Digital Music Distribution

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Technology Driven Changes in Copyright Law and Diversification of Business Models

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Abstract:
The change towards an information society has resulted in significant changes around us – and not the least within the music industry. The ability of consumers to easily produce perfect copies has resulted to fear of mass infringements among the music industry companies and thus, calling for legal protection for the content they produce. This protection has been effectuated by employing various technological protection measures with the goal being protecting and also enforcing their rights with the help of digital rights management systems. In this thesis technological protection measures are discussed as a subcategory of digital rights management. The context focuses on record labels, which are currently in the process of adjusting their business models to match the changed landscape of the digital music markets.

The new technology – and the subsequent legislation – which has been introduced to respond to perceived changes in society has provided new challenges. New legislative measures and especially increased protection has brought about changes that may have adverse effects on the delicate balance between the rights holders and the users of copyrighted works. In this study the technological, legislative and business aspects are seen as intertwined factors affecting the developments within this field.

The purpose of this study is to understand the developments referred to above and the subsequent changes in copyright law. Hence, this study explores technology-related changes in copyright law and copyright markets. The method employed in this study is based on legal dogmatics, i.e. the purpose is to analyze the current regulatory framework governing the activities within the scope of this study. In addition, the study also makes use of both economic and historical analysis of music distribution and consumption.

The study suggests that instead of increasing the level of copyright protection, what may be more beneficial to the rights holders, is an approach where the existing rights are utilized more efficiently; several commentators have concluded that more protection does not necessarily equal to better protection. Before, music distribution was based on delivering the content to consumers fixed on a physical medium. The technology available to consumers effectively restricted music sharing and reproduction. Now the desireable approach is to make music available in ways that are convenient and competitively priced. Making music ubiquitous and licensing access instead of restricting use are among the key considerations in making digital sales and efficient exploitation of creative content take off.

Keywords: copyright, file sharing, InfoSoc, DMCA, DRM.

Contents

Acronyms

AAC	Advanced Audio Coding
CD	Compact Disc
CDN	Content Delivery Network
DMCA	Digital Millennium Copyright Act
DRM	Digital Rights Management
DRMS	Digital Rights Management System
DVD	Digital Versatile Disc
EC	European Communities
EU	European Union
InfoSoc	The Directive 2001/29/EC; also referred to as the European Union Copyright Directive
HD-DVD	High-Definition DVD
IFPI	International Federation of the Phonographic Industry
IT	Information Technology
mp3	MPEG-1 Audio Layer 3
ODRL	Open Digital Rights Language
P2P	Peer-to-Peer
REL	Rights Expression Language
RIAA	Recording Industry Association of America
TPM	Technological Protection Measure
VHS	Video Home System
W3C	World Wide Web Consortium
WCT	WIPO Copyright Treaty
WIPO	World Intellectual Property Organization
WPPT	WIPO Performances and Phonograms Treaty
XrML	eXtensible rights Markup Language

1 Introduction

1.1 Scope and Research Questions

As the emergence of information society changes the ways we do things, new legal and contractual protections are strenghtening the positions of rights holders providing them with inherently strong protection. By this is meant the legal protection granted to Digital Rights Management (DRM). Digital Rights Management as such can be characterized as technologies that are used for securely distributing digital content protected by copyright. Examples of implementations of DRM technology include e.g. Microsoft's Windows Media digital rights management for audio and video,[1] Amazon's proprietary DRM-restricted AZW file format for e-books[2] and Apple's FairPlay digital rights management technology used for some of the content available in the iTunes Store.[3] DRM embedded into content and services and the accompanying end-user license agreements essentially regulate the use of such content as the design of these technological rule sets is left to be determined by rights holders. This effectively makes it possible to also prevent uses that would be otherwise allowed under copyright law. These new technologies – and the subsequent legislation have been generally claimed to be a response to perceived changes in society.[4]

This new legislation has effectively shifted the perspective from *ex-post* to *ex-ante* protection in the context of distribution of creative content online. The rights holders' point of view has been that employing DRM enables content owners and service providers to differentiate their offering: consumers are not given just one possible way to consume media, but a myriad of available options, be it download, streaming, purchase or rental. All this is just a matter of formulating the applicable rights expression language accordingly to facilitate the desired options for authorized use:

[1] See: Microsoft, Windows Media.

[2] See: Amazon.com, Kindle.

[3] See: Apple, iTunes.

[4] Here it is assumed by the author that at least to some extent legislative changes are in this regard aresponse to technological developments which cause a need for (copyright) law to adapt to changed circumstances. See Schollin, p. 289, footnote 473; quoting Koktvedgaard, *Nyere udviklingslinjer i Ophavsretten*, in Festskrift till Stig Strömholm, Iustus 1997, p. 536): "It is often so that technology has a few (kilo)meters head-start on legal regulation, and the copyright rationale entails playing a game of catching-up, and to drill technology into playing nicely on the copyright scene" (translation by Schollin).

e.g. permission to “play” or “copy”, restrictions concerning a platform or device and payment as a prerequisite for use. All these will be discussed in more detail in this thesis.

These developments raise the question of whether there is a need to redefine the balance between the interests of rights holders and users. Firstly, it is necessary to consider the effect of changes in copyright law and the increased protection granted to works of authorship which strengthens the positions of rights holders. Secondly, things to take under further scrutiny are the changes in the marketplace as technological advances have brought about changes in end-user demand for creative contents and whether overly strict protection is a hindrance to new ways of using and monetizing creative content online.

The DRM discourse has revolved around the questions of how law is embedded into systems, the products – or copies of copyrighted works – themselves, and what is the result of the interplay between copyright law, contract and code; those are the main issues to consider when discussing these changes. This thesis does not attempt to answer all the questions raised, but rather aims to point out various aspects of the debate around DRM and online distribution that requires further analysis and more discussion on whether a paradigm shift in creative content distribution is necessary, or possibly even already underway.

The objective of this thesis is to analyze the current regulatory framework that is relevant in the context of online distribution of creative content. The focus is on European Union, but also other jurisdictions are discussed for the purposes of comparison. As a starting point it is assumed here, as suggested by Koktvedgaard, that copyright law has changed as a rection to technological and societal developments. The legislative changes related to online distribution of creative content, especially the introduction of legal protection granted to various technological protection measures, are here reflected upon with the developments in the society, particularly within the online markets where creative content is distributed to consumers.

This thesis further discusses the impacts of this legislation and whether it has resulted to ”single user, read-only” content thus complicating or maybe even preventing the types of uses of copyrighted works that traditionally have been regarded as exceptions to those exclusive rights in copyright law also in the European legal tradition, and thus affecting the copyright balance. Similarly, the feasibility of such models need to be considered from the point of view of having a system with balanced rights and taking into account views of various stakeholders. Although the emphasis is put on discussing matters in the EU level developments, the developments in the U.S. are also discussed for comparative purposes as many of the landmark cases within this area originate from there. Also the global nature of this phenomenon calls for international comparison.

Product-based distribution and logistics challenges related to physical products contributed to development of geographically limited markets. Now technological development has led to a situation where providing services online, as well as delivering content online, makes larger markets – EU-wide or global – a technologically feasible option. Hence, there is a need to reassess also current licensing schemes, meaning a shift from country-based to cross-border licensing. Despite harmonization endeavours, the European online market still remains fragmented, not having become a functioning single-market. While copyright law has its basis on the national territoriality principle, there are no barriers to a (collective) licensing reform where a functioning single-market would be created from the current patchwork of national markets.

More specifically, the research question of this thesis is: are changes in copyright law or organizational structures, especially regarding the organizations with the purpose of collective management of copyright and related rights, necessary for improving the efficiency of commercially exploiting creative content by means of online distribution? In this thesis improving the efficiency refers to promoting both easy access to online content and its secure distribution.

1.2 Methodology

Legal dogmatics is employed as the primary method in this study in order to gain understading of the relevant legislation as it is currently in force.[5] Another method used in this thesis is legal informatics, meaning especially the relationship between law and new technologies. Legal informatics is employed to discuss policy issues related to law, e.g. copyright and privacy, and for analysing the relationship between legislation, and especially technologies, related to electronic disribution of digital content as well as other information and communication technologies.[6]

The feasibility of the current approach by the recording industry is also considered from the law and economics point of view.[7] Historical perspective is used to place the current legislation and the developments related to it in a termporal and social context. In addition to legal aspects also matters related to electronic disribution of digital content, especially online distribution of music to consumers with a European perspective, are dicussed. And thus, legal analysis is combined with a business approach considering the feasibility of the music industry's current approach. The primary focus here is on distribution methods where the content is predominantly chosen by the user, such as downloading. As a temporal limitation, the emphasis in this thesis is on developments that have occurred during the past decade.

1.3 Structure

In the second chapter of this thesis I concentrate on describing the relevant legislative framework and discussing the developments affecting this field. The third chapter delves into current business models and they are reflected upon with the changes and developments in law and technology.

In the fourth chapter I discuss the various views presented regarding peer-to-peer file-sharing and its implications to the music sales. In the fifth chapter the concept of digital rights management is discussed for the purposes of describing the implications,

[5] See: Peczenik (2005).
[6] See: Loevinger (1949).
[7] See: Cooter & Ulen (2007).

both threats and possibilities, that implementing DRM has on the use of content. In chapter six different views presented regarding the future of DRM are discussed. In chapter seven I concentrate on current trends in the markets and changes in copyright law.

In the final, eigth chapter I draw my conclusions based on the issues presented in this thesis and present my suggestions for the future regarding the online markets where creative content is distributed to consumers.

2 Bringing Copyright to the Digital Age

2.1 Copyright – Underlying Principles

The general view is that the basis for modern copyright can be traced back to the Statute of Anne. In continental Europe, i.e. in civil law jurisdictions, the French copyright law developed during the 18th century; in the United Kingdom the foundations for copyright was laid during the same period. The first generally recognized copyright act was the 1709 Statute of Anne, or to be precise, *The Act for the Encouragement of Learning, by vesting the Copies of Printed Books in the Authors or purchasers of such Copies, during the Times therein mentioned*. The purpose of the law was to grant book publishers legal protection, that being the exclusive rights. Considering the underlying reasoning behind passing this piece of legislation, Lee for example has suggested that the rationale was not that much about protecting authors but about regulating the book trade.[8] This background is probably the reason why the common law legal tradition approach to copyright, more than the European legal tradition, has developed towards regulating rights to "copies"[9] of protected works.

[8] Marshall (2006). p. 13. See also Schollin, pp. 275-278.

[9] For an alternative view, see: Bently, Lionel and Kretschmer, Martin (eds.): "Legislation conferring exclusive rights upon the author of books not yet printed or published for a period of 14 years and for a further 14 years if the author was still alive at the end of the first period. The legislation also provided the same rights for the authors or owners of books already in print for a single 21 year term. The commentary describes the background to the Act detailing the manner in which the legislation was amended as it passed through parliament, and highlights particular flaws in the drafting. It argues that, although the Act sought to both secure the interests of the Stationers while at the same time regulating the general operation of the book trade, the primary concern of the legislature lay in the encouragement and advancement of learning."

As said, the common law approach differs to some extent from the ideas adopted in the continental legal tradition. The French copyright law was based on the notion of *droit d'auteur* – the "right of the author". Whereas in common law systems "copyright" is recognized instead of this. It can be perceived that the the terminology and especially the underlying philosophy differs somewhat in common law and civil law jurisdictions. The *droit d'auteur* concept has had a strong effect on the evolution of copyright legislation in the continental Europe also in other civil law jurisdictions. In addition, the emergence of international copyright law has also been influenced by this notion, to name the *Berne Convention*[10] as an example.

In common law jurisdistions, especially in the United States *public benefit* has been the cornerstone for copyright. Compared to the individualistic European approach, this is illustrated by the fact that the courts in the U.S. have generally interpreted the Article I, Section 8, Clause 8 of the Constitution – commonly referred to as the Copyright Clause – to state that the justification of copyrights is to enhance public benefit by encouraging individuals to produce creative works. Hence, the public interests supersede the interests of the author in the occasion that the two conflict.

Today the general justification to copyright is commonly sought from *incentives to create*, which has been articulated also in the declaration made on September 9, 1986 by the Assembly of the Berne Convention stating:

> "…that the law of copyright has enriched and will continue to enrich mankind by encouraging intellectual creativity and by serving an incentive for the dissemination the world of expression of arts, learning and information for the benefit of the people."[11]

In economic terms, when a resource is *nonrivalrous* – meaning that one person's use does not rival the other's – the problem is not the demand for the resource – say, music – because it cannot be exhausted. Instead the essential question is how to make sure that the creators benefit enough from their work.[12] Though, from the U.S. perspective Litman opines that "[c]opyright today is less about incentives or

[10] Berne Convention for the Protection of Literary and Artistic Works of September 9, 1886.
[11] Schollin, pp. 296-297.
[12] Lessig (2001), p. 21.

compensation than it is about control." Ending up with the incentive model was about reformulating copyright matters as a trade issue to get the trading partners to expand the scope of protection of their domestic copyright laws – this to make sure that people using copyrighted material there would also pay the content industry for their use. This, in its behalf, would benefit the balance of trade.[13] So, more than principles, we are discussing issues closely related to foreign trade policy reminding that all legislation is the outcome of politics and sometimes bargaining for achieving ends not expressly stated. It is very plausible that this holds true concerning the current discussions with respect to ACTA, the Anti-Counterfeiting Trade Agreement.

The ACTA is being negotiated as a result of an initiative by the United States, the European Union, Japan, Switzerland and Mexico in October 2007 outside international organizations, such as WIPO. The aim is to establish agreed standards among the signatories "for the enforcement of intellectual property rights that address today's challenges" such as online infringement. Although negotiated as a standalone treaty, its provisions will be compatible with the TRIPS Agreement, the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights. The purpose of the negoatiating parties is also that the treaty will be open for other countries on a voluntary basis, should they be willing to become signatories at a later stage.[14]

The roots of copyright in civil law, i.e. the continental European copyright tradition, are largely based on the French *droit d'auteur* approach to ptotecting the rights of the authors when giving protection to works of authorship, whereas the view in common law countries tends to be more utilitarian and thus put an emphasis on the overall utility to a society. So, an underlying philosophical difference exists in civil law and common law traditions with respect to the ultimate goals of copyright.

2.2 Transition from Analog to the Digital World

The same rules that apply offline also apply online – but nevertheless the emergence of the so-called information society has changed the ways we do things and experience content. This change can be characterized as a transition from analog to

[13] Litman (2006), p. 80-81.
[14] ICC (2010), p.49.

digital. These developments also call for regulating these activities as well as defining the rights of the rights holders' and users' again. The widespread use of mp3 players and the sale of digital media online has brought about problems with it. But as often has been the case, new technology and new ways to use copyrighted material changes conceptions regarding the scope of copyright; what should be seen to be among the exclusive rights of the rights holders?

In The Future of Ideas: The Fate of the Commons in a Connected World[15] Lessig contemplates the current state of innovation and creativity. As an example he points out an advertisement from Apple where the company encourages consumers to "[r]ip, mix, burn", because "[a]fter all, it's your music". He comments the commercial as follows: [16]

> "Apple, of course, wants to sell computers. Yet its ad touches an ideal that runs very deep in our history. For the technology that they (and of course others) sell could enable this generation to do with our culture what generations have done from the very beginning of human society: to take what is our culture; to 'rip' it - meaning to copy it; to 'mix' it - meaning to reform it however the user wants; and finally, and most important, 'burn' it - to publish it in a way that others can see and hear. Digital technology could enable an extraordinary range of ordinary people to become part of a creative process."

