more mature than the European market. Although the two day conference explicitly targeted consumer issues, it is safe to say that consumer-friendly DRMs are not the most important thing for American players in the DRM and content industry.

**Keywords:** conference report – business models, collective rights management, consumer expectations, DRMS design, interoperability, P2P – USA

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### Introduction

The DRM Strategies 2004 Conference, organised by JupiterMedia, was held on October 25 and 26, in Los Angeles. The majority of the attendees were from the United States, with just a couple of guests and speakers coming from overseas. The main event was split into parallel tracks. In the "media track" over one hundred participants discussed about DRM for digital content, mainly entertainment like music and movies. In the much smaller "enterprise track", probably with a few dozen participants, there was discussion on how valuable business and client information can be managed and protected with the help of new rights management technologies. I attended the media track which comprised among others a keynote debate about consumer friendly DRMs. By the way, this is the second time that INDICARE has reported about a Jupiter DRM conference (Helberger 2004).

### General questions of DRM

#### *P2P and limits of DRMs*

Peer-to-peer file sharing networks were a general topic, and they were mentioned both

as good, creating new opportunities if they are applied with the right business model, and also as the "dark side", against which the content industry has to protect itself. Michael Einhorn, a consultant and economist argued that as long as peer-to-peer networks exist, no DRM would present a real alternative to consumers. He went as far as saying: "Peer-to-peer is a hydrogen bomb to every business model." The two sided P2P topic has also been analysed in depth by Bill Rosenblatt, chair of the conference, in a recent INDICARE article (Rosenblatt 2004).

There was agreement that DRM cannot reach everywhere. If the content industry outlaws big networks then people will move to smaller networks, which cannot be monitored. As Khaja Ahmed from Microsoft said, "Bullet-proof protection of media is cost prohibitive. Keeping honest people honest is the level we can realistically achieve." Another voice said "We do not have to block content leak to Kazaa, we have to compete with Kazaa's offering."

One creative use of new technology was called "viral marketing". John Beezer, presi-



dent of Shared Media Licensing, recommended recognising what people using peer-to-peer file sharing networks were doing: they put a lot of effort into spreading content and providing information to others, effectively doing the marketing instead of the content owners. Viral marketing is based on a revenue system, where instead of punishing wrong behaviour, good behaviour should be rewarded. In this model a recommendation system is set up, where a user recommending a track to a friend would get 20 percent of the price of that track if the friend buys it, 10 percent if the friend recommends the track further, and 5 more for a third level endorsement.

For me, the essence of debate was that new business models are needed to exploit opportunities created by new technology rather than fighting against them.

#### *Alternative compensation schemes*

As expected there were discussions about levies and compulsory licensing as alternative compensation schemes. Compulsory licensing means a flat fee charged to ISP subscribers for unfettered content usage, while levies are like taxes on blank digital media, computers or other types of hardware. The former was strongly rejected by Electronic Frontier Foundation's representative, Wendy Seltzer. Instead, she suggested to offer "darknet"-users the possibility to share music for a low subscription fee (e.g. \$5 per month), collected by their internet service providers or college network. This idea of a "voluntary collective license" was strongly criticised by other participants. They said that there is no difference between voluntary and compulsory licensing from the industry's point of view: content providers who do not agree with the terms of voluntary licensing, will get none of the collected money; so at the end of the day it is compulsory, too, if one wants to get revenue.

#### *Interoperability*

The ever returning question of interoperability was raised almost at every discussion panel. My conclusion on the discussion is that while everyone is talking about interoperability as a technological question, it is

rather a business model issue: whenever the industry comes to the conclusion that they have to create interoperable services, the problem is solved. For example, Brian Lakamp, a representative of Sony Pictures, argued that in home networks a set of devices has to behave as one device. Therefore a consistent usage model (e.g. DVD) is an absolute necessity. From the consumer perspective, as someone from the audience pointed out, full interoperability is less important. Consumers just want point-to-point interoperability. In other words, if they can transfer content between their living room and their bedroom, the content format can be proprietary, it will satisfy them.

#### **Fingerprinting and watermarking**

The conference devoted two sections to fingerprinting and watermarking, focussing on the opportunities these complementary techniques can provide. As the participants learned, watermarking is not just another method to make piracy more difficult, it has a lot of different functions. The list below was presented by Reed Stager, vice president of Digimarc, and gives an idea of the multiple uses:

- ▶ Copyright communication – identification data of the content owner and granted usage rights can be included in the content.
- ▶ Copy protection – watermarks can control recording and playback.
- ▶ Monitoring – to monitor broadcast and internet use.
- ▶ Classification/filtering – content can be classified based on included metadata and filtered based on this.
- ▶ Authentication/integrity – Genuineness of the content can be guaranteed.
- ▶ Forensic tracking – identifies where content has left the authorized domain.
- ▶ Asset/media management – links content to DRM system.
- ▶ Remote triggering – automatic actions during distribution.
- ▶ Linking/e-commerce – enables access to additional information and purchase of related content.

The importance of “information” was underlined by Michael Einhorn. He said that a considerable part of the money that consumers pay for legally obtained music does not go for the music itself, but the information about the music. This includes everything from making the tracks known by playing them in radio stations, to filling the correct tags (artist, title, genre, year of appearance, etc.) in digital music files. Such data can be embedded in the content as a watermark.

Fingerprinting, on the other hand, can not only be used for forensic identification or tracking the path of a specific digital file, Vance Ikezoye, president of Audible Magic, said. It can also be used for monitoring peer-to-peer networks blocking the spread of infringing content. “Peer-to-peer networks are a market of 60 million people”, John Beezer said, so it has to be regulated and business opportunities in such networks have to be exploited.

Gracenote’s idea of a media library could bring a revolution to peer-to-peer file sharing networks. This revolution is about filtering network traffic based on intelligent fingerprinting techniques, and if someone wants to download a piece of music from a fellow file sharer, traffic will be stopped by the Gracenote system and the downloader will be redirected to a legitimate music store where he can buy the content.

There are, however, two main problems with network filtering. On the one hand, applying filters everywhere would need a huge regulatory overhead, so it is almost impossible at the moment. On the other hand, client side encryption of network traffic renders fingerprint-based filtering useless, and anyway, with the spread of non-networked connections, where devices are “talking” directly to each other (e.g. over Bluetooth), there is nothing to filter. We have already discussed issues of filtering the network traffic in an INDICARE article (Kerényi 2004).

### **Consumer-friendly DRM systems**

There was a panel which investigated whether consumer-friendly DRMs are an oxymoron or an inevitability. The discussion, moderated by Bill Rosenblatt, managing

editor of DRM Watch and chair of the conference, unfortunately did not attract a large audience.

The first big issue was to find out what is the value consumers want? What is consumer-friendly? There was no definite answer to this question, because DRM was invented by the content industry, and it was not motivated by consumer needs. As someone from the audience noted, “DRM is not about end users’ experience, its starting point was the competition with the file sharing world”. However, everyone agreed that consumer acceptance is indeed a very important issue. DRMs should be invisible to the consumers, while the consumer should know exactly what they are allowed or not allowed to do. This was the criterion used to define user-friendly DRMs.

A big debate emerged on the topic of fair use. One party concluded that fair use was not really supported by the industry with technical means. It would rather incorporate narrow “fair use” rules into the present DRM platforms, so that new legal fair uses defined later cannot impede them in implementing their original intentions. Another group of people argued that ultimately the consumer would determine fair use, and not content owners, distributors, legislators or courts. Consumers vote with their wallets, and if they feel wronged they will look elsewhere for content. But this is not bad, because if the industry pays attention to lessons that can be learned from the “free world”, they can develop better business models. As Todd Chanko, an analyst from JupiterResearch noted, “piracy is another way of understanding consumer demand”.

One more important question was whether there will ever be a technologically enforced way to control fair use? Both answers from the panel concluded the same. One said that fair use is not the same everywhere in the world, thus it is quite fuzzy and cannot be enforced. The other answer was that fair use is basically about unauthorized uses of content, basically exceptions, which cannot really be built into systems. Personally, I think that symmetric rights expression languages could solve this latter problem.

The question arose why someone would want to buy a product with DRM. Ultimately – according to the querying person – DRM functionality decreases the value of the product, at least from the consumer’s perspective. The answer from the panel was that this was true, and “consumers hated DRM”, therefore providers would have to give them something in exchange. This could be any advantage over non-DRM capable devices, for example a selection of colours, better features or smaller files size. Therefore, as Mike Godwin from Public Knowledge stated, “competing with free, forcing industry to add value, is the healthiest idea”. The main problem, however, is that “while consumers are the market, consumers are also the threat to the market”.

#### Bottom line

All in all, the conference was a very interesting event. The most interesting point for

INDICARE was the discussion about consumer friendliness of DRM. The conclusion is that while originally DRM was not motivated by consumers, to be accepted it has to become consumer friendly. This means that it has to be seamless, minimally intrusive, and at the same time it has to provide full transparency. Ultimately, consumers are the customers of content, and they will choose the best fitting solution, be it free of charge or for money and DRM protected. Digital rights management solutions need to provide advantages over free content. My conclusion on the conference is that decision makers in the United States have realised that just as in every service in the world in DRM the consumer is the one to satisfy. Therefore creating acceptable systems is the most important issue.

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## State-of-the-Art Report Released

By: INDICARE Team

**Abstract:** The new INDICARE report demonstrates that interests and concerns of consumers are insufficiently considered in the context of DRM-protected digital content. The present publication is the first State-of-the-Art Report by the INDICARE project. You are kindly invited to download the report from the INDICARE website: <http://www.indicare.org/soareport> (PDF, 1011 KB). Your feedback on the report is appreciated, please use the “Read More & Comment” option.

**Keywords:** announcement – INDICARE

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Although consumer acceptability of DRM has started to draw wider attention, the report shows that there is still little knowledge and empirical evidence with respect to consumer concerns and expectations regarding DRM. The low level of active involvement of consumer advocates can explain to a certain extent the unsatisfactory degree of responsiveness of existing business models, technical systems, legal instruments and political initiatives.

The authors point out: “DRM is a topic that goes far beyond piracy prevention and has to be seen in a broader social, economic, legal and technical context. From the legal point of view, many of the identified issues go beyond the scope of copyright.” The report highlights the increased importance of consumer protection and contract law. Furthermore: “The technical solutions that could respond to some of the consumer concerns have not been fully exploited yet. In the report we show already existing technical possibilities to resolve these issues.” Major concerns are fair conditions of use and access to digital content, privacy, interoperability, transparency, as well as various aspects of consumer friendliness. The authors are convinced that the consumer acceptability of DRM is crucial for the economic success of different business models based on DRM: “Fair and responsive DRM design is the key to a profitable strategy.”

The first State-of-the-Art Report on “Digital Rights Management and Consumer Acceptability. A Multi-Disciplinary Discussion of Consumer Concerns and Expectations” is available for download at: <http://www.indicare.org/soareport> (PDF, 1011 KB)

You are kindly invited to give us your feedback, please use the “add comment” button below. Your feedback will be considered in an update of the report.

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## Report on the 1st INDICARE Workshop

### Business models for mobile music and DRM

By: SEARCH Laboratory, Budapest, Hungary

**Abstract:** The first INDICARE Workshop in a series of five was held September 30, 2004 in Berlin, Germany. The workshop was on "Business Models for Mobile Music and DRM". It was organised by INDICARE partner Berlecon Research. The results of the workshop are now available in a report, prepared by INDICARE partner SEARCH, and we invite you to download it from the INDICARE website: [http://www.indicare.org/tiki-download\\_file.php?fileId=49](http://www.indicare.org/tiki-download_file.php?fileId=49) (PDF, 669 KB)

**Keywords:** announcement – INDICARE, business models, consumer expectations, music markets, mobile networks, standards, superdistribution

In order to stimulate the Informed Dialogue, INDICARE partners are organising five workshops during the project's lifetime. These events aim to deal with topics, which have to our understanding not been discussed sufficiently in public: Business Models and Rights Management; e-Payments for Digital Content; Consumer Perspectives on DRM; Social Exclusion by DRM; and Human Factors of DRMs. On September 30, 2004, the first workshop was held in Berlin, Germany.

The first workshop titled "Business Models for Mobile Music and DRM" targeted the field of mobile music. Many of the problems providers face today are already known from previous experience in music distribution on the Internet, but new technologies also raise new problems which have to be solved to successfully exploit opportunities in an expanded market. The topics discussed at the Workshop included:

- ▶ The current state of the mobile music market
- ▶ Technological developments
- ▶ Legal issues
- ▶ Business models / case studies
- ▶ Consumer acceptance and consumer concerns
- ▶ Future trends

The first workshop of the project showed that there is considerable demand of stakeholders – positioned differently in the value chain and with different opinions about DRM – to come together and discuss current problems, trends and strategies. The workshop report informs about the presentations, opinions brought up during the panels, and lessons learnt. The full Workshop report is now available:

#### Source

- ▶ Kristóf Kerényi (ed.): Business Models for Mobile Music and DRM. Report of the 1st INDICARE Workshop, Budapest November 2004; Download: [http://www.indicare.org/tiki-download\\_file.php?fileId=49](http://www.indicare.org/tiki-download_file.php?fileId=49) (PDF, 669 KB)

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## About the mind-set of software pirates

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** The term "piracy" is used quite often, while still little is known about "pirates". An empirical sociological study about software pirates sheds some light on this crucial subject. Its special strength is to focus on the mind-set of "pirates" and its foundations. However we also found some limitations of the study, mainly that the context of interpretation chosen is still too narrow. In any case, more studies of this type could help to better understand the pirate-consumer conundrum.

**Keywords:** editorial, review – business models, consumer behaviour, consumer research, piracy, software, survey – Germany

### Introduction

The complaints about "piracy" by industries are numerous. To be clear, we are not referring here to illegal mass-copying and commercial mass-distribution but to "piracy" at the individual level, and we refer first of all to "software piracy". Little research has been done to find out, who and what is behind the behaviour called "piracy". Therefore I welcome very much a study commissioned by Microsoft and carried out by the "Institut für Strategieentwicklung" (2004), which presented its results last year. This small consultancy firm is a spin-off company of the University of Witten/Herdecke (Germany), and the study was performed in close cooperation with the university, namely with Dirk Baecker, a well-known sociologist. As the study was written in German, I will translate all quotes as well as I can asking for apologies if I have not found an exact translation for each concept.

The study is titled "Digital Mentalities". It is mainly based on two empirical research activities: On the one hand an online-survey was carried out in April 2004 with a final 126 questionnaires for analysis (cf. p. 12). Following the authors, the selected sample of German Internet users is characterised among others by a relatively high educational level. On the other hand the authors performed 16 expert interviews (cf. p.36). Both sources informed their study.

### Problem definition

What is the problem with "piracy"? First, the problem is **not** that the Internet users do not

know that making "pirate copies" of software is illegal. The problem is that users don't intuitively comprehend or accept the legal situation and thus have no moral problem with making illegal copies. In other words, there is a mismatch between the legal *status quo* and a feeling of not-doing-wrong when breaking the written law. The main purpose of the study is to reflect on this discrepancy and to think about measures the software industry could adopt to make the gap smaller.

### Main general findings

In my opinion eight items from the survey are worth highlighting here, because of their importance for the further reasoning of the authors. The findings from the survey are:

- ▶ 95 % of respondents state that protection of investment for software producers is needed (p. 32),
- ▶ 74 % state that each illegal copy means financial damage for software producers (p.15),
- ▶ 95 % state that the use of illegal copies in companies is wrong and should be prosecuted (p.13),
- ▶ 86 % state that making illegal copies for commercial purposes is bad and deserves prosecution (p.13),
- ▶ 22 % state that making illegal copies for private purposes should be prosecuted and punished (p.13),
- ▶ 66 % regard illegal copying of software less severe than shoplifting (p.15),

- ▶ 25 % don't use illegal copies themselves (p.16),
- ▶ < 2 % regard software as "free" information (p.16).

The authors conclude that there is general awareness of what's right and wrong (commercial use, use in enterprises). However with respect to copies for private use most people don't accept the legal situation and behave accordingly. The authors assume that in most cases this behaviour is not motivated ideologically (hinting at the small percentage of 2 % regarding software as "free").

#### Findings related to four specified groups

In a second step the study distinguishes four groups of respondents by two parameters "computer expertise" and "level of illegal copying" (cf. p.16-20). The four groups are:

- ▶ PC-freaks (high computer proficiency, high level of illegal copying; 10,3 % of the sample; average age 25);
- ▶ hobby-users (low computer proficiency, high level of illegal copying, 33,6 % of the sample; average age 29);
- ▶ pragmatists (low computer proficiency, low level of illegal copying, 49,5 % of the sample; average age 34);
- ▶ PC-professionals (high computer proficiency, very low level of illegal copying, 6,5 % of the sample; average age 38).

If we assume that these data are reliable, we can conclude that all in all less than 50 % are heavy illegal copiers, and that illegal copying is related to age.

The investigators wanted to find out more about these groups, in particular about their attitude towards pirate copying. Therefore they introduce two further variables: "piracy mentality" ("Raubkopiermentalität", which means that people are aware of their illegal behaviour and deliberately pursue it) and "sense of justice" ("Rechtsbewusstsein", which means in this case that people are aware of the legal situation and combined with the conviction that copyright infringements are wrong). Following the authors, PC-freaks have the highest degree of "piracy mentality". As one may expect, many PC-freaks and hobby-users lack a "sense of jus-

tice", i.e. they don't feel in the wrong when illegally copying, while PC-professionals and pragmatists in their majority have a higher or high "sense of justice" (cf. p. 22-25).

#### Interpretation and conclusions by the authors

Apparently consumers know what is right and wrong, but most of them behave contrarily from time to time. The authors argue that social gratifications for illegal behaviour from the family or friends are stronger than law. I will come back to this point in the discussion. If law is not accepted, then prosecution and punishment is one option. However this is not considered a promising strategy by the authors. Criminal law won't help to turn "pirates" into paying customers. Intuitive comprehension of legal provisions would be required to change behaviour.

The missing intuitive comprehension is explained first of all by an underdeveloped understanding of the rationale of "intellectual property rights". The traditional understanding of "property" prevents from coming to an appropriate understanding of property rights with respect to digital goods, e.g. ownership and rights of disposal (licensing) would not be distinguished and the traditional meaning of theft as taking away would not work. Therefore the authors call for "digital honesty", understood as a new "culture of how to behave with respect to intellectual property in a digital world" (cf. 32). Education would be important, but also software industry would have its share and responsibility in building this new culture in order to change the mind-set of "pirates".

With respect to "pirates" the authors recommend the software industry to employ differentiated communication. In short, PC-freaks should be treated as specialists and partners; hobby-users (and here DRM comes explicitly in) should be targeted by good service and DRMs; for pragmatists freeware or slim versions would be important; and for PC-professionals high quality and open communication would be the way to go (cf. p.33-35).

## Discussion

Although I appreciate the study very much, in my view there are some shortcomings further studies might wish to avoid.

- ▶ Of course it is easy to ask for more differentiation, but I believe that some more distinctions would have improved the study: it makes a difference if I am talking of game software (almost a media type) or expensive business software like SAP. It also makes a difference if I talk about an illegal copy made from software purchased previously, or e.g. software obtained via P2P networks. I would also argue that making an illegal copy of the latest release is different from a copy of an old release which sells cheaply in any case.
- ▶ The authors don't discuss that "piracy" is already part of the marketing strategy of the software industry. For the software industry the question is not whether tolerating "piracy" helps to develop markets, but which degree of piracy is best (see Givon et al. 1995 and Prasad and Mahajan 2003). "Piracy is just another way of boosting market share" says Bruce Schneier resuming a statement by Microsoft attributed to Steve Ballmer (quoted in INDICARE 2004, p. 85). Also the rather balanced report by the Committee for Economic development (CED 2004) tells us "The business software industry, for example, has assumed some level of unauthorized copying and, in particular (at times, as much as 40 %) and has moved forward, working against unauthorized copying and, in particular, mass commercial unauthorized physical duplication of their works offshore through education and enforcement by its trade associations. But *they have also changed their business model* to compensate for revenues lost from unauthorized use" (p. 20; emphasis added, KB).
- ▶ The strategic approach to "piracy" by the software industry makes the call for "digital honesty" sound rather idealistic. I would add that in fact consumers get quite different messages from industries. While the content and software industries

tend to criminalize "pirates", network providers and device manufacturers are much more relaxed, as e.g. the advertisements for broadband reveal.

