Digital Right Management (DRM) and Library Copyright Policy

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Abstract. The purpose of this paper is to introduce Digital Rights Management (DRM) and its implications for content producers, consumers, and libraries. Simply stated, DRM is a technology that allows copyright owners to regulate and manage their content when it is disseminated in a digital format, and it is the reason why some patrons cannot access some of the downloadable digital content provided by libraries. In the first part of this paper, we provide a short introduction to DRM by outlining the entities, the various technologies used as well as usage restrictions that come with DRM. In the second part of the paper are discussed the alternatives for the libraries, using DRM as a tool for library copyright policy and the main documents, which present the position of library organizations towards information legislation.

Keywords: Digital Right Management, Library Management, Copyright, Intellectual Property

1 Introduction

Digital technology makes possible the exact copy of a work, and the Internet allows for instantaneous distribution of copies to all parts of the globe. This creates conditions for copyright holders to present their work at the global level. Unlike the real world, however, where there are some established rules and reliable methods to control cyberspace is largely unregulated. Rights holders aware of the threat when confronted with so-called. illegal file sharing.

The actual sharing of files in its "original form" was not created for illegal purposes. With the advent of client platform (for file sharing between users' computers) Napster, however, network file sharing turned in global fora, most often illegally traded products. One of the networks that are used by Napster and that applies today is peer-to-peer. The format of peer-to-peer is such that it is very difficult to determine precisely who is responsible for the illegal distribution of works. Although Napster was not stopped after it emerged many decentralized peer-to-peer networks, designed in such a way as to allow illegal file sharing.

Measures taken to curb illegal actions against objects of copyright on the Internet for the most part, proved ineffective. According to Fritz Attaway this is largely due to

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the fact that their creators have ignored the global scale of digital piracy [1]. Copyright industries have huge losses from illegal distribution network in books, music, movies and other works.

We must not allow impunity to exist mechanisms allowing illegal sharing works because it acts detrimental to the "natural balance" namely maintained by the system of copyright: Authors are encouraged to create new works, which to be benefit for the society.

2 Digital Right Management (DRM): an Overview

In response to the need for a reliable tool in the fight against digital piracy and effective method for management of copyright works using the Internet system was created Digital Rights Management (DRM). In the literature there are different descriptions of this term, such as Automated Right Management (ARM); Technological Protection Measures (TPMs), but are based on a common idea expressed in the following: "to enable the holder of intellectual property rights to define a set of rules concerning access to the site in digital format and its use"[2].

Put another way, DRM allows the right holder to exercise control over how his work may become available and be used in the digital environment. This is done through the technological protection measures (amendment of the site coding the site, subscription systems, access codes) that prevent or restrict unauthorized acts of users on the subject of intellectual property.

DRM systems are beginning to provide copyright protection for digital content. Creators and providers of digital content are increasingly able to control end users' use of, and accessibility to their products, and stand to gain huge profits from this capability. However, as DRM technologies evolve and develop, so does end user concern about restrictions to their access to, and use of information. The DRM industry must provide a balance between fair compensation for the creators of digital content and the rights of end users to access and use information [3].

According three of the leading scientists in the field of DRM - Kunar, Hill and Barlas systems include DRM technologies and processes that apply to digital content to describe, identify, define and implement the rights in a secure manner [4].

The same authors conducted research on behalf of WIPO, according to which DRM has two functionalities:

1. Identification and description of intellectual property rights associated with works and parties involved in their creation and administration;
2. The technical implementation of restrictions on use rights.

There are differences in how to interpret the concept of DRM. The most widespread is the notion that DRM is to manage the digital rights. Such an understanding of this concept, however, suggests a number of restrictions on the content of the right holders and objects in terms of the following:

- digital rights cover only the reproduction right and the right to offer works wirelessly or via cable;
- the media of digital rights shall be only holders of intellectual products submitted in digital form;
- digital rights extend only to objects in digital /analog format objects and objects of industrial property fall outside the scope of these rights/.

As the interpretation of DRM as Digital Rights Management does not allow to address more fully the problems of rights in the digital environment Molhova considers that the appropriate Digital Rights Management can be understood as digital rights management and rights management intellectual assets in the digital environment [5]. Thus would be avoided these limitations.

The idea that DRM is the management of intellectual assets in the digital environment allows to distinguish the actions of management rights and the means by which these actions can be implemented. Actions related to the management of rights in the digital environment are described, identification, trading, protection, control and monitoring of all forms of enforcement of intellectual assets in the digital environment. Techniques that facilitate the implementation of these actions are digital information and communication technologies.

One of the main objectives set by the system for digital rights management to reestablish control over the distribution of an intellectual asset. This can be done by copy protection, or by increasing the spread. In one case, use technical measures by which a work is transformed so that it cannot be used on other devices or systems and software piracy. Another control model allows users to use the site and encourage them to produce copies and distribute them. The idea for the second model is that the object cannot be used until they acquire the rights to it.

Another goal of DRM is the control over use. It aims right-holders to be free to determine the extent of utilization of the works. This means that right-holders of an intellectual asset can allow:

- only a partial view of the asset;
- consideration of the asset for a fixed period of time or a certain number of users;
- use the asset for creating new assets;
- unlimited use of the asset whose features are modified according to customer requirements.

There are different systems for digital rights management. Each offers its own solution to the problem of piracy. The similarity between these systems is that they are based on systematic identification and recording of information on legal rights and powers over their intellectual assets represented in digital form.

The systematic identification is performed using metadata and information rights management object identifiers or digitize DOI (Digital Object Identifier). Most often the metadata is structured through a set of keywords and categorical description of the object. However, it is quite possible keywords to describe an intellectual object to its right-holder chooses not to match the keywords for the same object, which would choose a person who has acquired rights for its use. Problems may arise with respect

to metadata. For example, if a standard preparation of metadata requires personal information from the user in the format "name", "organization name", for example and one of the parameters allow even minimal difference mapping of different metadata about the same subject is impossible.

Identifiers of digital objects /DOI/ are an identification system for digital content in digital networks and are used to provide current information for the location of an intellectual property object in the networks.

The system of identifiers allows management of intellectual asset and its relevant information. Through this system might be realized a connection between the holders of intellectual property rights on an object and consumers interested in it.

In the management of intellectual assets are used the following techniques:

1. Encoding of the information contained in an asset distributed in digital networks, so that it can not be used without the password;
2. Technologies for the protection of exclusive rights over the assets - represent the encoding conditions of an intellectual property object's use, combining these terms into one file and authorization to use the asset only if the specific conditions are met. The most common file contains the owner's name, name of intellectual assets and its rights and link to the key that is used to read the information and use of the asset by the user. The key is directly related to the characteristics of the user's computer in order to prevent the use of the site from elsewhere. To use the key, the user must obtain a license;
3. Creation of digital watermarks and signatures, which contain information about the owner of the object's rights and conditions of intellectual property objects's use. The watermark is imperceptible embedded information (files or other identifier), which can be extracted with special software. Verification carried out in this way shows that the file that is distributed is authorized or not. Digital watermarking is a passive technology, not allowing the active prevention of copyright violations. But it allows the irreversible linking of information with multimedia data, ensuring that embedded watermark can be retrieved even after analogues copies [6].

Another way of using this technology is setting the watermark in the transactions. The actual betting of watermark involves changing the original content that can be a problem for certain uses.

In many countries (Bulgaria, inclusive) digital signature enjoys a legal status that is identical to that of the physical signature. It can extract information about the origin of content that has been modified content and other metadata. It's necessary to add certificate to the signature verifying the right of signature. Most often, these certificates are issued by an institution that identifies individuals and their signatures. Digital watermarks and signatures can be removed but then the quality of intellectual assets deteriorate sharply;

4. Personalization - include site adaptations to individual customer requirements and is usually accompanied by insertion of a watermark. This provides a unique intellectual asset and makes it easily identifiable on the Internet.

To build a system for digital rights management, you need to create a certain type of structures, including vital for its existence modules and components. These are functional and information structures that exist in other architectures to build DRM, but they do not fully cover both processes and relationships in the development and implementation of intellectual assets in the digital environment [5].

- The functional structure contains components of the Digital Rights Management, working in the following areas:

— provide management of the process of creating intellectual assets with a view to his successful realization in digital networks;
— enable the management of purchase of the intellectual assets created in the digital environment;
— operate the use of the asset bypersons who were granted such an opportunity.

- Information structure in turn determines the relationship between the various entities involved in digital rights management in the following areas:

— Describes the participants in the DRM, intellectual assets and rights over them;
— Identify individual items in the process of digital rights management;
— Indicates intellectual asset.

As already was mentioned, the DRM system was created as a result of the need for a reliable tool in the fight against digital piracy, and in search of an effective method for management of copyright works using the Internet.

The role of digital rights management to curb illegal activities in cyberspace is undeniable. Furthermore, DRM combines equally well with the individual and the collective form of management. In self-managing Digital Rights Management enables holders to retain information about the rights to share it and allow themselves to use their works. With collective management mediates the relationship between DRM so large a volume of right-holders and consumers, as far as it is not possible to cover by traditional means. Thus achieve economies of scale and offer better services.

As noted in the statement of the present study, one of the main problems in the use of works in the cyberspace and hence in the effective prosecution of copyright power over them is the lack of borders on the Internet. In this respect digital rights management is critical because it provides protection for circulating information in cyberspace.

Another important advantage of DRM is that it allows for protection of the moral rights of authors. The system allows contact between the holder of copyright and the user. As a consequence, the contract concluded between them, may contain a ban on changes in work or claim for authorship. Holders could also exclude certain users. DRM makes it possible to impose restrictions on the Internet for the protection of moral rights and restrictions may be applied through technological means.

Unfortunately, very often the system for digital rights management is vulnerable to hackers, so the protection which provides can be easily circumvented or broken.

There are many methods which allow the circumvention of protection provided by DRM.

New schemes are constantly invented for breaking techniques used by the system for digital rights management. Perhaps the most vulnerable in this respect is the watermark, which some authors argue that in most cases proved futile attempt to deal with digital piracy, because "only looking for problems rather than solve it."

In view of the existing system for digital right management issues, the authors believe that by itself it cannot fully realize effective protection against violations of the rights of authors on the Internet. It is necessary DRM to be supported by the law of copyright worldwide. The first step in this regard was made by the adoption of the WIPO Copyright Treaty, within which was first located the text concerning the technical means of protection, identifying and controlling the use of works on the Internet. Later, 1998. and the U.S. Congress take better and timely legislative decisions, assuming the basic substantive law governing digital content on the Internet and the copyright for it - Digital Millennium Copyright Act (DMCA) [7].

In 2001, the adoption of Directive 2001/29/EC on the harmonization of certain aspects of copyright and related rights in the information society, countries - EU Member States were obliged to provide protection for these devices in their national laws.

Therefore, to be used discovered the advantages of DRM, it is appropriate to accelerate and intensify the provision of regulatory issues, including in our country, through appropriate changes in the Act and others documents.

3 DRM and Libraries

Libraries have always been the repository for shared knowledge, providing free and open access to information. The purpose of DRM technology is to control access to, track and limit uses of digital works. It changes the fundamental relationship between the creators, publishers, and users, to the detriment of creators, users, and the institutions that serve them. If DRM is not carefully balanced, limits the ability of libraries to serve the information needs of their patrons and their communities in several ways by:

- Eliminating the “First sale” doctrine by limiting the secondary transfer of works to others;
- Enforcing a “Pay-per-use” model of information dissemination that, if it becomes the dominant or even sole mode of access, will be contrary to the public purposes of copyright law;
- Enforcing time limits or other limitations of use that prevent preservation and archiving;
- Eliminating “fair use” and other exceptions in Copyright Law that underpin education, criticism, and scholarship [8].

As an essential and irreplaceable component of the cultural, educational and informational infrastructure libraries take a unique space of our society. Copyright, libraries and users are subject that aimed to help the library managers in construction of library policies, in accordance with the requirements of the copyright and neighboring rights law in the offering of library services and resources. The emergence of new

communication and information technologies and new media predetermines the ambition of copyright legislation worldwide to respond to these developments, to keep peace with changes and to provide the necessary legal framework.

Emphasizing the role of libraries as creators of digital content, as gateways for access to digitized information and as a factor in overcome the digital divide and isolation – we would like to summarize some of the important documents, which present the positions of library organizations *IFLA, EBLIDA, LIBER, eIFL*[1] etc. and their interaction with the *World Intellectual Property Organization (WIPO)* and the *European Commission* in defending the interests of libraries and their users in preparing changes to information legislation, who aimed placing the management of copyright in line with the digital technologies and expand use of Internet.

In 2000, Council of Europe/EBLIDA Guidelines on Library Legislation and Policy in Europe, approved by IFLA also, was published [9]. These Guidelines adhere to the same principles as the international conventions promoted by the Council of Europe and other international organisations in related fields, and in particular: the Convention for the protection of Human Rights and Fundamental Freedoms, Article 10; the Universal Declaration of Human Rights, Article 19, United Nations General Assembly Res. 217 A; the United Nations International Covenants on Economic, Social and Cultural Rights; the IFLA-UNESCO Manifesto for public libraries (1994); the IFLA Statement on Libraries and Intellectual Freedom (March 1999); the IFLA-UNESCO Guidelines for legal deposit legislation (1981) etc. The Council of Europe/EBLIDA Guidelines on Library Legislation and Policy in Europe underline the necessity of:

- ensuring coherence, at the different levels in the hierarchy of legal norms, between rules relating to library legislation and rules applied in other related fields;
- enlarging the scope of traditional provisions for libraries, in order to take into account all different issues relevant for library legislation;
- striking a balance between the interests of all individuals and corporate bodies concerned and the different categories of book and information professionals.

It should be recalled that library legislation should take account of the different conditions and interests of the states in order to be effective. It is recommended to responsible authorities of the States to adopt legislative or other measures which are in conformity with the principles outlined in the Guidelines, and to bring existing legislation into line with the same principles.

The Council of Europe/EBLIDA Guidelines on Library Legislation and Policy in Europe covered four main directions:

- Freedom of expression and free access to information;
- Libraries within the national book and information policies;
- Libraries and the knowledge industries;

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[1] IFLA (*The International Federation of Library Association and Institutions*); EBLIDA (*European Bureau of Library, Information and Documentation Associations*); LIBER (*Ligue des Bibliothèques Européennes de Recherche*); eIFLnet (*Electonic Information for Libraries*).

- The protection of library heritage.

The International Federation of Library Association and Institutions (IFLA) is working with WIPO Member States to gain support for a binding international instrument on copyright limitations and exceptions to enable libraries to preserve their collections, support education and research, and lend materials. To demonstrate what is needed, IFLA, together with the International Council on Archives (ICA), Electronic Information for Libraries (eIFL) and Corporación Innovarte, has produced a Treaty proposal (TLIB) to guide WIPO's Member States in updating limitations and exceptions for libraries worldwide. Treaty Proposal on Copyright Limitations and Exceptions for Libraries and Archives (TLIB) is intended as a constructive proposal to feed into the discussions at WIPO. The limitations and exceptions mandated by the Treaty proposal are based on a set of principles that were developed in 2009 by librarians, intellectual property specialists, the World Blind Union, and representatives of other civil society NGOs. The idea of the present Treaty for Libraries is to require a set of exceptions for libraries which national legislators should incorporate into national laws. It governs the use of all copyright works and also of all materials protected by related rights, according to national law. It applies to materials in any format, digital and non-digital. These exceptions should allow libraries to perform all their daily tasks in the digital environment, including the acts of reproduction, communicating to the public and making available to the public. The Treaty for Libraries was discussed at the WIPO/SCCR meeting on the 21st November 2011 in Geneva [10].

On January 2012 was published Developing a Library Copyright Policy: An EIFL guide [11]. This guide is intended to highlight issues when considering the creation of a copyright policy for every library, how to go about drafting a policy and the elements that a library copyright policy might contain. IFLA also create a new webpage 'Copyright Limitations and Exceptions for libraries and archives' to give the actual information to the library community and to help in the establishment of contemporary library copyright policy [12].

The solution must take us beyond the blunt instrument licences and DRM techniques can provide, and include the development of a common set of rights or principles that will equip libraries with the tools they require to operate effectively in digital environments [13].

In accordance with measures taken by the European Commission initiatives to harmonize legislation on copyright and neighboring rights between the Member - States in the development of digital single market, can expect subsequent revisions to the Bulgarian law

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