Ironically, "the very same machines that Apple sells to 'rip, mix, [and] burn' music are programmed to make it impossible for ordinary users to 'rip, mix, [and] burn' Hollywood's movies."[17] The reason for that is that the content – music – is protected by software – i.e. code – that prevents certain uses of the content. Moreover, considering this against the thought that consumers should be able to "rip, mix, burn", Lessig observes:

> "You have no "right" to rip it, or to mix it, or especially to burn it. You may have, the lawyers will insist, *permission* to do these things. But don't confuse Hollywood's grace with your rights. These parts of our culture, these lawyers will tell you, are the property of the few." [18]

[15] Lessig (2001).
[16] Lessig (2001), p. 9.
[17] Lessig (2001), p. 11.
[18] Lessig, (2001), p. 11.

Setting legal and technological issues aside, music and the way we consume it is a part of today's cultural individualism, a form of self expression – as a CEO of an online music service said: ”people have been using music to express themselves through their mobiles via applications like ringtones, master ringtones, ringback tones and blog 'soundtracks'. Both these megatrends are likely to define the future evolution of music into its next form, or 'avatar'[19]... this is just the beginning.”[20] Now, especially with the emergent social media communities and other services readily available, people increasingly define themselves – their personality – through their choices, e.g. the music they listen to and share with their peers. But the the wording of this Apple ad ”mix it, rip it, burn it” and the reality raise a question of whether it really is your music in the sense that you are free to use it this way? And what is the appropriate level for protection for copyrighted works – intellectual property - so that certain balance between the affected stakeholders remains?

2.3 International Developments

Even though copyright law has its basis on the national territoriality principle, and thus the rights and restrictions are consequently based upon national copyright laws, there has been substantial harmonization internationally as the national laws especially in the field of intellectual property are to a great extent based upon international treaties, such as the Berne Convention – or the *Berne Convention for the Protection of Literary and Artistic Works* – from 1886, which also has set the foundation for later international harmonization in the field of intellectual property law.

Other international agreements on copyright protection and related rights include e.g. the Rome Convention for the Protection of Performers, Producers of Phonograms, and Broadcasting Organizations (1961), the Geneva Convention for the Protection of

[19] *Avatar* is a word originating from Sanskrit; it puts a name to worldly manifestations of Vishnu, a Hindu god. For example the incarnation of Vishnu as a tortoise was named Kurma; and Matsya was the name used when he appeared as fish. In this concept the earthly being – the avatar: tortoise or fish – was in essence the materialization of a higher being. Back in year 1985, F. Randall Farmer and Chip Morningstar together developed Habitat, which was the first multi-user domain with a visual 2D interface. Avatar was the term they chose for the animated figures that players would drive around the virtual realm in today's massively multiplayer online roleplaying games. *See*: Castronova, Edward (2002), p. 6.

[20] IFPI (2006), p. 6.

Producers of Phonograms against Unauthorized Duplication of their Phonograms (1971), the WIPO Copyright Treaty (1996), and the WIPO Performances and Phonograms Treaty (1996). The last two address the protection of authors' rights in the digital world. The World Trade Organization (WTO) Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) (1994) is the first multilateral trade-related intellectual property agreement. It covers most types of intellectual property and includes copyright and related rights.

According to ICC WIPO has, until the year 2008, identified a total of 102 countries which have implemented the anti-circumvention provisions of the WIPO WCT and WPPT treaties in their respective domestic legislation, of the so called Internet Treaties, or which alternatively have committed to implementing the provisions. A majority of the same countries also prohibit the act of trafficking in circumvention devices.[21]

The OECD Ministerial Meeting on the Future of the Internet Economy, held in Seoul in June 2008, also addressed certain key points, e.g. related to business and regulatory climate: The policy guidance document recognizes e.g that the role of digital content is becoming central.[22] Already the 2004 OECD Recommendation of the Council on Broadband Development had recognised the growing importance of digital content.[23]

Additionally, the policy guidance document calls for actions to enable the development of digital markets of digital content, where "governments have a role in developing "enabling factors" for creation and use of digital content, taking measures to support cultural diversity and local content-related entrepreneurship, and acting as facilitators by enhancing capabilities and removing unnecessary regulatory barriers and other impediments across previously separate policy areas."[24] Currently there is also an ongoing discussion on the negotiations on the proposed Anti Counterfeiting Trade Agreement ("ACTA") which will be discussed in more detail below.

[21] ICC (2010), p. 35.
[22] OECD (2008), p. 2.
[23] OECD (2008), p. 2.
[24] OECD (2008), p. 3.

2.4 European Union Copyright Legislation

At the European level the transition towards an information society began with the Commission Green Paper, *Copyright in the Information Society*[25] and the *Follow Up*[26] to it. So far the most significant piece of EU legislation dealing with copyright issues has been the *Information Society Directive*[27] – often referred to as the InfoSoc Directive or the EU Copyright Directive.[28] The directive was drafted with the purpose to implement the *WIPO Copyright Treaty*[29] (WCT) and the *WIPO Performances and Phonograms Treaty*[30] (WPPT) as the European Union is a party to those.[31] Thus, the EU member states have been obligated to implement certain provisions contemplated in those international treaties.

Firstly, it should be noted that the InfoSoc Directive does not contain a direct counterpart for the rather indeterminate concept of *"fair use"*[32] in the U.S. copyright law. The continental European legal tradition recognizes certain enumerated *exceptions to copyright*, and the InfoSoc Directive contains a list of certain specific circumstances under which member states may, under their national law, allow a user to make use of a copyrighted work that is not sanctioned by the rights holder, as provided in the Article 5 of the InfoSoc Directive. But also in the European legal tradition a distinction needs to be made as under the UK copyright law such use is termed *"fair dealing"*.[33]

Nevertheless, although emphasis is on continental European civil law approach, in this thesis I have chosen to use the concept of "fair use" when referring to those

[25] COM (95) 382 final.
[26] COM (96) 568 final.
[27] The Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.
[28] This has been the view of the Commission: *see* Commission Staff Working Paper, Digital Rights: Background, Systems, Assessment, SEC (2002) 197 (Brussels, 14 February 2002), p. 4.
[29] The World Intellectual Property Organization Copyright Treaty (WCT) adopted in Geneva on December 20, 1996.
[30] The WIPO Performances and Phonograms Treaty (WPPT) adopted in Geneva on December 20, 1996.
[31] Bently and Sherman (2004), p. 51.
[32] The American copyright doctrine contains a fair use defence for alledged copyright infringements; according to that, if the court views the use as "fair" under certain criteria there is no infringement. *See*: US Copyright Act 1976 Section 107.
[33] Bently and Sherman (2004), p. 192.

limitations and exceptions to copyright also under the European law, in addition to US law, to simplify the terminology when comparing civil law and common law systems. The the author recognizes the bias attached to this terminological choice but given the absence of a neutral term to be used when referring to fair use, fair dealing or the enumerated exceptions to copyright holder's exclusive rights, fair use is used to refer to all the above.

At the same time the author acknowledges the discourse around certain "user rights" – and whether they should be formally recognized – by which it is implied that besides authors, also the users of works of authorship have certain rights as a negation to those limitations and exceptions to copyright. This refers to the fact that certain balancing of rights between the relevant stakeholders, right holders and users should be recognized in order to optimally allocate rights and obligations within the society. This implies to a shift in the mindset beyond author-centric thinking.

The current EU regulatory framework relevant to copyright issues include the following directives, including the directives on semiconductors,[34] protection of computer programs,[35] rental right,[36] satellite and cable transmission,[37] term of protection,[38] protection of databases,[39] copyright in the information society,[40] resale right,[41] and enforcement.[42]

[34] Council Directive 87/54/EEC of 16 December 1986 on the legal protection of topographies of semiconductor products.
[35] Council Directive 91/250/EEC of 14 May 1991 on the legal protection of computer programs.
[36] Directive 2006/115/EC of the European Parliament and of the Council of 12 December 2006 on rental right and lending right and on certain rights related to copyright in the field of intellectual property (codified version).
[37] Council Directive 93/83/EEC of 27 September 1993 on the coordination of certain rules concerning copyright and rights related to copyright applicable to satellite broadcasting and cable retransmission.
[38] Directive 2006/116/EC of the European Parliament and of the Council of 12 December 2006 on the term of protection of copyright and certain related rights (codified version).
[39] Directive 96/9/EC of the European Parliament and of the Council of 11 March 1996 on the legal protection of databases.
[40] Directive 2001/29/EC of the European Parliament and of the Council of 22 May 2001 on the harmonisation of certain aspects of copyright and related rights in the information society.
[41] Directive 2001/84/EC of the European Parliament and of the Council of 27 September 2001 on the resale right for the benefit of the author of an original work of art.
[42] Directive 2004/48/EC of the European Parliament and of the Council on the enforcement of intellectual property right.

With respect to EU-wide collective rights management, the Commission has on May 18, 2005 given a recommendatation on collective cross-border management of copyright and related rights for legitimate online music services.[43] In the recommendation the Commission e.g. recommended that:

> 5. With respect to the licensing of online rights the relationship between right-holders and collective rights managers, whether based on contract or statutory membership rules, should, at least be governed by the following:
> (a) right-holders should be able to determine the online rights to be entrusted for collective management;
> (b) right-holders should be able to determine the territorial scope of the mandate of the collective rights managers;
> (c) right-holders should, upon reasonable notice of their intention to do so, have the right to withdraw any of the online rights and transfer the multi territorial management of those rights to another collective rights manager, irrespective of the Member State of residence or the nationality of either the collective rights manager or the right-holder;
> (d) where a right-holder has transferred the management of an online right to another collective rights manager, without prejudice to other forms of cooperation among rights managers, all collective rights managers concerned should ensure that those online rights are withdrawn from any existing reciprocal representation agreement concluded amongst them.

As noted above, there has been significant harmonization in the form of various directives having relevance in the context of intellectual property rights that affect the substantive, national copyright laws, to reduce barriers to trade and to adjust the framework to new forms of exploitation. Nevertheless, the approach adopted by the EU has thus far been to a great extent limited to dealing with narrowly defined issues at a time, which possibly has not been the most efficient way to harmonize national copyright laws so as to truly advance reducing barriers to trade and hence promote establishing a digital single-market.

[43] Commission Recommendation of 18 May 2005 on collective cross-border management of copyright and related rights for legitimate online music services (2005/737/EC).

2.5 Protection from Copyright Infringements

2.5.1 Offline World

The copyright owners have been granted protection against infringements with ex post remedies, as with physical copies of copyrighted works it was difficult to put in place technological restrictions that would prevent unauthorized uses. It would be too cumbersome to lock down the content in a physical copy of a book and make the user unable to copy it. Traditionally this has also been considered to fall outside the scope of the rightsholders' exclusive rights. And if the exclusive rights were infringed upon, there were available remedies in law, such as damages and injunctive reliefs.

This could be characterised as a normative approach, wherein the protection granted to proprietors would not empower them to expand their de facto rights beyond those set in the copyright law, as Lessig put it: "[t]hat copy would ordinarily give the copyright owner the exclusive right to say whether the copy is allowed or not, but the law denies the owner any exclusive right over such 'fair uses'..."[44] This, to a large extent still holds true when it comes to works in physical form; when the perpective shifts to creative content online, the situation differs, as will be further discussed below.

2.5.2 Online World

In view of digital content, on the other hand: "...what if we could change the laws of nature to make it impossible to steal intellectual property, we are asking whether it is possible to make the code such that stealing intellectual property would be extremely difficult."[45] With the introduction of various technological measures and the protection granted upon them this, in effect, has happened. The de facto protection of works of authorship has increased. Technological protection measures and DRM have become protected as such; even uses that do not fall into categories covered by the authors' eclusive rights have become subject to being authorized by DRM.

[44] Lessig (2004), p. 142.
[45] Lessig (1997), p. 8-9.

Debate on legal protection for technological control and protection measures resulted to the two WIPO treaties. WCT Articles 11[46] and 12 as well as WPPT Articles 18 and 19 deal with these issues. Implementing those treaties has been done by introducing the DMCA[47] in the United States and the InfoSoc Directive in the European Union. These instruments provided for legal remedies against the act of circumvention of ”effective technological measures” as provided in the aforesaid articles of the WIPO treaties above. Of interest in this respect are especially the articles 6 and 7 of the InfoSoc Directive as well as the section 1201[48] of the DMCA for comparative purposes.

The InfoSoc Directive explicitly imposes in its Article 6 on the Member States requirements to provide ”adequate legal protection” against circumvention of ”effective technological measures” that have been designed to prevent or restrict acts, which the copyright holder has not authorized. These include the trafficking in devices, products or services which may be used to circumvent such technology. Article 7 of the Directive sets similar obligations regarding electronic rights-management information. However, Bently and Sherman have pointed out that while the Article 6 of the InfoSoc Directive implements WCT Art. 11 and WPPT Art. 18, comparing the provisions of WCT and InfoSoc Directive regarding DRM the directive goes further than the requirements set forth in those treaties. It goes *beyond*

[46] Article 11 of the WIPO Copyright Treaty: ”Contracting parties shall provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights under this Treaty or the Berne Convention and that restrict acts, in respect of their works, which are not authorized by the authors concerned or permitted by the law.”
In Article 12 protection alike to that in Article 11 is granted to rights management information; Articles 18 and 19 of WPPT provide for rather similar protection.

[47] The Digital Millennium Copyright Act of 1998, 17 U.S.C. (DMCA).

[48] ”17 U.S.C. § 1201. Circumvention of copyright protection systems
...
(1)(A) No person shall circumvent a technological measure that effectively controls access to a work protected under this title. The prohibition contained in the preceding sentence shall take effect at the end of the 2-year period beginning on the date of the enactment of this chapter.
...
(2) No person shall manufacture, import, offer to the public, provide, or otherwise traffic in any technology, product, service, device, component, or part thereof, that -
(A) is primarily designed or produced for the purpose of circumventing a technological measure that effectively controls access to a work protected under this title;
(B) has only limited commercially significant purpose or use other than to circumvent a technological measure that effectively controls access to a work protected under this title; or
(C) is marketed by that person or another acting in concert with that person with that person's knowledge for use in circumventing a technological measure that effectively controls access to a work protected under this title.”

the actual act of circumvention and also covers devices and services that enable circumvention.[49]

As Lessig and Reidenberg have pointed out, the designer of such effective technological measures – or DRM – controls the technology and thus also controls users' behavior regarding the system they design through its code.[50] The reasoning behind it is that by employing code that restricts actions the need for *ex post* law enforcement is diminished when uses not sanctioned by the rights holder are prevented ex ante by employing DRM. Commenting the two previous writers Burk and Cohen opine that first "[t]he design of technological rule sets, however, is not the sole provenance of the state; indeed, it is more often left to private parties. In the case of rights management systems, copyright owners determine the rules that are embedded into the technological controls." And secondly that "[b]y implementing technical constraints on access to and use of digital information, a copyright owner can effectively supersede the rules of intellectual property law."[51]

Under Article 6(4) of the InfoSoc there exist certain specific exceptions where end-users should be able to exercise their user rights.[52] And, should the rightholders fail to take voluntary measures to facilitate this, the Member States are under an obligation to take appropriate measures to enable would-be users to exercise their user rights, although the InfoSoc does not define in more detail what such appropriate measures would be. A Commission Staff Working Document goes on by stating that "[t]he voluntary measures considered by rightholders include the supply of a non-protected version of the work or the supply of a decryption key".[53]

The above "obligation to take appropriate measures" does not apply to private copying as the second paragraph of the InfoSoc Art. 6(4) sets out the rules with respect to reproduction for private use. Contrary to the above the "obligation to take appropriate measures", absent rightholders' voluntary measures, Member States *may*

[49] Bently and Sherman (2004), pp. 266-267.
[50] See: Lessig (1999); *See* also: Reidenberg (1998).
[51] Burk and Cohen (2001), p. 50.
[52] For criticism on the efficiency of Infosoc Directive Art. 6(4), see: Mazziotti (2008), pp. 94-100.
[53] SEC(2007) 1556, p. 9.

take such measures – but do not have a duty – to take appropriate measures to enable reproduction for private use, i.e. private copying.

