

INDICARE Monitor

About Consumer and User Issues of Digital Rights Management Solutions

www.indicare.org

ISSN 1614-287X

INDICARE Monitor Vol. 2, No 3, 30 May 2005

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



Editorial of INDICARE Monitor Vol. 2, No 3, 30 May 2005

By: Knud Böhle, ITAS, Karlsruhe, Germany

Abstract: In this editorial we announce two new INDICARE deliverables: the first INDICARE consumer survey on digital music and DRM, and the first update of the INDICARE State-of-the-Art-Report. In this issue you will find, apart from announcing and presenting our new findings, three articles which continue the focus we started in April on DRM in the field of scientific publishing and libraries. In further articles, results of a survey addressing user perceptions of DRM systems are presented, the role of DRM systems in computer games is investigated, and two thoughtful conference reports are provided, one addressing the balance between rightholders and consumers at the international level, the other questioning consumer law in the information economy.

Keywords: editorial – INDICARE

INDICARE news

INDICARE has published the results of its representative consumer survey on digital music and DRM which was conducted in February 2005 in 7 European countries (Germany, UK, Spain, France, Hungary, The Netherlands, and Sweden) with nearly 5,000 Internet users participating. The main results are compiled in a special INDICARE Monitor article in this issue by *Nicole Dufft* who managed the survey.

We are also happy to announce the *first update* of the INDICARE State of the art report on "digital rights management and consumer acceptability" dealing with new developments since December 2004 and responding to expert comments we have received and published in past INDICARE Monitor issues.

About this issue

In this issue we continue to publish articles dealing with DRM systems in science and libraries. This time the focus covers a case study of one of the big document supply centres, the British Library. *Andrew Braid*, head of licensing and copyright compliance at the British Library explains the reasons why a DRMs had to be introduced, how it was implemented, how it works and what the current state of experience is. In an e-interview with *Tobias Steinke* of the German National Library (Die Deutsche Bibliothek) we explore the area of long-term archiving and the DRM- and copyright matters involved. The third contribution to the focus theme is from *Dan Hunter*, a professor teach-

ing intellectual property law and cyberlaw at the University of Pennsylvania. He analyses the phenomenon of mass amateurization which means new ways of non-commercial content creation and distribution. This concept is especially interesting as it allows overcoming the simple dichotomy between legal commercial content on the one side and illegal content of the "darknet" on the other side. There is often an alternative, a third option, and that's amateur content. Hunter argues that DRM systems have to play a role in amateur content.

The remainder of the present issue contains another four articles. *Marc Fetscherin*, who already presented findings from consumer research in the INDICARE Monitor before, this time shares with us results from his own consumer survey he undertook for his PhD thesis. His findings on how technological requirements and usage restriction by DRM systems are perceived by consumers and how this should be taken into account in business strategies arouse interest in the thesis. *Danny Vogeley* who worked for INDICARE when he was at Berlecon as an intern made us aware already earlier of the dynamic field of computer games and the increasing role of DRM systems in this context. This time he introduces us to "massive multiplayer online role-playing games", MMORPG, and developments in these worlds which encourage DRM systems. Last not least, *Natali Helberger* was present at two relevant events reporting and reflecting about them. One report is on a meeting of the A2K initiative – with

A2K meaning "Access to Knowledge" – striving for a new balance between rightsholders and consumers of content giving special attention to the problems of developing countries. In May 2005 the initiative met in London to continue their work on a "Treaty on Access to Knowledge". The second conference Natali attended took place in Seattle, State of Washington, in March 2005. "Is consumer protection an anachronism in the information economy?", was the title.

While the spontaneous answer to this question is of course "No", the conference report reveals that consumer protection laws may not always be the best means to achieve this goal.

Some of you will have noticed that the INDICARE Monitor appears this time last Monday instead of last Friday of the month as usual. This however is not due to a change in editorial policies, but just to a flu the editor caught. So, my apologies for the delay.

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URL: http://www.indicare.org/tiki-read_article.php?articleId=110

Digital music usage and DRM Results from a representative consumer survey

Nicole Dufft, Berlecon, Berlin, Germany

Abstract: Information about the acceptance of DRM solutions by consumers is difficult to obtain, since the largest part of consumers has no, or at least no clear knowledge, of DRM. If we want to understand how consumers might benefit from or be restricted by DRM technologies, we need to learn more about the way they use digital goods and the channels through which they obtain them. The objective of the first INDICARE survey among 4852 Internet users was, therefore, to gather reliable data on the preferences and behaviour of European consumers with respect to digital goods and on their awareness and acceptance of DRM.

Keywords: survey – INDICARE, consumer behaviour, consumer expectations, consumer research, digital music, online music stores – EU, France, Germany, Hungary, Spain, Sweden, United Kingdom, The Netherlands

Introduction

This survey was the first of two planned surveys of the INDICARE project and was focused on digital music. This focus allowed us to ask detailed questions about current behaviour and preferences, rather than giving just a broad overview over different usage forms. The survey was conducted on the Internet in February 2005 among 4852 Internet users in seven European countries: Germany, United Kingdom, Spain, France, Hungary, The Netherlands, and Sweden. These seven countries account for about 70 % of

the GDP and for 64 % of the total population in the 25 member states of the European Union (Eurostat 2005). The seven countries were chosen to cover various dimensions such as large and small countries, countries from east and west, as well as from north and south. The level of broadband penetration was taken as another decisive factor. The survey results are representative for all Internet users in the respective countries from age 10 with respect to age, gender, education and Internet usage frequency.

A large share of Internet users has experience with digital music

The results of the INDICARE survey show that large parts of the population have already gained first experience with digital music. 69 % of all Internet users have experience with music on a computer and 40 % use MP3 players. Particularly younger Internet users frequently use their computers or mobile devices to listen to music. But the older age groups also show strong interest in digital music and intend to try this new form of music in the future.

Survey results reveal, however, that digital music is not equal to downloads from the Internet. By far the most important source for digital music are CDs that consumers have either purchased themselves or CDs from family members and friends. Online music stores do not yet play a major role as a source for digital music: 29 % of the European digital music users have obtained music from online music stores, but only 9 % frequently use them.

Information about DRM and copyright is urgently needed

With digital music being so popular, one would expect that consumers have at least a basic understanding of the legal and technical foundations of digital music.

Our survey results disclose, however, that the majority of digital music users do not have the basic knowledge that seems necessary to make informed decisions. The majority of users is not well informed about the legality of their actions with respect to digital music. More than half of the digital music users either do not care whether the music they download onto their computers is copyrighted or do not know exactly what copyright means. This holds true especially for young Internet users who are at the same time the most frequent users of digital music.

The survey results also illustrate that a very significant knowledge gap about DRM exists in Europe. 63 % of the European users of digital music have never heard of Digital Rights Management, an additional 23 % does not exactly know what DRM is.

It can be concluded that significant information efforts are needed to ensure that consumers have a basic understanding of DRM, copyright, and the legal foundations for the usage of digital music. Such understanding seems necessary not only to prevent illegal behaviour, but also to defend consumer rights against possible violations.

Online music stores have to improve their information policy and customer care

The lack of information does not only concern digital music users in general but also users of online music store in particular. 79 % of the users of digital music stores did not know whether the music they purchased was DRM-protected or not. In addition, most users did not know whether any usage restrictions applied. Of those that knew about usage restrictions, the majority did not know the details of the restrictions.

It can be concluded that the information policy of online music stores about the application of DRM systems and/or the application of usage restrictions needs to be significantly improved. Online music stores that apply DRM technologies at least have to inform their customers that certain restrictions apply and how they are implemented. This is not only necessary for the sake of informed consumers. It is also necessary for the sake of satisfied customers, since a lack of knowledge about usage restrictions often results in problems when consumers want to use their purchased music files.

This is confirmed by survey results showing that about half of all digital music store users are not sure what they are allowed to do with the purchased content and have technical difficulties when using it.

Consumers are not willing to give up flexibility

The survey identifies device interoperability as the key demand of consumers. In addition, consumers frequently burn, share, and store music files. They will therefore hardly accept digital music offerings that do not support this behaviour. Commercial digital music offerings have to make sure that their applied DRM systems support these demands of consumers. Otherwise they might lose cus-

tomers to services that allow, for example, the easy transfer of files between devices or the sharing with others.

Our survey results also confirm that consumers "don't want all for free but they want value for money". The majority of users is, for example, willing to pay for music files that offer them more flexible usage rights, the ability to transfer files between devices, and the ability to share. Obviously, users are not willing to give up their flexibility in the use of digital music, even if restricted content were offered at half the price. It follows that DRM systems have to aim at supporting device interoperability and sharing features and apply relatively relaxed usage rules in order to be accepted by consumers.

The Internet is an excellent tool to promote new music

Findings from the INDICARE survey also indicate that digital music on the Internet is an excellent tool for musicians and their labels to promote new works and foster sales. This is particularly true for less known musicians, since many digital music users discover new music and unknown artists over the Internet.

Even more interesting is that many Internet downloaders spend money on music after they have discovered new music: 64 % of the digital music users who have discovered a new artist on the Internet have subsequently bought a CD by this artist, 31 % have visited a concert, and 16 % have bought more digital music by this artist. The music industry should, therefore, aim at making it easy for consumers to discover new music on the Internet, e.g. by supporting sharing and recommendation features.

Older usage groups offer potential for online music stores

An interesting finding of the INDICARE survey is that older users are a very interesting target group for the providers of digital music. While young Internet users are currently the most frequent users of digital music, older age groups show strong interest in using e.g. MP3 players in the future. Digital music users above 40 download music from P2P networks less often, but purchase music

from online music stores as often as younger user groups do. Older users often (more often than on average) spend money on digital music and CDs after having discovered new music.

The efforts of digital music stores should therefore not only focus on teenagers but particularly target older Internet users who are most inclined to spend money on new music. They typically care more about copyright and are better informed about DRM and legal issues than younger users.

Opinion on subscription services differs between countries and age groups

Subscription services are attractive to less than half of the users of online music stores. The opinion on subscription services differs quite considerably across countries and age groups. Subscription services are most attractive to Hungarian and French users. They are least attractive to teenagers.

We also find that the willingness to pay for music files that expire after a subscription period is limited: 80 % would rather pay 1 € for a song that they can listen to for as long as they like than paying only 20 Cents for a song that they can listen to for only a month. Accordingly, services where DRM technology makes songs expire after a certain subscription period are only attractive to a limited share of users. Providers of subscription services, therefore, carefully have to identify their specific target groups and pricing policies.

Frequent P2P users are also paying customers for the music industry

A more detailed analysis of frequent users of P2P networks reveals that the common perception of file sharers that generally do not want to pay for music is too simplified. Frequent P2P users are generally very active users of digital music, they use portable audio players or their mobile phone more often than the average Internet user does. And many of those who do not use those devices yet, consider doing so in the future.

We find that P2P users who have discovered new music on the Internet, subsequently buy CDs or purchase music from online music

stores almost as often as the average digital music user does. The share of frequent P2P users who have bought music from online music stores or used subscription services over the past 6 months is even above average. We can conclude from these results that P2P users are not just free riders, but also an interesting target group for the music industry.

Highest share of frequent digital music users in Sweden

If we look at results on the country level, no consistent picture about trends in different countries emerges. Some selected results are nevertheless interesting to observe. The survey results reveal, for example, that the highest percentage of frequent digital music users can be found in Sweden. At the same time, however, Swedish Internet users have the lowest level of information on DRM and copyright.