- ▶ Although the authors very briefly argue that the motivation for "piracy" is based on social recognition by family and friends, I would hold that the analysis of "digital mentalities" falls short in this point. Giesler and Pohlmann (2003a and b) have analysed filesharing on Napster rigorously and found that those consumers of "illegal" content are not the rational choice consumers but motivated by a sense of "subculture" in "virtual communities" and the ambition to be a different consumer. These findings can not simply be applied to "software pirates", but do cast some doubt on the result of the survey that sharing software is as "ideology-free", as the authors assume. Note also that "piracy" depends on age and the will to be different. A question about the use and attitudes towards open software might have helped to get a little bit deeper into the motivations of "software pirates". A more complete approach to "piracy" would also require investigating to what extent far "piracy" can be interpreted as a reaction to practices of software companies that are not accepted as fair (e.g. price policy, frequent updates, lack of service, lock-in strategies etc.), so that "piracy" appears as type of (illegal) "self-help measure".

This leads to the interesting question whether these results are meaningful for piracy in the media sector too. There are of course noteworthy differences: computer software often represents a higher value compared e.g. to a tune, the legal situation appears to be clearer (although not really clear) with respect to software as most people will assume a right to a backup copy but not a right to private copies as fair use. An interesting difference is also that normally software is regarded as a "tool" requiring certain training and skills to be used as opposed to e.g. a purely consumptive use of music (ignoring of course creative uses). As software users and consumers of digital content are in many cases the same population, I would guess that the basic prob-

lem that users don't intuitively grasp the legal situation and have no moral problem about making illegal copies will also be the same – influenced of course by many parameters. But instead of guessing we need empirical evidence.

### Bottom line

The study reviewed does a good job in assessing the software piracy phenomenon. It could show that the kernel of the piracy problem is not a simple problem of illegal behaviour but of a type of cognitive dissonance between legal assumptions and everyday assumptions, or in other words a problem of consumer acceptability of legal provisions and business models. As every good study develops an appetite for more, I hope that the university Witten/Herdecke and its alumni (like Giesler now a professor at the Schulich School of Business of the York University, Toronto) will continue this line of consumer research.

### About this issue

In this issue we start dealing with “piracy” one of the most controversial issues in the debate. One way to cool down the debate and to get a more realistic picture is to turn to empirical studies which seem to be gradually increasing in number. We have selected two empirical studies here, one about software piracy, the other about piracy of motion pictures, both trying to gain insights into the behaviour and the motivations of so called pirates. Despite limitations of both studies it becomes clear that a “consumer” is not an animal totally different from a “pirate”: For a majority of approximately 75 % the Faustian saw seems to be true “two souls, alas! are lodg'd within my breast...”.

The next two articles can be understood as critical comments on the current situation of rights management. *Rik Lambers* presents the US Digital Media Consumers' Rights Act (DMCRA) as an attempt to re-establish the balance between rightsholders' and consumers' interests in copyright. He then asks if Europe should follow this transatlantic initiative, and concludes that an explicit incentive to label products, and an attempt to restore copyright limitations, might also be benefi-

cial to consumers in the EU community, complementary to existing consumer protection provisions.

*Péter Benjamin Tóth*, legal counsel at the Hungarian musical collecting society ARTISJUS, focuses on a conceptual confusion he claims to have detected even in EC documents like the Communication on “The Management of Copyright and Related Rights in the Internal Market”. He argues that “Rights Management” needs to be understood as the exercise of rights based on copyright legislation with *licensing* as key action, while so-called DRM is based on technological protection measures (TPMs) with *permission* as key action. Not being based on legal regulations DRM would be a misnomer, and he proposes the term Digital Content Control Exercise (DCCE).

A particular technical issue of interoperability is dealt with by two standards experts, Niels Rump and Chris Barlas. They regard semantic interoperability as a fundamental problem of digital rights management. Special efforts are required to enable the flow of metadata describing content between domains e.g. the mobile domain, pay TV and PCs. The MPEG Rights Data Dictionary (ISO/IEC 21000-6: 2004), as part of the MPEG-21 group of specifications, is seen as a tool that should be able to solve the semantic interoperability problem.

INDICARE was present at the IST 2004 Event last year in The Hague, and Zoltán Hornák, SEARCH, reports about the two sessions on DRM. For businesses interoperability and security are the main concerns, while others still express their general scepticism and doubts about DRM solutions, and propose alternatives. Zoltán has also brought back from the conference a new acronym SPDC, i.e. Self Protecting Digital Content, which means that digital content will be transmitted as executable program and following execution on the user's authorized device, the protected content can be enjoyed. *Cryptography Research* promoting SPDC claims that if someone can break the protection of one particular good, he still is not able to break other items.



Finally we have included two reviews of the first INDICARE State-Of-the-Art Report. The first reason is that these reviews are valuable contributions to the Informed Dialogue on DRM solutions per se. Secondly, critical feedback is most important for us to inform and improve the envisaged updates of the State-Of-the-Art Report. This time we present comments from Cory Doctorow, European Affairs Coordinator for the

Electronic Frontier Foundation (EFF), and Philip Merrill, who writes for *grammy.com* and is an active contributor to the Digital Media Project (DMP, Geneva). We invite further reviews and would be happy to also receive comments from a much wider range of stakeholders including industries, collecting societies, legal experts, standards experts, consumer organisations, and policy makers.

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"Two souls, alas! are lodg'd within my breast..."

## Results of an online-survey on film consumption and piracy

By: Oliver Langewitz, Institute for Sociology, Karlsruhe, Germany

**Abstract:** This article presents results from an empirical study about consumers and "pirates" of film media. It starts from the assumption that the "film system" needs to exploit film content beyond film-theatres by means of secondary film media of which the DVD is most important today. At the same time digitization, the net, and p2p networks have given rise to "piracy". But interestingly, as the study scrutinizes, pirates are not the opposite of consumers...

**Keywords:** market analysis – consumer behaviour, consumer research, piracy, survey, video markets – Germany

### Introduction

Consumers use different film media, from screenings in cinemas via transmission on television to "secondary film media" like DVDs or VHS. For the film-industry, the exploitation of film-contents in film-theatres is only the first step of many in a long economical chain. Production-costs are recouped rarely at the box offices for the bigger part of all productions worldwide. Although some films, mostly Hollywood blockbusters, storm the box office, it isn't certain that the production costs will be completely recouped by exploitation in film-theatres. To make film-productions economically viable, other channels of exploitation like transmission on television, release on storage media like DVD or VHS as well as the new Video-On-Demand (VoD) have to be used.

However today, potential consumers can easily acquire film-contents illegally and film-piracy has increased because of uncontrolled p2p networks. While piracy-supporters argue that the internet has been constructed as a freebie information portal and therefore freebie data-transfers are considered legitimate, many economic and political initiatives are trying to use legal steps and technical protection measures to protect producers' copyrights.

### The survey

One of the main goals of an empirical analysis carried out by the Institute for Sociology at the University Karlsruhe (TH) between October and December 2004 was to investigate how users of illegally distributed film-

contents are at the same time legal users (Langewitz 2004).

A total of 982 people filled in the online-questionnaire, of which 67.4 % were male and 29.9 % female. This gender ratio isn't unusual for an online-survey, because predominantly male film-consumers use the web to collect information about films, as shown in the online survey by the two German television broadcasters under public law, ARD/ZDF(2004).

To reach as many persons as possible, e-mails were sent to potential participants selected from online-user-lists (e.g. [www.email-verzeichnis.de](http://www.email-verzeichnis.de) or [www.email-verzeichnisse.de](http://www.email-verzeichnisse.de)), alumni-lists and databases of professionals (e.g. [www.mediabiz.de](http://www.mediabiz.de)). Potential participants were also encouraged by way of online-media and online-forums as well as print-media, in which the goal of the survey has been communicated. Specialist film-sites like [www.filmforen.de](http://www.filmforen.de), [www.film.de](http://www.film.de) or [www.filmreporter.de](http://www.filmreporter.de) were mainly used for this purpose. It is assumed that in the end a *representative sample of active German film-users* participated.

This is confirmed by the basic findings:

- ▶ 48.2 % of all participants said they go to cinema often,
- ▶ 51.8 % frequently watch films on television,
- ▶ 58.9 % use film-DVDs a lot. The high value of DVDs for film-exploitation today is already apparent.

- ▶ 28.3 % (not more) watch films often on VHS, and just
- ▶ 8.3 % of all participants answered that they often use the World Wide Web for consuming films.

Next we wanted to know more about the use of secondary film media. Once a consumer has seen a film on one medium, it is of interest, to find out if he will consume the film once more on another medium. For maximum exploitation, consumers must consume film-contents multiple times. To achieve this, high content quality, high technical quality, and a strong emotional consumer commitment to the product is required. In some cases multiple exploitation is extremely successful due to strong customer loyalty, e.g. the mass-phenomena “Star Wars”, “Star Trek” or the “Lord of the Rings”-Trilogy.

According to the survey presented here: 63 % of all respondents often buy a film on DVD, *because* they already have seen it at the cinema, and 33.2 % often buy DVDs of films viewed on television before.

For the economics of secondary film media it is also interesting that DVDs and VHSs are bought rather than hired out: 27.9 % of all participants replied that they never rent DVDs, and 60.7 % of all respondents never rent films on VHS. In contrast only 16 % of all respondents never buy DVDs and 60.7 % of all respondents never buy VHSs. This precarious situation for VHS does not come as a surprise as production costs for VHSs are high while the functionality of this storage-medium is very low. Producers must lower prices and thus their margin gets very small. It is easy to foresee that the videotape as a storage medium is dying out and producers will concentrate on DVDs.

Next it was interesting to learn about copying behaviour: Almost every participant in the survey who owns up to having pirated movies is at the same time an active consumer. In other words: there are some consumers, who own illegal film-copies. In more detail:

56.6 % of respondents described video tape as their primary target-media for film copies, followed by 36.2 % copying on DVDs; next come special digital compression techniques,

e.g. DiVX with 30.8 %, and finally S-VCD (29.8 %) and VCD (28 %). Just 26.2 % of respondents said they didn't own any copied films. On average every respondent owns more than 57 copied films. The average number of legally purchased film-copies however is considerably higher; it is more than 86. Therefore it comes as no surprise that the German video-industry considers 2004 a successful year as reported in December last year in “Videowoche Online” (2004). The bigger worry for producers is the continuing and rapid decline of film-prices on video.

## Discussion about consumers and pirates

### *The importance of age*

Age plays an important role. The “Piracy Study 3” (2004) showed that predominantly people aged 20 to 29 years produce illegal film-copies. But this age-group is also the one which most frequently visits the cinema. These findings are confirmed by the survey presented here: 49.9 % of all respondents belong to the group aged between 20 to 29 years. Most of them are active both as consumers and as film-pirates. Only a tiny fraction consumes films only illegally. The overwhelming majority watches films in cinemas (98.2 %).

### *The importance of roles changes*

Film-pirates become consumers, producers become consumers, consumers become producers, and producers become pirates. There is no limit to role changes. This has already been observed by Winter (1995). Indeed an overwhelming majority of 90.9 % of all producers tape films from television broadcasts, 56.4 % of producers admitted to sometimes copying films from video tapes and 30.9 % copied films from DVDs. In other words producers behave more or less like average consumers. These results are based on the answers of those respondents (9.1 %) of the sample who said they were employed in the film-industry.

### *Anti-piracy campaigns go astray*

Anti-piracy-campaigns like the “Hard but fair: pirates are criminals”-campaign by ZKM (Zukunft Kino Marketing GmbH; ZKM 2004) try to prevent potential film-

pirates from carrying out criminal activities. One of the main problems of their strategy is that the campaign is targeted at film-theatre-audiences or is presented as a clip before the main feature on the DVD. In this way, consumers, who also may have some illegal film-copies at home, are treated as criminals. On the ZKM-campaign-website (cf. ZKM 2004) you find exactly this issue in the FAQ section: "We are showing the consequences of criminal organized film-piracy and we point out: your acts are actually theft of copyrighted works and illegal for that reason." It is certainly necessary to point out the problem of film-piracy but it is important to use an adequate form of communication and to address the target group properly. In practice, *organized* film-pirates will hardly be reached by this strategy.

#### *Motivations of film "pirates"*

In our study "unavailability" was frequently mentioned as a reason to make a copy, either because of timing (the film has already been distributed in other countries while a release for Germany has not been decided on), or for territorial reasons (the film will not or only within constraints be distributed in Germany). The reasons for this fall into three main categories:

1. The film hasn't found a German publisher.
2. The film has been put on the index by the "Federal inspection authority for youth endangering publications" (BPjS).
3. The film has been banned under §131 and/ or §184 StGB (criminal law).

Especially fans of the horror-genre have difficulty with the unavailability of movies, so a very productive "underground" has developed. In relation to this an interesting fact is that a lot of these fans would like to purchase the products legally to support the filmmakers. In addition, for these fans the original product possesses a special emotional or ideological value. From a legal point of view, these consumers act illegally as even the ownership of such films is a criminal act.

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Horror-fans use a complex network to get forbidden films and accordingly to buy their stuff abroad. It is easily possible for them to order appropriate films from foreign online-stores or p2p-networks. These transactions might be legal to the extent that the films are bought in official stores. Therefore the consumers aren't acting as film-pirates. The illegal aspect consists of buying films banned in Germany, e.g. by the §131 StGB.

Giesler and Pohlmann (2003) use the example of Napster to describe piracy primarily as a subcultural lifestyle concept which creates the "emancipated consumer paradox". Consumers are creating an ever growing distance to the consumption process as defined by market economy, which manifests itself in a collective feeling of freedom by producing and consuming illegal film-copies. This is certainly a problem for the film-industry, because an "emancipated" consumer can hardly be controlled.

#### **Bottom line**

Piracy for private purposes is not behaviour by a special group as the survey revealed, and film-pirates copying film-contents for their own use find themselves in a grey area, especially when they have purchased a legal copy before. Most consumers are at the same time "pirates" just like those who work in the film industry, who are producers, consumers and pirates. Nevertheless age is apparently an important parameter indicating a high level of legal film consumption and a higher level of (not always illegal) copying activities. Film piracy is also a group phenomenon when it comes to splatter and trash. Break out of the economical system is just one element of this "underground" culture. Prosecution and punishment may be the appropriate strategy against professional film pirates, who make profits from stolen films by selling them on black-markets, strategies to reduce piracy at the individual level need however to be more cautious than criminalising campaigns.

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## Restriking the balance: from DMCA to DMCRA

### A short analysis of the May 2004 Hearing on the Digital Media Consumers' Rights Act

By: Rik Lambers, Amsterdam, The Netherlands

**Abstract:** Historically US copyright law has sought a balance between rightsholders' and consumers' interests. The anti-circumvention provisions of the Digital Millennium Copyright Act have changed this balance to the benefit of rightsholders. Proposed legislation tries to restore the balance: the Digital Media Consumers' Rights Act would reaffirm fair use for consumers and augment the transparency of the use of technological protection measures. But what is fair? And should Europe follow this transatlantic initiative?

**Keywords:** legal analysis, policy analysis – consumer expectations, consumer law, copyright law, fair use – EU, USA

#### Introduction

In 1998 the United States Congress passed the Digital Millennium Copyright Act (DMCA). This act strengthened the position of copyright holders by, amongst others, the prohibition "to circumvent a technological measure that effectively controls access to a work" (see Section 1201 (a)(1)(A) DMCA).

Rightsholders can implement technological measures to prevent infringing uses of their copyrighted works and set the conditions under which consumers may access and use these works.

There has been considerable critique of this anti-circumvention provision of the DMCA, notably of its broad scope. It prohibits the



circumvention of an (effective) technological measure that protects any work, whether or not the work is copyrighted and whether or not the envisioned use of the work would constitute a copyright violation. Consequently, the anti-circumvention provision also prohibits consumers to circumvent technological measures of a copyrighted work if they want to make a fair use of that work.

#### *Fair Use Doctrine*

The fair use doctrine is comparable to, though not to be equated with the system of copyright exemptions in European copyright law. It is comparable in the sense that both the fair use doctrine and the system of copyright exemptions determine that for certain uses of copyrighted material the user does not need to have authorization of the rightsholder beforehand. Both US and European copyright are said to seek a balance between rightsholders' interests on the one hand and the interests of users and society as a whole on the other hand (see, for example, Recital 31 European Copyright Directive (EUCD)). The fair use doctrine and the copyright exemptions represent the second part of this balance: the users' interests. Examples of fair uses of copyrighted material, and which may also be exempted under European copyright law, are quotation for critique and news purposes, use for scientific or scholarly research, and private use.

While the object of the fair use doctrine and the copyright exemptions is comparable, their regulation differs. Where the copyright exemptions are exhaustively enumerated in national and European copyright laws (for example see Article 5 EUCD), the fair use doctrine is less clearly defined and more open to (juridical) interpretation. The boundaries of fair use, its scope, are fuzzy and hotly debated, as will be seen hereafter. However, it has been clear that technological measures do prevent fair uses of copyrighted works. For example, the DMCA forbids a teacher to circumvent a Digital Rights Management system (DRMs) on a DVD to show extracts of it in his class. The DMCA also prevents a visually disabled person from circumventing the DRMs on an e-book so he can use a technical fix that reads the e-book

aloud. Any circumvention, even if the subsequent use of the technologically protected material is fair, is prohibited. Consumers need to get permission from the copyright holder for a use that was historically allowed without authorization. This is what has been called the creation of a "permission culture" (see Lessig 2004, pp. 173, 192-193). The fair use of information by consumers, but also by scholars and news providers, becomes more and more dependent of the permission of rightsholders.

#### **Four pillars of the DMCRA**

The rise of a permission culture, or more specific the decline of the ability of consumers to make fair uses, has led to a reassessment of the DMCA. Five years after its enactment a new bill has been introduced in the US Congress to modify the DMCA and strengthen the position of consumers: the Digital Media Consumers' Rights Act (DMCRA). The DMCRA has four pillars: three that relate to fair use and the anti-circumvention provisions of the DMCA, and a fourth that seeks to augment the transparency for consumers towards the use of technological measures. Each pillar will be analysed in light of the Congressional Hearing on the DMCRA (see Hearing DMCRA 2004). This Hearing showed a great divide on the meaning of fair use between proponents (consumer electronics organisations, libraries, consumer organisations, academics) and opponents (the record and movie industry). Fair use, the ground on which the greater part of the DMCRA is founded, seems all but rock solid.

##### *1. Reaffirms Fair Use*

The most fundamental modification the DMCRA would bring to the DMCA is that the circumvention of a technological measure is deemed legitimate as long as the purpose of the circumvention is legitimate. A consumer, who circumvents a technical protection to make a fair use of the protected copyrighted work, shall not violate the anti-circumvention provision of the DMCA. This would be, for example, the teacher who circumvents a DVD encryption to show extracts in class for scholarly purposes. However, if that same teacher were to circumvent the



DVD encryption and distribute the content of the DVD without a legitimate purpose, he would be punishable for both the act of circumvention and the act of copyright infringement. As such the DMCA does not provide a legal tool in the hands of copyright infringers, stress the drafters of the bill. The content industry, a strong opponent of the bill, has a different view.

In the perspective of the Motion Picture Association of America (MPAA) the DMCA would legalize hacking and, states the MPAA: “once a copy protection is circumvented, there is no known technology that can limit the number of copies that can be produced from the original” or “distinguish between a ‘fair use’ circumvention and an infringing one” (see Hearing DMCA 2004, p. 31). Both opponents and proponents of the DMCA acknowledged that there are no such technologies at this moment. What is more, the Hearing showed that while there may be no technology that can determine what a fair use is, neither could the attendees. That is, there were conflicting views on what the scope of fair use entails. For example, is it a fair use to make a complete (back up copy) of a DVD or CD? Do consumers have a right to do so? No, said the MPAA. Yes, said legal scholar and copyright activist Lawrence Lessig. He relied on historic argumentation by referring to the tradition of US copyright and pointed to a US Supreme Court decision to underscore his claim. This last action revealed precisely one of the problems with the fair use doctrine: it is an open norm applied by judges to determine whether there is a case of copyright infringement in a specific context. While section 107 of the US Copyright Act provides four factors that should be considered while determining if the use made of a work is a fair use, this is still a matter of interpretation that proves difficult for skilled lawyers. For technology, such as DRMs, this determination is even harder to make.

However, the claim Lessig and other proponents of the bill made, was that the DMCA is not about the *scope* of fair use, but “whether you should have fair use despite the fact somebody has used a technology to take it away” (see Hearing DMCA 2004, p. 56).

Whatever the scope may be, if consumers can claim a fair use, they should be able to enforce it. Technological restrictions, backed by the DMCA, would make this enforcement impossible, and thus the notion of fair use effectively becomes obsolete. The DMCA would provide a much needed and legitimate remedy.

The strategy of the content industry was to take the focus away from this argumentation, and question fair use and its enforcement as such. It stirred up the existing legal debate about the nature of fair use: if it is a user’s right or not more than a defense to a copyright infringement claim. Proponents of the DMCA stress the first, opponents the second interpretation. No consensus on this question has been reached. But by questioning the nature of fair use the content industry tried to point out that the main foundation of the DMCA, on which three of its pillars are built, is not as rock solid as thought. Moreover, technological enforcement of copyrights through, for example, DRMs, would be impossible and bring considerable harm to the industry, so it was claimed.

## 2. *Reestablishes the Betamax Standard*

In December 2004 the US Supreme Court agreed to hear the *MGM v. Grokster* case. Twenty-one years after the groundbreaking *Sony v. Universal Studios* case, the Supreme Court can again decide to what extent technology providers are liable for the (copyright) infringing uses third parties may make with their products, so-called contributory infringement. From the *Sony v. Universal Studios* ruling followed the *Betamax* standard, which established that technology providers would have a defense against liability claims if the technology in question is “merely capable of substantial noninfringing uses”. The VCR had this capability, according to the Supreme Court, and this year a lower court determined that p2p network *Grokster* had too, and could rely on the *Betamax* standard against claims of contributory infringement.

The DMCA seeks to reestablish the *Betamax* standard for devices that can facilitate the circumvention of technological measures for legitimate purposes. Under Section 1201

of the DMCA the manufacturing or selling of these devices is currently prohibited. As a result a consumer cannot legitimately acquire hardware or software that would enable him to circumvent technological restrictions to make a fair use. Under the DMCRA consumers would actually be able to purchase the tools to enforce a fair use of a copyrighted work, or manufacture these tools themselves.

Proponents of this specific provision have not only stressed the consumers' interests, but also the more societal interest of flourishing technological innovation. This might be hampered if manufacturers live in a fear of liability for putting certain devices on the market, as noted by the President of the Consumer Electronics Association during the Hearing. For technological innovation the upcoming Supreme Court case *MGM v. Grokster* will be of great importance: the Betamax standard may be revised, even before the DMCRA finds its way into law, if at all.

### *3. Restores Valid Scientific Research*

Under the DMCA scientific researchers may only circumvent technological protection measures for encryption research under specific circumstances. Infamous is how Princeton University Professor Ed Felten was threatened with a DMCA lawsuit when he wanted to publish his research on weaknesses in a certain digital music security system (the Secure Digital Music Initiative). Felten initially withdrew his research. As a result both the academic freedom of speech and the progress of science were hindered by the (mis)use of a DMCA provision. The DMCRA would provide that researchers can analyse other technological protection measures than encryption and allows them to manufacture the circumvention tools to do so. Valid scientific research would be restored, bringing more security, and presumably also more secure technological measures.

### *4. Transparency through Labeling*

A fourth pillar of the DMCRA stands alone from the previous three, which are connected to the fair use principle. It seeks to enlarge the transparency for consumers on the use of technological measures. It may not be clear

to consumers that, for example, CDs or DVDs are unplayable on certain devices due to technological measures. The DMCRA would add to the DMCA that adequate labeling of copyrighted material should occur to the benefit of consumers. This would enable them to make a more informed choice in the purchases they make. Also, the sale and advertising of mislabeled CDs would be prohibited. This was the least controversial provision during the DMCRA Hearing.

**In short:** While the scope of fair use may be questionable, it seems uncontested that the anti-circumvention provisions of the DMCA have prevented consumers from actively making a fair use of content protected by technological measures. Consumers, but also scholars, libraries and consumer electronic device manufacturers may be hurt in their interests by the DMCA. Not the least because of the strong objections and lobbying of the content industry, it is all but certain that the DMCRA or a comparable proposal will make it into law.

### **European analogy**

Like the DMCA the EUCD offers a double-edged sword to rightsholders: circumvention is forbidden, and even if it were for a legitimate purpose, the manufacturing and sale of circumvention tools is also prohibited. The anti-circumvention provision of article 6 EUCD tends to overshadow the consumers' interests and related copyright exemptions, as laid down in article 5 EUCD.

Disagreement over the nature and scope of fair use in the US is mirrored in the confusion of European consumers over the private copying exemption. As such the EUCD does not provide a right to make a private copy, as recently underlined by several European court cases (see Helberger 2004). This shows an important difference to US legislation: many of the copyright exemptions that would be considered fair use, are not mandatory under the EUCD and left to the determinant of Nation States to guarantee and facilitate.

No proposal comparable to the DMCRA is pending on a European Community level. The European Nation States may take different regulative approaches to the subject mat-

ter. German copyright law, for example, does provide a transparency provision (Article 95(d)) that can be compared to the fourth pillar of the proposed DMCA. Likewise technologically protected content should be sufficiently labeled as such under the German provision. That insufficient labeling could lead to a misleading practice was outlined in the aforementioned European court cases (see Helberger 2004).

**In short:** An explicit incentive to label products, and an attempt to restore copyright limitations, might also be beneficial to consum-

ers in the EU community, complementary to existing consumer protection provisions (cf. Helberger et al 2004, p. 56). *Complementary* to consumer protection provisions, since the EUCD does not provide a private copying right. The DMCA might serve as paragon.

### Bottom line

Restriking of the historical balance between rightsholders and consumers is overdue. It is time that the *R* of Rights is put (back) in the DMCA and equivalents.

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## Digital Rights Management or Digital Content Control Exercise?

By: Dr. Péter Benjamin Tóth, ARTISJUS, Budapest, Hungary

**Abstract:** In quite a short time, the term Digital Rights Management (DRM) has conquered the world of copyright. The number of definitions given by law or IT professionals is inestimably high. Still, I try to give a new point of view on this matter, starting not so much from the practical realisation of DRM systems, but from the term itself. I wish to assert that DRM systems cannot be described as "digital rights management systems" as they usually do not involve the management of copyright.

**Keywords:** legal analysis, technical analysis – code as code, content protection, copyright law, DRM users, DRMS design, EUCD

### What does Rights Management mean?

The term "rights management" is not a new one in copyright; it has been in existence for several decades. As the European Commission states in its communication on the management of copyrights, "*The term 'management of rights' refers to the means by which copyright and related rights are administered, i.e. licensed, assigned or remunerated for any type of use.*" (Communication 2004). Briefly, rights management in my phrasing is:

- ▶ the licensing of relevant uses under an exclusive right based on copyright or related rights regulation (against payment, i.e. "royalty" or for free);
- ▶ the distribution of collected royalties (if it is not the rightsholder who carries out licensing in person);
- ▶ the prohibition of relevant uses under an exclusive right based on copyright or related rights regulation.

To sum up: in case of copyright management the right to license or prohibit a use is based on provisions of law. The following factors have to be explicitly regulated in law:

- ▶ the right itself;
- ▶ the uses that require a license;
- ▶ the person who holds the right;
- ▶ the limitations of copyright;
- ▶ the sanctions of infringements.

### What has to be excluded from the definition?

Now let me try to conclude in a negative way what activities can not be considered as "rights management":

- ▶ Permission or prohibition regarding contents that are *not protected by copyright*.

An example for this: someone has an idea that has commercial value, and intends to reveal this secret only to a person who gives money for his idea. Ideas as such are not protected by copyright; this activity is not rights management, but secrecy.

- ▶ The permission or prohibition of activities *not specified as relevant uses in copyright*.

For example, when someone gives mere access or allows perception of the work only on condition of payment – the bookshop sells a book, the movie theatre sells tickets to the show. As the consumer does not carry out a relevant "use" (watching the movie, reading the book), the movie or the bookshop does not manage any copyright, they just exercise their proprietary rights. None of the consumers who steals a book or goes into the movie theatre without buying a ticket is a copyright infringer.

- ▶ The permission or prohibition of activities specified as "*free uses*" in copyright law.

The term "free use" means an exception from the exclusive rights of the rightsholder. This term is often used also in

cases where the use is not totally “free”, i.e. it is accompanied by payment in some form. This is the case when a phonogram producer uses a digital copy control system that prevents the consumer from making copies for his private purposes, for example to listen to that CD also in the audio system of his car. As private copying is free use under several jurisdictions, the prohibiting activity of the phonogram producer is not rights management – it is just taking advantage of a technical possibility.

### Why so-called DRM systems are not DRM systems

With the example of the copy-protected CDs we have arrived at the definition of so-called

“DRM” systems. As most scholars agree, the term “*digital rights management*” can be understood in two ways: (a) rights management carried out in a digital way or (b) the management of digital rights. We can base our following arguments on any of these two approaches, as in both cases the *genus proximum* of DRM is “rights management”.

Now let us see, what the main DRM developer and provider companies present to us when trying to market their products. Their very simple model has three actors ( see Fig. 1): the author, the consumer, and the DRM-provider that helps the author in protecting the work. There is one small, but not irrelevant problem with this model: it does not exist in practice.

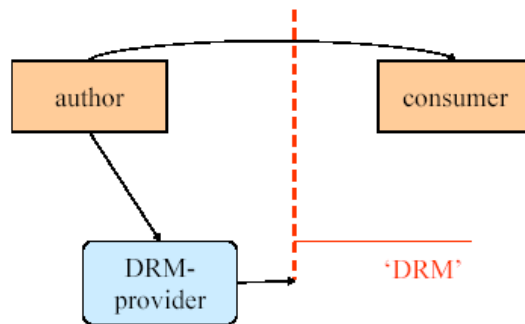


Figure 1: Simple model with three actors

We proceed with more practical examples. In Fig.2 we see the model of an electronic magazine publisher.

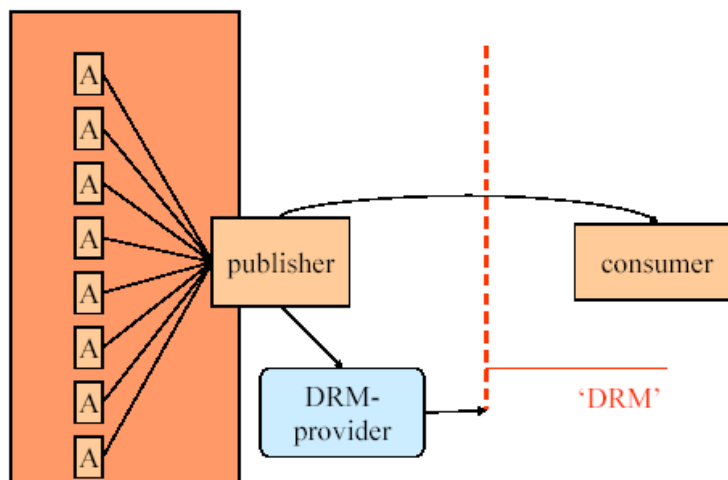


Figure 2: Model of an electronic magazine publisher



On the left hand side there are the authors (journalists or scholars, photographers, graphic artists, etc., signed with “A”) of the periodical. They license the publisher to reproduce and distribute (or make available to the public) their works. The e-publisher sells the magazine to the consumers, and – in order to defend his financial interests – pays for the services of a DRM-provider to safeguard the content.

In this figure there is one activity that can be regarded as rights management – it is the licensing activity of the authors towards the publisher. Therefore rights management does not appear on the right-hand side of the picture (where the activity of the DRM-provider takes place), but happens on the left-hand side, where there is no DRM. The space where real “rights management” takes place is signed in red (= left box) in Fig. 2.

If a consumer wants more than simple access to the works – for example he intends to republish some of the articles – he will not necessarily obtain a license from the publisher for it, he may have to agree with the authors directly. In most cases the agreement between the authors and the original publisher extends to other uses and also to sublicense other users, but in legal terms it is not necessary. Therefore it cannot be excluded that the relationship between the publisher and the consumer (seller and buyer) may also turn into “rights management”, but this is not imperative.

Let us go into details with another, recently typical use: the on-line music store (e.g. Apple iTunes). We can see the simplified licensing and marketing model of this service in Fig.3.

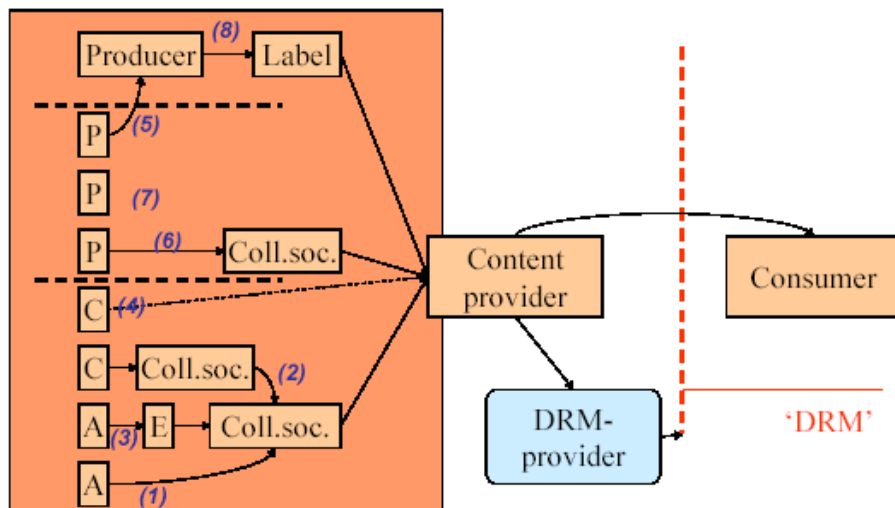


Figure 3: Model for an online music store

In the on-line music store, the musical works are usually sold fixed on a phonogram (and then turned into a common audio file format), in the interpretation of performing artists. Therefore we have three categories of original rightholders:

- ▶ authors of the musical works (using the hundred-year-old acronyms in the world of rights management “C” stands for composers, “A” stands for author, i.e. here lyricists);

- ▶ performing artists of the sound recording (signed with “P”)
- ▶ phonogram producers.

As all persons in the above categories have exclusive rights to license the making available of their works/performances/recordings under copyright or related rights, a lawful user has to obtain license from each of them.

In practice, these rights are not exercised individually by the original rightholder.

(1) The composers and lyricists usually form their own collecting society and trust them to manage their copyrights.

(2) These collecting societies trust each other to license their repertoire on their territory respectively. Reciprocal representation agreements exist in the field of online uses. These agreements of composers' and lyricists' collecting societies, the so-called Santiago- and Barcelona Agreements, are currently under competition law revision by the Commission.

(3) Some authors do not only trust their collecting society but also a music publisher (using again the French-based traditional acronym coming from the term "Editeur", signed "E" in the figure), and therefore he and the publisher both have a right to royalty-share. In Fig. 3 I could not present the complicated practice of music publishing – co- and sub-publishing agreements, repertoire transfers, etc. –, but in a fully developed rights management system one has to take all these into account. Presently the musical collecting societies track all these changes, and pay royalties to the authors themselves, their music publishers or sub-publishers and foreign collecting societies.

(4) Finally, some of the authors decide to exercise their rights individually.

(5) The performing artists generally transfer all their rights to the phonogram producer.

(6) However, the possibility may not be excluded, that some of them also form a collecting society, or

(7) keep their rights in their own hands.

(8) The related right of the phonogram producer is also often transferred to other producers or to one of the five "majors".

If the content provider (in the case of iTunes: Apple Inc.) intends to carry out this activity legally, it has to clear all these rights. This clearance, the licensing practice of all the rightholders, is called "rights management" (signalled with red = left box in the figure again). The DRM system used by Apple is, however, used in another relationship: between Apple and the consumer. This is not "rights management", because Apple does not give any right to use the work. If the downloader wishes to play the music files in his restaurant, he has to obtain a license from the rightholders (or their collecting society) directly. If he wants to create a PC-based jukebox, he also has to clear the rights, he will not be able to get a license for this use from Apple. This may also depend on the contracts between all rightholders and Apple, but in legal terms the opposite solution would mean the exception not the rule.

Let us summarize our conclusions in a table, showing the difference between real rights management activity and the so-called "Digital Rights Management".

**Table 1:** Difference between real rights management and "DRM"

	<b>Real Digital Rights Management System</b>	<b>So-called (IT) Digital Rights Management System</b>
<i>basis</i>	right (granted by copyright law) on special subject matters (specified by copyright law)	technical control (power) over any digital content
<i>substance</i>	licensing/prohibition of copyright-relevant uses	permission/forbidding of any acts based on a mere technical possibility to prevent these acts
<i>name</i>	Digital Rights Management	Digital Content Control Exercise

Consequently **Rights Management** is the exercise of rights based on copyright legislation. The key action is **to license**. On the other hand **so-called DRM** is the exercise of possibilities based on digital *technological protection measures* (TPMs). TPM is de-

finied by the Directive 2001/29/EC, Art. 6.3: "For the purposes of this Directive, the expression 'technological measures' means any technology, device or component that, in the normal course of its operation, is designed to prevent or restrict acts, in respect of works or

other subject matter, which are not authorized by the rightholder (...). The corresponding action is about **permission**.

As this is not a realisation of “rights management”, I propose a new name to it: **Digital Content Control Exercise (DCCE)**. In my view this concept emphasises that this phenomenon is not based on legal regulations, its basis is a purely technical power or control over any content.

### Bottom line

In my opinion it was an obvious and basic fault of the Commission to include the term

“DRM” (correctly: DCCE) in their communication on “The Management of Copyright and Related Rights in the Internal Market”, as a form of copyright management. “*DRM systems (...) clearly are an important (...) tool for rights management in the Internal Market of the new digital service*” (Communication 2004, 1.2.5.). As a rule, “DRM systems” have nothing to do with “rights management”, they are just a tool for defending interests of content providers.

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## When “playing” isn’t “playing” or how to achieve semantic interoperability

By: Niels Rump and Chris Barlas, Rightscom Limited, London, United Kingdom

**Abstract:** This paper discusses one of the fundamental problems of digital rights management: how to enable the flow of content between different domains: whether from the mobile domain to the world of pay TV or from music download to eBooks. While content itself can easily be migrated from one domain to another – thanks to content coding standards such as those developed by MPEG – the metadata describing the content can not – or at least not yet.

**Keywords:** technical analysis – interoperability, metadata, rights expression language, rights data dictionary, standards

### Introduction

One of the pre-requisites for trading “virtual goods” is that everybody in the value chain must know exactly what they are talking about. Without agreement on meaning, it will be extremely difficult, if not impossible, to make deals and transact business between

parties who do not know each other. And as we are talking about content that may be compiled from several different sources and contain several different media types, such as music, text and video (i.e. true *multimedia*), we are potentially talking about hundreds of different metadata and identification systems.

When talking about music we use ISRCs, ISWCs, GRIDs, MWLIs, IPIs and ID3. For textual resources we have ISBN, ISSN, ISTC, BICI, SICI, NITF, PRISM and ONIX, for visual content there are ISAN, V-ISAN, UMID, MPEG-7, DMCS and SMEF. Museums, libraries and Universities have their own systems (independent from the schemes based on content-types): IIM, LOM, IMS, CIDOC and MARC. To finish the alphabet soup for this paper, there are identifiers for physical products (EAN and UPC) as well as identifiers and metadata for the online world (DOI, DII, URL, URI, URN and iDD).

When trading a piece of multimedia content it will be necessary to be able to deal with identifiers and descriptors from any these identifier and metadata systems. The alternative – the development of an entirely new unitary system that would be adopted by everyone – is highly attractive, but probably completely impossible on the basis that everyone would have to agree on the new system and to give up their own systems.

In other words, we will need to create some method to be able to map the semantics of one metadata standard to the semantics of another if we want to be able to create true multimedia experiences.

### Lost in Translation

Nowhere is this more obvious than when dealing with content that is governed by rules articulated in rights expression languages (RELs), such as specified by OMA (2004) and MPEG (ISO/IEC 21000-5:2004). These two standardisation bodies each opted to adopt a different rights expression language on the basis that they were the most appropriate for their respective domains. It causes, however, a potential problem for users (a user being any participant in the content value chain, from content creator via content distributor to the consumer), namely that content that has been created in, say, the “MPEG domain” and is governed by the MPEG REL, cannot be rendered by a device in the “OMA domain” which does not understand the MPEG REL, even though the underlying compression and packaging of the content is the same.

The film “Lost in Translation” we all saw on the silver screen last year showed that translating from one language into another can be tricky. While this is true for humans, it is even more so for computers – especially when commercial values are at stake – as the following anecdote indicates. During the discussions between Consumer Electronics (CE) industry engineers and executives from movie industries which led to the drafting of the MPEG REL specification, there was extensive discussion about “deleting” content.