As the result for the current situation another two European writers have opined that ”fair use is currently threatened by a combination of new distribution technologies and unreflective legislative action.”[54] Copyright law and the protection it grants to technological measures as well as contract law are together employed to give rights holders *ex ante* protection against possible infringements. In essence, there is a change from reactive to proactive when it comes to remedying prospective copyright infringements. This issue as such is highly debated. The need to give works of authorship copyright protection is imperative to protect creativity – but the means to achieve this call for further discussion.

For more information on national level implementation of the InfoSoc provisions from that time period, there are several studies available that deal with this aspect in more depth, including a 2004 study by Urs Gasser and Michael Girsberger on transposing the provisions of the InfoSoc Directive into the EU member states' national laws[55] and the 2003 report by The Foundation for Information Policy Research (FIPR) where FIPR reported legal developments across the EU member states on their implementation process with the aim to comply with the Directive (2001/29/EC).[56] Also Mazziotti has covered this matter with a special emphasis on differences made by member states during their implementation processes while transposing the provisions of the Infosoc Directive to their national legislation.[57]

2.6 Balanced Copyright

Also in the Nordic legal discourse striking a balance in copyright has been a topical isse: user rights and balanced approach to recognizing various interests of different stakeholders has been discussed by e.g. Viveca Still who in her 2007 doctoral thesis[58]

[54] Burk and Cohen (2001), p. 47.
[55] Gasser and Girsberger (2004).
[56] FIPR (2003).
[57] For an overview of legislative measures taken by some of the EU member states with respect to the Infosoc provisions and protecting certain copyright exceptions, see: Mazziotti (2008), pp. 104-109.
[58] Still (2007).

discusses the questions relating to employing various DRM schemes and how to restore balance in copyright while rights holders are empowered to control use of their works and how that balance could be restored considering copyright owners' increased power to technologically and contractually control use of their works, and when the legal system protects the control mechanisms as such even though the limits may exceed the rights holders exclusive rights granted by copyright law. Also another Nordic scholar, Kristoffer Schollin recognizes a need to discuss "balance and wider interests"[59] of the society as a whole as part of the DRM discourse.

As noted above, the author acknowledges the discourse around certain "user rights" – and whether such rights should be formally recognized – which would mean that besides authors also users of copyrighted works have certain rights. This discussion suggests that certain balancing of rights between the relevant stakeholders, right holders and users should be recognized in order to optimally allocate rights and obligations within the society. This also implies to a shift in the mindset beyond author-centric thinking. Among other authors, Mazziotti discusses the need to take public interests into consideration when framing copyright policy. For example, from the European perspective, contractual clauses regarding DRMs which impose limitations upon consumers' ability to enjoy copyright exceptions to the rights holders' exclusive rights in connection with dissemination of digital content, raise questions that are relevant to consider from a consumer protection point of view.[60]

In the US, Judge Pierre Leval wrote in his article that "[f]air use should not be considered a bizarre, occasionally tolerated departure from the grand conception of the copyright monopoly. To the contrary, it is a necessary part of the overall design."[61] Also in Canada, the Supreme Court has stated that:

> (48) […] the fair dealing exception is perhaps more properly understood as an integral part of the Copyright Act than simply a defence. Any act falling within the fair dealing exception will not be an infringement of copyright. The fair dealing exception, like other exceptions in the Copyright Act, is a user's right. In order to maintain the proper balance between the rights of a copyright owner and users' interests, it must not be interpreted restrictively. As Professor Vaver,

[59] Schollin (2008), p. 364.
[60] Mazziotti (2008), p. 133.
[61] Leval (1990), p. 1110.

> supra, has explained, at p. 171: "User rights are not just loopholes. Both owner rights and user rights should therefore be given the fair and balanced reading that befits remedial legislation."[62] (*emphasis by the author*).

To briefly sum up the issuese that have been discussed above, copyright law should be balanced in a way, that the wider interests of the society as a whole would be taken into consideration. The changes in copyright laws around the world appear to have changed that balance in rights holders' favour. Another thing is, whether such increased level of protection leads to a societally optimal outcome through more use of copyrighted works, or will these developments lead to inefficiencies with regards to the use of creative content.

In addition to the "balanced rights" discourse above, copyright law is also perceived – at least by the general public who are more and more affected by copyright law in their daily lives due to their increased use of creative content – as a complex rule set. Also such complexity may lead to inefficiencies if efficient use of rights and thus content is prevented due to various stakeholders not completely understanding their rights and obligations. In her paper Pamela Samuelson concludes that "*no reasonable person could contest the idea that a simpler, more comprehensible, and more balanced copyright law would be a good idea.*"[63]

From the US perspective, Lincoff suggests that Congress should aggregate the rights of songwriters, music publishers, recording artists and record labels in their respective musical works, as well as sound recordings, and create a single right for digital transmissions of recorded music. This digital transmission right would be a new right, not an additional right. It would replace the parties' now-existing reproduction, public performance and distribution rights for purposes of digital transmissions.[64] Lincoff

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[62] CCH Canadian Limited v. Law Society of Upper Canada, [2004] 1 S.C.R. 339, 2004 SCC 13.

[63] Samuelson (2007). In the Abstract Samuelson states that "[t]hirty years after enactment of the '76 Act, with the benefit of considerable experience with computer and other advanced technologies and the rise of amateur creators, it may finally be possible to think through in a more comprehensive way how to adapt copyright to digital networked environments as well as how to maintain its integrity as to existing industry products and services that do not exist outside of the digital realm."

[64] Lincoff (2008), p. 9.

also states that "*the digital transmission right […] would represent a major shift in leverage and economics within the music industry*".[65]

As discussed above, the generally accepted motivation for granting copyright protection is that it incentivizes creation of new works and dissemination of them, which has been articulated also in the declaration made on September 9, 1986 by the Assembly of the Berne Convention. But in this theory there is also a built in need for maintaining a balance between encouraging creativity and social aspects where the users' interests play a role; e.g. Schollin opines that "*[s]ometimes the need for society to have access to creative works outweighs the need to stimulate creativity, and when it does, Incentive theory requires that limits be placed on copyrights.*"[66]

It should also be pointed out that when discussing e.g. digital music distribution we're typically dealing with the exercise of *economic* aspects of copyright and consequently the rights holder's right to deny certain copyright relevant uses of works by third parties. In this regard compensation for rights holders comes from e.g. license fees or platform levies. With respect to private copying and "fair compensation" for the use of copyrighted works, in the Infosoc Directive recital 35 concerning levies on digital devices and media are discussed in connection with DRM/TPM schemes.

The recital provides that no double fees on consumers should be imposed when private copying is managed through DRM and private copying is technically prevented. More specifically, recital 35 provides that "rightholders should receive fair compensation to compensate them adequately for the use made of their protected works or other subject-matter" but also states that *"[i]n cases where right holders have already received payment in some other form, for instance as part of a license fee, no specific or separate payment may be due. The level of fair compensation should take full account of the degree of use of technological protection measures referred to in this Directive.*"

[65] Lincoff (2008), p. 64.
[66] Schollin (2008), p. 304.

3 Evolution of Digital Music Distribution

3.1 Evolution of Business Models

Fixation on a tangible medium first made possible the distribution of music to consumers. Such technological developments related to distribution thus facilitated subsequent development business models where the revenue models were tied to distribution of tangible products on which the content was delivered for use.

Apart from changes in copyright law, the past decade has seen many changes in the music market. Looking back there has been certain changes, especially with respect to online music, that mark the developments in that field. Some major milestones include e.g. the launches of certain online music services that have been characteristic to, or defining, the emerging trends in online content distribution.

Music Ally, a London-based digital music business information and strategy company, has gathered some of the major events from 2000 through 2009 and put them on a timeline. The "Digital music timeline 2000-2009 – the decade at a glance" features events from the rise and fall of Napster to the emergence of mobile music apps on smartphones; in the article they state e.g. that "the past ten years have seen massive changes in the music industry, most of which have been triggered by the rapid development of online and mobile music technology."[67]

ProMusic is a "coalition of people and organisations working across the music sector. The international alliances of musicians, performers, managers, artists, major and independent record companies and retailers".[68] It has made available a list of online music stores from around the world that offer music for sale as a download or stream. The list is compiled by IFPI and is not and does not purport to be exhaustive. The list is available on the Pro Music website.[69] Also PaidContent has compared the value

[67] Music Ally, Digital music timeline 2000-2009.
[68] Pro Music, Who We Are.
[69] Pro Music, Online Music Stores.

propositions of different "unlimited" music services, e.g. Spotify and Nokia's Comes With Music services. The table is available on the PaidContent website.[70]

3.1.1 The Napster Era

To divide the developments into distinct phases, the first phase could be said to have begun in June 1999 when the launch of the file sharing service Napster marked the rise of online file sharing. Another service which became known for (music) file sharing was Kazaa. Both services utilized P2P distribution technology that enables users to share content online.[71] File-sharing and its effects will also be discussed in more detail below.

When considering what made their services so popular, one factor surely was that they enabled users to get music from various record labels from one place. Initially, when record companies began making their catalogue available online, users typically had to purchase music from several sources depending upon the fact which record label owned the rights to certain artists' music. With different file formats and other factors this could make acquiring music rather inconvenient when compared to being able to get practically all music from one single place – and without any usage restrictions.

3.1.2 Online Music Goes Legitimate

The second phase was about making online music legitimate: in January 2001 Apple first launched its iTunes music player. The iPod – a portable music player – was launched in October 2001. Subsequently, in April 2003 Apple complemented its offering by introducing the iTunes Store which went DRM-free in January 2009.[72] What made iTunes and iPod a phenomenon was probably that Apple introduced an easy and legal way to use and purchase music online and at the same time combined catalogues from major record labels under one service, the iTunes Music Store, which

[70] PaidContent, The Celestial Jukebox.
[71] MacManus (2009), Top Internet Trends of 2000-2009.
[72] MacManus (2009), Top Internet Trends of 2000-2009.

functions with the iTunes software that is used both to manage the music on the user's iPod and music on the computer. This has made the Apple's way to obtain, manage and listen to music, be it at home or on the go, quite convenient by combining Apple's line of services and devices.

One issue remains, though: the system is closed, meaning that although Apple has allowed e.g. mp3 files to be played on iTunes and iPods besides the primary AAC codec audio files, they still prevent compatibility with other software or hardware for the content from the iTunes Music Store. In essence this means that music from the iTunes Music Store can only be bought through iTunes and the only devices compatible with iTunes are devices offered by Apple, such as Mac computers and iOS devices, currently iPod, iPhone and iPad. Hence, no other player can be used to play the tracks that have been bought from iTunes Music Store.

3.1.3 Music and Social Networking

The third phase was about tying music and social networking together. MySpace was launched in August 2003. The service opened new possibilities for bands to use the internet and social networking to promote their music online and widen their reach beyond physical constraints as, citing RWW's Sarah Perez, the bands' presence on MySpace "began to attract a young, hip crowd of users who were interested in following pop culture, and, in particular, the up-and-coming artists they discovered while browsing through the network. Only eight months after its launch, MySpace began to experience exponential growth, as its users created profiles and friended others who would then, in turn, invite more users to join the social network. Thanks to the "network effect", MySpace soon became the place to be online. Everyone was there."[73]

Also Amazon.com is trying to bring user recommendations to online shopping for music and other content. To accomplish this and leverage their website, Amazon has launched a feature where users are able to connect with their Facebook account in order to enable social shopping. According to Amazon, the user benefits from

[73] MacManus (2009), Top Internet Trends of 2000-2009.

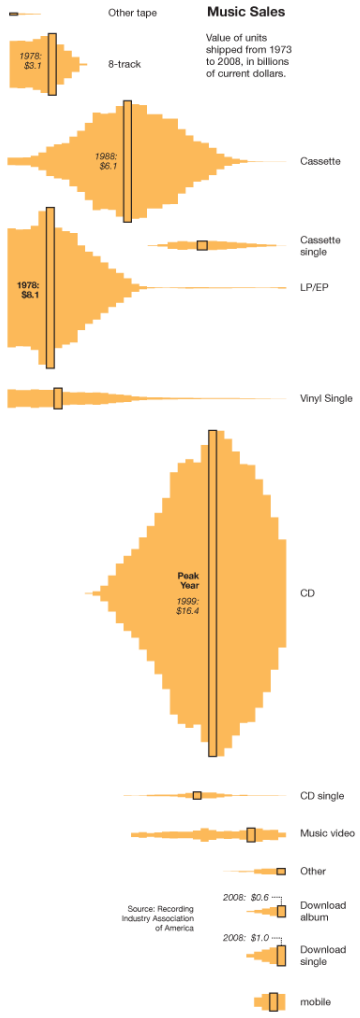
connecting Amazon with Facebook in the form of improved shopping experience, as the user then may e.g. "*[d]iscover Amazon recommendations for movies, music, and more based on your Facebook Favorites and Likes" and "explore [their] friends' Favorites and see who has similar interests*".[74]

3.1.4 Discovering Music Online

The fourth phase could be tied to online music discovery and services like Pandora[75] and Last.fm.[76] The two are streaming music services and e.g. Pandora monetizes its offering from revenues gained from audio advertising in its music streams targeted to its users. It also has affiliate deals with Amazon's MP3 store[77] and iTunes[78] and it is getting its share from music sold to customers referred to the online stores from the service.[79] Spotify[80] is also trying to get a share of the same revenue stream. Mobile music is gaining ground and many music services, such as Pandora and Spotify offer applications that smartphone users may use to access the service and stream music through it by using their mobiles.[81]

[74] Amazon.com, https://www.amazon.com/gp/facebook.
[75] www.pandora.com.
[76] www.last.fm.
[77] www.amazon.com.
[78] www.apple.com/itunes.
[79] MacManus (2009), Top Internet Trends of 2000-2009.
[80] www.spotify.com.
[81] According to recent Nielsen statistics on music apps, cited by MusicAlly, in the US market as 23% of iPhone users, 24% of Android users and 18% of BlackBerry users have Pandora installed. See: Music Ally, Pandora riding high in Nielsen app installation stats.

The diagram below, compiled from data from the Recording Industry Association of America, illustrates music sales and the value of units shipped from 1973 to 2008. It also shows the distribution in year 2008 between various delivery methods. According to data from the Recording Industry Association of America, since music sales peaked in 1999, the value of those sales, after adjusting for inflation, has dropped by more than a half.[82]



Source: The New Yor Times.[83]

The diagram above suggests a trend where physical media such as CDs are losing ground and digital music consumption is on the rise. For example IE Market Research is forecasting in its "Global Digital Music Forecast for online, mobile, and

[82] Blow, (2009).
[83] Blow, (2009).

subscription channels, 2010 – 2014" that the number of users accessing music through online channels like downloads, mobile and subscription services will increase to 1.555 billion people by the end of 2014.[84]

3.2 From Product to Service-Centric Approach

The next – or current phase – under discussion is the music services' expected migration into cloud – meaning that all music would be available on all devices and platforms, anytime and anywhere. But despite the great promise this holds to users, it may take a long time before this happens on a large scale. Forrester has recently published a report on a cloud-based music product strategy, entitled "360-Degree Music Experiences: Use The Cloud To Target Device-Use Orbits" It states that "Business models and rights issues have both distorted and fragmented the consumer digital music experience and products."[85]

Forrester did a poll where they asked over 5,250 North Americans about their music consumption habits, and according to their findings, the majority of people are using only one or two devices to access their music. The Forrester study, as cited by digital music news, indicated that a computer is the primary music device for 41,6 % while only 32,5 % considered this to be the case with their mp3 players. Still decreasing in significance, mobile phones with music capability were the top choice for 12,1 % and home streaming systems for 11,1 % of the respondents. Further, only 23 % used a combination of a computer and mp3 player to access music and a still smaller group of 9 % did this with a combination of a PC and a phone. Ultimately only 5 % used all these. They concluded that "multiple device usage is niche in the extreme."[86]

While there may be a change taking place in music consumption and a paradigm shift happening as instead of individual track purchases, purchasing access to content is becoming an alternative, challenges still remain, as discussed above. This approach may be called "the celestial jukebox", or "music like water", but in essence it is about commoditizing music or other content so that the price is not dependant on the level

[84] IE Market Research (2010).
[85] Forrester (2010), 360-Degree Music Experiences.
[86] Digital Music News (2010), Forrester: This Multi-Device Mania Thing Is a Myth...

of individual user's level of consumption; you may e.g. download as many songs as you like for a monthly fee. This kind of service-centric approach is already seen in services like Spotify where the free to the consumer, ad-backed version allows the user to listen to streams in exchange of receiving occasional advertisements – or the user may alternatively upgrade to the paid version of the service where no ads are played, and additional features are available, such as offline playlists and a mobile for using Spotify on mobile handsets.

Nokia on the other hand has another kind of an approach as they include the fee of their Comes With Music service into the mobile handsets' price, and after the purchase, the user may download an unlimited number of tracks during his subscription to the service. Robert Andrews cites a Forrester research director, Mark Mulligan who states that "[a]ccess-based services have long been part of the digital music map, now they're being reassessed as a means of addressing consumers other than the traditional aficionado niches."[87]

Especially protecting intellectual property rights is considered a challenging issue to address, particularly in emerging markets where the legal and also cultural framework might not support protecting one's rights adequately. On the other hand one might try to take a different approach to these problems and try to benefit from the realities of the market place and thus turn the problems into their competitive advantage. In their article, Strategies That Fit Emerging Markets,[88] the authors discuss how to identify strategies that enable a company to expand by entering new markets, and how to successfully avoid the pitfalls, which are usually associated with emerging markets like China.

Many companies simply try to establish themselves in the new business environment by sticking to their old strategies, but in doing so they may fail to understand the institutional variations between countries. The authors refer to this phenomenon by using the term "institutional voids".[89] It is essential to identify them and then consequently work around them. E.g. Nokia's director of global music, Adam

[87] Andrews (2010).
[88] Khanna, Palepu, and Sinha (2005).
[89] Khanna, Palepu, and Sinha (2005), p. 63.

Mirabella has stated on China that "[w]e looked at this marketplace with our label and publishing partners, and everybody agreed that the only way to captivate customers there is to offer something that is DRM-free" as well as that "[w]e felt if we go anywhere else but DRM-free, the service isn't going to get the traction it needs to."[90] Here the aim would be to convert Chinese audiences to consumers of legitimate digital music. They apparently believe that in order to curb online piracy they must satisfy demand for DRM-free music that people may use on independently of specific platforms or devices. This topic will be further discussed in this thesis in chapter 7.

4 P2P File-Sharing

4.1 P2P Distrubution, Networks, Concepts

Peer-to-peer – or P2P –commonly refers to a distributed network architecture which consists of users participating to the network with the purpose of sharing their resources like processing power (e.g. SETI@home[91]) or network bandwidth (e.g. Skype[92]) with other users of the same network. Characteristic to P2P is that it enables multiple networked computers to exchange information between them. This typically requires no central coordination as opposed to the traditional client–server model where servers supply the resources to clients. Peer-to-peer distribution is commonly used to set up networks where certain resources desired by several users are shared between the peers. For the purposes of this thesis there is no need to describe the technological aspects of P2P file-sharing in more detail.[93] Even though discussion around P2P is often hardly neutral in its nature, as such P2P technology is a neutral concept, a dual-use technology and can thus be used for both copyright infringing and non-infringing uses.[94]

Peer-to-peer was popularized by file sharing systems like Napster. As discussed above, P2P enabled users to get music from various record labels from one place.

[90] Music Ally (2010), Comes With Music goes live in China… DRM-free.
[91] SETI@home, http://setiathome.berkeley.edu/.
[92] Skype, www.skype.com.
[93] See e.g. Schollin (2008), pp. 115-125; Mazziotti (2008), p. 137; Wikipedia, Peer-to-peer.
[94] Mazziotti (2008), p. 138.

Initially, when record companies began making their catalouque available online, users typically had to purchase music from several sources depending on which record label owned the rights to certain artists' music. With different file formats and other factors this could be make acquiring music rather inconvenient when compared to being able to get practically all music from one single place – and without any usage restrictions.

The Pirate Bay became famous as a torrent tracker. The Pirate Bay has become known around the world as ”the worlds [sic.] largest bittorrent tracker”, as they claim themselves to be.[95] Bittorrent is a file sharing protocol that enables fast transfers of big files and is commonly associated with P2P file sharing. The Pirate Bay was started by Piratbyrån – or ”The Pirate Bureau”, which is a Swedish anti-copyright organization, in 2004. Although, since October 2004, it has been a distinct organization.[96]

The Pirate Bay was even reported to plan to launch its own legitimate music service as The Pirate Bay was in 2007 said to plan launching its own payment-optional music site. They stated on their website, that the record industry holding to its current business model was in their view outdated and, thus they were inspired to launch Playble.com.[97] Playble, they claim, ”will allow users to download music by artists for free and still support them financially.”[98] According to a Wired article it appears to be an ad-backed service where ”companies with strong brands” may obtain ”the opportunity to support music and artists directly”, quoting the wording from Playble web site.[99] Later on, the launch of the service was abandoned.

The Pirate Bay has been known for their bold statements against rights holders' claims that The Pirate Bay is engaging in infringing activity. In the verdict[100] by the Stockholm district court (Stockholms tingsrätt) the court ruled that The Pirate Bay indeed was guilty of contributory copyright infringement but the verdict was appealed

[95] The Pirate Bay, About.
[96] Wikipedia, The Pirate Bay.
[97] Playble – Paying Artists for Free Music.
[98] Playble – Paying Artists for Free Music.
[99] Van Buskirk (2007), It Takes a Pillage: Pirate Bay To Launch Payment-Optional Music Site.
[100] Stockholms tingsrätt, Mål nr B 13301-06 (The Pirate Bay verdict 2009).

by all the defendants. The court of appeals (Svea hovrätt) has heard the case during the autumn 2010[101] and gave its verdict that changed the district court's ruling on 26th November. The Svea court of appeals found the defendants guilty of contributory copyright infringement. It reduced the prison sentences so that they range from 4 to 10 months. The court also increased the damages that the defendants have to pay to the rights holders from SEK 32 million to SEK 46 million.[102]

4.2 The Extent of Infringing Content on BitTorrent Networks

A recent estimate on BitTorrent resulting from research by Robert Layton and Paul Watters of the Internet Commerce Security Laboratory (ICSL)[103], a research unit of the University of Ballarat, suggests that the majority of content on BitTorrent networks is infringing: "In summary, our results indicate that 89% of all torrents from our sample are confirmed to be infringing copyright, both by the number of files and total number of current seeders. Of the torrents in the top three categories (Movies, Music and TV shows), there were no legal torrents in the sample."[104]

They continue by stating that "through [their] investigations [they] discovered that 97.9% of non-pornographic files were infringing copyright. There is also a clear trend that more popular torrents are infringing."[105] The researchers also stated that while their investigation included information on more than one million torrents, "however there is a clear skew towards the most seeded torrents. Just 4,0% of torrents, a total of 15367, were responsible for 80% of the current seed population and 9,9% of torrents, just 38365, were responsible for 90%."[106]

4.3 Implications of File-Sharing to Music Sales

The debate around unauthorized copying of creative content is an issue that generates strong opinions from all sides. With regards to music, it has also been suggested that

[101] TorrentFreak (2010), The Final Day of The Pirate Bay Appeal.
[102] Svea hovrätt, The Pirate Bay case (mål nr B 4041-09).
[103] Internet Commerce Security Laboratory (ICSL).
[104] Layton and Watters (2010), p. 1.
[105] Layton and Watters (2010), p. 21.
[106] Layton and Watters (2010), p. 21.

P2P networks have potential as a *marketing tool*. Technologies are being developed to track users' downloading habits on P2P networks and the resulting data can provide information which can be used for marketing purposes. P2P networks might also be used to run market test for new artists.[107] Internet's end-to-end architecture enables anyone to publish and distribute and, considering the social nature of consuming music, there could be potential to turn this into revenues if businesses see the change taking place in one-to-many distribution models.

Contradicting the general perception of the effect of piracy, Economists Oberholzer and Strumpf studied the phenomenon of P2P and its actual impact on record sales by employing data on downloads of music files trying to establish causality between illegal filesharing and album sales. In their study they focused on a sample of albums that were sold in U.S. stores in the second half of 2002; this was drawn from a population of albums that were listed on 11 charts created by Nielsen SoundScan.[108]

This data was then compared with the logs of two P2P servers. Summarizing their findings they said that "[d]ownloads have an effect on sales which is statistically indistinguishable from zero."[109] As the analyzed data from the last four months of 2002, they ended up with an estimate that P2P affected no more than 0,7% of sales during that period.[110] Generally the studies on the effect of P2P have found at least some degree of a negative relationship between P2P and record sales.

According to the study the industry sold 803 million CDs in the U.S. in 2002.[111] This figure shows a decrease of about 80 million CDs from 2001 and for the most of the decrease the RIAA has blamed piracy. One counterargument to this has been that the recording industry does not focus on units sold but units shipped so, the decline can partly be attributed to reduced inventory. The retailers do not want to have a huge

[107] Petrick (2004), p. 7.
[108] Oberholzer and Strumpf (2006), p. 11.
[109] Oberholzer and Strumpf (2006), p. 2.
[110] *Cf*. Cunard, Hill and Barlas (2003), p. 8: *"It is currently estimated that over 2.6 billion music files are downloaded illegally every month, mainly through peer-to-peer services. IFPI further estimates that 99% of all music files exchanged on the Internet are pirated files."*
[111] Oberholzer and Strumpf (2006), p. 26.

unsold stock anymore.[112] According to the study the DVD and VHS saw an increase of over $5 billion between 1999 and 2003, which balances out the $2,6 billion decrease in CD album sales since year 1999. The changes here might be explained with a shift taking place in consumer spending on entertainment in general.[113]

Lessig refers to other researchers also estimating that a loss occurs, but it is not huge: in 2003 David Blackburn estimated the losses for the industry due to P2P to be $330 million. The RIAA estimates give a figure on a completely different scale where costs from ”all forms of piracy” total annually to $4,2 billion.[114] Nonetheless, it might not be correct to assume that every download would be possible to convert into a sale by abolishing P2P.

Karen Croxson argues that, from an economics point of view, not all pirated copies put into circulation translate to lost sales. Instead, she makes a comparison to a standard model of monopoly sales: only those people who value the offering above the asking price purchase it while others go without. She makes a conclusion that only those valuing the offering at its asking price are relevant when assessing the piracy's threat to business. Those who would not make the purchase anyway should not be counted as sales lost.[115]

Croxson also pointed out that piracy may have positive, “promotional externalities”. E.g. in a market where an artist is not already established, there might be willing buyers who are yet to discover the offering. This kind of latent demand might be exploited through advertising, but consumers may prove helpful here and provide exposure at no direct cost. This can be characterized as so called “word of mouth” or viral marketing. She also cites Godes and Mayzlin who in their 2004 study state that word of mouth “appears to be especially important for entertainment goods.”[116]

Also Petrick has suggested that P2P networks have potential as a *marketing tool*. As noted above. some companies have begun developing software that can track

[112] Fisher, Study: P2P effect on legal music sales ”not statistically distinguishable from zero”.
[113] Oberholzer and Strumpf (2006), p. 36.
[114] Lessig (2006), p. 337.
[115] Croxson (2009), p. 3.
[116] Croxson (2009), p. 3.

downloading habits of users on P2P networks. This data aggregated by region or city can provide information indicating, which artists or music genre are popular within a certain area. Gathered information can be utilized for marketing purposes, to increase the efficiency by making marketing targeted. In addition to his, P2P networks might be used to run market test for new artists.[117] At the same time P2P poses a significant potential threat to the music industry if use of that technology is not controlled because of the effects of the digital technology enabling consumers to copy and distribute content in a digital form. Internet's end-to-end architecture enables anyone to publish and distribute and, considering the social nature of consuming music, there could be potential for revenues if businesses see the change taking place in one-to-many distribution models.

In another study from 2009 the authors presented their views from the economics perspective on the optimal pricing model for music recordings where the existence of P2P sharing is recognized. The authors concluded that "[w]e can also observe exactly how the firm sets its price conditional on its market share and the network size. Sometimes it sets the price very low in order to win vital market shares to fight against the P2P network, while other times accommodates the network by setting a high price to reap the profit from its own customers."[118]

In a report from the United States Government Accountability Office to Congressional Committees, "Observations on Efforts to Quantify the Economic Effects of Counterfeit and Pirated Goods"[119] from year 2010, the authors concluded that "*it is difficult, if not impossible, to quantify the net effect of counterfeiting and piracy on the economy as a whole*."[120] Nevertheless, the authors of the paper concluded that even if some sources support the conclusion that negative effects of piracy could be to some extent overstated, still "literature and experts indicate the negative effects of counterfeiting and piracy on the U.S. economy outweigh the

[117] Petrick (2007), p. 7.
[118] Herings, Peeters, Yang (2009), p. 17.
[119] The United States Government Accountability Office (2010).
[120] The United States Government Accountability Office (2010), p. 16.

positive effects." As there is no data available concerning these potential effects, it is not possible to draw definitive conclusions regarding the net effect.[121]

If the situation actually is not as claimed by the industry, then the use of DRMs that have to a great extent been introduced in order to fight against piracy might actually act as a hindrance to increasing sales in the digital marketplace. Bringing in incentives instead could have a positive effect on sales figures. In trying to curb online piracy the so called "HADOPI" law was enacted in France. A team of French researchers conducted a survey[122] to find out how the law has affected behavior online. The survey indicates that online copyright infringement is down on P2P networks—but it's up in areas that the "HADOPI" law doesn't cover, such as online streaming and one-click download services. Also the recent study from Australia supports those conclusions. The authors state that there already is a migration "*underway by large BitTorrent sites such as The Pirate Bay in moving away from the tracker based model. These methods are Distributed Hash Tables (DHT) and Peer Exchange (PEX).*"[123]

The authors of the Australian study conclude that such distributed technologies are to a large extent used to respond to the lawsuits that have been targeted against those who operate large BitTorrent trackers. This approach is seen to mitigate risks related to file sharing.[124] These distributed technologies do not require a tracker server to be operated and thus there is no one place or operator who could be targeted to shut the network down.

Nevertheless, the United States Government Accountability Office researchers have in their report from year 2010 concluded that "*it is difficult, if not impossible, to quantify the net effect of counterfeiting and piracy on the economy as a whole*."[125] This conclusion was primarily due to the lack of conclusive data on the subject as well as many assumptions made in the process of estimating the economic effects of unauthorized trade. The report suggests that the "*[t]wo key assumptions that typically*

[121] The United States Government Accountability Office (2010), p. 28.
[122] Dejean, Pénard and Suire (2010).
[123] Layton and Watters (2010), p. 21. See also: Schollin (2008) on distributed P2P, pp. 115-118.
[124] Layton and Watters (2010), p. 21.
[125] The United States Government Accountability Office (2010), p. 16.

are required in calculating a loss estimate from counterfeit goods include the substitution rate used by consumers and the value of counterfeit goods.[126] Many of the experts we interviewed said that a one-to-one substitution rate is not likely to exist in most circumstances where counterfeit goods are significantly cheaper than the legitimate goods.[127] In the paper it was also stated that "*[u]nless the assumptions about substitution rates and valuations of counterfeit goods are transparently explained, experts observed that it is difficult, if not impossible, to assess the reasonableness of the resulting estimate*".[128] Also the Finnish Supreme Court has accepted this view, the relevance of determining the substitution rate in its recent "Finreactor" ruling.[129]

4.4 Reasons for P2P, Recent Developments

In a 2009 study from the UK, "Music Experience and Behaviour in Young People" the University Of Hertfordshire researchers surveyed music consumption of 14-24 year-olds. Their quantitative research indicates that the primary reason for filesharing is the zero cost associated with getting content through that channel. But besides getting music for free, the research indicates that they "*also use P2P to find music that is not commercially available (for instance, before a piece of music is released commercially) or to experiment and 'try-before-they-buy'*".[130] Although they are also willing to purchase digital music "85% of P2P downloaders would be interested in paying for an unlimited, all-you-can-eat MP3 download service. 57% of these said such a service would stop them from using unlicensed P2P services, and 77% that they would still continue to buy CDs."[131]

New data from the network security vendor Arbor Networks has indicated that the proportion of P2P traffic in relation to overall internet traffic may be declining.Their sample traffic consisted of a total of 264 Exabytes of data. The graph below shows the rate of decline from 2007 to 2009.

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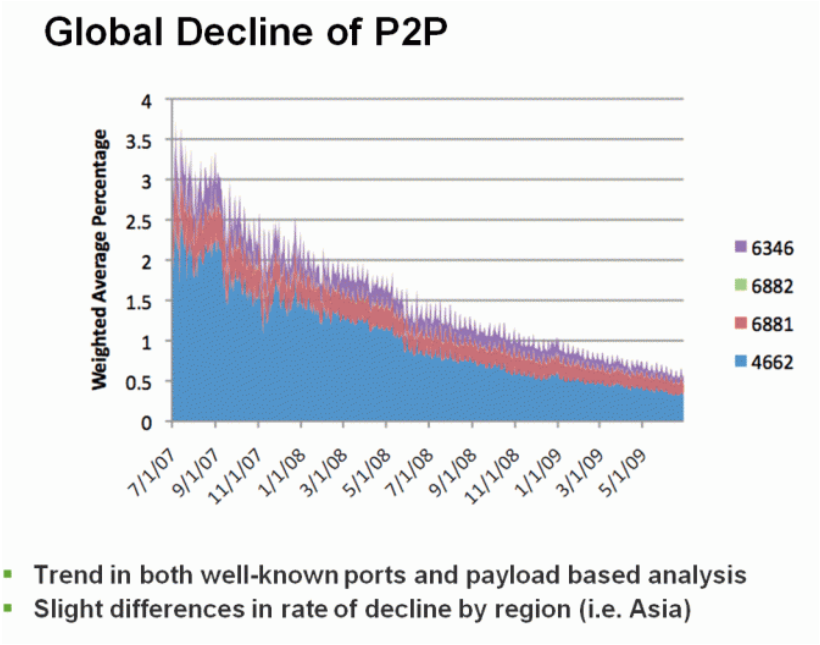
[126] The United States Government Accountability Office (2010), p. 17.
[127] The United States Government Accountability Office (2010), p. 18.
[128] The United States Government Accountability Office (2010), p. 18.
[129] KKO 2010:147.
[130] Bahanovich and Collopy (2009), p. 6.
[131] Bahanovich and Collopy (2009), p. 6.



Source: ATLAS Internet Observatory 2009 Annual Report[132]

Their data supports the conlcusion that P2P traffic does not anymore hold as dominant position as it has back in 2007; back then, according to Arbor Networls, P2P traffic accounted for some 40 percent of all Internet traffic. Two years after that there has been significant decline in P2P traffic, as it only accounted for 18 percent of the overall internet traffic.[133]

Further, Labovitz states that P2P is "increasingly eclipsed by streaming, CDN [content delivery network], and direct download".[134] The above figures do not indicate that P2P is going to be history anytime soon. Janko Roettgers cited Craig Labovitz in his article where Labovitz said that "[w]e found overall average Internet traffic growing globally at 35-45 percent annually," an continued that "[s]o the decline in P2P 'market share' is likely as much that P2P is not keeping pace with overall Internet growth as a decline in P2P traffic volumes."[135]

[132] Labovitz, McPherson, and Iekel-Johnson (2009), p. 23.
[133] Labovitz, McPherson, and Iekel-Johnson (2009), p. 22.
[134] Labovitz, McPherson, and Iekel-Johnson (2009), p. 24.
[135] Roettgers (2009), Is P2P Dead? Not So Fast.

4.5 Industry Perspective

The International Chamber of Commerce's BASCAP (Business Action to Stop Counterfeiting and Piracy) has released a study in March 2010, entitled "Building a Digital Economy: The Importance of Saving Jobs in the EU's Creative Industries". The "creative industries" in the study include recorded music, film, TV series and software. In the study, the it was noted that the value of creative industries corresponds to 6,9 % of European GDP or € 860 billion in revenues and provides employment for some 6,5 % of the European workforce, which means 14 million jobs.[136]

The study also predicts risks to European economy related to piracy. According to the study there are two possible scenarios of estimated losses until year 2015 due to piracy:

> In Scenario 1, digital piracy growth follows "file-sharing" traffic trends and assumes that piracy behaviour continues to be centred on P2P. For the same creative industries, retail losses will reach approximately €32 billion by 2015, while cumulative job losses will reach 610 000 in the EU. In Scenario 2, digital piracy growth follows "global consumer IP" traffic trends in Europe. This scenario assumes that digital piracy techniques will be further diversified and leads to retails losses equalling €56 billion in 2015 and to 1.2 million cumulative job losses by 2015.[137]

For example U2's Bono has expressed his views in a New York Times Op-Ed where he expressed his worries on unauthorized use of copyrighted content and opined that ISPs should start proactively filtering copyrighted content in their networks:

> A decade's worth of music file-sharing and swiping has made clear that the people it hurts are the creators — in this case, the young, fledgling songwriters who can't live off ticket and T-shirt sales like the least sympathetic among us — and the people this reverse Robin Hooding benefits are rich service providers, whose swollen profits perfectly mirror the lost receipts of the music business.[138]

[136] International Chamber of Commerce / BASCAP (2010), p. 17.
[137] International Chamber of Commerce / BASCAP (2010), p. 46.
[138] Bono (2010), Ten for the Next Ten.

Control requirements for ISPs raise questions with respect to other concerns such as user privacy in connection with the use of deep packet inspection (DPI); this is among the considerations that need to be taken into account, as at some point copyright protection may trump other rights, and balance between the interests of various affected parties needs to be maintained. This issue will be discussed later in this thesis.

5 Embedded Protection of Copyrighted Works

5.1 The Concept of Digital Rights Management

5.1.1 Embedded Rules

Generally the technological measures that are used to implement digital rights management systems can be divided into different categories those being (i) access and (ii) copy control with the purpose of controlling access to copyrighted works as well as restricting reproduction and other usage of those that is not authorized by the right holder. In addition to these there exist systems purporting to facilitate (iii) identifying the works so that the rights management information reveals the right holder and also possible conditions that are set for the use of the particular work; and (iv) measures taken in order to protect the authenticity of this identification data.[139] From the European perspective it has to be noted that the InfoSoc Directive does not make a distinction between (i) and (ii) while the provisions of the DMCA do.

As discussed above, the rights and restrictions can be embedded into the product itself to enable *ex ante* enforcement of copyright by code. Currently there exists no standard definition for *digital rights management*[140] (DRM) but e.g. in the final report of the

[139] Bygrave (2003), p. 420.

[140] The general concept of DRM can further be divided into two aspects:
First, *digital rights management* can be said to deal with ”the identification and description of intellectual property, rights pertaining to works and to parties involved in their creation of administration” and second, *digital management of rights* the (technical) enforcement of usage restrictions” of the content.
Cunard, Hill, Barlas, (2003) p. 4.

High Level Group on Digital Rights Management[141] appointed by the European Commission the group referred to a description, often also called ”the NIST definition” presented in a paper written by Dr. Gordon Lyon of the US National Institute of Standards and Technology[142] stating that:

> ”Digital Rights Management (DRM) is a system of information technology (IT) components and services that strive to distribute and control digital products. Product authenticity, user charges, terms-of-use and expiration of rights are typical concerns of DRM.”[143]

And in the InfoSoc Directive text, Article 6(3) gives the definition for *technological measures* that are protected under the directive, as follows:

> ”3. For the purposes of this Directive, the expression ’technological measures’ means any technology, device or component that, in the normal course of its operation, is designed to prevent or restrict acts, in respect of works or other subject-matter, which are not authorised by the rightholder of any copyright or any right related to copyright as provided for by law or the sui generis right provided for in Chapter III of Directive 96/9/EC. Technological measures shall be deemed ’effective’[144] where the use of a protected work or other subject-matter is controlled by the rightholders through application of an access control or protection process, such as encryption, scrambling or other transformation of the work or other subject-matter or a copy control mechanism, which achieves the protection objective.”[145]

The “effectiveness” of the “technological measures” is another relevant consideration. The Finnish Copyright Council has addressed the “questions of interpretation relating to the protection of technological measures referred to in Sections 50a and 50b of the Copyright Act” in its Opinion 2007:09.[146] The Council noted that the “the definition

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[141] eEurope 2005, High Level Group on Digital Rights Management.
[142] National Institute of Standards and Technology (NIST).
[143] Lyon (2001), p. 1.
[144] The copy-protection discourse got an interesting twist on May 25th, 2007 when the Helsinki District Court ruled in its judgment 07/4535 that the CSS technology used to protect DVDs is not ”effective” in the sense as defined in the Finnish Copyright Act which implements the InfoSoc Directive. According to the court CSS no longer ”achieves the protection objective” as provided in the directive. The Helsinki Court of Appeals overturned the District Court’s ruling in its judgment on 22.05.2008, in which it stated that there indeed had been an act of illegally circumventing a technological protection measure and of providing an illegal service for the circumvention of protection measures. The Supreme Court of Finland has denied leave of appeal in the CSS case on 11.12.2008. Therefore the decision made by the Helsinki Court of Appeals is final.*See*: http://www.valimaki.com/org/docs/css/ for commentary by the defendants’ counsel, Mikko Välimäki (19.07.2010).
[145] InfoSoc Directive, Article 6(3).
[146] Copyright Council (2007). Circumvention of an effective technological measure, Opinion 2007:09.

of effective TPMs is circular by nature. A protection is effective if it achieves the protection objective. If it does not, the protection is not a protection referred to in the Act"[147] For criticism on the definition of "effectiveness" they also referred to the IVIR study – The Recasting of Copyright & Related Rights for the Knowledge Economy[148] by Hugenholtz et al from 2006.[149]

Also the Commission has addressed this aspect in its explanatory memorandum concerning the proposal for the InfoSoc Directive, where it states:

> "As in the WIPO Treaties, the provision contains an element concerning the technical "effectiveness" of the measure, which his further defined in the provision. This would imply that rightholders have a duty to demonstrate the effectiveness of the technology chosen in order to obtain protection."[150]

Bechtold describes digital rights management as a general term to be used in connection with a set of technologies that are closely linked in order to secure distribution of digital content protected by copyright.[151] To achieve this various *technological protection measures* (TPMs) are used in connection with other technologies to form *digital rights management systems* (DRMS) in order to ensure that the content is used in the way intended by the rights holder.

According to the Commission's explanatory memorandum concerning the proposal for the InfoSoc Directive the anti-circumvention provisions and the protection granted should ensure establishing a secure way to offer interactive on-demand services,[152] which are explained as follows:

> Interactive "on-demand" services are characterized by the fact that a work or another subject matter stored in digital format is made permanently available to third parties interactively, i.e. in such a way that users may order from a database the music or films that they want; this is

147 Copyright Council (2007), p. 10.
148 Hugenholtz et al. (2006).
149 Copyright Council (2007) p. 10; see: Hugenholtz et al. (2006), e.g. p. 75 and 176.
150 COM(97) 628 final, p. 33.
151 Bechtold (2003), p. 3.
152 See: Schollin (2008), pp. 240-242.

> then relayed to their computer as digital signals over the Internet or other high speed networks for display or for downloading depending on the applicable license.[153]
>
> In economic terms, the interactive on demand transmission is a new form of exploitation of intellectual property. In legal terms, it is generally accepted the distribution, which only applies to the distribution of physical does not cover the act of transmission.[154]

5.1.2 DRM Technology

As discussed above, from a technological perspective, the technological measures that are used to implement digital rights management systems can be divided into different categories. To give a general description on DRM solutions, as a practical matter and in view of content usage from an end-user point of view, digital rights management systems can be roughly divided into *access* and *copy* controls.

But in addition to this, DRM solutions could be further divided into two categories, in terms of their being "closed" or "open" solutions, those being vendor-specific *proprietary* solutions where the emphasis is often considered to be put more on the robustness of the DRM system as the vendor using the proprietary solution attempts to control the entire system as well as who else may use the system so that e.g. certain content purchased online may be accessed on devices produced by different manufacturers and "*open source*" DRM solutions having their focus on interoperability instead of tying customers to certain vendors, as well as supporting fair-use. Recital 47 of the InfoSoc Directive states that:

> The protection of technological measures should ensure a secure environment for the protection of interactive on-demand services, in such a way that members may access works or other subject matter from a place and at a time individually chosen be them.

Thus, the Directive as the legislative basis for different DRM solutions is neutral in its approach as to whether the adopted technological measures should be vendor-specific or open. Traditionally, although DRM still is a rather new concept, the predominant approach to solving those issues that DRM is generally focused upon, has been a

[153] COM(97) 628 final, p. 5.
[154] COM(97) 628 final, p. 16.

closed approach. The focus with adopting DRM schemes has primarily been that of content protection. Rights management issues have not received the same attention and haven't had such an impact on end users. Several copyright scholars maintain that emphasizing content protection has adversely affected the rights of the end users by diminishing the possibilities to enjoy some exceptions to the exclusive rights of the rights holders as well as caused interoperability concerns when content originating from one vendor is technologically tied to devices offered by that same vendor. This development has likely led to discussions on "Open Digital Rights Management" (ODRM).

As said, ODRM has been suggested as an alternative to proprietary solutions in order to promote interoperability and support for fair-use. Thus far "open source" DRM solutions have not managed to attract content distributors but the solutions employed have remained proprietary. Already back in 2006, Sun Microsystems proposed an open-source DRM in the form of its DReaM initiative, which, on the Open Media Commons website, is described as being "an initiative to develop an open Digital Rights Management (DRM) solution for multiple domains (media, documents, enterprise, personal, etc.)."[155]

Sun Microsystems has been widely recognized as a proponent of open source software and thinking in terms of openness. If DRM need be employed, then, from a consumer point of view, adopting open source architecture for digital rights management could be a preferred solution as it would enable end-users to access content on different devices, even if the manufacturers had not licensed their proprietary DRM solutions to any third parties. This model could facilitate assigning rights with respect to certain content to individual users who would then choose on which devices or platforms to consume the content rather than just authorizing use of the content on certain devices.[156]

Seltzer gives critical views on this topic. In her opinion, besides claims that DRM may prohibit uses allowed by copyright law, DRM's "conflicts with open

[155] Open Media Commons.
[156] See also: Van Buskirk (2006), Reasons to Love Open-Source DRM.

development are a serious architectural flaw in anticircumvention law and policy"; in her view, an "open-source DRM" is not a logically viable concept.

> Under an anticircumvention regime, the producers of media content can authorize or deny authorization to technologies for playing their works. Open source technologies and their developers cannot logically be authorized. "Open-source DRM" is a contradiction in terms, for open source encourages user modification (and copyleft requires its availability), while DRM compels "robustness" against those same user modifications. Since DRM aims to control use of content while permitting the user to see or hear it, it can be implemented only in software or hardware that is able to override its user's wishes—and can't be hacked to do otherwise. For a DRM implementation to make any sense, therefore, its barriers against user modification of the rights management must be at least as strong as those against user access to its protected content.[157]

There are various ways to facilitate these functions using technology, including steganography e.g. "digital watermarks" for embedding the identification information; encryption e.g. for the purpose of controlling access to electronic content; and different electronic agents, "web spiders" that are used for monitoring how consumers use the content they have obtained from the vendors.[158]

Rights Expression Languages (RELs), so called *"metadata"* is used in DRM systems to define and express the rules for access and use; the rights holder can attach these machine-readable rule sets to the content, i.e. into the files themselves so that they define the ways an authorized user is allowed to use the content. One example of these RELs is the eXtensible rights Markup Language (XrML).[159] The Open Digital Rights Language (ODRL) Initiative[160] will be discussed later in this thesis. XrML "provides a universal method for securely specifying and managing rights and conditions associated with all kinds of resources including digital content as well as services."[161]

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[157] Seltzer (2009). p. 1.
[158] Bygrave (2003), pp. 420-421.
[159] XrML.org, eXtensible rights Markup Language.
[160] The Open Digital Rights Language (ODRL) Initiative: ODRL *"is an international effort aimed at developing and promoting an open standard for rights expressions. ODRL is intended to provide flexible and interoperable mechanisms to support transparent and innovative use of digital content in publishing, distributing and consuming of digital media across all sectors and communities."*
[161] XrML.org, About XrML.

RELs – e.g. XrML – allow the content providers to express the terms for approving users to ”copy, delete, modify, embed, execute, export, extract, annotate, aggregate, install, backup, loan, sell, give, lease, play, print, display, read, restore, transfer, uninstall, verify, save, obtain, issue, possess, and revoke content”; and all these can be expressed as metadata in a machine-readable form.[162] As said, these functions can be embedded into the product itself by using e.g. XrML, which is a language for expressing user-right specifications. It is described as:

> “a universal method for securely specifying and managing rights and conditions associated with all kinds of resources including digital content as well as services. […] Rights and conditions can be securely assigned at varying levels of granularity to individuals as well as groups of individuals and the parties can be authenticated. In addition, the grants/licenses can be interpreted and enforced by the consumption application. XrML is designed to be used in either single tier or multi-tier channels of distribution with the downstream rights and conditions assigned at any level. In addition, the trust environment can also be specified in the language in order to maintain the integrity of the rights and conditions.”[163]

For example “copy”, “transfer” and “loan” refer to “transfer rights” thus indicating that a user may in compliance with those assign certain rights to third parties, whereas “play” and “print” refer to “render rights” and indicate how a user may use the work in question. “Extract”, “embed” and “edit” on the other hand denote “derivative rights”, i.e. a user may in compliance with those generate new works based on the original. Discussing the characteristics of rights expression languages Akester cites Bechtold:

> “with rights expression languages such as XrML, the permission to copy, delete, modify, embed, execute, export, extract, annotate, aggregate, install, backup, loan, sell, give, lease, play, print, display, read, restore, transfer, uninstall, verify, save, obtain, issue, possess, and revoke content may be expressed in a machine–readable form. The grant of these rights may be conditioned upon a wide array of circumstances: access to and use of digital content may be restricted to certain time periods, locations, devices (for example, computers, storage media, printers, and computer displays), and to certain users. Furthermore, the number of times content may be accessed or used can be restricted. At which quality, in which

[162] Bechtold (2003), pp. 8-9; See also: Akester and Akester (2006), p. 161. The authors discuss about using RELs to allow rights to change dynamically.
[163] XrML.org, About XrML

format and for what purpose the content may be accessed may also be defined. Finally, the access and use may be conditioned upon the payment of a flat or a pay–per–use fee." [164]

5.2 Methods for Implementing Digital Rights Managements Systems

5.2.1 General on Methods

As said, DRMs can generally be characterized as a "secure packaging and delivery software designed to prevent purchasers and third parties from making unauthorized uses of digital works."[165] These technologies need to be incorporated with the product itself and when the rights related to the use of the media are managed digitally, these systems can be broadly characterized as digital rights management systems.

There exists no established standards for DRMS but some commentators have sorted different methods to employ these technologies – discussing balancing the rights of rights holders and end-users – into e.g. following categories: first, a DRM system itself could be designed to accommodate fair use of copyrighted material; second, an external decision maker might authorize would-be fair users to override DRM controls upon request; and third, there could be a combined system taking features from both previous models. Those are discussed in greater detail below.

5.2.2 Implementing Fair Use into Code

There have been several models proposed by different commentators on, if DRMs should be used, how this is to be done. Burk and Cohen have suggested that there would be three different methods for implementation; in the first one the DRM system itself could be designed to accommodate fair use of copyrighted material. In this model certain uses of the material would be defined as allowed and the restrictions programmed directly into the technical rule set that controls access to the digital copy of the copyrighted work.[166] Petrick refers to this as the "code-only" method and points

[164] Akester (2009), p. 67-68. See also: Schollin (2008), p. 206; Hugenholtz et al. (2006), p. 15-16.
[165] Burk and Cohen (2001), p. 48.
[166] Burk and Cohen (2001), p. 55.

out the iTunes software as an example of a service that has used this kind of implementation of DRM.[167]

The writers themselves seem to have a rather skeptical view of this method, as they state that ”[i]n reality, an algorithm-based approach to fair use is unlikely to accommodate even the shadow of fair use as formulated in current copyright law.”[168] Keeping in mind the commentators' point of view this might be even more true from the U.S. point of view than from the European perspective as the U.S. doctrine of ”fair use” differs somewhat from the European system, the first being primarily based on case-by-case consideration and the latter on enumerated exceptions from the rights holder's exclusive rights. Nevertheless, some of these exceptions are formulated in such a vague way that it leaves room for interpretations making it hard to construe a system based on algorithms.[169] This in practice narrows down the gap between the two approaches to user rights.

5.2.3 Key Access and Human Decision for Fair Use

In another model an external decision-maker might authorize would-be fair users to override DRM controls upon request.[170] So, the way to control the use of digital music would be implementing a DRM scheme where content would be available through key access. Thus, the consumers would apply for digital keys to be able to access the media.[171]

A human decision-maker would be involved in the process judging case-by-case whether or not to allow particular use according to user's request. This evaluation would also involve deciding whether the use would be charged for. According to Burk and Cohen this method ”build[s] in judgment capabilities that cannot practically be emulated by technical defaults.”[172] There are major obstacles for introducing this system, as this kind of a preauthorization system is vulnerable to some general

[167] Petrick (2004), p. 8.
[168] Burk and Cohen (2001), p. 55.
[169] See: Burk and Cohen (2001), p. 70.
[170] Burk and Cohen (2001), p. 59.
[171] Burk and Cohen (2001), p. 59.
[172] Burk and Cohen (2001), p. 59.

objections. On one hand a preauthorization requirement would not only be expensive but also prohibit spontaneous uses. On the other hand also the anonymity of uses would be compromised.[173]

This external human decision-maker – *a trusted third party* – would, according to the commentators' proposal, be a publicly funded institution that would be subject to scrutiny for compliance and exempted from any liability regarding copyright infringements.[174]

5.2.4 Combined Infrastructure for Fair Use

Both of the two described mechanisms for accommodating fair use with regard to DRMS have pros and cons. As automatic functionality – a coded set of rules – does not entail intervention by an external decision-maker, it is nevertheless not likely to facilitate implementing all the possible uses allowed by copyright law into the code – as described above. A third party on the other hand might afford users all the uses allowed by law but raises questions with regard to anonymity and spontaneity. Hence, Burk and Cohen suggest an infrastructure that combines the two as an optimal result.[175]

This approach combines elements from both the previous models. Another commentator terms this as the "code-plus" method.[176] Under this scheme some uses would be coded as allowed onto the file by the DRM System. In case the user wanted to use the copy in a way that is not allowed by default, he could request an access key that would permit the use of the file in a way that would circumvent the restrictions set by the rights management systems.[177]

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[173] Burk and Cohen (2001), pp. 59-60.
[174] Burk and Cohen (2001), p. 63.
[175] Burk and Cohen (2001), p. 65.
[176] Petrick (2004), p. 8.
[177] Burk and Cohen (2001), p. 65-66.

5.3 Challenges for Implementation of DRM

5.3.1 Societal Reflections

Generally the social norms in our society do not encourage stealing; people usually are willing to pay for goods and services. But – if the use of legally obtainable material is made overly restricted it will probably have an effect on tipping the scale to the other direction. It could be a mistake to treat consumers – who mostly are honest customers – like criminals and claim that they need to be supervised and that all acts of circumvention result to piracy.[178]

One commentator makes an interesting analogy to alcohol and the Prohibition in the U.S. When it was decided that ordinary people are not to possess alcohol the actual problem did not go anywhere; alcohol did not vanish. Its production, distribution and consumption just went underground. These developments sound familiar when compared to discussion around DRM. Although some things could be abused and may cause harm, it might nevertheless be beneficial for the society as a whole to ban them.[179]

Discussing digital rights management Bechtold notes that "[a]ll these technologies are used to *enforce* certain policies."[180] So far DRMs have mainly been introduced and implemented on the rights holders' and vendors' terms. The fear for piracy has made them to reduce the users' rights which combined to relatively high pricing – roughly equaling prices for content distributed in a physical form with less restrictions what comes to use – is not likely to enhance acceptance among consumers. The future of DRM-protected content is probably up to the markets to judge; whether the content producers succeed in making the content attract customers and really utilize the possibilities for price discriminating and modify their products to suit different ways to consume media and music.

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[178] For critical views on DRMs, see e.g.: Carsten (2005), Report on the 3rd DRM Conference; EPIC, Digital Rights Management and Privacy.
[179] Fisher (2007), How the RIAA views its customers: completely untrustworthy.
[180] Bechtold (2003), p. 3.

Another caveat is that while rights holders have – at least with online music stores – to some extent replicated the brick-and-mortal music store model, consumers attach a strong feeling of ownership when they acquire media in physical form. An analogy could be made from MMORPGs (Massive Multiplayer Online Role-Playing Games) where Certain analogies with respect to user attitudes may be available from a comparison to MMORPGs; according to a study on digital item trade conducted by MacInnes et al. a considerable percentage of players strongly believed that they in fact owned the digital items created by themselves within the virtual world.[181] This could possibly apply also to purchasing music online and customers – upon purchase – have a strong feeling of ownership to the content they just downloaded.

5.3.2 Contractual Implications and Markets

The idea that users have to be protected from unfair contracts is rather new as in the past a person purchasing a book did not need any further consent from the rights holder to be able to use the copy in ways sanctioned by law. Today new technology has brought new methods for distributing the content where intermediaries are no longer required. However, this kind of direct contact and the use of technology has also enabled the rights holders to strenghten their position contractually by using various licensing schemes compared to the exclusive rights they have under copyright law.[182] It should also be taken into consideration that consumers are not required to contractually waive the rights that copyright law grants to them in the form of the exceptions to the exclusive rights.

The current legislation, however, seems to have resulted to ”unleashing carte blanche protection for any and all ’technological measures’ which rightsholders may choose to adopt.”[183] ”What type of controls copyright owners will choose will, of course, depend on a variety of factors beyond the legal protections, including such considerations as availability, effectiveness, cost, and consumer acceptance.”[184]

[181] MacInnes, Park and Whang (2004), p. 9-10.
[182] Bently and Sherman (2004) 283.
[183] Esler (2002), p. 1.
[184] Reese (2003), p. 1.

5.3.3 Permitted by Copyright, Prohibited by Contract – Enforced by Code

Jane Ginsburg has stated that ”in theory, access controls are designed to protect a business model based on price discrimination according to intensity of use.”[185] In practice the situation seems to have become such that uses permitted by copyright are to a great extent prohibited by contract and this is enforced by code, which brings us to Lessig’s thesis ”code is law”.[186]

However, one has to keep in mind that code – various technological measures for protecting content – so far has become compromised at some point. This can be illustrated for example with the recent events around the HD-DVD’s DRM system.[187] In the beginning of 2007 the processing key for HD-DVD DRM was cracked. Now the key, which copyright protection technology protected by anti-circumvention provisions, is widely in distribution. The intention to technologically prevent the public from gaining ability to manufacture copies of copyrighted works has also in this occasion proven itself unsuccessful in practice.[188]

In the situation where the integrity of the technological controls is granted legal protection – as the case is both in the InfoSoc Directive and in the DMCA’s anti-circumvention provisions, the focus shifts from unauthorized use to infringing the protection granted to these technological measures. Thus, the technological constraints become effectively a substitute for law; control over the design of these measures lies in the hands of rights holders, who can as a consequence ”write their own intellectual property statute in computer code”.[189]

Schollin discusses whether the window for DRM acceptance by consumers has already closed and concludes that this might indeed be the case.[190] This could be true as the restrictions imposed on the consumers have caused their experiences to have been largely negative; DRM is also referred to as “digital restrictions management”

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185 Ginsburg (2002), p. 16.
186 See: Lessig (1999).
187 See: Singel (2007), HD DVD Battle Stakes Digg Against Futility of DRM.
188 Van Buskirk (2007 B), Lawyers: The True Beneficiaries of Copyright Law.
189 Burk and Cohen (2001), p. 51; See also: Dusollier (2005), p. 203.
190 Schollin (2008), p. 190.

and the constraints associated with this notion are usually not desirable features from the end user's perspective. Consumers also commonly perceive digital objects acquired by them as "theirs", especially if the delivery model or usage replicates real-world examples.[191]

6 The Future of DRM and the Protection of User Rights

6.1 Balancing Rights

6.1.1 Fair Use

Proactive or at least an active approach on behalf of the legislator in order to maintain the balance between rights holders and consumers is needed. As Lessig opined on anti-circumvention provisions: "[y]ou can't do indirectly (protect fair-use-denying-code protecting copyright) what you can't do directly (protect copyright without protecting fair use)."[192] As Samuelson was cited above, "*no reasonable person could contest the idea that a simpler, more comprehensible, and more balanced copyright law would be a good idea*",[193] also DRM systems are becoming increasingly complex – to the extent that the DRM schemes may be as complex as copyright law itself.[194] This may raise the question whether it would be beneficial to simplify matters.

Picturing copyright law as bargaining between copyright owners and the public, the balance of those has gradually shifted to an economic analysis of law suggesting that

[191] See also: Fairfield (2005), p. 1096 from economics perspective regarding discussion on who owns digital items: Fairfield opines that attempting to answer this question requires analyzing the concept of virtual property or digital objects and making a distinction between ownership of a copy, i.e. an item, and intellectual property rights embedded into that. To recognize virtual property rights does not mean that we at the same time eliminate intellectual property rights associated with that. The one who possesses virtual property does not have the right to copy it. But if you purchase music in whatever form, you own that copy of the music and possible the media where the data is embedded, but no more. Similarly to that situation, ownership of virtual property – a digital item – does not threaten the interests of the intellectual property rights holder – the creator or developer. Thus we grant protection to the interests of the purchaser of the item; an owner of virtual property should have the same rights as the owner of a book.
For replication of real-world examples, see: Schollin (2008), p. 178.

[192] Lessig (2001), p. 188.

[193] Samuelson (2007), p. 17.

[194] Hugenholtz et al. (2006), pp. 15-16.

copyright should be seen as a system of incentives.[195] As discussed above, the approach to recognizing the *incentives to create* was also articulated by the Assembly of the Berne Convention in the 1986 declaration. The model forms a direct relationship between the degree of copyright protection and the amount of produced works; thus, an increase in the protection granted to those works results in increased production. If one does not perceive this model as just a simplification of real world, then there is no good reason not to ask why copyrights should not be perpetual and cover all uses.[196]

Akester opines that, given the current regulatory framework for copyright, for example in the music business, the prevailing view is "that there is not an obligation to accommodate permitted acts, including privileged exceptions, through DRM."[197] As mandated by the current copyright law, rights holders ultimately decide upon the usage restrictions imposed upon user by DRM systems.

The content need not be "free" but the justifications from the industry side to the use of DRM in its current form has so far been the economic losses due to piracy and illegitimate P2P file-sharing. As some studies discussed above in this thesis suggest, this might not be that simple and the music industry could be doing more harm to itself by restricting the actions and fair use possibilities of the consumers.

6.1.2 Interoperability

An IFPI[198] representative in a W3C[199] DRM Workshop in 2001 stated regarding interoperability[200] that "[t]he recording industry sees the use of DRM technology as a vital (if optional) part of the future commerce in music. Such technology must be

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[195] Litman (2006), p. 80; *See*: Landes and Posner (1989).
[196] Litman (2006), p. 80.
[197] Akester (2009), p. 98).
[198] IFPI, International Federation of the Phonographic Industry.
[199] The World Wide Web Consortium (W3C).
[200] According to the EC one dimension of this is "[t]he ability of content to be accessed via different delivery systems – eBook Reader, PC, Television etc. This will require "platform independent standards" which will enable the different types of machine to receive or exchange the same content packages – and this must incorporate (not precede or be independent of) the International Interoperable Standard format as developed by the Content sectors." *In* The European Standards Committee (CEN) at 11.

flexible and strong enough to allow record labels to develop innovative business models that offer real value to consumers and yet prevent these business models from being subverted by the circumvention of the DRM technology. To date record labels have established relationships with different DRMs, which do not offer a seamless experience as consumers attempt to use music from different sources."[201]

One commentator of the current DRM discussion has opined that there is no need to eradicate illegal downloading of music completely in order to facilitate profitable market for the industry; a minimal level of illegal file sharing by committed pirates should be expected to remain. Nevertheless, this will not hinder the music industry from creating legitimate online services that are comparatively more attractive for consumers than their illegal competitors – illegitimate P2P file-sharing networks. The music industry can continue with their present-day strategies trying to abolish piracy but the key to adapting the business in the age of digital music distribution is to attract consumers by offering a larger selection of downloadable music compared to their illegal counterparts as well as to enable compatibility of devices that consumers use for downloading, playing, and storaging the content – music.[202]

In addition to these aspects, to be attractive a competitive marketplace should make sure that online services will offer flexibility and allow the customer to choose whether to download individual songs or the whole album. Also the price must stay at an affordable level and consumers' reasonable fair use expectations have to be met. Offering incentives, such as sponsored downloads and prizes and providing virus protection, is likely to tip the scale in favor of the legal services.[203]

6.1.3 User Privacy

One option to prevent or at least remedy copyright infringements would be to use steganography – i.e. digital watermarking technology that would provide the rights holders with means to trace a certain copy back to where it was distributed or to the copy of the work that was used to make the subsequent copies thereof, maybe even to

[201] Morrell (2001), IFPI Position Paper for the W3C DRM Workshop 22/23 January 2001.
[202] de la Torre (2006), p. 504.
[203] de la Torre (2006), p. 505.

a certain user.[204] This solution, though, would bring other complications that might hinder endorsing steganography as the solution for securing fair use rights under DRMs. Even though this approach could allow spontaneous fair uses of digital content better than various algorithms today and would be more flexible than systems requiring pre-authorization it still poses a threat to the anonymity of users. A system requiring that certain copies will be possible to link to certain users would despite its advantages pose significant risks. Hence, its legitimacy would largely depend on the implementation of the system itself in order to protect the privacy of the users engaging in fair use activities.[205]

Bygrave has opined that the developments in this area are causing concerns over maintaining consumer privacy because of the friction between their rights and those of the copyright owners and enforcement of intellectual property rights.[206] A basic difference between these two sets of rights is, simply put, that for those advocating privacy ”knowledge is power” and for rights holders ”knowledge is wealth”. Until rather lately privacy and IPRs have had rather a minuscule effect on each other in practice because traditionally the transactions have been anonymous and in cash, and the material has lacked the means to monitor and report on how it is used.[207] Now, privacy issues are also becoming increasingly important, as while consuming content, many users increasingly use various social networking services to interact with other users or service providers.[208]

A likely cause for tension between the two interests is probably the re-use of personal data if it is used for secondary purposes, i.e. uses for purposes different from those that the data was originally collected for. The primary purpose is typically the gathering of data for a certain transaction – but when that same data is later used for cross-selling or other marketing purposes it might give rise to complications especially if this is done without a prior consent from the data subject.[209]

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[204] Burk and Cohen (2001), p. 82.
[205] Burk and Cohen (2001), p. 83.
[206] Bygrave (2003), p. 418.
[207] Bygrave (2003), p. 419-420.
[208] For EU data protection law and social networking issues, see also: ENISA (2010) “Online as soon as it happens”.
[209] Bygrave (2003), p. 422.

In the European context the EC Directive on data protection from year 1995,[210] which sets the minimum requirements for data protection and the relevant domestic legislation of Member States implementing those, is to be considered in connection with the requirements of the InfoSoc Directive.[211] Also, the Directive on privacy and electronic communications from 2002,[212] needs to be taken into account. What is important here is that according to the InfoSoc Directive Article 9, its provisions shall apply ”without prejudice” to requirements set in other areas; these comprise also of ”data protection and privacy”. This can be read meaning that in effect the InfoSoc Directive does not necessarily surpass the provisions of data protection directive and the Directive on privacy and electronic communications. However, these regulatory instruments may yield to the conflicting interests protected by the InfoSoc Directive.[213]

The prevailing trend has been for major online music stores to move to non-DRM mp3 files. Despite employing less usage restrictions upon content, content vendors may still watermark the files downloaded by users so that individual files may be linked to individual users. This enables the rights holder to e.g. identify the person who has uploaded music to BitTorrent or other P2P networks. Also, if music is stored into cloud-based storages, it is possible to match the watermarking with that user’s information so that where this is successfully completed, the song plays and where not, the user is refused access to content. There have been speculations as to some rights holders possibly planning to resort to watermarking technology to control access to music instead of using DRM.[214] Nevertheless, this type of use of hidden data has notable privacy implications and should consequently always be disclosed to users so that they may make an informed decision at the time of purchase.

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[210] See: Directive 95/46/EC of the European Parliament and of the Council of 24th October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data (OJ L 281, 23rd November 1995, 31 et seq.).

[211] See: Bygrave (2003) 424.

[212] See: Directive 2002/58/EC of the European Parliament and of the Council of 12th July 2002 concerning the processing of personal dataand the protection of privacy in the electronic communications sector (OJ L 201, 31st July 2002, 37 et seq.).

[213] Bygrave (2003), p. 439.

[214] Arrington (2010), How “Dirty” MP3 Files Are A Back Door Into Cloud DRM. A list of music services selling mp3 files without embedded personal information is available at: MP3 Store Comparison Guide, http://mp3storeguide.com/.

6.2 Considerations for Future Legislation on DRM in Europe

6.2.1 Technological Changes Shaping Copyright Law

Usually copyright law has developed in steps responding to external pressures; these generally being technological changes taking place. As the rights granted to the copyright owners have expanded, and also with the recent implementation of the InfoSoc Directive, there has been skepticism about continuing expansion of copyright and the dangers this development poses to the users of copyrighted material.[215]

A High Level Group was established by the European Commission to address topical matters that have arisen in connection with digital rights management.[216] These issues were addressed as part of the eEurope 2005 Action Plan[217] as DRMS are seen as a key component of the e-content distribution chain and hence, part of the creation of a broadband market. Also the InfoSoc Directive recognizes concerns about using technological measures repressively from the user's point of view in order to prevent accessing material that falls within the exceptions that are defined to balance the copyrightand "Article 6(4) of the Information Society Directive provided for a strange, barely comprehensible, compromise"[218] in its wording, stating that:

> "4. Notwithstanding the legal protection provided for in paragraph 1, in the absence of voluntary measures taken by rightholders, including agreements between rightholders and other parties concerned, Member States shall take appropriate measures to ensure that rightholders make available to the beneficiary of an exception or limitation provided for in national law in accordance with Article 5(2)(a), (2)(c), (2)(d), (2)(e), (3)(a), (3)(b) or (3)(e) the means of benefiting from that exception or limitation, to the extent necessary to benefit from that exception or limitation and where that beneficiary has legal access to the protected work or subject-matter concerned."

[215] Bently and Sherman (2004), p. 130-131.
[216] This was was announced by the Commission in its Communication "Connecting Europe at high speed: recent developments in the sector of electronic communications", adopted on 3 February 2004..
[217] eEurope 2005 Action Plan, Communication from the Commission to the Council, the European Parliament, the European Economic And Social Committee And the Committee of the Regions, eEurope 2005: An information society for all.
[218] Bently and Sherman (2004), p. 283.

The anti-circumvention provisions and user rights – the balance between the rights of the copyright holders and the rights of the users – should be in balance. Anyway, according to recital 51 of the InfoSoc Directive:

> ”Member States should promote voluntary measures taken by rightholders, including the conclusion and implementation of agreements between rightholders and other parties concerned, to accommodate achieving the objectives of certain exceptions or limitations provided for in national law in accordance with this Directive.”

And the recital continues that:

> ”[i]n the absence of such voluntary measures or agreements within a reasonable period of time, Member States should take appropriate measures to ensure that rightholders provide beneficiaries of such exceptions or limitations with appropriate means of benefiting from them, by modifying an implemented technological measure or by other means.”

The approach chosen in the InfoSoc Directive provides for certain exceptions and limitations to copyright that are also applicable to technologically protected content. This differs from DMCA, and it has even been argued that this is their main difference.[219] This is because the DMCA ”does not introduce exception to the liability of circumvention of technological measures in a traditional sense, but rather introduces a unique legislative mechanism which foresees an ultimate responsibility on the rightholders to accommodate certain exceptions.”[220] Currently it is nevertheless unclear what should be understood with the ”voluntary measures” and what are these ”appropriate measures” that are to be taken once the previous ones have not come into reality.[221]

In 2009 the Finnish Ministry of Education appointed a committee with the task of looking into and preparing legislative means for eliminating illicit file-sharing. The committee presented their report in a publication entitled *Legislative means for eliminating illicit file-sharing* (Reports of the Ministry of Education, 2009:21) where the committee opined that the current legislation “provides for efficacious means of legal protection and means of intervening in illicit file-sharing” They also stated that

[219] Gasser and Girsberger (2004), p. 17; *See* also *Ibid*. footnote 63.
[220] Braun (2003), p. 499.
[221] Gasser and Girsberger (2004), p. 17.

"[i]t largely depends on the right holders' resources and expediency how and to what extent measures are taken against illicit file-sharing" The committee continued by concluding that as the current legislation has been in force only since January 2006 and therefore a rather short time to draw any decisive conclusions as to its effects, the efficacy of the adopted legislation should be further monitored.[222] Thus, no changes were suggested by the committee at this point.

On October 29th 2010 a new government bill (HE 235/2010) was introduced in Finland.[223] The purpose is to eliminate illicit file-sharing by providing new means of intervening in it. These would include amending the Copyright Act and the Act on the Protection of Privacy in Electronic Communications. The changes in the Act on the Protection of Privacy in Electronic Communications would include that telecom operators would be obligated to deliver notifications on behalf of copyright organizations regarding infringing content. The Copyright Act would be changed so that during a pending trial a court could order a telecom operator to disclose information on the subscriber whose internet connection is used for infringing content. It is expected that the new laws will come into force during the spring of 2011.[224]

Kristoffer Schollin, among other scholars, suggests that the on-going technological developments may bring about new challenges to copyright legislation: this could lead to a state where technological controls may surpass copyright law in terms of their impact on use of copyrighted material thus rendering copyright law (and certain exceptions to rights holders' exclusive rights) obsolete or at least secondary to technological controls.[225]

Viveca Still's book discussed the same theme, although her approach to technological controls and DRM discourse was primarily about balanced copyright where the interests of various stakeholders are appropriately taken into consideration.[226] Her

[222] Ministry of Education (2009), p. 5.
[223] HE 235/2010.
[224] Ministry of Education (2010), Luvatonta verkkojakelua pyritään vähentämään ilmoituksia lähettämällä.
[225] See: Schollin (2008).
[226] See: Still (2007).

research concerned especially “how copyright’s balance can be restored considering copyright owners’ increased power to control use through technical and contractual means, possibly backed up by the legal system.”[227]

6.2.2 Competition Law, Consumer Protection and Copyright

Välimäki and Oksanen have commented on the absence of interoperability-specific provisions under the InfoSoc Directive as the directive only addresses interoperability briefly in its Recital 54, where it is said that ”[c]ompatibility and interoperability of different systems should be encouraged.” But this is stated without any obligations to vendors to make this actually happen.[228] The authors also opine that it can be argued at a general level that proprietary DRM systems are a controversial issue both from the perspective of consumers and competitors and according to them it seems possible to apply consumer protection law if a vendor attempts to ”lock” consumers as its customers with their DRM.[229]

So far consumer protection authorities, especially in the Nordic countries have claimed that this is what Apple is trying to do with its iTunes music store and so the consumer ombudsmen have demanded Apple to open up its proprietary AAC format.[230] From the competition law point of view interoperability is not just about agreeing whether to open up the DRM or not, but how this is done and its market effects. If proprietary interoperability information is made available but the licensing terms are unduly restrictive and expensive, the competition on a full scale is not likely to occur – so, it is a matter of degree too.[231]

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[227] E-thesis, DRM och upphovsrättens obalans.
[228] Välimäki and Oksanen (2006), p. 563.
[229] Välimäki and Oksanen (2006), p. 567.
[230] See: Ibison, Terazono and Waters (2007), *Norway declares Apple’s iTunes illegal*.
[231] Välimäki and Oksanen (2006), p. 562.

6.3 Feasibility of DRM?

6.3.1 What Is the Next Step?

DRM Systems have received hard criticism because they seem to set aside the exceptions to copyright, but maybe their development will make it possible to also take the interests of the users into account. DRM – as a technological concept – is neutral and not necessarily a threat to fair use but this is a matter of technological solutions and their implementation. The design of the rights expression language plays a key role when determining to what extent the system features fair use. Thus, it is crucial that RELs incorporate semantics to also express the rights of users – not just those protecting the interests of the rights holders.[232]

Bechtold discusses the attempts that Mulligan and Burstein have made with regard to change XrML, to create a ”symmetric” REL. This means that if a content provider tried to prevent uses that fall into those categories that are within the exceptions to copyright the symmetric REL would enable the user to express his wish to engage fair use to the DRM enforcement engine. In addition to this a symmetric REL would contain mechanisms to indicate the context in which the media is used, so that the system could evaluate if the requested use is fair or not.[233]

This kind of technology could also contain some default settings that are favorable for fair use, e.g. that certain activities are always authorized in connection with particular kind of content. Additionally, employing functionalities for tracking usage patterns of individual user would not be permitted. When compared to the U.S., this might be even more feasible in the European countries where fair use is based on enumerated exemptions to copyright. This probably would not solve all the questions but would act by balancing the rights between users and rights holders.[234] For example the ODRL, which aims to promote an *open standard* for rights expression languages, is an interesting effort among the closed, proprietary alternatives as an open DRM

[232] Bechtold (2003), p. 13.
[233] Bechtold (2003), p. 13.
[234] Bechtold (2003), p. 14.

system might advance the interoperability among different content providers as well as various hardware and software developers.

6.3.2 Technology Enabling Business Models

Looking at the DRM issue from a different angle and taking the industry perspective into consideration, the ICC has recently stated that:

> "Digital rights management systems are being designed to better distribute and protect the rightsholder's investment while allowing an increased variety of terms and conditions for use of those works. It is expected that increased market implementation of such systems will increase consumer choice and availability of copyright works such as software and entertainment products in digital format and permit price points better suited to increasing the options of the consumer."[235]

Thus, DRM should have the potential of being an enabling tool instead of a restriction. One potential for the use of DRMs could be that an artist could contract directly with his audience without the need for intermediaries i.e. recording companies.[236] Esler gives an interesting example illustrating the potential for DRMs. John Anthony, a British musician made a song called "Now Time for Romance" in 1973. In the beginning he was earning some royalties but later on both he and his song became forgotten. Eventually, without him knowing about it, the song was used in two films, "The Full Monty" and "Jackie Brown".[237]

After becoming aware of this Anthony contacted the Performing Rights Society, which was administering his rights but according to them he was only entitled to £2,29 for some radio play years ago. The film royalties had accidentally been paid to another artist who had made a song with the same name. In a situation where his rights management information had been embedded into copies of the song itself this mistake would have been unlikely to have occurred. Or maybe the artist could have even automatically entered into a license agreement with those wishing to exploit his

[235] ICC (2010), p. 34.
[236] Ginsburg (2001), p. 1646-47.
[237] Esler (2002), p. 2.

work.[238] So despite the problems associated with DRMs, it also has promising characteristics. Protection is needed for proprietary material online but its form and effects are to be discussed and considered.

Currently it seems though, that copyright owners use copyright law and its new extended range to promote their own interests. Traditionally they have controlled those uses typically associated with commercial actors and most of the copyright infringement cases were tried against businesses. Today, however, the emergence of digital technology has changed the shape of the marketplace enabling anyone to become a publisher. But considering the realities for record companies they are not likely to embrace the idea of musicians and listeners contracting directly, so they try to maintain their position as the middleman distributing the content.[239]

In 2007 a British indie band, The Crimea[240] released its new album on the web. Before the release they stated on their website that the ”Secrets Of The Witching Hour, will be available from May 13. What's more, it will be available for free, forever, for you, from a secret location on the web.”[241] The Crimea apparently believed that by releasing its whole album on the internet for free they would be able to gain bigger audiences and thus generate more income through concert tickets. Additionally, their wide group of fans on the internet might also affect their negotiating position with record labels who also increasingly switch to online business due to the decrease in CD sales.[242]

Not only new forms of distribution but also different strategies for marketing have emerged. Other artists have also released their music on the web for free; for example Madonna’s song ”Hey You” was released at MSN.com on May 16, 2007 for seven days downloadable in mp3 format.[243]

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[238] Esler (2002), p. 2.
[239] Litman (2006), p. 18-19.
[240] The Crimea.
[241] The Crimea – News.
[242] Poutanen (2007), Ilmainen albumi verkossa on uutta markkinointia (A Free Album on the Web Is New Marketing).
[243] AbsoluteMadonna.com, Madonna Writes New Song ”Hey You” for Upcoming Live Earth Concert Series on July 7th.

In the long run it seems possible that the role of the record labels might also diminish somewhat as, in addition to main-stream music, also more marginal genres and bands such as The Crimea may be able to attract larger audiences than before without a contract with a record company. And the significance of independent online marketplaces in online distribution increases as those bands are able to distribute their music online without intermediaries. Also more established acts, such as Radiohead may prefer to distribute their records directly through their own website or other channels. Back in 2007 Radiohead experimented with an alternative pricing model with their album "In Rainbows". They offered the album as a download on their website and let the people downloading the "In Rainbows" to decide the price they wanted to pay for the album, including getting the album for free. Nevertheless, the band has not disclosed details of the success of their experiment.[244]

In this situation new business models for distributing electronic content are needed – and maybe also new ways of thinking about the extent of copyright protection are needed. In a multi-disciplinary paper on DRM and consumer acceptability the authors noted that there are some conditions under which the DRM based business models might succeed:

1. Only if DRM-based business models can offer real *added value*, will consumers accept them and be willing to pay for them.
2. Content providers are only just starting to experiment with new DRM-based business models. The extent to which these truly *benefit consumers is rather limited.*
3. Mainly due to *lacking interoperability*, costs of DRM systems currently seem to outweigh benefits from a consumer point of view.
4. Attractive business models for digital content *do not necessarily have to rely on DRM (alone).*[245] (*emphasis added by the author*)

A shift in the way DRM and its role is seen is needed: it should not be considered merely as a matter of copy protection but as a business model enabler facilitating multiple ways to consume. DRM systems are expensive to implement and if they in fact are no good in preventing digital content being used in ways that are illegitimate they rather dissuade consumers from buying digital content legally. Thus, the question

[244] Sandoval (2007), Radiohead criticized as band shuts down 'In Rainbows' promotion.
[245] Helberger (2005), p. 27.

arises of what they are good for. Views regarding this vary quite notably; on one hand, As Cory Doctorow says:

> ”Regarding flexible business models: while there is the theoretical possibility that DRM could enable a marketplace of infinite price discrimination, where someone who merely wants to listen to a track once pays less than someone who acquires the permanent right to listen to the same music, it should be noted that to date, DRM systems have been used exclusively to sell music with less flexibility than non-DRM equivalents at higher prices – in other words, DRM in the market is used exclusively to charge consumers more for less.”[246]

Or, on the other hand, Timo Ruikka, Vice President at Nokia, with a rather different view has noted:

> ”I found the issue of new business models and flexibility offered by DRM to be incompletely articulated in the report. I personally believe that there can be HUGE value to users in getting something less (in usage rights) than what the content industry is afraid to distribute in wide circulation (that being the freely copiable personal copy like the CD disk is today). If it is a good deal, users can accept something less than permanent and something that is less than freely transferable. This does assume that prices also come down from the early trial phase that we are witnessing now… Also, the flexibility will be in the incredible selection and in the tailoring to changing needs and tastes: having a constantly updated top 100 songs in your pocket is flexibility even if you cannot transfer any of those tracks to another device…”[247]

The music industry has seen the rise of new subscription-based services but, at large, the consumers haven’t been massively interested in it. As a commentator notes, ”[t]here's no mainstream demand for music subscriptions. The music business isn't built on long-term rentals; it's built on one hit after another.”[248] These services, like Spotify, can be easy to use, provide a vast catalogue and offer the user the opportunity to listen to all the music he might desire, thus being a notable competitor for services offering music to be bought; in Spotify this option is also available to users.

Moving forward in this area, the Digital Entertainment Content Ecosystem (DECE), an alliance consisting of nearly 60 companies, i.a. Warner Bros., NBC Universal, Sony, Fox, Microsoft, Intel, Cisco, Netflix, Adobe, DivX, is developing their own

[246] Helberger (2005), p. 28.
[247] Helberger (2005), p. 28.
[248] Kahney (2007), Why Steve Jobs Will Never Offer Music Subscriptions.

cloud-based "digital locker" system. The alliance is planning a standard for such video encryption which would make it possible for users move content between various devices so that DRM could be implemented, taking content from device to device without sacrificing DRM. The system would authenticate to a cloud-based Digital Rights Locker when user moves content to a new device, so that users wouldn't be locked to certain devices while the rights holder could still exercise their control over the content.[249]

The music industry's approach to DRM has now changed towards a wider variety of available options in models for commercializing content, including DRM-free options – like in the iTunes music store. Currently the issue seems not only to be just how DRM is used – but also whether it should be used.

6.4 Enhancing Consumer Acceptability

As the record labels insist that they are not able to compete with free content available online they are forgetting an asset they possess and that is not in distribution: they have the master recordings that were used to produce the albums. At first people were enthusiastic in getting their music on their computers and mp3 players without giving a lot of thought to sound quality. But now with increased storage space and bandwith for distribution the labels could re-master the music into a lossless-encoded version rather than mp3 that would even supersede the quality of CD sound.

This better sound could be something that consumers would be willing to pay for and it would be something not available yet on P2P networks. Featuring DRM or not, also this media would find its way to file-sharing but on the way there it would create revenues for the music companies to come up with something new – whatever that would be.[250] Consumers' willingness to buy and pay more for high-quality DRM-free content probably also would increase the price and thus, maybe give the distributor's revenues a competitive advantage over other online distributors.

[249] Cheng (2010), "Universal DRM" renamed UltraViolet.
[250] Van Buskirk (2007 C), Music Labels' Ace in the Hole.

Consumers want flexibility in the form of interoperable systems. But so far it seems as if the record companies have not been able to meet with the consumer expectations and respond in a dynamic way to changes in consumer behaviour. ”Competition among information providers may also affect the successful deployment of technical protection systems. If one information provider tightly locks up his content, a competing provider may see a business opportunity in supplying a less tightly restricted copy to customers who might otherwise buy from the first provider.”[251]

6.5 Efficiency Considerations

Eventually it all boils down to money when looking at the issue from a business perspective: is it efficient to do business using DRMs? This question can be approached through some experiences from the industry point of view. Before entering the deal with Apple’s iTunes EMI ran marketing tests by conducting experimental sales online with songs from some of their artists’ forthcoming albums as DRM-free mp3s.[252]

The best results were achieved with 4,852 European internet users to whom Relient K’s first single was sold in two formats, one being a standard-quality mp3 and the other a higher quality mp3. According to EMI they sold 10 times the number of high-quality media in comparison to standard quality. This indicates that in addition to wanting DRM-free content consumers also wish to obtain higher quality content and are willing to pay a premium price for it. Pricing of content can be used to encourage people to buy the whole album instead of cherry-picking just the desired tracks when premium pricing only applies to individual tracks, but the whole CD is offered to consumers for the regular, lower price equaling the price per track for standard quality media.[253]

Currently “cherry-picking” just the desired tracks seem to be favoured by consumers. A media measurement company, BigChampagne has introduced its new Ultimate

[251] Samuelson (1999), p. 566.
[252] Hart (2007), EMI's Last-Ditch Effort: DRM-Free Music.
[253] Hart (2007), EMI's Last-Ditch Effort: DRM-Free Music.

Chart[254], which uses the number of singles sold and songs streamed online among other factors to rank the popularity of artists instead of the traditional charts[255] based on the number of albums sold.[256]

Also the internet retailer Amazon.com has launched an online music store to compete with Apple's iTunes, which currently has a dominant market share. The company is said to have engaged into negotiations with all the four major music labels in order to bring DRM free music to their store.[257] This can be seen as a continuance to the development set in motion by Apple: in February 2007, Apple's CEO Steve Jobs in his open letter urged all major labels to drop DRM.[258] Although commentators with more cynical views claim this to be due to the pressure Apple faces from European regulators to open the FairPlay technology to other platforms.[259]

Is 100 % certainty feasible – or even possible? Or would it be better to concentrate on incentives for the consumers to pay for the content? In addition to the traditional download services another trend has emerged especially in the U.S. but in Europe too. Some providers have been experimenting with viral marketing that features P2P technology, superdistribution (i.e. users sending the content further to subsequent users) and various compensation schemes as their backbones. To take Snocap[260] as an example, they claimed to have "a vision for the digital music marketplace: to bring more music to more people through more outlets." Through their "proprietary Digital Registry, artists and labels are empowered to easily promote and sell their music through digital retailers or through their own unique artist store. In turn, these retailers have a growing inventory, offering more music to more music fans."[261]

In essence the idea was to run a centralised system that acts as a licensing and copyright management service. Snocap intended to allow both download services and P2P networks to offer digital music not only for downloading but also for sharing, but

[254] The Ultimate Chart.
[255] See e.g. Billboard 200 Chart.
[256] Plambeck (2010), Platinum Is So Passé. In iTunes Era, the Singles Count.
[257] Sabbagh (2007), Amazon set to launch online music store.
[258] Jobs (2007), Thoughts on Music.
[259] Reuters (2007), Apple seen having upper hand in music negotiations.
[260] SNOCAP.
[261] SNOCAP, About SNOCAP.

planned to simultaneously utilize a fingerprint system to make sure that only licensed content is used. Ultimately the service would have managed the payment of royalty payments due to right holders.[262]

Consumption of content – especially when it comes to music – is social by its nature; this fact results to the demand for features facilitating sharing and recommending media. The example of Snocap and various other services demonstrate that.[263] To add, in a recent interview in Wired Magazine the CBS President, Leslie Moonves was asked about the company's stance on their proprietary content on Youtube. He answered: "[y]ou have to look at it in two different ways. One is content that you will get paid for directly, and the other is promotional content. Our attitude is, either pay us for it or give us promotional value that will eventually lead to our getting paid for it."[264]

According to Richard Gooch (Director of Technology, International Federation of the Phonographic Industry), DRM is here to stay and will continue to be applied to products such as films, games and software. The only question, he said, is the extent to which it will be used in the music context: "This has to be played out in the market dynamic, as companies are undertaking experiments to find out what works in different areas."[265]

7 Diversifying Business Models and Considerations for Future Copyright Law

7.1 Current Trends Shaping the Future of Copyright Law in Europe

The Commission has outlined an action plan, the Digital Agenda for Europe,[266] where seven goals are set to deliver the benefits of the digital era. One of the seven goals outlined in the agenda is to create a new single market for digital services and content in Europe. The Commission has recognized that the volume of music downloads in

[262] Helberger (2005), p. 30.
[263] