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The **IN**formed **DI**alogue about **C**onsumer **A**ceptability of **DRM** Solutions in **E**urope



Editorial

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: copyright, media, entertainment, P2P network

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

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: Netherlands, copyright, Creative Commons, legal aspects

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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About the author: Nynke Hendriks studied Information Law at the Institute for Information Law (IViR), University of Amsterdam, has contributed to some research projects at the IViR and is also a translator/editor Dutch/English.

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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: European Commission, consultation process, interest groups, consumer, interoperability

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 associa-

tions, i.e. IFPI, Vivendi, Eurocinema, BBC, France Telecom, Vodafone, Fast Web, Philips, Nokia, Alcatel, Hewlet 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 European 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 "**authorised domain**" (AD) concept in the context of the

DVB activities or the "**digital home**" concept of Digital Living Network Alliance (DLNA). These concepts refer to personal spaces in which authorised 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 consumers, 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: Europe, online music market, competition, consumer demands, portable music player

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 business

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: USA, stakeholders, copyright, music industry

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 favor 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

Content Industry	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.
Government	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.
Digital enablers	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).
Hardware industry	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.
Software industry	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.
Public Interest Groups	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.
Retailer	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.
Collecting Society	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 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.

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 iden-

tified 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
Berman	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
Boucher	The Digital Media Consumers' Rights Act (DMCRA).	Demand exact labeling requirements for usage-impaired "copy-protected" compact discs, as well as several amendments to 1998's infamous Digital Millennium Copyright Act (DMCA).	Hardware
Brownback	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
Hollings	Consumer Broadband and Digital Television Promotion Act (CBDTPA).	The bill would mandate copyright protection technologies in all digital media devices.	Content Industry Digital Enabler
Lofgren	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
Smith	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
Tauzin	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
Wyden	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 Rights

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

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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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: P2P networks, file sharing, bandwidth, technical aspects

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 come 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 (Lecture Notes in Computer Science 2770), 805 pp., ISBN 3-540-40465-1, 83.46 €

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, consumer, business model, copyright, information law

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-centered 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 original 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 Du-

sollier 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 A. 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

Sources

- ▶ At <http://www.digital-rights-management.de> you will find some more information about the DRM-project, and the contents page of the book.
- ▶ A more extensive review of the book by this author, in German, titled “Digital Rights Management - ein Fall für TA?” has been published in TATuP, a journal of ITAS. The review is available online at <http://www.itas.fzk.de/tatup/041/boeh04a.htm>

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“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. Gehring 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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Masthead

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