However, while the CE engineers understood “deleting” as the process of wiping the entry from the media’s table of content (and thus making the file inaccessible), the content owners’ view was that “deleting” should mean a complete overwrite of the entire file with random numbers, thus destroying every trace of it and making it completely impossible to restore. This seems to be a small difference, but there are significant consequences as, if devices were to be built based on the former definition, content owners might well not have been willing to release their content for such devices. This story highlights the critical importance of well-defined and agreed semantics.

### Managing Meaning

Douglas Adams has already described a solution to this problem: A “Babelfish” (Adams 1979) that translates entire sentences without any loss of meaning from one language into another. Unfortunately, no-one has been able to implement a complete Babelfish as of yet.

We do, however, have plenty of syntactical tools (XML being the fashion of the last couple of years) to help us with the transforming the structural grammar and we have many online dictionaries that can help to translate individual words. But when it comes to translating phrases or sentences, the available systems are far from perfect. What has been missing up to now are semantic tools that can translate (i) from one language to another language without losing the meaning, but also (ii) to translate from one environment to another environment (e.g. between different content verticals as discussed above) while maintaining the meaning of what is being translated.

However, with the development of the MPEG Rights Data Dictionary (ISO/IEC 21000-6: 2004) as part of the MPEG-21 group of specifications we do now see tools emerging that should be able to solve the semantic interoperability problem.

### **MPEG Rights Data Dictionary Approach**

When MPEG set out its requirements for a rights expression language and a rights data dictionary it was not anticipated that one of the submissions would be an ambitious and novel idea for the creation of tools for semantic interoperability. The submission from the Contecs:DD consortium (at that time: International DOI Foundation, Melodies and Memories Global Ltd., the Motion Picture Association, the Recording Industry Association of America and Enpia, who have since then been replaced by Rightscom Ltd.) was chosen by MPEG partly because it did offer a route to interoperability, enabling MPEG to work with the huge variety of vocabularies implied by the profusion of metadata schemes identified earlier.

The rationale for this decision was that communities wishing to use MPEG technology would not necessarily want to adopt a single (new) MPEG vocabulary, but would continue to use their own. Indeed, it is not the job of a horizontal standards organisation like MPEG to dictate to specific vertical communities what they should and should not do within their own sector. This of course extends to enabling them to continue to use their own metadata schemes, even though the use of a single scheme could greatly enhance meaningful communication between sectors. It was this problem that MPEG sought to solve when it adopted the approach of an ontology-based rights data dictionary. This means that the dictionary is built up as a knowledge base using a consistent data model with all terms being expressed in terms of their relationships to one another. For computational purposes this enables extensive inferencing, which both cuts down complexity and achieves rich results from the knowledge base (cf. International DOI Foundation 2004).

The dictionary standard is actually based on a remarkably simple model, containing only

four entities – resource, agent, time and place. Combining these four entities in a “Context Model” (so called because each term is analysed in terms of the context in which it exists), it is possible to classify and derive terms for the dictionary in a highly granular way with the use of these four entities. The advantage of using an underlying data model of this nature is that the dictionary can be cumulatively enlarged in a consistent manner, so that all terms are potentially interoperable, even though they come from non-interoperable sources. For more information see International DOI Foundation (2004).

This is achieved by analysing each term as it is presented for inclusion in the dictionary, then mapping it to a central core in accordance with their original semantic content. By this means, the dictionary can be built up with terms from many different vocabularies, mapped together in a matrix of meaning.

The dictionary as finalised and published in the ISO standard is only small, but, supported by the Context Model it contains the building blocks of a potentially much bigger dictionary. And given that the communities that may adopt MPEG standards could be very substantial, this bigger dictionary will contain terms required by anyone wishing to use MPEG technology, especially, but not limited to, the MPEG Rights Expression Language (ISO/IEC 21000-5). The process for extending the dictionary is the proposed Registration Authority, which is expected to be managed by the International DOI Foundation (IDF). This is significant because the IDF represents a major content owning community that will be encouraged to adopt the dictionary from the start. In addition the music, motion picture and publishing industries have all expressed their support and several implementations are currently under way.

### **Achieving semantic interoperability between MPEG and OMA**

While the dictionary deals with the method by which terms can be made interoperable, it remains to be seen how rights languages themselves could be made to interoperate. To understand this, it's essential to understand



the problem that multiple rights expression languages may present. Say that rights holder A uses the MPEG rights expression language while rights holder B uses the OMA language. Both languages have a right called “play”. The question then arises as to whether the MPEG “play” is the same as the OMA “play”. But only by analysing the semantic content of both versions of the word “play” it is possible to know if they mean the same. If they do not mean exactly the same, there is a danger that a device will allow a user to deal differently with a resource, depending on whether the device is using the MPEG “play” or the OMA “play”. This could have serious unintended consequences and may lead to the same issues as discussed above with respect to “delete”.

One solution to this is to use an interoperable rights data dictionary, constructed on the MPEG principle, to enable users to generate rights expressions in both the MPEG and OMA languages, by using the same top-level core terms, which are then translated (“specialised”, to use the term coined in ISO/IEC 21000-6) into the appropriate MPEG and OMA semantics. This approach would ensure that the actions permitted by an MPEG or OMA rights expression (using terms from the respective languages) were equivalent even though the two rights expressions had apparently different terms. There may, of course, be other methods to achieve the same ends, but what is certain is that direct translation between rights languages may be unreliable for a combination of syntactic and semantic reasons. If this is so, a better solution may well be the one outlined above.

### What does that mean practically?

Rights owners will describe their content as well as the rules under which their content

can be accessed in their preferred language and to their requirements. Device manufacturers A and B will, however, design their devices with technical capabilities in mind.

This will almost certainly lead to slightly different implementations of, say, the verb “play”: In a specific device, “play” could involve a resizing of a video clip to a slightly smaller screen and another device it would involve the reduction of the colour depth to a black-and-white picture to cater for a black-and-white display.

In order for the automated content distribution system to work with such different devices, a semantic connection between the content owner’s “play” and the two device’s “play” needs to be created so that (i) the former becomes a superset of the two latter and (ii) that this relationship becomes known to the content distribution system as well as the devices.

### Bottom line

Everyone agrees that standards are valuable and can lead to interoperability. But when there are different standards solving the same problem in different domains, it may be extremely difficult to efficiently interconnect even adjacent domains. Today we have this situation: each content vertical and each distribution domain has its own vocabulary – with the net result that true *multimedia* must remain a dream unless there is a process to make controlled vocabularies interoperable. Technologies such as the MPEG-21 Rights Data Dictionary can help to manage these various sets of meaning so that one always knows in terms of one’s own vocabulary what someone else was saying.

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*Chris Barlas* has more than twenty years experience of rights management. In the mid 1990s, he led the European Commission supported Imprimatur project. Subsequently he was involved in other successful European Commission projects including <indec> which delivered the widely adopted analysis of metadata interoperability. He has also worked as a writer and producer in television and radio. At Rightscom he works as Senior Consultant. In the public sector, he edited the CEN/ISSS DRM study and co-authored WIPO's recent report on DRM. Chris has been active in international standards development. At MPEG, he co-edited the MPEG-21 Rights Data Dictionary, published in April 2004 and took an early leadership role on standards at the Open eBook Forum. At Rightscom he recently assumed responsibility for developing the market for Ontologyx.

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## DRM at IST 2004

By: Zoltán Hornák, SEARCH Laboratory, Budapest, Hungary

**Abstract:** This year the EC's annual IST Event was held 15-17 November in The Hague. Two dedicated sessions addressed DRM: "The Evolving Consumer Value Chain: Extended Home Environment and DRM Challenges" (conference session) and "The Future of DRM" (networking session). While the conference session mainly addressed security and interoperability issues, the networking session was characterized by a vivid debate whether the problem of digital IP protection can be solved by DRM approaches or if completely different solutions are required. Although no clear conclusion was drawn, the arguments were interesting.

**Keywords:** conference report – authorized domain, collective rights management, consumer expectations, interoperability, cultural heritage, preservation, security – EU

### The IST 2004 Event

One of the most important thematic priorities of the European Commission's Sixth Framework Programme (see FP6) is the Information Society Technologies (see IST), whose aim is to ensure European leadership in knowledge economy and foster the development of the knowledge-based society. The annual conference, where representatives of the academia, the public sector and the ICT industry can meet to build relationships and establish cooperation, is the so-called IST Event (2004a).

This year the IST 2004 Event was held in The Hague. The event offered three main instruments for the participants to help them build new contacts and find potential partners: the **Conference** with 30 sessions addressing main topics of IST, the **Exhibition** showing results of recent IST R&D projects, and several **Networking Sessions** offering valuable possibilities to meet persons with the same interest and discuss ideas about future cooperation.

A conference session called "The Evolving Consumer Value Chain: Extended Home Environment and DRM Challenges" and also

a special networking session were dedicated to Digital Rights Management.

### Home environment and DRM challenges

At the conference session on DRM six presentations (IST Event 2004b with slides available) addressed ongoing development activities and future views on the improvement of DRM solutions.

*Richard Gooch* (IFPI) talked about new music distribution needs, where consumers would like to listen to the songs they have paid for throughout their home environment: PC, music centre, discman, car, etc. without any inconvenience. The DRM system in this scenario should protect against “copying for the neighbours”. The speaker highlighted two important problems: security and interoperability. Admittedly solutions to these problems were not addressed in this opening presentation.

*Lindsay Holman* (Panasonic OWL) presented several interesting facts about music and video downloads and P2P network penetration. Even though P2P networks have been understood as equivalent with piracy in the past, the speaker’s opinion was that this technology would play a significant role in the future of *legal* content distribution. By learning from the success of this technology and applying adequate Copy-Protection and Copy-Management (CPCM) solutions to it, content industry could benefit.

*Erwan Bigan* (VIACCESS SA) gave an overview on current protection systems, like conditional access (CA), digital rights management, copy protection and copy control. According to the speaker’s view, evolution seems to be turning from conditional access based services, like coded cable TV, to usage controlled DRM solutions. He also highlighted interoperability and security as the key success factors.

*Timo Ruikka* (Nokia Corp.) introduced OMA/DRM standardisation efforts to elaborate open, widely accepted standards. Now OMA DRM 2.0 is ready and can be deployed to create interoperable DRM solutions. The next steps will not be of technical nature, but about attractive services and business models to win consumers. If offer

and demand were to match, then the relative security and interoperability provided by OMA DRM should be enough.

*Wouter Leibbrandt* (Philips Electronics) addressed future trends from the convergence point of view. It seems that mobile trends will drive development in this area. According to surveys mobile phones are more important for people than their wallets as they carry their mobiles with them all the time and wish to use them for all sorts of services. During the first wave of mobile infotainment developments “*single function products*” became more and more powerful. In this phase development was driven mainly by insufficient memory capacity and other technical bottlenecks. Now we are experiencing the second wave of this evolution characterized by “*combination products*”, where different services are integrated into one device (mobile + camera, flash-drive with MP3 player, etc). In this phase a lack of interoperability is the main obstacle.

*José Jimenez* (Telefónica) interpreted DRM as the key element in the “war towards the Intelligent Home”. Using Lord of the Rings imagery, he went through mobile network trends and pointed at actions needed to fight decreasing ARPU (average revenue per user) and increasing competition. With respect to consumers, the lack of interest in technology would be the most important hurdle. This war can be won only together, according to the speaker, and DRM seems to play a key in this process, because its interoperability requirements force actors to cooperate.

**Shortly summing up:** From the presentations mentioned above one can see that much effort has been invested in developing and deploying DRM solutions, but several problems, mainly security and interoperability, are still open and call for widely accepted solutions. The question – which none of the speakers addressed directly – however is, whether these problems can be solved in the near future.

### Vivid debate about DRM at the networking session

The networking session about the “Future of Digital Rights Management” started as a conventional round table discussion about

upcoming calls for proposals and possible projects, but very soon the direction of the conversation turned to the theoretical and practical problems and the uncertainty surrounding the future of DRM. After the second round the audience joined the debate with – sometimes extreme – views and the whole session turned to an endless debate about the question, whether any DRM technology can be long-lasting in practice or not. Even though there was no clear outcome of this discussion, it is interesting to highlight some points from the debate.

#### *People do not want unbreakable rules*

Any type of protection is based on laws and rules. Rules in everyday life are sometimes easy to break, like speed limits and illegal music downloads. We all know that breaking rules is illegal and in unlucky situations entails punishment. However in case of digital content protection, rules seem to behave strangely. On one hand there is practically no punishment for P2P MP3 downloads, while on the other hand, if strong DRM technology were applied, the rules would not be breakable, and ideally there would not be any exception from the rule.

The vision of rules that do not permit any exception sounds exaggeratedly strong for consumers. A future in which there is no way, even in exceptional cases, to un-protect protected digital content in order to have access to it, understandably frightens us. In everyday life a “small breaking” of the rules may help more than it causes trouble (e.g. exceeding the speed limit sometimes can save life)? Applied to digital content, the equation of all the disadvantage of strong protection on the one side and relatively limited damage avoided on the other side, is often perceived as unbalanced. According to one of the speakers, people do not want unbreakable rules.

#### *Preserving digital heritage*

One can experience that it is hard to find certain works of art, like CD's and films from the beginning of 1900's. There are many cases where the market for traditional media became very limited due to the free Internet availability of the content. As a con-

sequence shops and libraries did not keep copies. While in the past many of these works of art could be found and downloaded from the WEB freely but illegally, these channels are shut down today. As a result content practically disappears and becomes unavailable.

The speaker urged that we should take care of our digital heritage and ensure that all digital works of art will be preserved for the time when their legal protection expires and they become public and unprotected. Nobody seems to deal with this issue, no one seems to be interested, and law does not seem to address this question.

#### *Can IP protection ever work?*

After the issues that addressed DRM from the points of frustrated expectations a comment from the audience turned the table to the technological problems: “We have to see that *legal means and technological means have all failed*. We should not pacify the world with the promise that these questions can be solved in the future by technical means. Copy protection does not and will not work. We have to look for a different solution.”

Since this comment implied that if the situation is so bad, there is no ground for further research or standardisation investments, it raised quick and loud objections and started a lively debate:

Many from the audience claimed that from a theoretical point of view the problem is solvable, but requires actions that are hard to achieve in practice, that was why further efforts are needed.

- ▶ For example in the case of music it should be possible for a song to exist only in properly encrypted form right from the very beginning when it is recorded in the studio.
- ▶ Decryption should be dynamic and self-containing, that is the digital content should be an executable program, whose output would be the protected content. The executable program should play the output only in such environment, where it is ensured that content can not be sto-



len (i.e. only on certified playback devices). Self Protecting Digital Content (SPDC) was referred as an example for this solution (see Cryptography Research, Inc. 2004). SPDC claims that if someone can break one of the protections, he still won't be able to break others, since there is no single point of attack in the system. Interoperability would be the key question if such a strong DRM came into practice.

### Alternative compensation to encourage intellectual production

There was another interesting comment from the audience. It suggested that we should have turned back to the roots of IP protection laws and examined how its initial goals could be reached in another way: The very basic goal of IP protection is to encourage authors to produce more and higher quality intellectual property, because it is the common interest of the whole society. In the past IP protection law seemed to fulfil its basic goals, it encouraged authors to produce more and more products (quality is another question) and consumers accepted paying for them. The new possibilities by newer and newer technology would have spoilt the mechanism and its balance.

The comment suggested forgetting about the current situation for a minute, where we are, what the laws are, and try to think in a set of rules, that can be feasibly enforced even in practice and take into account the new possibilities of the Internet and the changed requirements of the consumers, while still encouraging authors.

One has to accept that *consumers want to exploit the possibilities of easy copying* between different devices, through the Internet or even between each other (not just within their own home!). Experience would show that those initiatives fail that try to apply any sort of copy protection and try to prohibit users from exploiting opportunities that technology now provides. Users want to

collect everything they might ever need – even if they do not or only very rarely use it (e.g. music collections with thousands of albums) –, and they want to take these collections with them all the time, just because technology permits it, and because it is much easier than anything else.

The speaker suggested that one should play a bit with the idea that copying any content would be free (according to law) and very easy (because of technology improvements). In such an environment how could one encourage authors to produce more and higher quality IP?

A possible solution would be to collect “IP taxes” and distribute this money based on the usage of different IPs (e.g. songs). If the usage counts for this calculation were to be solved by relatively strong (but weaker than currently projected) DRM technology it could be the solution. On one hand it would not prohibit consumers from doing what they like, giving them total freedom, while on the other hand there would be no reason to break this system by anyone, since their money would not depend on it. Only authors would be interested in cheating the system, but tolerating some fraud in that sense might be better than the current situation. However, one has to admit that this idealistic situation would need such basic changes that chances that it will ever be reached are very small.

### Bottom line

From the lively debate and the extreme views on the future of DRM we can conclude that there is no clear consensus about the direction where technology, law and practical systems should go. It might be the case that the so-far more or less common IP regulations will split into different sub cases (like music vs. other arts, or even the case with software), or different proprietary solutions will rule this world. Currently no one seems to know the answer, but time will surely take future to present.

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## Eight comments on the first INDICARE state-of-the-art-report

By: Cory Doctorow, Electronic Frontier Foundation, London, United Kingdom

**Abstract:** The following article is based on a letter the author sent to Natali Helberger, the editor of the first INDICARE state-of-the-art-report. While the overall appraisal of the report is very positive, there are eight suggestions which INDICARE might want to stress in its updates of the report. Most of them deal with intricate technical matters of DRMs.

**Keywords:** review – INDICARE, authorized domain, broadcast flag, business models, DRMS design, interoperability, vulnerability

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### 1. Latent effects of DRMs

There should be more consideration given to the ability of DRM to change the capabilities of your device after the fact. If you buy a device with a DVD burner, but buried within the device’s DRM language is the ability of a broadcaster to disable your burner for his shows, then how will you know whether your burner will work with the shows you’ve bought the device for? In the US, a Media Center PC can no longer be used to burn DVDs of the Sopranos because HBO has switched on a “no-burn” flag. Likewise, users of the Rhapsody music service may lock in to a service contract and compatible devices because their favourite artists are available on Rhapsody, and find themselves both locked in and shut out when the artists terminate their agreements with Rhapsody – a common occurrence today.

### 2. The concept of “authorized domain” is based on unrealistic social assumptions

With regard to “authorized domain” and the idea that a cartel will set out devices that know what constitutes a household. In the DRM meetings I’ve attended where this is being implemented, the notion of an authorized domain is being driven by assumptions about what constitutes a family that are far from universal. It might be impossible for a child who is in joint custody to her parents to bring her videos from one parent’s home to another. A family where one party travels too often may find its media fragmented and locked out of its devices. Divorce, marriage, custody – all of these are moving from the realm of the social contract to a determination made in secret by a cartel of content companies who are locking in all their views of what constitutes a valid household.

### **3. The “authorized domains” is a mere option not a guarantee**

Further to authorized domain: even within an authorized domain, the DRM systems envisioned will allow rightsholders to restrict how you use the media you lawfully acquire. The authorized domain *allows* a rightsholder to give you the flexibility to watch a movie anywhere in your household, but it does not *require* that the rightsholder do so: already in the proposal for the authorized domain is the ability to limit viewing to a single device, or to cap the number of viewings, or to limit viewings to “local” devices (i.e., even though your authorized domain includes your car, a music company can still force you to buy music that only plays in your house, and you’ll have to buy the same music over again for your car).

### **4. Increased vulnerability by DRMs**

Regarding vulnerabilities created by DRM, see the recent revelation that Microsoft’s DRM has a flaw that allows malicious people to embed viruses in your music, so when you play the music back, it compromises your machine. This is a much more direct risk than that from Trusted Computing – needless to say, non-DRM music does not carry this risk.

### **5. The promise of lower prices for DRM protected content is not held in practice**

Regarding flexible business models: while there is the theoretical possibility that DRM could enable a marketplace of infinite price discrimination, where someone who merely wants to listen to a track once pays less than someone who acquires the permanent right to listen to the same music, it should be noted that to date, DRM systems have been used exclusively to sell music with less flexibility than non-DRM equivalents at higher prices – in other words, DRM in the market is used exclusively to charge consumers more for less.

### **6. The promise of piracy prevention by DRM is not held in practice**

A meta-question that’s often missed here is, “Does DRM work at its stated purpose?” We know that DRM can be used to take rights

away from consumers who want to do legitimate things, but is there any evidence that DRM has ever been successfully used to keep a work from being shared on the Internet or sold by counterfeiters on CD or DVD? My experience of this suggests that DRM is a complete failure at accomplishing its stated goal: In other words, DRM costs consumers a lot and does not prevent piracy -- there isn’t a single instance in the history of the field where a DRM system prevent some piece of content from appearing and circulating on the P2P networks.

### **7. The Broadcast Flag isn’t a “standard”**

It’s a mistake to characterize the Broadcast Flag as “standardization” – what is standard with the Broadcast Flag is that if you build a TV, it must detect the flag and lock flagged content away. What liberties can be exercised within the lockbox is not determined by a technical standard, but rather by an FCC review whose criteria are still not set, through which a given technology will be either approved or denied approval for inclusion in digital television devices. There is no guarantee of interoperability, similar capability or other “standard” elements in the Broadcast Flag regime.

### **8. Effective “forensic” DRM is rather unlikely and not without problems**

Regarding DRM for “tracking unlawful use” – given the experience of the SDMI watermarking technology, there’s plenty of reason to believe that “robust” watermark (eg one that can’t be removed or altered) is improbable. If “forensic” DRM can be removed by users before engaging in an “unlawful use”, we should assume it will be. More: what’s to stop me from attacking you by releasing files on the Internet with a watermark that fingers you as the originator? Finally – how can we reconcile the goal of a world where users can listen, read and watch media anonymously with a scheme that requires that all such media have to be tagged with the user’s identity?

### **Bottom line**

The INDICARE State-of-the-Art-report does a great job of telling everyone’s story, in-

cluding the DRM proponents', but juxtaposing the other side's remarks with good, compact rebuttals. Some issues when assessing

intricate technical matters of DRMs may still deserve further consideration.

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## Another cry in the wind?

### A review of Indicare's first state-of-the-art report

By: Philip Merrill, Pasadena, United States

**Abstract:** This review is written by a columnist writing for the music industry and at the same time one of the most active members of the Digital Media Project (Geneva). He declaredly shares his biased and rather sceptical view of the current situation of DRM and combines it with a rather positive review of the first State-of-the-Art Report of the INDICARE project.

**Keywords:** review – INDICARE, Digital Media Project, DRMS design

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### Introduction

Dramatic progress leaves us wanting more, and so INDICARE's worthy and excellent first State-of-the-Art Report (Helberger et. al 2004) can use a good pounding. With two revisions scheduled and handbooks on DRM for consumers and small businesses expected, it would be nice if the sorry state of DRM truly improved by March 2006. There is every reason to hope, but unlike the premium movie features trusted to DRM, a happy ending might not be in the script. At least this exceptionally well-mannered and articulate document makes it more likely, exemplifying the fine spirit of informed dialogue that puts the "INDI" in INDICARE.

### Of unfortunate DRM circumstances

Some observers of the issues surrounding Digital Rights Management have believed, in many cases for ten years or more, that this is possibly the single most important issue of our time with the potential to shape history by ushering in enduring "rules of the game" for electronic publication and subsequent use. Great faith was placed in technology when America's anti-circumvention approach became internationally adopted by WIPO WCT/WPPT signatories leading to our present regimen making it illegal in most cases to circumvent digital content protection technologies (see Merrill 2004a). Since the technology of DRM is still in its early stages, such faith might have been ill-founded. Aside from inherent technical difficulties,

there is the need for society to perform a systems analysis on how we communicate among ourselves, as well as the age-old distortions caused by incumbent's very powerful special interests. In this case, any firm in the business of DRM solutions is bound to be impressive on many technical levels, albeit the pressing issues of whether any DRM protection has worked yet or whether a security solution can be expected to be developed capable of being effective in the future. One view of digital security regards protection schemes as virtually doomed as soon as their features become known to the hacker community, which is the bias of this reviewer.

The SOTA Report avoids coming out and saying that all protection schemes thus far have been a failure once their features became known. Chapter 2 of the SOTA Report adds the separate hidden message that the European Commission has known for ten years what the problem is and that its best efforts have not prevented today's unfortunate DRM circumstances. This attracted mention on Indicare.org by Knud Böhle when he asked, "does the 'European paradox' apply to DRM research too?" while describing his reading experience of the Report's Chapter 2 (Böhle 2004). But the Report faces a paradox of its own.

#### **Is the State-of-the-Art Report yet another cry in the wind?**

The impartiality that was the goal of the SOTA Report has now been achieved. So what? This reviewer described it elsewhere as "One of the most informative documents ever written about Digital Rights Management." (Merrill 2004b). Who will read it? One might wish the world to be acutely aware that digital permissions and security on line could form the basis for the "new world order" far more than overt cultural philosophies or dogmas. DRM at least rivals global warming as one of the hugely important things that can vastly damage the conditions for human life on Earth. Unlike hideous weapons to which great attention is paid, apathy and ignorance cause DRM to be of distant concern like the putative effects of carbon emissions. So is the State-of-the-Art Report yet another cry in the wind? Let us

hope not and shape our endeavours to let its informed dialogue be a solid platform for significant progress to be made.

As an Internet type, I feel compelled to share my bias. I write a weekly column on intellectual property rights news of relevance to content owners in the music industry. I am especially sympathetic to IP rights holders because of the writers and other creative people I have known personally, none of whom have been made rich by their efforts. I am an ardent contributor to the definitional TRU efforts of the Digital Media Project, as described in the SOTA Report and at Indicare.org in an interview with Leonardo Chiariglione (2004). I am both an opponent and a supporter of the notable work done by Lawrence Lessig, Fred von Lohmann and Cory Doctorow. Because of my news function as a writer, I scan EFF and legal news regularly, often regretting that voices I consider overly partial to cleartext and hackers do the best job crying out on this important issue. With regards to the SOTA Report's treatment of "Interoperability" I side with DMP's response to the EC DRM HLG (HLG 2004); this too might be a cry in the wind.

#### **Between generalities and sad-but-true specifics about the state of today's DRM**

Indeed the SOTA Report can be considered to oscillate between generalities such as "interoperability" and sad-but-true specifics about the state of today's DRM and the need for improvement. A subsequent INDICARE article calls into question whether "digital rights management" as a phrase is not itself such an over-generality (see Tóth 2004). This reviewer is most struck with frustration at the Report's repetition about the importance of "transparency" in consumer contracts since this highlights both present social ills as well as a daunting future challenge. Although the possibility of granular licensing for individual content licenses was thought as one of the great potentials of electronic commerce for at least a decade, the fact is that most consumer contracts and licensing are only consensual by fiction. In our DMP work, several TRUs (Traditional Rights and Usages) relate to respect for terms and conditions; these are included with an emphasis on the fact just stated. To think that the Report's list of items

such as “affordability” or “ease of use” can do better would be folly. As if all this is not depressing enough, we can come to the definitively important challenge of better defining “access” since continued access to content and the ability to do things with that content is what the underlying issue is all about. Thus the emphasis of EFF types on cleartext and their often bombastic confidence that all digital security will continue to be hacked. The rules for electronic content need to do better than to rely on malfunctions and defeats for our future freedoms.

### **The task of DMP and INDICARE compared**

The Digital Media Project has it easy since our fondness for technological solutions brings simplicity that is missing from the scene today. It is easier to start afresh with plans for a wish list that includes both security and advanced End-User usages. INDICARE does not have this luxury. If the envisioned DMP platform comes along, that would be wonderful, but it does not change the issues of other DRM technologies that choose to do things a different way. Since DRM is the scope of INDICARE, future revisions of the SOTA Report will most likely be forced to document continuing problems and unresolved issues posed by ever-more-numerous DRM technologies. It might be better to think of the Report in terms of the “stalemate” described in DMP’s Digital Media Manifesto (Digital Media Project 2004). While DMP attempts to break the stalemate through standardisation, INDICARE has produced what could be considered the first objectively impartial prose document that can be considered to be post-stalemate in the sense that it opens up the discussion on a much better level for “informed dialogue”.

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### **Overall**

As can be seen from the tone of this review, it is easy to be partisan and stay focused while pushing a clearly defined agenda and set of views. It takes far more skill and thoughtfulness to render into prose what the authors of the State-of-the-Art Report accomplished by balancing views, staying polite, and avoiding what could be considered ranting and raving. This review could be considered a rant by many, although its slant is meant to achieve brevity. The State-of-the-Art Report’s authors invite comment and this reviewer expects to make more detailed comments available. For example, in overly brief form, one paragraph was written in partisan shorthand, the discussion of REL could be considered overoptimistic, and the discussion of fingerprinting appears to omit important features of that technology. But these are trivial as objections and only important as the sort of fine-tuning commentators might hope to provide. This reviewer especially hopes that a spirit of community and informed dialogue will cause a variety of stakeholders to comment on the Report, as requested, enabling further revisions to achieve progress and improvement. The first step was a big one.

### **Bottom line**

The first State-of-the-Art Report was a good one. Now that this post-stalemate step has begun, one hopes major stakeholders will join in adding their voices to this enterprise that could so critically improve the future use of digital content.



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## Obscurity in patent matters

By: Knud Böhle, ITAS, Karlsruhe, Germany

**Abstract:** This editorial presumes that DRM patents are a public policy issue which at the end of the value chain has an impact on the consumer experience with protected digital content. After a brief general characterization of the “social invention” called patents, DRM patents are addressed and open questions are raised which deserve further analysis. Surprisingly even seemingly simple questions like the one what the meaning of “DRM patent” is, have no easy answer. The second part of the editorial introduces the content of this INDICARE Monitor issue and draws your attention to a slight change of our publication concept.

**Keywords:** editorial, review – open source, patents, rights expression language, software patents

### Introduction

DRM-patents play a role in standards setting and interoperability and by this means are closely linked to consumer experiences. That’s one reason why we think patents should be dealt with in the INDICARE Monitor. The second reason is that patents are kind of hinge connectors aimed to balance private interests and public benefits and therefore the question if DRM-patents stimulate innovation is a citizens’ (and public policy) concern, interesting for INDICARE too. Thirdly, there is a lot of activity to be observed in the field of DRM-patents showing that the respective industries are forming up – think of the litigation InterTrust vs Microsoft way back in 2003 (settled in 2004; see Microsoft 2004), or the concerns of the European Commission in 2004 that Microsoft might achieve a dominant position in the DRM technology market as a shareholder of ContentGuard (see Beals 2004; Gray 2005). More recently attention has shifted to the marketing of patents, e.g. MPEG LA announcing a portfolio license agreement for essential patents relevant to OMA DRM 1.0 to be ready in March (see the interview with MPEG LA, Horn 2005), and Macrovision recently announced a patent pool for CD copy protection (see Rosenblatt 2005).

### Background

Patents are about industrial property rights and refer to inventions which “use principles of nature and technology for new devices or processes that are novel, useful, and nonob-

vious” (Marlin-Bennett 2004, p. 34). The social bargain underlying the patent system is to grant a monopoly to exploit an invention for a limited period of time (often 20 years) in exchange for the disclosure of the secrets of an invention, i.e. to make them patent. On the one hand the inventor can exploit the invention by selling products or by getting royalties from licensees – the money may be invested in new inventions. On the other hand competitors have access to the essential know-how and can go on – based on public knowledge – inventing and innovating and come up with solutions which are significantly better (or solutions which circumvent existing claims). Following the underlying societal calculus of patents, innovativeness should increase in this way. While there is no doubt about the good intentions at the outset when the patent system came into being, its costs and benefits, and its ambiguous effects on competition and innovation have been debated almost as long (see on the economics of patents the worthwhile primer by Lévêque and Ménière 2004). From a social point of view the following groups are often regarded as disadvantaged by the patent system: SMEs (lack of know-how and resources), third world countries (“digital divide”), indigenous communities (appropriation of their knowledge), and the open source movement (which follows a different approach to innovation).

Apparently patents become ever more important in “knowledge economies” and the importance of an adequate and efficient IPR

regime is therefore evident. The evaluation of present trends, however, is highly controversial. Currently a trend can be observed to extend the scope of what's patentable and to introduce new categories of inventions, e.g. "natural compounds", "genetic sequences", "medical treatment techniques" (cf. Wikipedia 2005a with further links). Of course patents on computer programs and business methods have to be mentioned here too. Literature about the usefulness of patents in dynamic industries like computers and software, and about the role of open source software is abundant. Many have also observed a trend that companies use patents for strategic purposes e.g. to block competitors, to strengthen reputation, to increase their bargaining power (cross-licensing), and to give incentives to their researchers (see e.g. Blind et al. 2003). This has led to an increase in the number of patents without a parallel increase of R&D outcomes.

The strategic use of patents however is not new: patents are often written in a form that the decisive information is not easy to grasp. The problem to figure out what a patent really means might also be due to old terminology, as *Stefan Bechtold* mentioned at the 3<sup>rd</sup> DRM conference in Berlin with respect to DRM relevant patents, which were written in the 1990s. Patents may also play a strategic role in the standardization process when e.g. companies pushing a standard hide the fact that they hold patents relevant for the implementation of the standard – a kind of "submarine patents", so to speak (see Wikipedia 2005b; see also Berlecon Research 2005, p.11). Another strategy is to grant licenses for free until a critical mass of deployment and implementation has been reached. Developers of software who are against software patents may decide to make their invention public to prevent others from applying for a patent. In this respect a handbook on IP in the Internet even recommends making the invention public on a website outside your home country in a foreign language which only few people in G8 countries will understand (see Bittner 2003, p. 689).

### **DRM patents**

While the debate about patents in general and software patents in particular has led to a

record number of papers of all kinds, DRM patents are seldom addressed. You can easily find articles about DRM standards (for instance in the INDICARE Monitor). Some of them even touch upon DRM patents (e.g. Bill Rosenblatt 2005a). One of the few dedicated papers on DRM patents I know stems from INDICARE partner Berlecon (Berlecon Research 2005). As you can see from the title – DRM, DRM Patents and Mobile DRM – it pays special attention to developments in the mobile field. Reading the paper it becomes evident that this topic has not popped up incidentally but due to the transition to *rich content* in the mobile segment and consequently an increased demand for "multi-device and multi-channel capability" (p. 13) of DRM-systems.

The paper explains well the relationship between interoperability, standards and DRM patents including the intricate question what patents mean for "open standards". The authors can also show with respect to mobile DRM (especially OMA 1.0 and OMA 2.0), which players in the mobile content value chain need to know about patents. They hold that the patent situation for mobile DRM still lacks transparency, because not all essential patents are known and can not yet be licensed via patent license administrations (cf. p. 15). This situation however is about to change due to the efforts of patent license administrators like MPEG LA (see also the interview with Larry Horn in this issue). However, efficient administration of patents is not the only effort where industry cooperation is required to foster the use of DRM systems. Issues of trust and confidence are at least as important. The CMLA (Content Management License Administrator) is an industry initiative aiming exactly to ensure interoperability of DRM implementations at the level of trust and confidence (cf. p. 14). CMLA has been set up by Intel, mmO2, Nokia, Matsushita, RealNetworks, Samsung and Warner Bros. Studios.

### **Open questions**

While the above might be taken as a teaser for an interesting paper, I would like to add some questions – some of them already mentioned in the paper – which in my opinion deserve further analysis and should be taken

up in future articles for the INDICARE Monitor. There are three major questions with further questions attendant.

1. **What is a “DRM patent”?** In fact this question contains two separate questions one about scope and the other about claims: A) what spectrum of patents is relevant when designing, building and implementing DRM systems? B) what are – in terms of content and ideas – the relevant inventions or claims in the field? The Berlecon “Whitepaper” tells us that rights expression languages (RELs) “are not the only standardized components of DRM” (p. 6), adding that also a “standardized trust model” addressing encryption, security, authentication etc. is required. In other words, there will be relevant patents related to rights expression languages and others related to trust and security. Are the latter “DRM patents”? The same question, adapted to a precise DRM standardisation effort, namely MPEG-21, is: How many and which patents are involved considering the MPEG REL and how many are involved when it comes to the IPMP (intellectual property management and protection) part of this standardisation effort? Of course the question is not about quantity, but about relevance of patents for DRM systems builders.
2. **How is the development of DRM patents influenced by the regulation of software patents?** Many of the relevant DRM patents are probably US software patents. What are the likely effects on DRM-based markets if regulation in the US and the EU – software implementations as patentable or not – differ? Berlecon states that “(n)o matter how the current debate and legislative initiatives turns out, the patents that have been granted so far will have to be taken into account” (p. 9). This suggests thinking that there might be lots of patents granted e.g. by the European Patent Office dealing with DRM relevant software implementations although this matter is not legally regulated. Be that as it may, it should not prevent us from asking if the current situation implies significant mar-

ket disadvantages for the EU, and what implications a different regulation of software would have in the future. In this context it would also be interesting to know if “DRM patents” include also business method patents. Is something like “superdistribution” patentable?

3. **How to best understand the strategic behaviour of industry players in the field of DRM patents?** Everything from proprietary solutions to official standards and “open standards” involves intellectual property and often patents, and by nature they become assets in strategy games. The difficult thing to find out is the underlying logic – just to put forward two particular observations: No doubt the OMA consortium relies on ODRL (Open Digital Rights Language) – and not on XrML or MPEG REL. Nevertheless MPEG LA – offering a portfolio license for essential patents for OMA 1.0 – has included in this portfolio patents of ContentGuard (the licensor of XrML). The likely reason is, as the Berlecon paper already points out, a general claim of ContentGuard “that its portfolio of patents is not restricted to XrML but covers *any* rights expression language” (p. 7; emphasis, KB). This might be considered a delicate claim, because it suggests that the implementation of XML constructs like XrML can be patented, and any developer of a REL might be obliged to pay licenses to ContentGuard. Can this really be the case? Another interesting question is about the intricate relationship between MPEG REL and XrML. MPEG REL has been developed on the basis of XrML – no doubt. But what are the strategic reasons why Microsoft, shareholder of ContentGuard, still uses XrML in its DRM systems instead of shifting to MPEG REL developed by ISO within MPEG-21?

#### About this issue

For the first time we pick up the “DRM patents” topic and hope to shed some light on this matter in coming issues too. Apart from the editorial we offer an interview with *Larry Horn*, Vice President, Licensing and Busi-

ness Development of MPEG LA, LLC. His answers to the questions of *Thorsten Wichmann* (Berlecon) bring the role and position of MPEG LA to the fore.

Next *Rik Lambers* (associate INDICARE member) fervently argues against the implementation of the “broadcast flag” in the US. The broadcast flag seeks to prevent the unauthorized distribution of digital over-the-air television content via p2p-networks. For European readers the question is, of course, if Europe will adopt a broadcast flag regime too or what alternative solutions respectively may protect the legitimate rights of broadcasters and content industry in the EU region?

*Natali Helberger* (IViR) has encountered a new commandment “Thou shalt not mislead thy customer!” She starts from legal reasons confirmed by a court decisions in France. The measures against “misleading” consumers are labelling and transparency. However, as we learn these measures are tricky, and may even turn against the consumer.

The consumer perspective is also paramount in the interview which *Nicole Dufft* (Berlecon) conducted with *Patrick von Braunnmühl*, Federation of German Consumer Organisations (vzbv). The interview neatly shows where consumer organisations are not satisfied with current legislation demanding that copyright exemptions have to become consumer rights.

*Péter Benjamin Tóth* (ARTISJUS) sees a need for a comprehensive re-thinking of “DRM”. The focus of his article is on the potential of DRM systems – which he understands as a technology monopoly – to override statutory exceptions and to be misused when it comes to legally non-copyrighted content, non-protected works, and non-protected uses. By the way, Tóth has also contributed an interesting comment to an earlier INDICARE article which deals with a

related subject – the first one including nice pictures (see and find out at: [http://www.indicare.org/tiki-read\\_article.php?articleId=48](http://www.indicare.org/tiki-read_article.php?articleId=48))

*Carsten Orwat* (ITAS) reports on the 3rd DRM Conference, Berlin, 13th and 14th January 2005, addressing consumer concerns, economic aspects of DRM and alternative compensation schemes.

Finally we have included again a comment on INDICARE’s first State of the Art report. *Chris Barlas* (Rightscom) argues that INDICARE has not got the work of MPEG-21 right. Critique is a necessary part of an Informed Dialogue, and definitely helps us to improve.

### INDICARE News

The present issue of the INDICARE Monitor is the last one of Volume 1. Volume 2 starts in March in parallel with the start of the second year for the INDICARE project. As there were some ambiguities with respect to the monthly publication of INDICARE we have adjusted our terminology and procedures for Volume 2. *On the last Friday of each month* INDICARE publishes its monthly *online-journal: the INDICARE Monitor*. This publication contains *reviewed articles* which have been *pre-published continuously* on the INDICARE website during the month, and adds an editorial. The INDICARE Monitor is made available online in *html* and *pdf* format and collected in the *INDICARE Monitor Archive*.

You can use the *RSS-feed* to get articles as soon as they are posted, and you can *subscribe* to the INDICARE Monitor, and receive an *e-mail notification* containing the contents page (title, author, abstract, and URLs) and a link to the pdf-version (this service replaces the bi-weekly INDICARE newsletter).

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## MPEG-LA's portfolio license – A jumpstart for DRM-based markets?

By: Lawrence Horn, MPEG LA, Denver/Colorado, USA

**INDICARE-Interview** with Lawrence Horn by Thorsten Wichmann, Berlecon Research, Berlin, Germany.

The interview discusses MPEG LA's upcoming patent portfolio license for essential patents related to OMA's DRM 1.0 standard as well as its potential implications for the market of DRM technologies and DRM-based products and services. The existence of patents on certain elements of DRM technology is frequently seen as an obstacle to the quick and widespread introduction of DRM solutions. Patent portfolio licenses like those offered by MPEG LA might provide a way out of this dilemma.

**Keywords:** interview, mobile networks, patents, portfolio license, standards

**Larry Horn** (American) is Vice President, Licensing and Business Development of MPEG LA, LLC. MPEG LA is a pioneer in one-stop technology standards licensing,

which enables widespread technological implementation, interoperability and use of fundamental broad-based technologies covered by many patents owned by many patent

owners. MPEG LA provides the marketplace with fair, reasonable, non-discriminatory access to a portfolio of worldwide essential patents under a single license. Its MPEG-2 Patent Portfolio License, for example, now has over 800 licensees and includes more than 650 MPEG-2 essential patents in 57 countries owned by 23 companies and a major university.

*MPEG-LA announced in January 2005 its first license related to DRM standards. We took the announcement as an occasion to conduct this e-interview.*

**INDICARE:** Mr Horn, you are Vice President at MPEG LA and also part owner of this company. Could you shortly describe what MPEG-LA does and how it relates to MPEG, the Moving Picture Experts Group at the standardization organisation ISO?

**L. Horn:** There is no relationship between MPEG LA and MPEG. MPEG LA is a private company in the business of offering patent licenses for the use of various standards including some developed by the Moving Picture Experts Group.

**INDICARE:** MPEG LA announced its plan for a joint patent license for DRM technology in October 2003. Could you tell us why you started with DRM at that time and use this example to explain the procedure at MPEG-LA?

**L. Horn:** This is the first step in the plan envisioned by the DRM Reference Model, which first issued in October 2003. The DRM Reference Model envisioned the establishment of patent licenses for various DRM implementations wherever the market might find them an efficient and convenient alternative to negotiating separate licenses with individual patent owners for access to essential patents. Consistent with that plan, the OMA DRM 1.0 Patent Portfolio License ...

**INDICARE:** ... which covers the DRM standard developed by the Open Mobile Association OMA in its first version ...

**L. Horn:** ... is the first in a number of DRM related licenses expected to issue in response to emerging market needs. We are also working on a license for OMA DRM 2.0 and

Internet music transfer services, among others.

**INDICARE:** Is there any benefit for consumers from such portfolio licenses?

**L. Horn:** Yes, the purpose of the OMA DRM 1.0 Patent Portfolio License is to assist in removing the uncertainty surrounding the "patent overhang," which stands in the way of releasing DRM products and services to the mobile sector. And, to the extent these products and services are made available, consumers are the beneficiaries.

**INDICARE:** What exactly do you mean by "patent overhang"?

**L. Horn:** Patent overhang refers to the uncertainty on the part of users surrounding the availability and terms of a license under the essential patents required for the use of particular technologies. But in the absence of a joint license providing a convenient and efficient way to access the technology on fair, reasonable terms, the uncertainty may discourage them from its use. The portfolio license was a response to demand from both, providers and consumers to open up markets for DRM products and services. Without efficient access to the essential patents, development and deployment of these might be inhibited.

That's what MPEG LA does and why the acknowledged key patent holders ContentGuard and InterTrust as well as other leading parties have come together. This is about technology to enable new markets, new products and services, new revenue and other growth opportunities. Therefore, the license will assist in satisfying this demand and benefit everyone in the distribution chain – content owners, service providers, device manufacturers and consumers.

**INDICARE:** According to your announcement from January, you have reached a major milestone this year with an initial group of essential patent holders for the OMA 1.0 DRM standard having reached a tentative agreement for a joint license. Why did you choose OMA as a starting point? Did they contact MPEG LA and point out some urgent need?

**L. Horn:** OMA DRM 1.0 is being widely adopted in the market, and there is an immediate need for a joint patent license for OMA DRM 1.0. The license is a private marketplace initiative in response to this need. It was not requested or initiated by OMA.

**INDICARE:** The announcement is worded very carefully. Is there a risk that the partners will not come to a final agreement?

**L. Horn:** The actual License Agreement, which is still being worked on, will provide the only definitive and reliable statement of license terms. We fully expect the parties named in the announcement to join the actual license agreement, but the final decision of the parties to become licensors is not final (no more or less than in any other joint license situation) until each of them has signed the documents that give MPEG LA the right to sublicense their patents to others under terms of the license and until the license actually issues.

**INDICARE:** What will be the next milestones? OMA 2.0?

**L. Horn:** A call for essential patents for OMA DRM 2.0 has been made, patents are currently being evaluated for their essentiality, and a group of initial patent holders will be convened soon to decide the terms of license.

**INDICARE:** Some people might have been surprised that for such a relatively simple standard as OMA 1.0, already patents from five companies were found to be essential. Was that number in line with your expectations? Or did even more companies submit patents for consideration?

**L. Horn:** Because of our confidentiality to submitting patent holders, we don't disclose the identities of patent holders who have submitted patents for evaluation – whether those currently being evaluated or those found not to be essential. But, there were additional patent submissions.

**INDICARE:** Does MPEG LA know from the submission process whether all essential patents are included in the portfolio license?

**L. Horn:** This is a license of convenience enabling users to take essential patents from

multiple patent holders as an alternative to negotiating separate licenses with each. And, while it is MPEG LA's objective to include as much essential intellectual property as possible for market convenience, participation on the part of patent holders is voluntary. Therefore, not only do we not make any assurances in that regard, but we have not conducted any studies and have no way of knowing who owns essential patents in the absence of a patent submission.

That said, the patents of the named patent holders are well recognized as having extraordinary value in the DRM space, our process for including essential IP will continue throughout the course of the license in order to include as much essential intellectual property as possible, and if a patent holder believes it owns an essential patent, we encourage them to submit it for evaluation and inclusion. If found essential, such patent(s) will be included on the same terms and conditions as the other essential patents without any increase in the royalty rates during the current term of the license.

**INDICARE:** If the royalty rates are not increased when new patents are added, do the early participants in the agreement have to give up revenue shares in favour of added patents or how does this work?

**L. Horn:** As a general matter, royalties are normally distributed according to the relative number of essential patents held by each patent owner in relevant countries at the time of each royalty distribution

**INDICARE:** How do portfolio licenses such as the one related to OMA DRM handle regional IPR differences? I suppose that not all patents included in the license apply all over the world? Will there be a price differentiation between usage in the US and in Europe, for example?

**L. Horn:** At this point each patent holder has had at least one patent evaluated as essential, and they will be required under their agreements with MPEG LA to include all of their essential (to OMA DRM 1.0) patents worldwide. Wherever a product is manufactured, sold, received in or transmitted to a country with patents, a royalty is payable.

**INDICARE:** I understand from your answer that the patents you offer are worldwide patents. But take, for example, a service provider operating only on the German market. He probably won't want a worldwide license. Will there be a way to take out a license for the German (or European) market covering only those patents valid over here or is it take it or leave it?

**L. Horn:** Although is it true that we offer only one license, I think there may be some misunderstanding how it works, which I will clarify. Each patent is essential to the technology (i.e., infringed by use of the standard), and the same royalty is payable whether one or more of them is used. The benefit of including all of the patents is that licensees have coverage wherever they need it, but again the royalty is the same whether one or more of them is used.

**INDICARE:** You are probably by now used to complaints about the structure and size of MPEG LA license fees. Why did MPEG LA (or the consortium) choose to demand fees from device manufacturers and service providers, but not, e.g., from software companies producing backend DRM software? And isn't 1% of revenue – the fee demanded from service providers – quite substantial, when taking into account the low profit margins and the fact that OMA 1.0 offers a very limited DRM functionality?

**L. Horn:** It is standard practice and widely accepted to collect royalties from the end

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product (hardware or software) or service provider. Regarding your second question, we disagree. This is a core enabling technology which will create new markets, new products and services, new revenue and other growth opportunities; and its value should be measured against those opportunities. As such, everyone in the distribution chain – content owners, service providers, device manufacturers and consumers – will benefit.

We also know that the patent overhang has been an issue of great concern to the marketplace, and providing a marketplace solution in the form of an OMA DRM 1.0 Patent Portfolio License which allows users to plan for and build these costs into their business models should come as welcome news which will encourage the release of DRM products and services.

**INDICARE:** One last question: Some people suggest that intellectual property rights issues related to DRM technology are especially difficult and complex. From your experience with other technology standards during the last years, are they right? Is DRM any different?

**L. Horn:** Every license is different, but I would not characterize one as more difficult and complex than another.

**INDICARE:** Mr Horn, thank you very much for this interview!

## Hail to the flag, it's the 1st of July

### The main arguments against the implementation of the US broadcast flag

By: Rik Lambers, Amsterdam, The Netherlands

**Abstract:** On July first of this year the so-called broadcast flag regime will come into effect in the United States. The broadcast flag seeks to prevent the unauthorized distribution of digital over-the-air television content via p2p-networks. But, replacing the black flag of piracy with the broadcast flag may also prevent fair uses and hinder innovation. The debate about the broadcast flag will be outlined, and the question will be raised if the broadcast flag approach will stretch beyond the US, towards Europe.

**Keywords:** policy analysis, legal analysis – broadcast flag, digital television, fair use, innovation, security, P2P, EU – USA

#### Introduction

*Bells ring-a-lingin', firecrackers poppin'  
Lighting up the sky  
Hail to the flag, It's the 4th of July*

Roger Miller – *The 4th of July*

Three days before Americans celebrate Independence Day and salute their flag in a display of fireworks, another flag will be introduced with less fanfare: the *broadcast flag*. This flag is not about independence, but will have to be saluted nonetheless. In order to protect digital over-the-air television signals against unauthorized (re-)distribution, especially via p2p networks, all devices capable of receiving these signals will become dependent on the broadcast flag regime and its executioners. For users of digital television content and manufacturers of consumer devices the 1st of July will be marked as “Dependence Day”.

#### Background

US Congress is pushing to bring the higher quality of digital television in the US living rooms and expects broadcasters to air digital television signals by 2006. This is an optimistic goal, to say the least. Some critics think it's a matter of decades (see e.g. Thierer 2001). Nonetheless, (video) content producers have called for the protection of aired digital content. They fear that users will be able to widely redistribute the received digital broadcastings over the internet if no protection system is in place. This

redistribution, popularly labelled as piracy, would undermine their current business model, which depends on the exploitation of multiple distribution streams for the same work: e.g. box office performance, (DVD) sales and rentals, (paid) cable distribution, next to (digital) over-the-air broadcasts (see Crawford 2004, pp. 607, 610). Some content producers state that without a protection scheme for digital broadcasting they would not permit their content to be broadcasted digitally. This in turn would undermine the willingness of users to buy into digital television and frustrate the transition from analogue to digital television. As this transition would free up a great part of the analogue spectrum, which will be auctioned off to the benefit of the US government, the political pressure on the FCC to support a smooth transition has been high (see Crawford 2004, p. 609).

#### The FCC's broadcast flag

It is against the sketched background that on November 4th 2003 the FCC adopted the broadcast flag regime, recognizing and catering to the fears of the movie and video producers: “We conclude that by taking preventive action today, we can forestall the development of a problem in the future similar to that currently being experienced by the music industry” (see FCC Report 2003, p. 5). This preventive action seeks to assure secure channels by regulating the devices that receive digital television signals. These devices may only redistribute



received digital content if a flag that is transmitted with the signals, the broadcast flag, allows this. The architecture of the receiver and the devices connected to it have to provide a trusted environment that keeps the digital content locked-in, unless the redistribution outside this environment is permitted by the flag. In short: a receiving device checks for the presence of the flag; flagged content is encrypted with *approved* technologies; digital copies of the flagged content may be made with *approved* copy protection technologies; redistribution of flagged content is only allowed within a trusted environment to other devices that abide to the set security rules.

From July first only those devices that meet these conditions may be distributed and sold within the US (see Section 47 CFR 73.9002(b) FCC ruling). The FCC has made the scope of this mandated DRM scheme perfectly clear: “We further note that we intend our redistribution control regulations to apply to any device or piece of equipment whether it be consumer electronics, PC or IT device that contains a tuner capable of receiving over-the-air television broadcast signals” (FCC Report 2003, p. 18). Users that want their digital television sets, TiVos, computers and other devices to be able to process digital television content, will all have to salute to the flag from this summer on.

Alternatives to the broadcast flag, such as encryption of the television signal at the source and watermarking or fingerprinting the content, have been considered by the FCC, but rejected with the argument of not providing enough security (see FCC 2003, pp. 11-13).

### **The debate about the broadcast flag**

There has been considerable critique on the broadcast flag. This critique mainly relates to (the effectiveness of) its security regime (1), the interests of users (2) and its influence on (future) innovation (3).

#### *(1) Security regime*

*a) inappropriate threat model:* the broadcast flag as security regime lacks a clear “threat model”. For the FCC, the threat, i.e.

the goal of its regulation, is clear. The FCC seeks to prevent the distribution of any copy of digital television content on p2p networks: “(T)he express goal of a redistribution control system for digital broadcast television (is) to prevent the *indiscriminate redistribution* of such content on the Internet” (see FCC Report 2003, p. 6, italics added). However, its regime is likely to have another effect: to prevent casual copying by the average user – but not to prevent more tech-savvy users from circumventing the protection and put a copy on the internet to be massively copied later on. Consequently, the FCC does not provide the technical measure for the goal it has set itself. It provides an insufficient threat model that fails to fill the hole in its security regime (see Felten 2003).

*b) underestimating the analogue hole:* A more infamous hole that undermines the effectiveness of the broadcast flag is the so-called analogue hole. The broadcast flag does not prevent the conversion of the digital signals through analogue outputs (e.g. the analogue video jack of a VCR). Content that is flagged can be recorded in an analogue format of high quality through an analogue output, redigitized and then copied and disseminated. These copies got no flag attached, being lost in the digital-to-analogue conversion, and are subsequently not secured against indiscriminate redistribution via the internet. Consequently broadcast content may still be downloaded in a lower quality. This will be good enough for most file-sharers, who are more likely to be driven by costless content than the best quality. Efforts to plug the analogue hole, to cut off the stream of digitized analogue signals, have thus far not been successful.

*c) underestimating non-flag-compliant digital television receivers:* No one can be sure that prohibited devices may still be acquired or even built by users after the implementation of the broadcast flag. The FCC does not think this will influence the security of the regime: “We do not believe, however, that individual acts of circumvention necessarily undermine the value and integrity of an entire content protection system” (see

FCC Report 2003, p. 10). It may be right that it is unlikely for an average user to get around the broadcast flag protection and even more unlikely that he will build (or acquire) a device that is able to do so. Nonetheless, the Electronic Frontier Foundation (EFF) has provided instructions on how to build non-flag-compliant digital television receivers (see EFF 2005).

### *(2) Users' interests of fair use*

The instructions provided by the EFF are meant to enable users to continue their current (fair) uses of digital content in the future: e.g. time-shifting, place-shifting, taking excerpts from clips and integrate them in their own works. However, with the broadcast flag in place these uses are likely to be restricted and made dependent on the authorization of the copyright holder. Home networks become closed circuits, in which users can only copy and transport content to approved devices that are compliant with the broadcast flag regime. Users will not be able to transmit or play this content on non-compliant devices. Even fair uses, allowed under copyright, might be prevented by the technological protection measures, and become subject to the permission of the copyright holder beforehand. In that sense the broadcast flag is an exponent and stimulator of the rise of a "permission culture" (see e.g. Lambers 2005). What's more, the broadcast flag may not only exclude current fair uses, but also those that would be deemed fair in the future. It encodes a restricted copyright of today for tomorrow. At the same time uses currently enjoyed might be coded away in the future.

### *(3) Innovation*

It is important to remember that the broadcast flag is *mandated* by the FCC. The broadcast flag regime not only dictates that device manufacturers should implement DRMs, but also makes the used DRMs subject to approval. All devices manufactured to receive digital television signals will have to use protection technologies from the so-called A Table. Technologies to be included in this Table, will have to be approved. For now this approval is left to the FCC, but possibly the video content

industry will take over this function. Consequently the approval of new information technologies and consumer electronic devices will depend on the authorization of a (federal) gatekeeper (see Crawford 2004, p. 630).

It is questionable if this gatekeeping will be done in a neutral fashion, but it certainly influences the ability to freely innovate. TiVo, the manufacturer of digital video recorders, found this out last year. When the company had to ask permission to the FCC under the broadcast flag for introducing the option for its users to send their recorded digital television programs over the internet, it got more than a little opposition from the content industry, specifically Motion Picture Association of America (MPAA) (see Pegorano 2004).

*The example of the general purpose computer:* Computers controlled by end users and the Internet as a decentralised network have been leading forces for creativity and innovation. The broadcast flag might change this. To protect the broadcasting model, control will be embedded in the ends of the internet. General purpose computers able to receive digital television signals and distribute these over the internet fall within the regulative scope of the broadcast flag, the rules of which determine that users should not (be able to) modify their hard- and software. This, for example, conflicts with open source software, which is disseminated under licenses that subscribe to the freedom to tinker: the possibility to change and redistribute the software in order to improve it and learn from the process. This has, amongst others, led to the development of the GNU/Linux operating system. In more general terms, for the first time, some of the openness of the computer platform will be locked down, and with it part of its innovative potential.

### **Broadcast flag outside the US**

The influence of the broadcast flag may reach further than the US. While in Japan a broadcast flag scheme is in place for commercial television, and Canada is watching the developments in its neighbouring country with great interest, more substantial

considerations are brought into play on a worldwide level by the so-called Broadcasting Treaty of the World Intellectual Property Organisation (WIPO). Though not proposing a broadcast flag as such, the treaty seeks to consolidate the interests of broadcasters (not copyright holders) over (the distribution of) their broadcasts, and make it illegal to circumvent technological measures protecting them. The discussion over this treaty has been heated and is ongoing (see IP Watch 2004).

On a European level the broadcast flag approach has not been followed, yet. However, it may serve as an inspiration for regulators. The Motion Picture Association has already proposed the implementation of a protection scheme reminiscent of the broadcast flag (in its comments to the Final Report of the European Commission's High Level Working Group on Digital Rights Management; see Lambers 2004).

If not directly, through a European version, Europe may be influenced indirectly. No European consumer electronic device or information technology that falls within the realm of the broadcast flag may be imported into the US if it does not comply with the regime, while US companies will be allowed to produce non-compliant products for the foreign market (e.g. Europe). Not only may this result in a competitive disadvantage for European manufacturers, it may also lead to a de-facto implementation of the broadcast flag so industry won't miss out on the US market. However, there is a much bigger market for consumer devices outside the US. European manufacturers, not burdened by a broadcast flag regime in the first place, will be freer to

build the products they and especially users want. It may be proven that the market for non-broadcast flag devices is more fruitful and rewarding, now and in the future.

### Bottom line

The fear of content producers of commercial harm by unauthorized redistribution of content they provide may be legitimate. Through the broadcast flag (video) content producers do not only try to protect their content, but also their existing business models. The video content industry has sought to project its incumbent network model on the internet and other developing technologies. Both innovation and user interests may be trampled in the process. Exemplary of this projection is what a representative of Hewlett-Packard had to say over an FCC approved content protection measure, "While developing the Video Content Protection System, we continually kept the perspective of the person sitting in their living room watching TV as a dominant part of the equation" (see PhysOrg 2005). This is the image of the consumer as couch potato, locked-in to his home network, dependent on the will of an incumbent industry, which sets the rules for the future.

However there are no irresistible laws in history. Recently, February 22, the authority of the FCC to mandate the broadcast flag has been challenged in court (see Public Knowledge 2005). If the broadcast flag will actually have to be implemented by the first of July will become clear in the coming months.

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## Thou shalt not mislead thy customer!

### The pitfalls of labelling and transparency

By: Natali Helberger, IViR, Amsterdam, The Netherlands

**Abstract:** The article explains why one should not mislead his customers. And the author is not even talking about rules of decency and fair play; she is talking about legal reasons, as recently confirmed by a court decision in France. The article also explains, however, why the issue of transparency is a tricky one, and under which conditions transparency could turn against the consumer.

**Keywords:** legal analysis – consumer expectations, fair use, labelling, transparency – France

#### Prelude



Does this look familiar? What does this mean to you, average reader? One tip: it is about transparency (solution to the question at the end of the text).

#### Part 1 – Transparency rules

*Thou shalt not mislead thy customer!* This at least was the conclusion of the Tribunal de

Grande Instance de Nanterre (2003a). The court had to decide on the complaint by buyers of CDs from the music publisher EMI music, which would not play on computers or car radios. The consumers were represented by the French consumer organization CLCV. CLCV held that the consumers have been misled. True, on the CDs it was indicated that technological anti-copy protection measures were in place; but nowhere was it written that this means one cannot listen to the music. Surely, making it impossible to even listen to music would mean pushing copyright protection too far, or not? It does,



so said the court, it does at least if consumers have not been warned beforehand.

*Misleading – not a gentleman’s crime in France*

According to French consumer protection law, anyone who deceives consumers about the nature of a product can be held liable (Article L213-1 of the French consumer law). The judge concluded that the nature of a CD is that it can be listened to, even on computers and car radios. If one cannot do so, the product is flawed (see Tribunal de Grande Instance de Nanterre 2003b). Not informing a consumer about the fact that a product is flawed constitutes misleading behaviour. And, at least in France, this can have consequences and be fined with up to 250,000 French Francs (38112.25 Euros) or two years imprisonment. Misleading consumers is clearly no gentleman’s crime in France. Interestingly, the court also found that sole reference to the fact that technical anti-copying measures are in place is not enough to avoid liability. Consumers cannot be expected to know that anti-copying can mean anti-listening. In response, it imposed on EMI Music France the obligation to label its CDs – in 2.5 mm characters: “Attention cannot be listened on all players or car radios”.

*...Nor in Europe – Unfair B2C Commercial Practice Directive*

Consumer protection laws differ from state to state, and not each state might have rules comparable to the French law. Soon, however, no European Member State will be able to get around acknowledging a legitimate interest of consumers “to know”. The proposed Unfair Commercial Practices Directive will harmonise the existing national general clauses in consumer protection laws in relation to unfair commercial practices between businesses and consumers (see Unfair Commercial Practices Directive 2003). It will establish precise criteria for determining when behaviour is unfair under the general clause (Unfair Commercial Practices Directive, Explanatory Memorandum, Recital 48). In addition, it addresses specific unfair practices which are to be banned in the Internal Market. One practice to be banned in the

Internal Market is the misleading of consumers by omitting information the consumer should know. Article 7 (1) of the proposed Unfair Commercial Practices Directive stipulates that a commercial practice, which “[...] omits material information that the average consumer needs, according to the context, to take an informed transactional decision and thereby causes or is likely to cause the average consumer to take a transactional decision that he would not have taken otherwise” is regarded misleading according to Article 7(1)) and as such deemed unfair and is banned, Articles 5(3)(a) and 5(1) of the proposed Unfair Commercial Practices Directive.

Translated into a language that the average consumer is able to understand this means that providers of music CDs, DVDs and downloadable music must provide the consumer with all the reasons and characteristics why the product he buys is possibly not what he thinks he is buying. The consumer should have the possibility to know what he is buying. Fair enough, one might want to add. In an increasingly sophisticated technical environment it cannot be expected of the consumer to know all the technical specifications by just looking at the product. CDs are more complicated than pears and books. Still, a consumer does have certain expectations of how CDs should function. For example, it should play in a CD player. If a product fails to live up to these expectations, this is information that the consumer should have. Consequently, if a producer sells CDs that cannot be played on different devices, he is obliged to inform the consumer about this.

*Transparency and consumer expectations*

Precondition is that the average consumer would not otherwise have bought the CD. This leads to some difficult questions, first and foremost what is it that a consumer expects from a CD, and what features of a CD are so essential that, if the consumer knows that they are absent, he will not buy that CD? So far, there was not much need to think about what we expect from a CD. It played. Thanks to DRM, however, CDs no longer simply play. The controller of DRM has increasingly sophisticated tools at hand to con-



trol if a CD plays in a car radio, if it can be ripped, sampled, fast forwarded, if it plays in different countries and continents, if it allows to skip the commercials, e-mail an electronic file of it to a friend. In order to know whether a label will prevent us from buying or not buying a product we must know what we actually expect from this product. And the industry must know what we expect so that they can warn us not to buy their products. And we must know what the industry thinks that we expect so that if we expect something different and nobody warns us we know what to expect. Listening to music used to be easier.

Transparency is good and important. Knowledge is power. The power of consumers is to decide to buy or not to buy a product. In order to be able to make an informed decision, consumers must, first of all, know what the characteristics of the product they buy are. The purpose of transparency obligations is to tell consumers what they must know before they can make an informed decision. The purpose of labels, of transparency is also to give consumers the chance to compare and to choose the products that offer the most attractive terms, conditions and quality. Transparency is inevitable in a functioning market place.

## Part 2 – Transparency is not everything

But transparency is not – as some have heralded (see Beemsterboer 2005) – the answer to everything. As beneficial as transparency can be from a competition and consumer welfare point of view, we should be aware that simply by informing the consumer about all the things that he cannot do with the product, which he bought, the digital world is not necessarily a much better one – at least not for the consumer.

### *Headache*

Transparency can cause a headache. Perhaps, in future we will buy music like medicines – accompanied by a long and fierce looking insert, which lists all the side effects and risks that listening to this piece of music involves. How much transparency is the average consumer able to digest?

### *Risks and side effects*

Transparency can have its own risks and side effects. Transparency can turn against the consumer – if we read often enough on CDs that this product will not play in car radios, cannot be copied, cannot be sampled and ripped – do we actually still expect that CDs can do all these things? The notion of a transactional decision “that he would not have taken otherwise” presupposes that the consumer actually believes he has a choice. In the worst case, transparency could be abused by the entertainment industry to educate us, and tell us what we are supposed to expect from a product.

### *Abuse*

And finally, transparency can also be used to manipulate the consumer, the market place. This could be, for example the effect of Microsoft’s newest “transparency” initiative – “Plays for sure” (Microsoft 2005). Microsoft has launched its labelling campaign “plays for sure”. The idea behind “plays for sure” is the introduction of a new logo that indicates which formats a portable music player can process.



In order to be able to play music “for sure” consumers would have to 1) download the Windows Media Player 10, 2) find a portable device that carries the “play for sure” logo, and 3) find an online music store that also carries the logo. In other words, with all the music stores and portable devices that are not part of Microsoft’s campaign, consumers cannot be sure at all that their player will play their music. It is worth mentioning that serious competitors of Microsoft’s own download service MSN music, such as iTunes and Rhapsody, are not amongst the online stores that the campaign supports. It is difficult not to have the impression that Microsoft’s motives for the campaign are not entirely altruistic. Selective transparency can be also a tool to tell consumers what to listen to, or even more importantly: whom not to listen to.

### Bottom line

In conclusion, maybe, better than to warn consumers from not functioning products is to actually produce products in a way that consumers want to buy them – even if they know all about them. Knowledge is good. Quality is better.

### After play: solution

The solution to the question what the label means is: It is the IFPI Copy Control Symbol

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## Copyright exemptions have to become consumer rights!

By: Patrick von Braunmühl, vzbv (Federation of German Consumer Organisations), Berlin, Germany

**INDICARE-Interview** with Patrick von Braunmühl by Nicole Dufft, Berlecon Research, Berlin, Germany

DRM technology and current legislation threaten the original balance of copyright law. The use of DRM technologies may override copyright exemptions – this the more since, for the time being, consumers do not have clear carved-out rights regarding DRM use. Therefore consumer organisations demand that copyright exemptions have to become consumer rights as a prerequisite for effectively enforcing consumers' legitimate interests.

**Keywords:** interview – consumer rights, copyright law, fair use, private copy – Germany

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consumer associations. It represents the interests of consumers in public and vis-à-vis legislators, the private sector and civil society. Its goal is to protect and empower the consumer. The organisation does this by lobbying and campaigning at national and European levels, by taking collective legal action on behalf of consumers and by ensuring that its message receives broad media coverage. Contact: [wirtschaft@vzbv.de](mailto:wirtschaft@vzbv.de)

**INDICARE:** Mr. von Braunmühl what are, from your point of view, the most serious threats of DRM for consumers and the society as a whole?

**P. von Braunmühl:** A broad application of DRM technologies carries the risk that the use of content will be completely controlled by the content industry. As a result, DRM technologies could limit the access of broad parts of society to information and cultural goods.

In addition, there is a danger that prices for information, cultural goods, and scientific works will increase if consumers have to pay for every single use of content. Consumers that want to use their legally acquired digital content in the same way as they are used to from the analogue world, might only be able to do so at higher prices. Such a development would not only be negative for consumers but also for society as a whole. Innovation would be negatively affected, since creators of works need inspiration from other artists and scientists, which requires easy access to other works.

**INDICARE:** How can DRM technology confine consumer rights?

**P. von Braunmühl:** DRM technology has the potential to override copyright law. When DRM technology is applied, the legal relationship between content providers and consumers is increasingly ruled by contract law rather than by copyright law. Limitations to copyright law, e.g. the private copying exemption, might factually be overruled by the contract between content provider and its client. Standard clickwrap licenses, for example, that consumers have to accept to access content can exclude uses of con-

tent that are actually exempted from copyright. In this way, DRM technology and respective contracts can disqualify exemptions stated by copyright law.

**INDICARE:** What can consumers do to fight this?

**P. von Braunmühl:** For individual consumers it is difficult to know which uses of digital content are legitimate and which are not. Copyright law is a very complex issue and individual consumers are usually not very well informed about copyright limitations. Adding to this lack of knowledge is a significant lack of transparency in many online contracts and in the use of DRMs. Furthermore, consumers are severely alienated by campaigns from the content industry, which give the impression that private copying is equal to piracy.

But even if individual consumers know that the legitimate use of content is restricted by a specific content provider, they have only very small incentives and high financial risks to engage in court actions against this practice.

**INDICARE:** How can consumer organisations help to enforce consumers' rights?

**P. von Braunmühl:** Consumer organisations can help to protect individual consumer rights with collective actions against unfair practice. However, we need concrete complaints from individual consumers to become active in collective actions that prevent rightsholders and content providers from restricting consumer rights.

**INDICARE:** Is there a new role for consumer organisations in the digital world?

**P. von Braunmühl:** One important role of consumer organisations in the analogue world is to check whether sales contracts and terms of conditions contain clauses that are detrimental to consumer rights. We increasingly have to play this role in the digital world as well. We have to check the terms and conditions of online offerings for unlawful clauses and unfair practices and make sure that contracts are in line with legal provisions that protect consumer rights.

However, in the case of digital content, current legislation does not provide a very good basis to protect consumer interests. Consumer protection law in most countries does not consider the use of digital media. And copyright law does not provide for consumer rights, it only provides for exemptions to copyright. If these exemptions are factually disqualified by DRM technology, the legal situation is currently far from clear.

**INDICARE:** So current legislation is not adequate to protect consumer rights in the area of digital content?

**P. von Braunmühl:** No. Currently, consumer rights in the digital world are not clearly defined. There is no balance of interests of rightsholders and consumers. In some cases, current legislation even protects unfair practices. For example, legislation in most countries prohibits the circum-

vention of technical protection measures, completely ignoring whether these measures are in line with copyright law or not. Even if a technological measure restricts a consumer from using digital content legitimately, this measure may be protected by law.

What we need is a clear definition of what private copying means and under which conditions consumers have the right for private copying. We claim that copyright exemptions have to become consumer rights! Otherwise, DRM technology can – and will – be used to the disadvantage of consumers, without any legal measures to enforce consumers’ legitimate interests. Legislation should make sure that DRMs cannot restrict copyright limitations.

**INDICARE:** Mr. von Braunmühl, thank you very much for this interview!

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## Need for a comprehensive re-thinking of “DRM” systems and copyright

By: Dr. Péter Benjamin Tóth, ARTISJUS, Budapest, Hungary

**Abstract:** In my previous article (Tóth 2004) “Digital Rights Management or Digital Content Control” I pointed out that as a rule so-called DRM systems (for which I offered a new expression: Digital Content Control Exercise systems or DCCE) do not involve the management of copyright. The technical power offered by these technical tools can exist over any digital content and can prevent any activities regarding these contents. This strong monopoly conflicts with several interests and therefore needs to be examined comprehensively. The focus of this article is on the conflict of DCCE with the statutory exceptions and non-copyrighted content, non-protected works, and non-protected uses.

**Keywords:** legal analysis – code as code, content protection, copyright law, EUCD, fair use, WIPO – EU

#### Introduction

Copyright is created by an independent branch of power based on wide discussions

as a *legal monopoly* limited by rules to protect different legitimate interests. In contrast, control provided by so-called DRM systems

is based on a *technical monopoly* unilaterally adopted by the “content owner”, hardly limited by legal regulations. Table 1 below points out essential differences between the

copyright regime and a digital content control regime:

**Table 1:** Comparing the properties of copyright and DRMs

	properties of copyright	properties of DCCE systems
<i>material scope</i>	<b>Yes.</b> The law defines what content is protected by authors' rights and related rights.	<b>No.</b> It can be applied to any digital content, irrespective of its copyrighted nature.
<i>term of validity</i>	<b>Yes.</b> After the expiry of the protection term, works belong to the public domain.	<b>No.</b> It can be applied to any digital content, irrespective of how “old” it is.
<i>restricted acts</i>	<b>Yes.</b> Only certain activities are subject to the exclusive right of the rightholder.	<b>No.</b> It can restrict any <i>digital</i> acts, irrespective of its relevance in copyright.
<i>exhaustion</i>	<b>Yes.</b> The rightholder can no longer control the distribution, if the copy of the work has been lawfully put into circulation in an EEA member state.	<b>No.</b> Although the distribution of physical copies can not be prevented by DRMs, the consumer can be kept from accessing the works, practically evading the law.
<i>conditions of exercising rights</i>	<b>Yes.</b> In some cases the copyright law provides for a mere right to remuneration without an exclusive right to license the use – see for example Article 12, Rome Convention on the communication to the public of a sound recording released for commercial purposes	<b>No.</b> The mere rights to remunerations can be turned to an exclusive right through a DRM technology.
<i>conflicts with other prioritised interests</i>	<b>Yes.</b> Exceptions, limitations from the exclusive right of the rightholder, in some countries these limitations are called “free” or “fair” uses – see Article 5, EUCD.	<b>Partly.</b> The EUCD appointed 7 paramount exceptions, the beneficiaries thereof can benefit from them – even against the technical protection.

This table clearly shows that use of DRMs tends to overstretch copyright. This topic was already subject in the INDICARE article “It’s not a right, silly...” by Natali Helberger: While I have already commented online on the case she makes in her article (see <http://www.indicare.eu>), in this article I will discuss the tension between copyright and DRMs more strictly. There are two theoretical aspects that need attention:

1. Firstly, the barriers of copyright are the outcome of long debates. If we think, that these debates were not in vain, some elements of these solutions should be applied to DRMs as well, as a legal regulation.
2. Otherwise: if – with the wide, unlimited recognition of DRM systems – we accept, that these barriers are not neces-

sary, then we should consider, whether they are needed at all in copyright. Should we erase the definition of “public domain” from copyright?

The consumer protection issues addressed in the INDICARE State-of-the-Art Report (2004) are important, but they cannot answer the above questions. The purpose of that branch of law is different of copyright, and is only applicable to “consumers”, although the DRM-problem affects all kind of users. *Copyright Law must continue to create a balance of interests.*

In the following I will first present the areas where the European legislator tried to solve the problem, before I will share some comments on those fields which the European legislator has not dealt with in order to find a balance of conflicting interests.



## Regulation in effect

First I would like to present the current legislation contained in 2001/29/EC, the European Copyright Directive (EUCD), Art. 6.4. This regulation deals with the situation, when a technological protection measure (TPM) – and therefore the DRM system based on it – conflicts with the exceptions provided for by the Directive. The problem is evident: in these cases the copyright holder would have no right to claim for remedies against the user, but with a technical action he can nevertheless prevent him from this use.

As every legislator, the European one also tries to balance the interests of copyright holders, of users and of other interested stakeholders. Therefore it grants exceptions from the exclusive rights to some beneficiaries with (theoretically) well-defined conditions. This effort could remain fruitless if the rightholders (or in this case we should rather call them “content owners”) simply make this balancing technically impossible.

At this point we need to mention that the exceptions – although in some countries formalized as “rights” – basically give no enforceable right to users, they only mean the simple limitation of the exclusive rights under copyright (see e.g. Helberger 2004). In other words: when a country’s Copyright Act states that someone “may freely make a copy...”, it means, that if someone is able to make a copy, the rightholder cannot protest against it.

The European legislator tried to solve this problem as follows:

1.) The Directive, Art. 6.4, appoints seven prioritised exceptions:

- ▶ reproductions by reprographic means [Art 5(2)(a)];
- ▶ reproductions made by libraries, schools, museums, archives [Art 5(2)(c)]
- ▶ ephemeral recordings of broadcasting organisations [Art 5(2)(d)]
- ▶ reproductions of broadcasts made by social institutions [Art 5(2)(e)]

- ▶ illustration for teaching or scientific research [Art 5(3)(a)]
- ▶ uses for the benefit of people with a disability [Art 5(3)(b)]
- ▶ uses for the purposes of public security [Art 5(3)(e)]

It also appoints another prioritised exception separately:

- ▶ private copying of natural persons [Art 5(2)(b)]

2.) The regulation continues as follows: in these 7+1 cases, when technological measures make the exception unavailable to the public, “*the rightholders should make available to the beneficiaries of these exceptions the means of benefiting from that exception*”. In other words, the member states are to give a first chance to the rightholders to deal with this matter, and only after they have failed to do so, legislators have to interfere. By the way, in app. 14 “other cases” the directive specifies when rightholders are not required to make the exercise of such limitations possible.

3a) In the first seven cases, if the rightholder does not make these exceptions available, the member states *shall* take “appropriate measures” to ensure their realization. It means that in cases when technological measures and exceptions conflict with each other, the latter triumphs. As the law finally can not give any other means to solve a legal dispute – in case the rightholder and the beneficiary of the free use can not agree in these questions –, the final solution of any such “appropriate measure” can only be a court decision on the case.

3b) In the case of private copying, if the rightholder does not make this exception available, the member states *may* take appropriate measures to ensure its realization. If a member state does not take any such measures to ensure private copying, nothing happens. The only “sanction” is that the member state will have to take into account the application or non-application of TPMs in the levies compensating rightholders for the private copying (see Art. 6.4 and 5.2(b) of the EUCD).

4.) The above regulations are not applied, i.e. TPMs prevail by all means, if the works are made available to the public on agreed contractual terms, for example through “online music shops”. With the shift of copyright-related commerce to online solutions, this surprising regulation of the European legislator will become more and more discriminative and unjustifiable.

### Regulations needed

The broad collision of technological measures and uses irrelevant to copyright is of course not a new discovery. “With the advent of technological measures for the control of access to and use of works, and with the beginning of the actual application of such measures, the question emerged quite logically whether these measures would – or should – allow the continued application of exceptions and limitations recognized by international treaties and national law” (Ficsor 2002, pp. 556-557).

However, up to now, all regulations addressed only the conflict of *exceptions* or limitations and technological measures. As I tried to demonstrate in the introduction, this topic covers only a small part of the problem. The controversy caused by DRMs is however much broader: what happens, if it prevents uses that are not relevant to copyright? What happens if it prevents uses of works not protected by copyright (e.g. news, folklore works, works of authors died more than 70 years ago)? These technical barricades also cause conflicts of interests.

What is the current answer to these questions?

- ▶ Under the WIPO Copyright Treaty (Art. 11) only technological measures “that are used by authors in connection with the exercise of their rights” are protected.
- ▶ Under the EUCD (Art. 6) only those technological measures are protected, that are designed to prevent or restrict acts, in respect of works or other subject-matter, which are not authorized by the rightholder of any copyright (...)."

It means (somewhat simplifying) that *if a technological measure is applied for not-*

*protected works, it can be circumvented legally.* This solution is not a good one for those who could otherwise freely use these contents: they must become hackers to enjoy the public domain. But this solution is also bad for the “content owners” using DRM technology to prevent acts: they will use the same technology to protect contents, and if someone freely hacks these measures, all their measures would become unprotected. And finally, it is not a good solution for the public at large, because it leads to an “armaments race” outside the rule of law.

The solution could therefore be a comprehensive re-thinking of the question. The simpler answer would be the total ban of using technological protection measures where no copyright exists.

Another option could be a general anti-circumvention protection to all technological measures. This would previously require a thorough investigation of every barrier of copyright: should they remain dead letter, or should we fight for their continued application? In my view however, at least the already existing regulation of the EUCD could be extended to DRMs which prevent acts that are otherwise not relevant from a copyright point of view. In the present situation it is quite absurd, that a library can ask publishers for copies of protected copyrighted works, but if a non-copyrighted content (e.g. an old poem or a court decision) is protected by technical measures, they can't. Again, the legislator should address the already mentioned 7+1 beneficiaries, and should prioritise them *also* against those TPMs which are preventing non-uses, or any acts regarding already-non-protected-works and non-protected-contents.

### Bottom line

My – maybe unorthodox – conclusion contains a question and a request. The copyright legislation of the Community solved somehow the conflict between exceptions and technological measures. I would like to ask the INDICARE community (if any such exists) to help thinking out of the box and to address the following question: Does the

conflict of otherwise freely accessible and exploitable contents and DRM systems

need further legal regulation?

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## Report on the 3rd DRM Conference, Berlin, 13th and 14th January 2005

By: Carsten Orwat, ITAS, Karlsruhe, Germany

**Abstract:** The present conference report is selective as its focus is on consumer issues of DRM. The debate about economic aspects of DRM and alternative compensation schemes is nevertheless taken on board too. While the original purpose of implementing DRM to prevent piracy has not been achieved, and the next objective of DRM to enable new DRM-based business models is still in its infancy, we can observe new reasons to implement DRM, for instance to stifle competition.

**Keywords:** conference report – business models, collective rights management, consumer expectations, competition, privacy, trusted computing

### Introduction

The third in a series of international DRM Conferences taking place in Berlin brought together a broad spectrum of DRM experts

giving presentations and an audience of about 300 people eager to discuss. Financial support for this conference, as in earlier years, came mainly from the Ministry of

Science and Research of North-Rhine Westphalia, while the responsibility for the programme rested mainly with the University of Dortmund, Germany and Berkeley Center for Law & Technology, University of California at Berkeley, USA. The following conference report is selective, concentrating on three overlapping topics: consumer concerns, economics of DRM, and alternative compensation systems.

### Consumer Issues

Industry has learnt that DRM-based solutions have to respect consumer demands. For instance, *Johannes Mohn* (Bertelsmann AG, Germany) pointed to legitimate questions of consumers which industry has to address, such as: What about reselling or just giving away DRM-based products? What happens when a device gets lost? How to use protected content on different devices? Following Mohn it is inevitable to find out in a trial-and-error process what consumers want. The ideal DRM system would probably be one that won't be noticed at all by consumers.

*Soichiro Saida* (Vodafone) also stressed the importance of the customers' experience. In particular he acknowledged the expectation of anywhere, anytime with respect to CD usage, and pointed to seamless interaction of DRMs as a prerequisite. Superdistribution was seen as the most promising approach to realize the revenues predicted by analysts. Here again, interoperability is crucial and it is the client side industry which has to make the "DRM eco-system" work.

*Tomas Sander* (Hewlett Packard Laboratories Princeton, USA) repeated that consumer acceptance is the key factor for success. He put forward direct benefits of DRMs for consumers: different price points, new payment models, and new functionality. In addition as DRM enables individual compensation of rightsholders it will also be a much fairer system.

This view was not shared by all as the debate showed. The benefit of DRMs was questioned as new digital product types and flexible business models have also been developed without DRM. Another fundamental – not so new – objection against DRM was

renewed by *Fred von Lohmann* (Electronic Frontier Foundation, USA), namely that DRM has failed to prevent piracy as predicted (see Biddle et al., 2002) and is not just a "waste of time", but also actually counter-productive, because copy-protected content drives customers to P2P. Further caveats were that the costs of building up the DRM infrastructure – especially due to new devices required – are shifted to consumers, and transaction costs for consumers increase given the extra complexity of DRM-protected content.

Another interesting point of debate was about the role of copyright exceptions. Fred von Lohmann was sceptical that the market comes to solutions in which copyright exceptions are adequately acknowledged since the groups for which exceptions were established are less powerful. *Thomas Dreier* (University of Karlsruhe, Germany) underlined that in his opinion DRM will not be accepted by consumers if existing statutory exceptions are overridden by technical means and/or legislation. He was however a bit less sceptical than von Lohmann and recommended switching from object-oriented to user-oriented DRM design. Consumers should be provided with a non-transferable key that is specific to their statutory use privileges. He sketched a possible solution based on public key infrastructure (PKI) with a Trusted Third Party (TTP) infrastructure.

In the opinion of *Cornelia Kutterer* (Bureau Européen des Unions de Consommateurs (BEUC), Belgium), the advantages of DRM-based content distribution for consumers have yet to be shown, in particular greater choice and the reduced costs for consumers of protected content. Today legal uncertainty prevails combined with shrinking legitimate uses, shrinking public domain, segmentation of markets, draconian enforcement, and dubious marketing or "education campaigns". Her positive vision was that DRM will be adjusted to business models and business models will be adjusted to consumer expectations. She asked consortia developing interoperable DRM to invite data protection and consumer advocates right from the start.



*Deirdre Mulligan* (University of California at Berkeley, USA) explained how she understands consumer expectations of personal use which are usually defined by the capabilities of devices. Such capabilities are normally determined by legal rules, which themselves are generated in view of consumers' expectations. Thus, expectations of personal use of digital content stem from a mixture of "fair use" exceptions, "first sale" rights and factors that are unregulated in copyright laws (i.e. use habits such as annotating a book's pages, physically removing pages, reading a book in a foreign country, or making personal music selection from CDs for private uses). Referring to results of a study (Mulligan, Han, and Burstein, 2003) she argued that many online music services do not respect consumer expectations such as portability and privacy. She recommended policy measures especially in the field of competition policy and consumer protection law.

*Thorsten Wichmann* (Berlecon Research, member of INDICARE) argued that consumers expect "fair use". Such fair use can be reached, firstly, by clear rules which have to be found between the extreme positions of consumers and content owners. In his opinion a discussion is needed, for instance, on where "fair use" ends and "piracy" begins. He urged to "fix the numbers", i.e. to clearly determine how many copies are legal, how many "friends" can be supplied, et cetera. Secondly, the rules have to be made bilaterally instead of being dictated by the supply side alone. Thirdly, in his opinion the market should be the referee of the rules defining. Consumers vote with their wallets and this would be the strongest force to come to consumer-friendly solutions. However, he emphasised that until now little is still known about consumer needs in relation to DRM and DRM-protected content.

*Martin Springer* presented goals and work of the Digital Media Project (DMP). Its main objective is to develop standards for interoperable DRM. DMP is developing – alongside its technical specifications – a recommendation on transferring so called "Traditional Rights and Usages" (TRUs) from the analogue to the digital space. Examples of TRUs are to quote, make personal copy, shift con-

tent in space and time, use copyright-expired content, or use content anonymously. In their opinion, DRM has the potential for an imbalance, which may reduce the "TRUs" of media users and may in the end lead to a rejection of DRM.

Turning to privacy *Lee Bygrave* (University of Oslo, Norway) doubted that market forces will provide more privacy-friendly solutions, first of all because consumers are too superficial in this respect. Therefore he called for awareness raising measures. DRM systems have a considerable potential to collect personal information, and this issue is not well regulated. Uncertainties exist with respect to technical processes, e.g. how DRMs are talking to each other, and with respect to legal provisions, e.g. it is difficult to apply the data protection criteria of "necessity" (only such information can be collected that is necessary for a defined purpose) in the DRM context. A reform of the European Copyright Directive would be required to stimulate the implementation of "privacy-enhancing technologies" (PETs) in DRMs.

#### **DRM and TC**

It became clear at the conference that DRM and trusted computing (TC) is a consumer issue too. At first sight the promises of TC are in the interest of consumers using PCs. *Graeme Proudler* (Hewlett Packard Laboratories Bristol, UK, and Trusted Computing Group) explained that DRM is just one of a broad range of applications based on TC. It is mainly designed for the protection and processing of secret and private data. In the short term, protected storage is envisaged with TC, i.e. that customers will be able to protect data on hard disks more securely than with software solutions. In the mid term, integrity checking should be possible, enabling the automatic prevention of unwanted programmes to access information. Furthermore, in the long term, customers and their partners will be able to connect their IT systems and expose only the intended data ("trusted ecosystems").

However, there are considerable caveats. *Stefan Bechtold* (Max Planck Institute for Research on Collective Goods, Bonn, Germany) drew attention to some of the prob-



lems. He questioned if TC is a good basis for DRM systems due to their limited protection against local attacks and the high complexity of “platform state attestation” on the consumer side. Content providers might be able to misuse the possibility that TC allows to bind objects to particular platforms. Another type of misuse could be based on “remote attestation” which allows third parties to check the integrity of PCs – with the help of the Trusted Platform Module (TPM). This bears the risk of anti-competitive behaviour, when e.g. interoperation can be denied, because software by competitors is detected on a PC. *Seth Schoenn* (Electronic Frontier Foundation, USA) also highlighted the anti-competitive potential of TC (see also Schoen 2004). The verifier would get identity information which would lead to an unprecedented situation. He sees the risk of a “super-spyware” that controls attestation. In the discussion *Ross Anderson* criticised particularly the intransparent proceeding of the Trusted Computing Group (TCG). The risk that the specifications might be captured one day by a single player was pointed out and there was criticism that TCG is taking no measures to avoid this.

### **Economic aspects of DRM**

Economic issues were addressed in different sections of the conference, many of them about competition at the end of the day.

Keynote speaker *Hal Varian* (University of California at Berkeley, USA) believes that “in the long run, ensuring competition is more important than determining the default rights”. It is likely that a standardised set of usage rights will evolve. Markets and society should have the ability to experiment with sets of rights. He emphasised however the threat of monopolisation in DRM technology due to the need for standardisation. For content and device suppliers it is much easier to produce for a single standard (see the DVD example). To avoid the potential misuse of a proprietary standard he called for open systems like the Internet or GSM standards. At the same time he warned that seemingly open systems could be captured by single parties. Fully open standards with no proprietary extensions would be required and a govern-

ance system with a lot of checks and balances.

It was also interesting that *Varian* put the emphasis on DRM in B2B relations, i.e. rights clearing in the content industry. In his view, maybe the greatest benefit of DRM could be the reduction of transaction costs of rights acquisition. However, the solution of establishing an online registry has not received the attention in public policy it deserves.

*Pamela Samuelson* (University of California at Berkeley, USA) criticised some developments in the USA, especially the misuse of TPM and DMCA for anti-competitive behaviour, and so did *Todd Alberstone* (RealNetworks Inc., USA). He pointed to some notorious legal cases demonstrating how companies misuse the anti-circumvention rule of the Digital Millennium Copyright Act (DMCA) to stifle competition (e.g. “Chamberlain Group vs. Skylink Technologies”, i.e. the “garage door opener” case, and “Lexmark vs Static Control Components”). In these cases competitors who circumvent a proprietary protection technology embedded in a product – here remote controllers for garage door openers and printer cartridges – were sued under the DMCA by market incumbents.

*Bernt Hugenholtz* (Institute of Information Law, IViR, University of Amsterdam) scrutinised “regional coding” in the light of the anti-circumvention provisions in the European Copyright Directive (EUCD). He shrewdly argued that – depending on the TPM – removing regional coding might be legal, because the EUCD only protects those TPMs from circumvention which refer to explicitly non-authorized uses. *Hugenholtz* recalled the internal market goal of the European Commission of avoiding market fragmentation which has been emphasised also with respect to TPM (see report on the “satellite directive” European Commission 2002). During debate a discussant pointed to the already existent market segmentation by TPM referring to the higher prices of iTunes in UK compared to other European countries.

## DRM and Alternative Compensation Systems

The debate about alternative compensation systems was one of the most interesting ones as the schemes proposed get more and more sophisticated and down to earth – of course not escaping sound criticism. *Volker Grassmuck* (Humboldt-University Berlin, Helmholtz Centre for Cultural Technology, Germany) said that there is no evidence that a stronger protection of content leads to higher innovation and creativity. He proposed a so-called “culture flat-rate” (or content flat-rate) to compensate artists – an approach with lower systems costs compared to DRM, and without controlling consumers.

*William W. Fisher* (Harvard University, USA) listed some disadvantages of DRM ranging from additional transaction costs, inconvenience and additional costs through lack of interoperability, impediment of consumer creativity, to the economic and cultural losses caused by price discrimination. Referring to his book (Fisher 2004) he suggested an alternative compensation system, in which – very briefly sketched out – artists register at a central office under a compulsory license. A tax is imposed on digital consumption (in particular on P2P) and the collected money is distributed to artists according to their popularity measured by a counting system.

*Alexander Peukert* (Max Planck Institute for Intellectual Property Law, Munich, Germany) criticised the scheme proposed by Fischer pointing to the incompatibility with international treaties. The scheme would not pass the “three step test” of the Berne Convention (i.e. a set of provisions that define permissible limitations and exceptions of national copyright laws under international IPR treaties). In contrast, Peukert suggested a “bipolar” system that would better fit with international treaties since it is close to the already existing dual compensation systems in many European countries. Authors would have the choice between the individual exercise of exclusive rights or to use collective compensation systems.

*Bernt Hugenholtz* also criticised the approach of Fisher and a similar one by Netanel (2003). He pointed out some defects of levy

schemes, reminding of the long-lasting experiences with them in most European countries. Such defects include the intransparent repartition of the collected money to the creators and right holders, the complex and protracted administrative procedures of setting the “right” tariff for the levy, and the unfair treatment of those consumers who use a device or service with a levy on it (e.g. PC of ISP services), but are not engaged in P2P file sharing. Furthermore, levy schemes generally require a complex administration and the scheme proposed by Fisher would require an even larger one.

*Susanne Dehmel* (BITKOM, German Association for Information Technology, Telecommunications and New Media) added to the criticisms of levy schemes the argument that currently – and more in the future – the number of devices that are capable of copying, and therefore potentially imposed with a levy, will vastly increase including more and more multi-purpose devices for which levies for private copying of copyrighted material seem unfair.

Private and collective licensing will be necessary and existent in parallel for the near future, said *Eric Baptiste* (International Confederation of Societies of Authors and Composers, France). DRM is no rival for collective licensing because collecting societies have more functions than enforcing licensing, especially for international distribution and to establish bargaining power. At the moment, he regards levies as more effective than DRM. In the future, collecting societies would have to better cope with the multi-purpose ability of devices.

### Bottom line

Apparently DRM has not fulfilled its original purpose of piracy prevention. It is becoming obvious that DRM can also be employed for other purposes such as for anti-competitive behaviour, to gain market dominance, lock-in consumers, and maintain price discrimination or to experiment with new compensation models. Thus, in my opinion, the focus of public policy has to be shifted accordingly from copyright issues to consumer protection and to policies of innovation, anti-trust and competition.

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## Getting the work of MPEG-21 right

### A comment to the first INDICARE state-of-the-art-report

By: Chris Barlas, Rightscom Limited, London, UK

**Abstract:** This comment is specifically about one of the issues covered in the report, namely the creation of usage rules with RELs I think that the report has not fully informed itself in this area, particularly with regard to the activities within MPEG-21.

**Keywords:** review – INDICARE, rights expression language, standards

### XrML and the activity in MPEG are connected

I think that the report has not fully informed itself in the area of RELs, particularly with regard to the activities within MPEG-21 (Moving Pictures Experts Group Multimedia Framework initiative). In para 5.6.4, the concluding remarks of the chapter on technical aspects (Helberger et al. 2004, p. 92f) there is a significant factual error, which leads the reader to assume that XrML (eXtensible

rights Markup Language) and the activity in MPEG are not connected. In fact they are, as XrML provided the baseline for the MPEG REL. Furthermore you refer to IPMP (Intellectual Property Management and Protection) as though it were a REL. It is not. IPMP covers all the activities that can be brought together generally under the DRM acronym.

MPEG went out of its way to avoid using the DRM tag, simply because it didn't want to be

saddled with legacy thinking. The current MPEG-21, part 4 is now called “IPMP Components” and at present it provides tools to enable different proprietary DRM systems to talk to each other. Currently there is no intention within MPEG to specify any kind of security algorithm that could be used for encryption. The specification, at heart, is about messaging.

### What MPEG really is and does

This brings me on to a wider point, which is the whole issue of your coverage of MPEG-21, which is not really very adequate. Over the five years since its beginning, MPEG-21 has specified a whole bunch of tools that could be used in combination to create an environment for the secure delivery of content. While a lot of these specifications have, apparently, nothing to do with DRM, they are all focussed ensuring that all users in the system can have access to standard technologies. For instance, “Digital Item Adaptation” provides tools to ensure that content can be rendered on different platforms, an essential part of interoperability. “Event Reporting” is being specified so that both rights holders and consumers can have an audit trail. While I don’t expect anyone to have the extensive knowledge of MPEG-21 possessed by those intimately involved in the standard, I think that it would have been possible to see that the MPEG-21 initiative is an honest attempt to work on many of the issues covered by the INDICARE report.

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### Why symmetric REL is a misnomer

Finally, I would like to bring to your attention MPEG-21, Part 6, the “Rights Data Dictionary”, in which I was closely involved. This is an attempt to provide a platform for interoperable metadata for rights, so that content from different metadata environments can be integrated.

That said, there is some other work we are doing connected with the RDD that I’d like to mention. This is in the area of rights statements, which we believe can be used to create offers. At the moment, RELs are all about permissions rights holders give to consumers. It is a one way business. The issue of symmetric RELs (Niels Rump and I wrote about this for Indicare, see Rump and Barlas 2005, and rejected the term) is that they maintain the “permission” modality and do not embrace the *negotiation modality*. Rights statements would be part of an agent based negotiation process. Certainly, without the rights statement (here’s my offer, you can do this, this and this, but not this and if you do this, we will do that), you cannot move on to any kind of automated negotiation based on personal profiles. That is, I think, where we need to get to.

### Bottom line

The INDICARE report addresses the right topics, however picking up one technical aspect, namely Rights Expression Languages (REL) and the work of MPEG-21 there is room for improvement.



## Masthead

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## Purpose, scope and focus

As the overall aim of the INDICARE project is to establish and maintain an Informed Dialogue about consumer and user issues of DRM, the publication concept of the **INDICARE Monitor** aims to

- monitor technological, legal, business, and social developments of Digital Rights Management solutions, especially in Europe, with a focus on consumer and user concerns, and to
- provide for interaction among experts, and for public debate about the topics dealt with in articles.

The targeted **readership** are all actors interested in user and consumer concerns of DRM solutions – not only organised user and consumer organisations –, but a broad array of stakeholders and concerned parties, including interested citizens and policy-makers.

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The INDICARE Monitor is a **monthly English language publication** delivered last Friday of each month. It is available free of charge.

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**Language and style** takes the diversity of readers into account, and should be analytical (concise and compact) and journalistic (comprehensible for non-experts) at the same time.

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**Formats** accepted are plain text, rtf, html, doc (word), and for graphics gif and jpg. All illustrations should be sent as separate files. Tables should not be too complicated.

**Acronyms** should be explained at first occurrence.

**References** and further sources appear at the end of the text in alphabetical order. Referencing should be as follows: (Lessig 1999), (see Peterson 1997), (see Buhse and Wetzel, p. 273). Examples of bibliographical data required are:

- Buhse, Willms; Wetzel, Amélie (2003): Creating a framework for business models for digital content. Mobile music as case study. In: Becker, Eberhard.; Buhse, Willms; Günnewig, Dirk; Rump, Niels (Eds.): Digital Rights Management. Technological, economic, legal and political aspects. Berlin et al.: Springer, pp. 271-287
- Lessig, Lawrence (1999): Code and other laws of cyberspace. New York: Basic Books  
<<http://www.code-is-law.org/>>
- Open Mobile Alliance, La Jolla, California:  
<<http://www.openmobilealliance.org>>
- Peterson, Richard (1997): Eight Internet search engines compared. First Monday, Vol. 2, No 2  
<[http://firstmonday.org/issues/issue2\\_2/peterson](http://firstmonday.org/issues/issue2_2/peterson)>



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