Hungary has the highest share of users that know about DRM and has, at the same time, the lowest share of frequent P2P users. The highest percentage of frequent P2P users can be found in Spain and the Netherlands.

Sources

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- ▶ Eurostat (2005), <http://epp.eurostat.cec.eu.int>

About the author: Nicole Dufft is a senior analyst at Berlecon Research. She has been analysing a variety of ICT topics ranging from mobile computing and application service providing to DRM. Currently, she works in the field "digital consumer". She is a member of the INDICARE project team.

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Internet users from Germany and the UK are most inclined to spend money on digital music: Germany and the UK have the highest share of online music store users and the highest share of users who bought digital music or CDs after they had discovered new music on the Internet.

Bottom line

Despite the popularity of digital music in Europe, most digital music users do not know what DRM is, do not know or do not care about copyright and are not well informed about the legality of their actions with respect to digital music. This lack of knowledge and awareness can have a number of consequences: First, it might result in illegal behaviour when using digital content. Second, the lack of knowledge often results in problems when consumers want to use music files they have purchased in digital music stores. And, third, when consumers do not have a basic understanding of the legitimate rights they have when using digital music, they will hardly be able to defend these rights against possible violations.

The use of digital rights management in document supply

By: Andrew Braid, The British Library, Boston Spa, Wetherby, United Kingdom

Abstract: The paper, based on Braid (2004), describes the use of DRM in providing a secure document supply service; the reasons for implementation of a DRM system by the British Library; the system adopted, with reasons for the rejection of some systems; and insight into how the chosen system has been received by users.

Keywords: case study – electronic document delivery, national library, publishers, stakeholders – United Kingdom

Introduction

Electronic document delivery (EDD) is a relatively new addition to the older traditions of document supply and inter-library loan. EDD involves the supply of a non-returnable surrogate copy of the required item, usually an article in a journal, by an electronic method which is very fast and can be instantaneous. It has proved very popular with users who can easily obtain a copy of an article that is not held locally. This is the very reason that publishers find it unattractive. They claim that EDD permits libraries to cancel subscriptions to journals and rely on document suppliers and other libraries instead – the so called "just-in-case" versus "just-in-time" argument. Arguments to counter these claims (Russon 2001) have been met with a degree of scepticism by publishers.

These arguments have been heard for some considerable time but the recent addition of EDD to the document supply process has intensified the debate. Publishers see the possibility of users obtaining copies of articles almost at the same speed as if they were available on a local subscription. Document suppliers on the other hand see instant supply as a natural progression in the evolving nature of the document supply process. They want to be able to offer a service that does compete effectively with local supply.

One method of controlling EDD is by the use of digital rights management on the transmitted file. This article offers a background on the use of such systems and describes the implementation of such a system by one major document supplier.

Digital Rights Management

Digital Rights Management (often referred to as DRM) can either mean the digital management of rights, as in the context of this article, or the management of digital rights. The latter term, which is a market enabling technology, encompasses the identification and description of content and includes information about the rights and permissions associated with that content; usually this is done in such a way as to be interoperable with other content and access systems.

The digital management of rights means the technical protection measures that are added to (or wrapped around) a piece of content. This usually involves the use of some form of encryption and access control mechanism. As well as preventing unauthorised access, the controls limit various aspects of use of the content. Such limitations include the number of copies that may be printed, whether the file may be copied, the length of time that the file may be accessed and whether the content may be "cut and pasted". Unlike the management of digital rights, where work has been done by several organisations, for example BIC in the UK, in proposing standards for the electronic trading of rights, there is little standardization in the digital management of rights. Several systems have been developed and have found use in controlling many digital objects, typically e-books. Here the user, after downloading the necessary access software, can obtain an e-book and obtains rights using a variety of business models. Many of these are based on analogies with borrowing physical books, for instance the length of time the e-book is available can be controlled and the item can be lent to another user.

Reasons for implementing DRM for document supply

At least three major document suppliers, the British Library, CISTI (cf. sources) and Infotrieve (cf. sources), have now implemented a method of secure electronic delivery. Although the three systems differ technically they have all been implemented for the same reason. That is because, unless such systems are in place, publishers will not grant the necessary rights for EDD to be provided.

This may seem an irrational response from publishers, nearly all of whom allow unsecured access to their online journals for subscribers and pay-per-view customers but they are unwilling to grant similar access through document suppliers. The reasons for this are that (i) publishers are not in direct control when supply is through a third party; (ii) they fear that inappropriate use might result; and (iii) as stated above they fear erosion of subscriptions. DRM systems do not provide a solution to all of these fears but they do give comfort to publishers in controlling inappropriate use.

The British Library and electronic document delivery

The British Library has experimented with several forms of EDD over the years (Braid 1993). Many of the systems described have not come to fruition, although the Ariel (cf. sources) system has been used since the late 1990's. In 2003 the Library upgraded its copying processes and replaced all the photocopy machines with electronic scanners using the Relais system (cf. sources). Although principally used for output in print format, this gave the possibility to supply any item from the collection by electronic delivery, if the necessary rights are in place. To obtain these rights it was necessary to come to an agreement with either individual publishers or their agent in the UK, the Copyright Licensing Agency (CLA). For the reasons stated above, in order to obtain the required rights it was necessary to implement a secure electronic delivery system.

The chosen system

Several forms of secure electronic delivery were investigated. All of these were based on DRM systems. Many of the early systems

were rejected for one or more of three main reasons: (i) they were too expensive; (ii) they were too complicated; or (iii) they did not work properly. Trials began with one system in 2001 but it proved to be inadequate technically.

During 2002, the British Library worked closely with Elsevier to develop a system which, it was hoped, might develop into an industry standard. The Adobe Content Server and Adobe eBook Reader systems were chosen. These permit the encryption of existing PDF files in real time and allow a variety of security levels to be set. Initially, the following parameters were chosen:

- ▶ Use of the file limited to the machine on which it is downloaded;
- ▶ Printing set to one copy only;
- ▶ Saving and viewing of the article permitted, but for a limited period of time. (The time period varies depending whether the article originates from a scanned image, when the item is only available for printing for 14 days, or a digital original, when the article is available for viewing for up to three years)
- ▶ Forwarding and copying disabled;
- ▶ Annotations and conversion to speech permitted.

The other advantage was that, for users, they had software that was provided at no cost by a well known and reputable company. Many of the other systems rely on plug-in software, often supplied from very small companies. Since the initial work Adobe have integrated their eBook Reader software into Adobe Reader from version 6 onwards. This has the added advantage that, as most users already use Acrobat Reader, it is not necessary to install any additional software to use the system. However, the requirement for version 6 has caused some problems – see later.

It was also decided that rather than "push" the PDF file to the requester it would be better for the requester to 'pull' the file from a British Library server. There were several reasons for this, but many of the problems associated with the transmission of large files as email attachments and firewalls are overcome if the requester controls the process.

The drawback is that, for the standard requesting methods, the user is not online to the British Library and so cannot initiate the downloading process at the time of placing the request. However, the British Library does offer two services (Inside and British Library Direct) where the user searches and orders documents in the same online session and these will permit online delivery.

Both these services allow users to search for and select individual articles from the listing of journal content pages. Individual articles can be requested for delivery through a web interface. The British Library has agreements with some publishers for the storage and use of online journals. These publishers permit the delivery of requested articles to be online (a PDF icon alongside the bibliographic citation signifies that the article is available for immediate downloading). When such a request is placed, the PDF file is encrypted using Adobe Content Server and downloaded for viewing using Adobe Reader. The file is secured according to the parameters listed above.

For material held in paper format a different approach has been adopted. After the article has been scanned it is encrypted in the same way as above. The article is then stored on a server. An email message containing a link to the article is sent to the user. Because the security permits only the person who opens the link to download the file, it is important that the requester should be the person to do this. Thus, if the request is sent via an intermediary, it is important that the intermediary should forward the email message to the original requester before downloading takes place. An added advantage is that, as the encryption and access software is exactly the same for born-digital and scanned files, both types can be transmitted in exactly the same way.

The system in practice

The system has been operational since December 2002 for Inside users, with the name Secure Electronic Delivery (SED; cf.

Sources (websites current as at May 2005)

- ▶ Ariel: http://www4.infotrieve.com/products_services/ariel.asp
- ▶ Braid, J. A. (1993): Electronic document delivery: a reality at last? Aslib Proceedings, Vol 45 No 6, pp. 161-166.

sources). Because of the relatively small number of documents that are available take-up was not great. Problems were also caused when Adobe changed the reader software from eBook Reader to Adobe Reader v6 in June 2003. The system linked to scan on demand from paper originals became operational in December 2003. At the time of writing (May 2005) use has grown considerably and SED is now responsible for over 10 % of all items supplied.

There are still some problems to be resolved. The main ones are:

- ▶ Some large organisations have shown reluctance to upgrade to the latest version of Adobe Reader
- ▶ Some customers who mediate requests have asked for a mechanism whereby the item can be checked to see if it is the correct item and complete before it is forwarded to the end user. At present the system does not permit this.
- ▶ There were some problems in the authentication of version 6 of the Adobe Reader software. These have been resolved with the release of version 7 of Adobe Reader

For those who have used it reaction to the system has been very positive. Many users have commented favourably on the speed of delivery and the ease of using the system.

Bottom line

The DRM system chosen by the British Library has proved to be successful. It is now responsible for over 10% of all items delivered. At first sight, the use of such a complex system for what is a relatively low-cost product may seem overkill, but it proved to be the only way that the British library could obtain the rights that it required to be able to continue to offer electronic document delivery. It is hoped that, as both publishers and users become more familiar with the use of such technology, a less obtrusive system of control might be possible.

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About the author: Andrew Braid is head of Licensing and Copyright Compliance at the British Library. He joined the former National Lending Library for Science and Technology at Boston Spa in 1968. He has held a variety of posts including management of the literature stores and reprographic unit, the conservation unit, stock relocation, building planning and service development. For the past 10 years he has been involved in negotiating licences with publishers for use of electronic journals in the Library's document supply services. He can be contacted at andrew.braid@bl.uk

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National libraries, preservation and digital rights management

"The challenges of long-term preservation require continuous processes of migration and/or emulation. But the goal of DRM is to prevent exactly this"

By: Tobias Steinke, Die Deutsche Bibliothek, Frankfurt, Germany

INDICARE-Interview by Knud Böhle, ITAS, Karlsruhe, Germany. The interview explores major problems and current developments in long-term archiving and preservation trying to identify possible entry points for DRM systems in this area.

Keywords: interview – copyright law, libraries, preservation, national libraries – Germany

Tobias Steinke is a computer scientist working at Die Deutsche Bibliothek, the German National Library. He is specialized in long-term archiving and preservation and is partner project manager of the German project kopal. Contact: steinke@dbf.ddb.de.

INDICARE: DDB, Die Deutsche Bibliothek (the German National Library), made it recently to the news with headings like "German Library Allowed To Crack Copy Protection" (cf. EDRI-gram 2005). What exactly is the agreement about between DDB and the German Federation of the Phonographic Industry (Bundesverband der phonographischen Wirtschaft) and the German Booksellers and Publishers Association (Börsenverein des Deutschen Buchhandels)?

T. Steinke: In principle it's about our need to bypass copy protection in order to fulfil our legal obligations. The use of programs able to do so is normally forbidden in Germany due to the legal anti-circumvention rules. The urgent need behind this agreement was the fact that the German Music Archive (Deutsches Musikarchiv), which is part of DDB, has already collected numerous copy protected audio CDs. To ensure the preservation of these CDs it is necessary to make legal copies. In principle DDB has the right to make copies, but without the agreement we wouldn't be allowed to use computer programs which enable us to effectively do so. So far we have no experience with copy protection beyond audio CDs. You can find

all official information available about the agreement on our website (DDB 2005) – an English translation "The Frankfurt Group"(2005).

INDICARE: How can you ensure that the staff of DDB is skilled enough to hack and crack whatever protected content comes along? Think of a situation where circumvention-tools are not available legally...

T. Steinke: We will think about this when we get this kind of material. As a basic principle, we want deliveries without any copy protection.

INDICARE: You probably know about the agreement between KB, Koninklijke Bibliotheek (National Library of the Netherlands), and Elsevier (and other publishers) about the preservation of scientific electronic journals. In this agreement KB is clearly specified as responsible institution for long-term archiving. What are the differences and the similarities between the task and the approach of KB and DDB?

T. Steinke: First, DDB in Germany and KB in the Netherlands are the very institutions responsible for long-term archiving of *electronic* journals among others. While it is still voluntary to deposit an electronic copy at DDB (according to the present legal deposit law, i.e. Gesetz über Die Deutsche Bibliothek, DBibLG), this will change with the oncoming new law making the legal deposit of electronic copies mandatory. The proposed bill passed cabinet this month. Many publishers have already signed delivery contracts with DDB (e.g., Springer, Wiley-VCH) in this way anticipating the future legal situation.

Second, DDB has accumulated considerable experience with, for example, online theses and dissertations, while KB has gathered more experience with other materials. As both institutions have to fulfil roughly the same tasks, they are well advised to share their experiences with specific publication types to their mutual benefit. There is already an ongoing co-operation with the KB at several levels, especially regarding long-term archiving.

INDICARE: It appears as if DDB as well as KB prefer agreements on a private basis between publishers and libraries instead of a legal regulation on exemptions for libraries. I heard some library experts advocate for a legal regulation to ensure that libraries can fulfil their tasks without being dependent on bargaining power or the good will of publishers. What is your view?

T. Steinke: Your assumption is not entirely true. If legal regulations could be found representing equally the interests of all institutions involved, no further agreements would be necessary. Indeed this would be the ideal case: Legal regulations providing sufficiently clear structures. If, however, the legal regulations are not sufficient to guarantee the fulfilment of our tasks (e.g., technical protection measures must not be broken) then it is of course useful to get individual contracts with publishers or publishers' interest groups (e.g., allowing DDB to crack TPM). Realistically, in the future there'll be no way to avoid a dualism of both strategies, because the publication variance in the electronic sector is too widespread for any law to capture. Individual agreements can help to simplify the co-operation (e.g., a publisher agrees with DDB not to apply the TPM to the copies delivered to DDB). As for that, we understand the legal fixation of our rights as a clarification that helps avoiding uncertainties on both sides. That doesn't alter the need to actively seek and to intensify our contacts with publishers.

INDICARE: Let me turn to some more technical questions. I would assume that different publication types go together with rather different technical requirements for preservation. A database of online journals is one thing, while an item like an e-book is quite a different animal.

T. Steinke: We accept all file formats for publications we are obliged to collect. Currently the most common formats for electronic publications are PDF, XML, and HTML. But numerous other formats are in use, some of them are indeed very exotic. These formats complicate of course long-term preservation. Because electronic journals are mostly delivered to end-users in PDF or HTML, we get them in these formats as

well. Therefore, from a technical point of view, e-journals are also single objects. We don't collect the complete presentation as it is on the publisher's site (webpage with database and shopping system).

INDICARE: As the field of scientific publishing is as international as science itself, a network of journal archives would seem more appropriate than a huge effort of one central library...

T. Steinke: Yes, definitely, and that's true from a national perspective too. There's no way for DDB to collect all available electronic publications on its own in one huge effort. We are thinking of building-up a network of reliable partners (such as regional libraries, university libraries etc.) which collect part of the publication production (not only journals but also websites etc.) in a well-defined geographical area. The collections of all these partners will then be archived at DDB without further (bibliographical) processing. By this DDB will at the same time function as backup for the partner institutions. At present we are in the state of planning this network on a national level. At the international levels discussions about co-operation and the way to chose are ongoing. With respect to web-harvesting a co-operation of national libraries and the Internet Archive (cf. sources) is already in place, however DDB has not yet joined in.

INDICARE: Well, I would have expected that international co-operation in the field of scientific publications would be most advanced. What is the state in this segment?

T. Steinke: The collecting duties and activities of a national library are normally defined by national law and target the national production of publications. Although the American Library of Congress also collects German books, this does not exempt us from our duty to collect them. Therefore co-operation among national libraries is primarily related to technical issues. We are trying to establish common technical standards and to share our different experiences.

INDICARE: Building archives for digital objects will need standards at different levels. I have heard e.g. of OAIS (Open Archi-

val Information System) and SAN (Storage Area Network).

T. Steinke: The OAIS model is very important in the long-term preservation community. It is a theoretical model defining functional entities. It was originally developed by NASA and enhanced within the European project NEDLIB (cf sources). This model defines a terminology to ease comparison of archival systems at the conceptual level and in the phase of planning. However, the OAIS model doesn't say anything about the implementation of these systems.

SAN is a technical term of network technology meaning a specific technical realisation of storage techniques. From the viewpoint of long-term preservation, concepts should be independent of particular technical realisations, because these are constantly changing. But it's necessary to have agreements about the degree of reliability and about suitable service concepts (backup, refreshment).

INDICARE: I mentioned SAN, because *Manfred Osten* (2004, pp. 88-90) presented it in his book as a key technology to solve problems of long-term archiving by a distributed system architecture. Independent of SAN, the idea of distributed long-term archives exchanging information remains intriguing – especially when you envisage them to be used remotely by end-users all over the world.

T. Steinke: The idea of creating a shared archival system based on shared storage is, e.g. realised in the project LOCKSS (Lots of copies keeps stuff safe) at the University of Stanford (cf. sources). However long-term preservation (LTP) is not primarily about sharing documents, and sharing is not one of the main problems of long-term preservation for which we try to find solutions. A high degree of technical skills and continuous development is needed for long-term preservation, and therefore central organisations should care about preservation and availability of committed material. These specific organisations could be understood as kind of a bank, in which you have a safe deposit box accessible for you only. A goal of our project kopal (cf. sources) is to create this kind of basis. Based on a stable technical solution of

this kind we aim to develop a co-operatively usable archival system for long-term preservation. The system itself will then be hosted by a technical service provider, who is responsible for providing the requested technical competencies.

INDICARE: Digital technology blurs the border between archives and digital libraries and both may strive to offer their users *permanent access*. How should the borderline between digital archives and digital libraries be defined today?

T. Steinke: First some words of clarification why long-term preservation of electronic documents is needed and what the essential problems are. There are two problems in the field of long-term preservation: On the one hand it is about the preservation of the binary bit stream as storage technologies only guarantee duration for a limited time. Therefore service guidelines are needed to guarantee the *migration* to new storage technologies right in time. The second problem is more complex. Every file format is only usable within a given context (software, operating system, hardware). As a consequence relatively soon it will not be possible to access the content of the preserved binary bit stream. There are two concepts to address this problem. *Migration* is a process to convert a file format to another file format as long as it is still possible to interpret the source file. Of course the target file should have the same content afterwards. *Emulation* is a simulation of an old system environment needed for a chosen file on a current system. Both strategies require a continuing high effort and there is always the risk of losing some information. But it's the only chance to access any of the content in the future. A digital archive for long-term preservation should deal with these problems. A digital library on the other hand emphasises sharing and organisation of digital objects and can rely on current technologies.

There will be lots of digital libraries; nearly every institution has set up one already. Not every institution, however, has the task and/or resources to set up a digital archive for long-term preservation. True digital archives will only exist on well-defined foun-

dations, e.g., connected to the legally defined deposit task of regional and national libraries. Most other libraries will be digital libraries which may guarantee to provide all e-publications for a limited time (~5 years). After that, digital archives – at the well-defined (higher) level – will get into place to serve as a backup (as said above) and as institutions making these publications available after a defined timeframe.

INDICARE: What happens when copyright of archived digital publications expires?

T. Steinke: Access to our whole collection is possible via the OPAC (Online Public Access Catalogue). You can use the OPAC on our webpage (<http://opac.ddb.de/>) or at PCs in our library. If a catalogue entry refers to an electronic resource you will get a link to the corresponding file. Depending on permissions, some links are displayed on PCs in the library only. In other words we are able to grant or cede access at any time when required.

INDICARE: Recently I heard library experts saying that libraries and archives would be willing to accept and employ DRM systems if on the other hand publishers are willing to let the libraries do their preservation job. Would you say that this kind of bargain will be typical in the future? Are there already archives with DRMS in place?

T. Steinke: As said before the challenges of long-term preservation require continuous processes of migration and/or emulation. But the goal of DRM is to prevent exactly this. Therefore a digital archive for long-term preservation is not able to preserve DRM protected material. DRM is suitable within access components for end-users.

For example, at present links to some of the objects are not shown within the web-accessible OPAC. It would be imaginable to have an agreement with the right holders to show these links but to put some kind of DRM on them, on-the-fly during access. Note however, this process would not be connected to the archival system itself in any way. It is like fetching ware from a warehouse and sticking your label on it before selling it to the customer.

INDICARE: Is there a role of TPM and DRM in safeguarding integrity and authenticity of electronic documents stored in digital libraries and archives?

T. Steinke: Digital archives for long-term preservation should be as trustworthy as banks. Of course, within the archives techniques like checksums are used to ensure authenticity. In the end, customers of those archives have to trust in getting the "right" objects and the right content. It is the same as with books, which could be manipulated. Either you trust a library to not tear out pages or you don't. But we expect that we will have to use digital signatures for end-user access in the future.

INDICARE: A final question, more and more information is being made available by others than professional publishers forming part of our cultural heritage as well. Will this development change the task of national libraries and are they aware of the challenge?

T. Steinke: Yes, and it's a very difficult issue. Are all web pages worth being collected? What are German web pages at all? These questions are being discussed, but there are no clear answers yet. We only know for sure that we have to start collecting online publications (which we already have done), otherwise a lot of today's publications will be lost.

INDICARE: Thank you very much for this interview.

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URL: http://www.indicare.org/tiki-read_article.php?articleId=107

Digital rights management and mass amateurization

By: Dan Hunter, University of Pennsylvania, Philadelphia, United States of America

Abstract: The production of culturally-valuable, expressive content is moving out of sole commercial control and into the hands of amateurs. This movement promises to provide meaningful alternatives to the commercial production of content, and equally promises to be a brake on commercial over-reaching in the DRM arena. Further, DRM has the possibility of spurring the uptake in amateur content (especially in the amateur content fields like open source and open access) by providing a simple and effective way of denoting attribution interests for the long term.

Keywords: amateur content, content industries, intellectual property, intermediaries, open access, open source, societal change, stakeholders, trusted computing

Introduction

Over the last twenty years we've seen extraordinary changes in the landscape of intellectual property, wrought by the speed of adoption of the general purpose computer and the internet. Even as recently as a decade ago only visionaries like *John Perry Barlow* understood that the widespread ability to reproduce and distribute digital content would change the assumptions that underpinned the music, and movies industries (Barlow 1994). He suggested that intellectual property was going to be set loose from its physical moorings, and the digital age would see the overthrow of large segments of the music, movie, and content businesses. Now, after the rise-and-fall of Napster and the rise-and-rise of bitTorrent, it is clear to everyone that the business model of established content providers is under threat. And so access control and Digital Rights Management (DRM) have emerged from the incumbent content industries as their last, best hope to control the uncontrollable spread of content that they used to be able to regulate through the architectures of cost structures and physical limits.

The war over content can, then, be seen as a fairly simple battle between file-sharers and their supporters versus the music and movie industries. This is a war fought on the battlegrounds of technology, and in the courts and legislatures around the world. But viewing it only in this way is a mistake. Focusing on this war misses the profound changes that have occurred for those who don't create content for the purpose (primarily) of com-

mercial gain. The digital revolution makes it easy to share sound recordings; but it has also reduced the cost of creation, production, and dissemination for amateur producers of content, and the significance of these producers represent the most extraordinary change in intellectual property that we've seen in hundreds of years.

It probably has always been the case that brilliant authors, artists and creators have always been walking amongst us, unrecognized. But now these creators can produce their culturally-significant, expressive work, and send it out into the world to compete for attention with professionally-produced content. Examples abound: the eight or ten million blogs that are challenging mainstream media sources; open source software like Linux, Apache and MySQL; the open access movement within scholarly literature; the citizen journalism experiments of online newspapers like South Korea's Ohmynews; the Wikipedia, the growing list of amateur podcasters; and so on. These disparate examples represent the beginning of the amateur content movement, a movement that has been largely ignored by the commercial content industries. But this movement is quite radical, and gaining in significance.

The purpose of this essay is to sketch some issues that the amateur content movement poses for DRM, and vice versa. In the next sections I want to focus on some aspects of amateur content, and ask how they intersect with DRM. Then I'll look at the open access and open source movements. As I'll demonstrate, the mass amateurization of content

generates interesting, counter-intuitive responses to DRM.

Mass amateurization

In order to understand why amateur content is only now becoming significant, it's necessary to look at our assumptions of copyright and the way that expressive content has traditionally been generated. Copyright has played an important social role because it provides incentives to the intermediaries of the content industries – publishers, agents, movie studios, retail stores, etc. – where the processes of moving content from creator to user have been capital-intensive. These "content processes" include the creation of the content, the selection of the content for commercial publication, its production and dissemination, its marketing and its eventual use. Each of these processes has been too-expensive or too-difficult or too-specialized for amateurs to undertake. Consider magazine or book publishing: apart from the creation of the text, each stage in getting the work to market either costs money (offset printing requires large print runs, and large amounts of expensive paper), requires special knowledge (how does one request an International Standard Book Number?), or is just plain difficult (try to get a bookstore to devote shelf-space to your self-published magazine). Hence we have needed highly-capitalized intermediaries to provide these services, and this has reduced the opportunities for all but the most devoted amateurs.

But as Greg Lastowka and I have explain elsewhere, each of the content processes have moved into the hands of amateurs (Hunter and Lastowka 2005). With the advent of the general purpose computer - together with content-creation software for desktop publishing, music creation, film editing, and so forth - the cost of creation and production has fallen. To give you an idea, *Jonathan Caouette's* first movie, *Tarnation*, was shown at the Sundance Festival. It is probably the first feature-length film edited entirely on iMovie, and it cost \$ 218.32 in videotape and materials (Silverman 2004). Beyond creation and production, the internet means that distribution is effectively costless for digital content.

Which leaves us only with the selection and promotion processes, which have traditionally involved expensive advertisements, and specialized marketing expertise. But recently we've seen the development of social software, which leads users to content they will like, without the intervention of marketers. An example of this is the Amazon.com feature that suggests other purchases based on the metric that "People who bought this book also bought..." This type of algorithm can suggest all manner of content that users might be interested in, based on their previously expressed preferences. This means that the amateur content-producer is no longer dependent on the highly-capitalized publisher, record label, or movie studio for selection and promotion of content.

As a consequence of all of these changes we will see the flowering of amateur content that will move directly from the creators to the users. Highly-capitalized intermediaries are no longer necessary for the creation, production, dissemination, and use of culturally-significant content. Witness the rise of blogs and amateur journalism, along with the various other examples: the band Wilco's success in its net-release of *Yankee Hotel Foxtrot*; the extraordinary rise of the Wikipedia; the success of web-based cartoons that do not have print syndication; and so on.

Amateurs are increasingly competing with professional outlets, even though they lack all manner of the appurtenances that we expect of content creation. They don't have paid editors, they don't have any type of "quality control" et cetera. And yet, through various means - often involving large numbers of amateurs contributing small amounts of time to the project - they manage to fact-check, manage output, and maintain quality standards as high as their professional competitors. And in areas like web-logs, open source software, and textual references works, the amateurs are beating the professionals at their own game.

DRM and amateurization

The operation of DRM within the amateur content environment is extremely interesting. Amateurs, by definition, are not in it for the

money, so they have little need for access control to "protect their investment". Amateur content is therefore likely to be released without DRM; indeed it's hard to think of one amateur content provider which uses any type of access control on its content. This means that, as more and more commercial content is released with access control via DRM, we will see unlocked alternatives produced by amateurs. Consumers dislike the reduced functionality generated by DRM because they can't use the content they've paid for, in ways that they consider fair but which don't suit the content provider. The increasing reliance of commercial providers on hard forms of DRM is likely, therefore, to push users towards amateur substitutes for commercial content.

This leads to the somewhat counter-intuitive result that we might positively encourage commercial content providers to use DRM access control to lock up their content as tightly as they can, under the most restrictive terms imaginable, for as long as they want. If there were no competition to this type of locked content then we should be justifiably concerned about rent-seeking by monopoly holders, and we would see a reduction in creative activity, and a stifling of cultural expression. But as the amateur content movement progresses, competition in the marketplace for content will affect the degree to which professional providers want to offer this sort of locked content. If a record label wants to digitally-lock *Christina Aguilera's* latest album and make it unplayable for a large number of consumers, then they should be free to do so (subject to some other policy concerns that they should not be free to break people's computers in locking their content; nor should they be able to break into other people's computers to lock their content; and so on). We can expect a range of amateur content to enter the market to compete on value, quality, and degree of access prohibition. We are likely to see two themes emerge from this. First, DRM access control in commercial content will encourage amateur content production (which is a good thing). And second, amateur content production will act as a natural brake on the imposition of over-broad access control by

commercial content providers (which is also a good thing).

Thus the amateur content movement demonstrates that culturally-oriented and consumer-based concerns about DRM are (probably) less troubling than first imagined. However, two concerns remain, even if amateur content production provides some basis for hope. First, like many parts of our cultural experience, amateur content relies on the ability to reuse and remix existing material. Access control using DRM has the potential to affect the ability of individuals to engage in this type of creative reinterpretation (Lessig 2004). This point has been made before and I don't want to belabor the point again. But it is important to note that amateur content production cannot occur without the ability to use (to some extent) material which is part of our cultural heritage. To the extent that DRM stops this from happening, then we need to place limits on the ability of commercial content owners to stop amateur content reuse.

Second, the above comments about access control do not extend to its bad big brother, trusted systems computing. In trusted systems, only content signed by certain providers can be used by the computer system. An example of this is found in Microsoft's newest Media player. This type of DRM is an actively bad thing for amateur content, since amateurs are unlikely to be able or unwilling to obtain the appropriate license for their content to be used by the trusted system machine. To the extent that one thinks that amateur content is a good thing - and I think it's a very good thing indeed - trusted systems must be resisted. The market acceptance of trusted computing has been low to date, but future generations may have wider uptake. This is likely to reduce the opportunities for amateurs, and we should think seriously about changing copyright laws and using antitrust actions to ensure that amateurs retain the same access to users as multinational media companies.

Open Access and Open Source

The open access and open source movements can also be characterized as elements of mass amateurization, since they both stem

from the same technological changes and they both rely on non-commercial motivations of the producers. Moreover, both movements demonstrate important lessons about amateur content and DRM.

"Open access" is the label for the principle that scholarly publishing should be freely available to everyone, without charge, political censorship, or commercial interference (Bethesda Statement 2003). The idea is, in short, to provide a publicly-accessible and useable commons of scholarly literature for everyone. "Open source", on the other hand, usually refers to collaborative mechanisms of content production. Open source, like open access, does involve the free distribution, copying and use of creative content, but it adds the requirement that users are also free to alter the content (Open Source Initiative 2005). Open source software - like Linux or MySQL - provides the model for distributed production of complex creative objects, and the open source model has been adapted for the production of news, commentary, and many other types of content.

Open access and open source usually have no truck with DRM. Clearly the common view of DRM - that it is about access control - is inconsistent with both open access and open source philosophies. One cannot subscribe to open source or open access principles without accepting that the user is free to pass the material on to others, to read without cost, use and reuse, and so on. But as Poynder (2005) explains in an earlier INDICARE article, if one views DRM in its widest form, it is not necessarily inconsistent with open access. He makes the important point that open access authors still want to retain some rights, most notably the right of attribution, and he suggests this interest can be supported by DRM. Purists might argue that this can be achieved with digital watermarking, which is of course correct. But watermarking is a form of DRM; and this form of DRM happens to support the interests of open access.

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I agree here with Poynder, and suggest that the same interest can be found in the open source movement, in the rise of amateur content generally, and in Creative Commons licenses. The vast majority of Creative Commons licenses that have been adopted to date (around 95%) require the licensee to attribute the work to its author, no matter what other conditions of use are attached. The lesson of this, and of various other examples of amateur content, is that the attribution interest is probably the most fundamental incentive of creativity in areas that are not driven by commercial concerns. It is possible then that a truly beneficial role for DRM exists in making attribution run with content, so that the author will know that her name will live as long as the content is being used.

Of course this is not the traditional view of DRM, and indeed DRM generally speaking does not handle this particularly well. While the emphasis in DRM is to remove content from use, it will be inimical to the open access and open source movements. But if one looks to the future, it is possible to suggest a beneficial role for DRM within the amateur content movement.

Bottom line

Amateur content is the elephant-in-the-kitchen of content production. It's been around us so long that we no longer see it, even as we walk around it. In its newly visible form it promises to provide meaningful alternatives to commercial content, and equally promises to be a brake on commercial over-reaching in the DRM arena. Further, DRM has the possibility of spurring the uptake in amateur content (especially in the amateur content fields like open source and open access) by providing a simple and effective way of denoting attribution interests for the long term. We should be careful therefore to assume that DRM is always bad, and that commercial use of DRM will always trend towards over-control of the content.

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URL: http://www.indicare.org/tiki-read_article.php?articleId=106

Consumer acceptance of digital rights management systems

By: Marc Fetscherin, Harvard University, Cambridge, Massachusetts, USA

Abstract: This article presents parts of an empirical study undertaken by the author in respect to his PhD thesis. It deals with consumer acceptance of Digital Rights Management Systems (DRMS), with a focus in this article on the implications of the various technological and rights management requirements on consumer behavior and the demand for digital content. This article shows that there are some technological requirements as well as user rights restrictions which consumers might not accept when downloading legal content.

Keywords: survey – consumer behavior, consumer expectations, consumer research, content industries, music markets, piracy

Introduction

Consumers have various methods, channels, and possibilities for accessing, copying, using, sharing, and providing digital content. They can either copy it illegally over peer-to-peer networks or purchase it by downloading the files from legal music providers such as iTunes. In that respect, content control is one of the most important aspects for content providers to fight piracy and also to successfully distribute and commercialize digital content. However, when implementing control systems, such as Digital Rights Management Systems (DRMS), it is unclear what the effects on consumer behavior are and whether consumers accept such restrictions and to what extent. It is therefore very im-

portant to understand the implications of the implementation of DRMS on consumer behavior, choices and the resulting demand for originals. The questions are: Do consumers accept specific technology requirements for legal downloads and are there any differences between technologies? Do consumers accept usage or rights requirements on digital content and are there any differences? These questions will be discussed in this article and we provide first empirical results about the consumer acceptance of Digital Rights Management Systems in that respect.

Empirical study

The study is based on a sample consisting of about 500 students, which is a sufficiently large number to represent the wide diversity

of students adequately. We got 174 responses from the anonymous web-questionnaire. Although students do not represent the entire consumer segment, they account for a considerable proportion of all consumers of these products and are part of a consumer group in which copying and sharing of digital content is prevalent. Students are also part of the group which has already been identified as being more prone to copyright violations and piracy.

Consumer acceptance of technological requirements

There are a number of technologies used by DRMS that control the access to and the usage of digital content. The respondents were therefore asked which of the various technologies used would keep them from downloading content legally. A 5-point

Likert scale was used to measure the acceptability of the various technologies from a consumer's point of view. The Likert scale ranged from 1 (strongly disagree), over 2 (disagree), 3 (indifferent/undecided), and 4 (agree) to 5 (strongly agree). The question asked was: Which of the following (technological) requirements would keep you from downloading legally? The technologies to be rated were: The requirement of a username, the requirement of a password, the encryption of content, the presence of an embedded watermark on the content, the need for specific software to use the content, and the need for specific hardware. The results are provided in Figure 1, in which the horizontal line represents the various DRM technologies used and the vertical line the rating of each, represented by the median value.

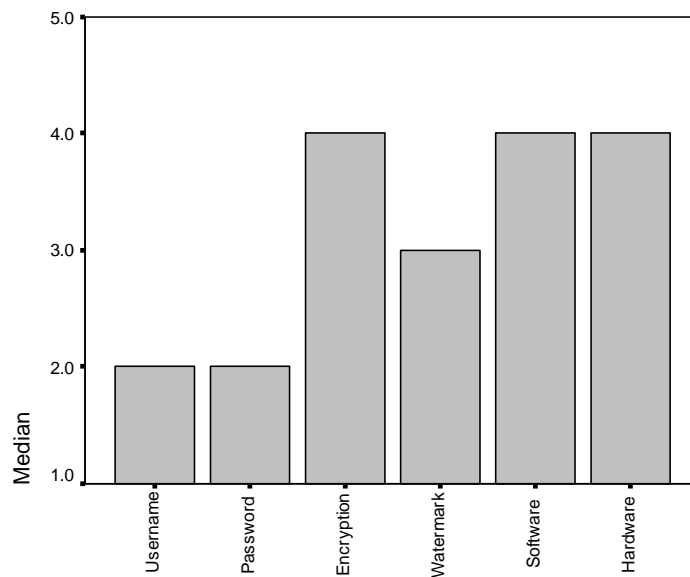


Figure 1: Technological requirements

Technologies perceived as obstacles from a consumer's perspectives are encryption and the necessity for specific software and hardware to use the digital content. The technologies not perceived as obstacles by respondents are the requirements for a username and a password. Respondents seem to be indifferent to watermarks or not having any clear idea. However, two questions arise when a Likert scale is used: Does the question measure the perception in a useful way? Second, does the scale measure what it is

meant to measure? In that respect we have to conduct a reliability and validity test of the answer provided. One way to measure the reliability and validity is by calculating a Cronbach alpha. We obtained a value of $\alpha = 0.7970$, which is higher than the required $\alpha = 0.6$, indicating that the results obtained are consistent and reliable.

Consumer acceptance of rights restrictions

Content providers grant consumers various usage rights and attributes of these rights for

the digital content acquired, most often expressed in a rights model. These rights can include the right to play, copy, burn, or move the content where the attributes of rights might be the number of times a song can be copied onto a CD. In most cases, they are expressed in a rights language such as XrML or ODRL. The questions arise, which of these rights restrictions and underlying attributes of rights consumers are willing to accept? Are there differences for the various rights and if so, which? We therefore asked the respondents to rate a variety of statements, each including a type of right (play, burn, and copy/move) and an attribute of that right. The question asked to respondents was:

Which of the following (rights) restrictions would keep you from downloading legally? The statements to be evaluated were: Limited playability (in number), limited burning on a CD/DVD (in number), limited copying onto a PC (in number), limited copying onto mobile devices (in number), limited encoding into other file formats (conversion), and limited playability (in time). Again, a 5-point Likert scale was used to rate these statements, ranging from 1 (strongly disagree) to 5 (strongly agree). The results are illustrated in Figure 2, where each statement is outlined on the horizontal line and the median value recorded for it provided on the vertical line.

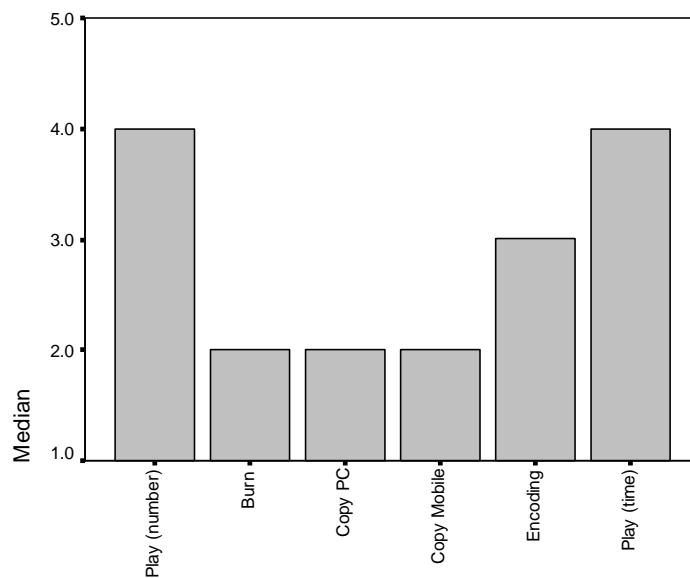


Figure 2: Rights restrictions

According to Figure 2, any restriction on playability (either in the number or in time) is not going to be accepted by consumers, as consumers perceive it as a constraint in their use of the digital content. The restrictions on the right to burn, copy onto a PC, and copy onto mobile devices are not perceived as key obstacles by respondents and might therefore be acceptable as also other studies have shown. Finally, respondents were indifferent about the possibility of converting media files from one format to another (i.e., encoding). As in the previous question, we conducted a reliability and validity test for the scale used and the answers provided. We arrived at Cronbach $\alpha = 0.8646$, which is higher than the required $\alpha = 0.6$ and thus

indicates that the results obtained can be accepted as consistent and reliable.

Bottom line

Consumers have different options for acquiring digital content, either to pirate or to purchase. Thus far, the possibilities to copy or pirate for consumers, especially for music, are diverse, easy and most of the time of low risk in terms of security threats such as viruses or legal prosecution. Implementing control systems like DRMS may make purchasing less attractive than copying for consumers as the legal products restrict them in their usage. However, the question arises which of these technologies and rights restrictions consumers perceive as obstacles

and hence may reduce the utility of the original. Our results have shown that consumers dislike encryption and the requirement for specific software and/or hardware to use the digital content, and they don't like any restrictions on playability. Overcoming these

obstacles may be a way for content providers to make some consumers switch from copying to purchasing, or even to make consumers switch from not consuming any digital content to purchasing it online.

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URL: http://www.indicare.org/tiki-read_article.php?articleId=105

Real money for virtual items: A case for DRM?

By: Danny Vogeley, Berlecon Research, Berlin, Germany

Abstract: A phenomenon in massive multiplayer online role-playing games (MMORPG) is the immense interest of players to monetize virtual items in exchange for real money. MMORPG developers do not welcome such behaviour, which has been so far beyond their control. As a result, developers are considering restricting user rights for the trade of virtual items. This article analyses DRM in a potential new role in the game market to define and to enforce developers' claimed rights to virtual items in virtual worlds.

Keywords: economic analysis – business models, consumer expectations, MMORPG, online games, secondary markets, virtual worlds

Introduction: Welcome to the virtual worlds of role-playing games

Digital Rights Management in the online game market usually applies to copy protection, online distribution models and online access control (Vogeley 2005). Beyond these common roles, DRM can also be used in a broader sense to manage the gameplay of virtual worlds. Especially in massive multiplayer online role-playing games (MMORPGs), the management of user rights is gaining increased relevance.

MMORPGs are persistent virtual worlds, in which thousands of players are interacting simultaneously with each other via the Internet. Each player is symbolized as a graphical representation, a so-called avatar. These vir-

tual worlds are persistent, i.e. they continue whether an individual avatar is logged in or not (Wikipedia 2005). Usually, avatars are interacting with each other and work together in a range of different activities. The developer is in charge of supervising this virtual world to guarantee new activities and challenges for players. Users usually pay a monthly fee between €10 and €15 in addition to the initial purchase of the game. The genre reaches from fantasy settings to realistic environments.

The most popular MMORPGs have more than 300.000 subscribed players. Among them are EverQuest by Sony, Ultima Online by Electronic Arts, and World of Warcraft by Blizzard. Since its release in December 2004,

World of Warcraft has become one of the most successful games today. They recently announced their 500.000th subscriber in Europe (worldwide 1.5 million) (Blizzard 2005/03/17).

The trade of virtual items for real money as a phenomenon in MMORPGs

A phenomenon in MMORPGs is the trade of virtual items among the players. These items are traded via external online platforms in exchange for real money. Virtual items include coins, weapons, spells or buildings. Usually MMORPG developers did not intend this kind of trade, when they implemented transfer mechanisms for virtual items between avatars.

There is a high demand for specific and scarce virtual items, which give the owner enhanced power to accomplish further challenges. Usually, to receive such items requires much time and effort. Many players do not have the required time to "earn" these items. They simply buy the desired items outside of MMORPGs on platforms such as eBay. After a purchase, buyer and seller meet inside the virtual world to hand over the traded item.

This has led to a prosperous external market with a high monetary value for in-game items and with remarkable transactions. Recently, a player of the MMORPG Project Entropia bought a virtual island for US \$ 26,500 (Lettice 2004/12/17). This purchase included mining and hunting rights, ownership of all land on the island and a castle (no furniture included). The current number one seller of World of Warcraft items on eBay has earned more than 44.000 \$ each month in early 2005 (Leupold 05/06/05). Altogether, the secondary market for virtual goods is estimated at between US \$ 800 and US \$ 900 million annually (Terdimau 04/12/20). It is notable that players have created this secondary market by themselves.

This development has led to a big controversy among MMORPG developers about the legitimacy of these markets. Popular MMORPGs such as EverQuest, Ultima Online or World of Warcraft do not welcome external online trade beyond their control.

They claim intellectual property rights to every item in their worlds and deny any real-world economic value of virtual items (Terdimau 04/12/20). Users have to comply with these assignments in the corresponding End User License Agreement (EULA).

One reason for this point of view is the increasing number of complaints from angry players, who have been defrauded by sellers. Although the developers are not responsible for these kinds of problems, their customer services are getting increasingly confronted with them. Another aspect deals with the customer life cycle: Revenue models of MMORPGs are usually based on monthly subscription fees. Therefore, developers are designing evolving worlds where users will constantly have to spend significant time to collect powerful items or to achieve higher levels. When the players can easily buy desired items outside the game, they can overcome the time needed to collect all necessary credits. This leads to reduced income for the developers. As a result, most of the largest MMORPGs have taken legal action to fight external trading. For example, the MMORPGs EverQuest and Asheron's Call forced eBay to remove every auction with items from their corresponding world (Rolston 01/01/19; Beckers 04/05/14). Blizzard is continuously cancelling accounts of players who have been identified as traders on online platforms (Klaß, 05/03/14).

DRM to control external trade of MMORPGs

However, these approaches by the developers are not sufficient to stop further trading effectively. On the contrary, the focus on eBay has led to the emergence of other less-tractable online platforms such as IGE or ItemBay.com. IGE organizes trade for more than 15 different MMORPGs and provides an exchange rate between virtual items and real money (www.ige.com).

As a result, developers are considering using in-game tools in MMORPGs to manage the trade inside of MMORPGs more effectively (Leupold 05/06/05). Microsoft for example announced (cf. Feldman 05/03/16) that the selling of virtual items via their next-generation game console Xbox will be possi-

ble allowing the purchase of new levels, maps, weapons or skins via a one-stop-shop. This leads to a new and interesting potential role of Digital Rights Management – either to control the trade of items or to enable new business models. DRM as a tool to manage further trading of items opens up a variety of possibilities for MMORPG developers (MacInnes et al. 2004, p. 4). For example, developers can determine special rights of valuable items to prevent the handover to other avatars. World of Warcraft uses this concept on specific items: Once the item is picked-up by an avatar, it cannot be transferred to another. It is also possible to determine the maximum number of items, which can be created in a given period. DRM can also be used to demand taxes on every transferred item. On the other side, DRM can be implemented to broadly allow item trading. The MMORPG "Second Life" by Linden Lab (www.secondlife.com) gives users the right to sell items they have created by themselves.

DRM in this context is an appropriate term, because MMORPGs are not simply games, where a set of mandatory game rules by the developer applies. Rather, MMORPGs should be regarded as social spaces, where users create characters, dynamic economics, and an evolving culture (Taylor 2005, p. 4). Unlike pure computer games, MMORPGs are leading to a convergence between virtual and real life: Virtual goods do already have an economic value outside of MMORPGs and are also increasingly affecting national laws. For example, a Shanghai MMORPG gamer has killed a man in real life for selling his virtual sword (Slocombe, 05/03/31). Gradually, the boundaries between virtual and real are more and more blurred.

The role of DRM as a tool to manage, i.e. to restrict, trading is currently in its infancy. Among MMORPGs developers there is intense discussion on how to find a balance between restricting real-world exchange without limiting in-game trading too much (Ondrejka 2004, p. 2). In a widely discussed attempt by *Randy Farmer* to describe a complete eBay-resistant virtual economy, he concluded that it would lead to the removal

of too many interesting features (Farmer 2004).

What the players think about the restriction of trade

Regardless whether developers are tolerating, battling or supporting the trade of virtual items, they will hardly be able to achieve consent among the majority of their customers. According to a survey by Sony among its EverQuest customers, the position for, against or neutral towards external trading is evenly split (Leupold 05/06/05). This leads to the interesting situation that one customer group would welcome the deployment of DRM to stop trade, while the other group would not. The main argument of the trade opponents is the unfairness of players paying for desired items rather than achieving them through skills and labour.

But it is likely that more and more players will be engaged in external trade and will constitute the dominant group. According to the survey by Sony, 20 to 25 % are already involved in trading. In South Korea, which has a mature MMORPG market with the largest penetration rate of MMORPG players worldwide, the vast majority is already in favour of trading (MacInnes et al. 2004).

The crucial dispute between players and developers is the question of copyright ownership of created items. Many players regard items, which they have earned or built through countless hours of game-play, as their own intellectual property with a measurable value outside the game. A survey by the Korea Game Development & Promotion Institute (KGDI) among 1.247 players of the worldwide biggest MMORPG Lineage shows that 78 % claim to own the items. Only 3 % accepted ownership of the developers (MacInnes et al. 2004, p. 9). Developers have to acknowledge the massive interest of players in monetizing their items.

Bottom line

The emergence of MMORPGs has led to an unexpected convergence between virtual and real life. MMORPG developers have to acknowledge that there is a dynamic social and economic change in their virtual worlds, which they have only partly under control.

DRM mechanisms will play an increasingly important role for MMORPG developers to define and enforce claimed rights to virtual items. But in-game trading is already common practice and broadly perceived by the

players as their personal right. Therefore, to balance the interests between developers and players it is crucial to adapt the increasing dynamics of MMORPGs.

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URL: http://www.indicare.org/tiki-read_article.php?articleId=104

Preparing for the Iditarod of the digital world – Bringing consumer protection into the information economy

By: Natali Helberger, IViR, Amsterdam, The Netherlands

Abstract: Is consumer protection an anachronism in the information economy? US and European experts came together in Seattle, State of Washington, US, to discuss the impact that new techniques for selling and managing electronic content have on consumers, and the role that consumer protection law should play in the information economy. INDICARE was there to report.

Keywords: conference report – consumer expectations, information economy, consumer law, transparency, stakeholders – USA

Introduction

Seattle was once the gateway to the gold-fields of the Yukon. Today, it was the setting for discussing the implications of a different kind of rush – the digital-content rush. Is consumer protection an anachronism in a time when vendors are rushing to explore new sources of revenues and selling electronic content to consumers? This was the theme of the conference that took place in Seattle on Friday, March 4 in 2005. Or, as the organizers themselves described the topic of the conference: "If technology can correct market failure better than regulatory intervention can, will consumer protection law be superseded by the growth of competition? Or does innovation merely create new mechanisms to exploit consumers that should be controlled with new legislation? This conference will consider the impact of technological innovation on the foundations of consumer advocacy, contracting behaviour, control over intellectual capital, and information privacy."

The organizers, among them Prof. *Jane Winn*, from the Shidler Center for Law, Commerce and Technology at the University of Washington (cf. sources for conference page) succeeded in drafting an inspiring agenda and bringing together an impressive range of excellent, mostly US but also European experts in matters of consumer protection in Seattle. The presentations pivoted around what Professor *Iain Ramsay* from York University, Toronto, Canada called the "Renaissance of consumer protection law".

The speakers highlighted various consumer law issues in e-commerce. Although not specifically directed at DRM issues, the role of electronic content protection technologies for the distribution of creative content figured prominently. Moreover, one section was dedicated specifically to address the controversial relationship between innovators and consumers in intellectual property law.

Consumer protection is no anachronism in the information economy

Rob McKenna, Attorney General in the State of Washington answered in his key-note already the question that gave the conference its title. He left no doubt about his opinion that the information economy needs consumer protection law, and his intention to give more prominence to this subject matter in the future. In his opinion, technology does not make consumer protection abundant, however, consumer protection can benefit from technological developments. But the Attorney General did not restrict himself to statements; he came to Seattle with concrete suggestions. One was the suggestion to raise the budget for the consumer protection division of the State of Washington – its first budget rise since 1993. The additional resources should be invested, so said Rob McKenna, in hiring more attorneys who are specialized in technology and consumer protection matters, in the enforcement of consumer protection laws as well as in the education of consumers. Rob McKenna's assessment of the role that consumer protection

law has to play in the digital economy was shared by many of the subsequent speakers. The presentations that followed also demonstrated, however, that the devil has settled persistently in the "how" and "where".

Transparency is a controversial form of front-line defence

Even the issue of transparency – a fairly acknowledged interest in consumer protection law – and the statement that "education is a front-line defence" of consumers against fraud was discussed controversially. There was a broad agreement among participants that transparency is an essential element of facilitating the education of consumers on how to deal with digital content and how to protect themselves against fraud and disadvantageous business deals. As Professor *Pamela Samuelson*, University of California, Berkeley, pointed out, transparency is also an important instrument to stimulate competitive markets, a factor that again can contribute to enhancing consumer welfare. Professor *Glynn Lunney*, Tulane University, explained that transparency obligations can be an element not only of traditional consumer protection laws. Patent law, a form of intellectual property law, also includes elements of transparency obligations in the form of the requirement of proper attribution. The presentations and the discussion that followed revealed, however, that the opinions are still divided on how to achieve transparency, how much information consumers need and on how useful transparency actually is as an instrument to consumer protection. Professor *Thomas Rubin*, University of Pennsylvania, for example, intervened that in his opinion, the idea of using disclosure obligations to protect consumers can be inefficient for various reasons: the information provided is not comprehensible, there is too much information available, or transparency obligations pose unreasonable burdens on producers. Accordingly, he doubted, whether the increased availability of information would correct information asymmetries and thereby eliminate the problem of market failure. What consumer needed, so said Professor Rubin, was to be able to understand the essential features of competing products and select the product that offers the best terms.

In other words, what consumers need in order to be effective market actors is, according to Professor Rubin, education and "wisdom". In this context, other conference participants pointed out that the effect of transparency obligations is to impose the burden of consumer protection on the shoulders of consumers themselves. In this sense, transparency obligations might be a rather convenient way for producers and service providers to rid themselves of eventual responsibilities regarding consumers (cf the reasoning in Helberger 2005).

The idea of the active consumer – an anachronism?

One issue that is at the heart of the matter is the notion of the "informed consumer", and to what extent consumers can be reasonably expected to protect themselves. Enlightening was a study by Professors *Robert Hillmann* and *Jeffrey Rachlinski* from Cornell University titled "Consumer Standard Form Contracting Practices on the Internet" (Hillmann and Rachlinski. 2001). The authors studied consumer demand as a factor to discipline market power. Informed consumers would shape markets and generate market pressure, which again would motivate businesses to offer services at fair, reasonable terms. On the other hand, the authors had to admit that the potential power of consumers does not yet play a major role in practice. One reason to explain this is that most consumers do not even read contractual notices. Only 4 % of the 92 responding interviewees generally read contractual notices and 44 % never read them. The authors concluded that transparency obligations benefited in the best case a fraction of the consumer-base – the reading consumers – and left other parties aside, such as poorer and less educated consumers. This could be an argument against relying on transparency obligations alone and in favour of taking recourse to additional, stricter obligations for service providers. The study warned, however, against lawmakers failing to take into account the cost-benefit relation of legal interference. This was also a reference to the self-healing powers of the market. In this context, Professor *Jean Braucher*, University of Arizona, introduced an interesting project - the "Stop before you click cam-

paign". This is a campaign by AFFECT (Americans for Fair Electronic Commerce Transactions; cf. sources) to promote fair business practices and to guide sellers, users of digital products and policymakers in developing balanced law to govern purchases of off-the-shelf software and digital products. The initiative is the result of co-operation between consumer advocates, industry representatives, non-governmental organizations and academics and has resulted in 12 principles for fair commerce in software and other digital products (cf. AFFECT).

Far away from idealizing consumer protection law

The need to approach consumer protection laws with a sound portion of critical consideration was another conclusion from this conference. Not all laws that are labelled consumer protection laws are indeed designed to take care of the interests of consumers. This was a point that was made, for example, very clearly by Professor *Norman Silber*, Hofstra University. Professor Silber demonstrated that consumer protection laws can be also pieces of rent-seeking-legislation-in-disguise, by formulating rules that respond in reality to the needs and interests of very different interest groups beside consumers. One consequence is that consumer protection rules, instead of protecting consumers, can have occasionally very detrimental effects on the position of consumers. This is not to say that there are no good and effective consumer protection laws. However, as Professor Silber pointed out correctly one should be aware of the difficulty of designing laws that respond to the real needs of consumers in an age that he described as one of "misinformation and widespread consumer victimization".

Other conference participants warned against overestimating the impact of information technologies on the position of consumers. Many problems that were identified as consumer-issues in the online sector were not new at all, but actually well-known already from the offline world. Professor *Richard Epstein*, University of Chicago, was a clear advocate of this point of view. He claimed that one result of the urge to protect consum-

ers from the pitfalls of the online sector is that some laws contain even too much consumer protection. They are not based on a realistic assessment of who consumers are and how they behave in an information economy. The example that he gave was the Uniform Computer Information Transactions Act (UCITA), a proposed uniform law to create new rules for software licensing, online access and other transactions in computer information. Professor Epstein defended standard industry practices, such as click-wrap licenses and other standard-term contracts. However, they are target of many complaints from consumer advocacy groups (cf. AFFECT 2005b). Professor *Jean Braucher* from the University of Arizona referred to them as "sneakwrap" licenses that manipulate consumers to make purchases they might have otherwise avoided. In contrast, Professor Epstein claimed that consumer expectations actually support standard term contracts, and that such practices were economically and socially efficient.

On the question if consumer protection is a matter for general or sector-specific law

While some speakers claimed that consumer legislation does not necessarily respond adequately to the interests and needs of consumers, others demonstrated that laws that were, so far, not commonly thought of as consumer protection laws actually might serve this function rather well. This was a point Professor *Pamela Samuelson* made in her presentation. Professor Samuelson demonstrated that copyright law, which some experts claim is not designed to serve the consumer side, provides for a range of provisions that respond to important concerns of consumers. Examples brought by Professor Samuelson were the first sale doctrine, the fair use exception in US copyright law, the possibility to use ideas and information in copyrighted works and the provisions on privacy and the parental control privilege in the DMCA. Another question is to what extent these provisions are still effective in a DRM-ruled environment.

Professor Jean Braucher, University of Arizona, explained some of the drawbacks of general consumer protection law: most con-

sumer protection laws still apply to products and thereby cause legal uncertainty on whether, for example, download or subscription services qualify for protection. Moreover, often, general consumer protection law provisions are kept very general, which is another reason why they do not provide for much legal certainty. On the other hand, as Professor *David McGowan*, University of Minnesota, pointed out: using sector specific laws to protect consumer interests would also bear the risk of overstretching such laws and interpreting them too narrowly and in a biased way. This was a reason why, as Professor McGowan claimed in response to Professor Samuelson's presentation, interpreting consumer protection rules into copyright law is "at odds with basic principles of copyright law". He also pointed out that the notion of the consumer is not homogenous. Rules, such as a prohibition of reverse engineering might benefit certain parts of the consumer base; whereas the effect of the prohibition was neutral as far as other consumers, notably the group of passive or technically less skilled consumers, were concerned. This point re-emphasised another aspect that was brought forward during the conference, namely that in order to draft effective rules to protect the interests of consumers when contracting for and consuming digital content, it was crucial to know who are the consumers, and how the different segments of the market are characterized. Having said this, Professor McGowan also acknowledged that copyright law is *not exclusively* designed to stimulate creators, as already demonstrated by Professor Samuelson. He also suggested that a utilitarian view of copyright law must not preclude interpreting aspects of consumer protection into copyright law. The decisive factor, so said Professor McGowan, is the total surplus, not only consumer or service provider surplus.

Conclusions

Consumer protection is far from being an anachronism in the information economy. Consumer protection is "hot" for various reasons. There is a strong social interest in consumer protection in order to prevent social exclusion (cf. e.g. European Council 2002) and to safeguard or restore the balance

between distributors and consumers of digital content. Guaranteeing a strong and independent role of consumers can be important for economic reasons, too, to promote consumers as market drivers and controlling instances. Protecting consumers in the digital economy can be hence a way to further both public and economic interests at the same time.

Still, the matter is not as simple as that. Existing consumer protection regulations are not always drafted to protect the weaker party in commercial dealings. They can also be the result of rent-seeking and industry interests. This finding further emphasizes the need to learn more about the way consumers use digital content, what legitimate consumer interests and expectations are and how they can be best protected. This is not an easy task due to the lack of homogeneity of the group called "the consumers" as well as due to the difficulty of striking a balance between sometimes rather conflicting positions, even on the part of consumers themselves. This is why the next conference to address the consumer issue should more strongly involve consumer representatives and consumer organizations. Moreover, the Seattle conference again demonstrated that consumer protection is not a legal issue only, but also a matter of adequate technical solutions and business models, thereby stressing the advantages of a more interdisciplinary approach.

One important question that needs further discussion in both the US and in Europe is to what extent consumers can be reasonably expected to protect themselves, and when a more paternalistic approach in the form of regulatory intervention is needed. On the one hand, the new technologies offer consumers new opportunities to express their preferences, to benefit from interactivity, choice and more differentiated service offers. On the other hand, factors such as the existence of technical and contractual lock-in situations, vigorous standard battles, the gap between highly educated and technically skilled and badly informed or poor consumers, render the vision of "the" consumer who is able, ready and willing to protect himself an illusion. This is why more clarity is needed on where the responsibility of consumers shall

end, and where liability of service providers shall begin.

Another question that deserves future attention is whether, once it is decided that more elaborate provisions on consumer protection are needed, this is a matter for general consumer protection law, competition law or sector specific laws, such as copyright, patent and banking law. One key question in this context is whether the relevant sector specific laws, such as copyright law, are also designed to protect the consumer side and offer, among others, the procedural means to enforce the rights and interests of consumers. Also this is an issue that is far from being settled yet.

Bottom line

All speakers were well aware of the fact that most of the issues discussed that day in Seat-

tle were not US specific problems. Currently, similar issues are on the agenda in Europe. In some fields, this was at least the impression one got from the discussion, Europe is regarded as an example when it comes to addressing consumer issues. Accordingly, there was lively interest during the conference for the way Europe is dealing with questions such as privacy, consumer policy and standardization. Many agreed with the presentation of Professor *Peter Swire* from the Ohio State University and former Chief Privacy Counselor, who emphasized the importance of comparative research and information exchange. In such an exchange, both the US and Europe could not only learn from each other but also inspire the discussion on both continents.

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URL: http://www.indicare.org/tiki-read_article.php?articleId=103

A2K: Access to Knowledge – Make it happen

By: Natali Helberger, IViR, Amsterdam, The Netherlands

Abstract: A2K stands for “Access to Knowledge” and is the acronym for a global initiative that took its start in 2004 and that is progressing quickly. The goal of the A2K initiative is to restore the instable balance between the interests of holders of exclusive rights in creative content and users of such content. One element of the initiative is the drafting of a proposal for a treaty to protect and promote access to knowledge.

Keywords: conference report – Access to knowledge (A2K), developing countries, disabled, exclusive rights, intermediaries, WIPO

Introduction

Access to knowledge – who would not agree that this is a subject matter that is of great social and democratic importance, a matter that can rightly be described as a human need, in developed as well as developing countries. Not only is access to knowledge globally acknowledged as a desirable value, worthy of being promoted and protected; there is also a widely shared feeling that in the so-called “information economy” the ongoing expansion of intellectual property law, as well as the way exclusive rights in contents are exercised, actually threatens access to knowledge in many ways. Thus it is surprising to realize that access to knowledge is an issue that has been rather neglected when drafting recent pieces of intellectual property (IP) legislation, such as the World Intellectual Property Organization (WIPO) Copyright and Performers and Phonograms Treaty, the Digital Millennium Copyright Act, the European Copyright Directive, to name but some.

The call for access to knowledge gains an additional dimension from the perspective of developing countries. As *Peter Drahos* from the Australian National University explains: “For developing countries the coming century of knowledge-based growth raises two basic development priorities. The first is that these countries must give more urgent attention to encouraging investment in human capital and this essentially translates into investment in health and education. The second basic priority is to think creatively about models of governance for the production of knowledge that maximize the participation of developing countries in the processes of in-

novation, that maximizes the spillover benefits of knowledge and that minimize the social cost of accumulating knowledge.” In other words, the Information Society is not a phenomenon that ends at the borders of developed countries. Access to knowledge is a matter of great interest for developing countries as well, and a means to protect and defend their interests in the global economy.

Drafting a treaty on access to knowledge

In May 2005, experts from the US, Serbia, South Africa, UK, the Netherlands, Spain, Greece, Italy, Germany, Malaysia, France, India, Canada, Korea, Brasil, Chile, among others, met in London for a second round of drafting a proposal for a *Treaty on Access to Knowledge* (A2K 2005). In a two-day marathon a consolidated version of the draft Treaty was presented for discussion to representatives from non-governmental organizations and consumer organizations, academics, governments, international organizations, academics, foundations, standardization bodies and industry players.

The first meeting took place in Geneva earlier this year, when a smaller group of experts brainstormed and submitted first proposals on what the content of such a Treaty could be. The original idea for a Treaty on Access to Knowledge has its origin in a proposal for a development agenda that was made by Argentina and Brazil at a WIPO General Assembly in 2004 (WIPO 2004). Civil society representatives, among them the Transatlantic Consumer Dialogue (TACD; cf.sources) and the Consumer Project on Technology (CPTech; cf sources) recognized the potential and rightfulness of such a pro-

posal and engaged in developing it further by starting a global initiative – the A2K initiative.

Scope and content

The version of a draft Treaty that was presented in London begins with a Preamble that describes the motives and guiding principles for this initiative. The Preamble expresses concerns about an arbitrary expansion of IP rights and the effect this can have for individual participation in creation, technological and economic progress, innovation, development, research and education. The goal of the Treaty is to create opportunities for the accumulation, distribution and sharing of knowledge, as well as benefiting from knowledge on a global level. The initiative is aimed at both developing and the developed countries; it is aware of possible disparities and different needs of both, developing and developed countries.

The actual draft provisions consist of a bundle of ideas on how to promote and protect access. Most of the suggestions made have already been subject to extensive research, and are the result of practical experience or are inspired by already existing national or international legal solutions. They cover a comprehensive agenda of 12 different subject matters, all of which have in common that they address ways of how to make knowledge accessible and how to realize the economic, academic and social benefits of access to knowledge. The draft includes provisions on the nature and scope of obligations in this draft treaty, its relationship to other international and regional agreements, provisions on governance and enforcement. It has provisions regarding limitations and exceptions to copyright and related rights, on collecting societies and access to publicly funded research. Other sections deal with patents, the promotion of open standards and the relationship between intellectual property and competition law. A selection of the suggested provisions that are most relevant for the INDICARE project will be discussed more closely in the following. These are the proposed provisions concerning the exceptions and limitations to copyright law and

DRMs. In a last section, an overview of the next steps of the initiative is given.

Exceptions and limitations to copyright law

One major section of the draft Treaty suggests provisions regarding limitations and exceptions to copyrights and related rights, and here more specifically exceptions and limitations to exclusive economic exploitation rights (not: moral rights). The principal idea behind this section is the need to preserve and promote a number of uses of creative works that should not be inhibited by exclusive intellectual property rights. This can be the use of works for education, science or preservation. This can be the use by groups with special needs and interests, such as persons with disabilities, but also distant education institutions, the media or developing countries. This can be the use of works by intermediaries for the purpose of making the works accessible to third parties; examples are search engines and Internet Service Providers (ISPs).

One issue that generated a good deal of critical discussion in this context was the relationship of the suggested exceptions and limitations in the draft treaty and provisions in other, existing treaties. This is most certainly a point that will deserve further attention during future meetings. Some of the proposed exceptions already exist in this or a similar form in other legal texts, such as in the TRIPs agreement or the European Copyright Directive. Others are new, such as an exception on search engines, which will be discussed more in depth in the following.

Exceptions for knowledge-intermediaries

In a vast and difficult-to-overview information environment, seekers of access to knowledge rely increasingly on the services of intermediaries that select, bundle, guide and offer access to contents. Such knowledge-intermediaries can be search engines, portals, libraries, archives or schools, to name but some. Their activity – providing access to knowledge – must be reconciled with the interests of holders of intellectual property rights to control the distribution of such content. Occasionally, the interests conflict. One example are search engines, and

the search-engine exception in the draft Treaty is a response to an ongoing discussion whether search engines, such as google.com or yahoo.com, conflict with copyright law by deeplinking and/or caching. If this was the case, holders of intellectual property rights could possibly abuse such rights to impede the function of search engines (cf. BGH 2003). The search-engine exception in the draft A2K Treaty seeks to avoid the use of intellectual property rights to impede the work of search engines. In the version from May 2005, it reads: "The use of works in connection with Internet search engines, so long as the owners of works do not make reasonably effective measures to prevent access by Internet search engines, and the Internet search engine service provides convenient and effective means to remove works from databases upon request of the right owner" (A2K 2005, article 3-1 (ix)). Additional exceptions are designed to benefit institutions that make knowledge accessible, such as education and research institutions, distant education universities, archives and libraries.

The exceptions in favour of knowledge-intermediaries such as search engines, libraries, archives and academic institution acknowledge that one important precondition for access to knowledge is the existence of institutions that make knowledge accessible. Consequently, one way to stimulate access to knowledge is to support the work of institutions that generate, aggregate and disseminate knowledge. The experts at the London meeting remarked rightly that the work of such institutions should not stop at national borders. It was demonstrated that there can be valid, also economic, arguments to open for examples archives in one country for citizens in other countries. Share-as-share-likewise models can be the basis for sustainable and attractive business models and, at the same time, ensure that citizens from different countries have access to knowledge hosted in other countries.

In a similar direction – making knowledge accessible – are provisions in the draft Treaty that seek to expand and enhance the knowledge commons. Proposals made include the compulsory licensing of copyrighted works

in developing countries, the making available publicly of works resulting from government-funded research, access to archives of public broadcasters and government information as well as the idea of so-called "Knowledge Commons Databases". The proposed Article on Knowledge Commons Databases stipulates that persons, organizations or communities that seek to establish open databases that address an important public interest and are freely available to all should be exempted for a limited period of time from the application of exclusive rights.

Exceptions for people with special needs

Accessibility is also at the heart of a set of exceptions in favour of visually impaired or hearing impaired persons or persons with other disabilities. A representative of the World Blind Union explained the special situation of these groups. Two major issues in this context are accessibility and equity. People with visual, hearing or other impediments should be able to read same material as everybody else at the same time. This means in most cases that the content has to be adapted beforehand. Where the exercise of economic rights in contents inhibits the making larger of, reformatting and offering of contents in a format that is compatible with special player devices, this goes clearly at the expense of people with disabilities. To improve this situation, exceptions are needed that allow the formatting of works and also the importing and exporting of works that have been already formatted in another country. The international availability of accessible content created in one country should not be restricted because different exceptions apply in different countries. This is even more so because the amount of adequately formatted material is limited. Important was also the observation that there is no homogenous group of disabled people and that each group would need its own specific set of exceptions in order to be able to benefit from access to knowledge. The representative of the World Blind Union emphasized that the different groups of disabled people have a strong interest in stimulating large commercial production of readable copies and are therefore interested in active cooperation

with publishers and in finding ways to reconcile the interests of all parties.

Access to knowledge and digital rights management

Article 3-6 of the draft Treaty is specifically directed at Digital Rights Management (DRM) and Technological Protection Measures (TPM) that are designed to restrict electronic access to knowledge. In its first part, the proposed article points towards the risks of DRMs and/or TPMs for the application of exceptions and limitations to exclusive rights, access to knowledge for the visually impaired or other people with disabilities, consumers, competitors and archives. The provision warns that unfair contract terms, the so-called business rules that are enforced through DRMs and the inadequate disclosure of limitations of uses of works can harm consumers. It, furthermore, calls attention to the danger of anti-competitive practices as a consequence of the use of DRMs or TPMs. Market segmentation and anti-competitive tying practices may result in higher prices and reduced innovation. The present wording of the draft provision acknowledges that DRMs are part of a larger problem that reaches into the realms of competition law and consumer protection. Having said that, several experts criticized that the provisions on consumer protection were still too narrow and required more elaboration, possibly in a separate article.

The goal of the second part of Article 3-6 is to ensure that the users of DRMs or TPMs respect prevailing public interest reasons in making knowledge accessible. The present concept of the second part of Article 3-6 of the Treaty to realize this objective is to say that legal prohibitions against anti-circumvention of DRM and TPM measures shall be restricted or not enforced in certain cases. Examples are a situation in which DRMs or TPMs preclude the implementation of Free and Open Software, in which the operators of such measures fail to inform consumers about their restriction modes and the terms under which they can be invoked or where DRM and TPMs are used to restrict access to public domain material. Insofar, national regulations should not prohibit the

making available of technologies or services that facilitate circumvention for legitimate or authorized uses. One of the criticisms that were expressed regarding this proposal is that only few consumers will have sufficient confidence in their technical abilities to actually circumvent DRMs and TPMS. Another problem is communicating clearly and understandably to consumers when they would be entitled to do so.

Bottom line

As one participant worded it: "Our strength is diversity, our weakness is too much diversity". No doubt – the Access to Knowledge Treaty is an ambitious initiative that seeks to cover a whole range of areas. The resulting danger is to lose sight of the ultimate goal and to get caught in a multitude of different topics each of which might deserve to be subject of an initiative of its own. But this is just one reason more to remember the strength of the A2K initiative: this is the ability of its initiators to mobilize a group of international experts from different disciplines and backgrounds that all share a common motive: being convinced that it is high time for some action to restore the often deplored imbalance between consumers and producers of electronic content. The composition of the round of experts that came together in London enabled the scrutinization of this first proposal from many different perspectives and its exposure to constructive criticism from different disciplines and areas of expertise.

The present content page of the draft reads like the wish list of someone who has missed out the last three year's Christmas. It gives a good impression of the range of issues that have been, on the one hand, caused and, on the other hand, ignored by recent legal, economic and technological developments in the IP field. It is now for the drafting committee(s) to extract from this pool of ideas the most relevant ones and to expose them to further discussion. For the time being, the participants in the second A2K meeting left London exhausted but with the distinct feeling of having taken yet another step in the right direction.

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URL: http://www.indicare.org/tiki-read_article.php?articleId=102

First supplement of the INDICARE State-of-the-Art-Report released

By: INDICARE Team

The issue of DRMs and Consumer Concerns is beginning to draw attention. This is one conclusion of the first supplement of the INDICARE State-of-the-Art Report. After the INDICARE State-of-the-Art Report, published in December 2004, has provided a first overview of the social, technical, legal and economic discussion about Digital Rights Management (DRM) solutions, the INDICARE-team continued to monitor the developments in this sector. The present supplement reports on new developments since December 2004. It also responds to a number of comments INDICARE received on the first report from experts and interested parties. Central in the present publication is a selection of issues that reflect new developments or that, in the view of the INDICARE team, deserve more attention in future discussions.

Topics that this publication reports about are, among others, the authorized domain, recent studies concerning the position of consumers with disabilities and DRMs, developing countries, and international aspects of DRM in general. The supplement describes recent legal initiatives in Norway, Germany and Belgium. It also highlights some important consultation procedures and initiatives concerning DRMs that were initialised by the European Consumer Law Group (ECLG), The European Consumer Organisation (BEUC) and the Transatlantic Consumer Dialogue (TACD). An update on recent technical developments in the field of copy protection for different media is given. Finally, the role of DRM in the information economy is discussed and if DRM, from the business perspective, are primarily means of copy protection or business model enablers. New DRM-based business models are introduced that are based on viral marketing, peer-to-peer networks or subscription and rental services. And then there are alternative business models, new DRM-free content offerings that are reported about in this supplement.

The supplement concludes that the DRM sector is on the move, and that consumer and DRM issues are slowly but consequently generating more attention and triggering new initiatives in research, business models, and on the regulatory field. The authors conclude: "The issues discussed in this publication are issues that will very likely see more activity in the future. INDICARE will continue to monitor the sector until the next update end of the year".

The first supplement to the State-of-the-Art Report on "Digital Rights Management and Consumer Acceptability. A Multi-Disciplinary Discussion of Consumer Concerns and Expectations" is available for free **download** at: http://www.indicare.org/tiki-download_file.php?fileId=111

You are kindly invited to give us your feedback, please use the "add comment" button below. Your feedback will be considered in a second update of the report.

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INDICARE consumer survey on digital music published

By: Nicole Dufft, Berlecon, Berlin, Germany

A representative survey among 4852 European consumers finds that a large share of Internet users already has experience with digital music. However, the survey shows that the main source for digital music are ripped CDs, not Internet downloads. In addition, the survey reveals that consumers are not well informed about usage restrictions and DRM applied by online music stores. As a result, they are confused when technical restrictions keep them from burning, sharing or transferring music between devices. The report also shows that digital music on the Internet is an excellent tool for musicians and their labels to promote new music.

According to the survey that was produced by Berlecon Research for INDICARE, 69 percent of European Internet users listen to digital music on their computer, 40 percent use a MP3 player. Digital music files are, however, not primarily downloaded from the Internet. By far the most important source for digital music are ripped CDs that consumers either purchased themselves or borrowed from family members and friends.

Already one third of digital music users have shopped in online music stores. Their experiences, however, were not always good ones. The majority of music store customers is not well informed about usage restrictions and the application of Digital Rights Management (DRM) technology. "This lack of knowledge often results in problems when consumers want to use their purchased music files", says Nicole Dufft, senior analyst at Berlecon Research. "Consumers expect that they can burn, share, and transfer their digital music files between different devices. They are confused and annoyed when technical restrictions keep them from doing so." Berlecon, therefore, recommends online and mobile music stores to significantly improve their information policy. "This is not only necessary for the sake of informed consumers but also for the sake of satisfied customers."

The survey results confirm that music on the Internet is very well suited for marketing activities by musicians and their labels: 64 percent of the digital music users who have discovered a new artist on the Internet have subsequently bought a CD by this artist, 16 percent have bought more digital music. This should be reason enough for the music industry to make it easy for consumers to discover new music on the Internet, e.g. by supporting sharing and recommendation features. The report also reveals that these efforts should not only center around young user groups but should particularly target older Internet users. Nicole Dufft: "We found that particularly those older than 40 have spent money on digital music and CDs after having discovered a new artist."

The representative survey was conducted in February 2005 among 4852 Internet users in Germany, UK, Spain, France, Hungary, The Netherlands, and Sweden. The survey is part of the INDICARE project, which aims at raising the awareness about consumer and user issues of DRM solutions in Europe.

The survey results are available for free download at www.indicare.org/survey.

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URL: http://www.indicare.org/tiki-read_article.php?articleId=100

Masthead

The INDICARE Monitor is an electronic periodical of the EU-funded project INDICARE being published every last Friday of a month. Articles having passed an internal review process are immediately posted at the INDICARE homepage for public debate. Authors are encouraged to revise their articles in the light of previous discussion before publication in the monthly issue.

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Acknowledgment: The INDICARE Monitor is an activity of the INDICARE project, which is financially supported as an Accompanying Measure under the [eContent Programme](#) of [Directorate General Information Society](#) of the European Commission (Reference: EDC - 53042 INDICARE /28609).

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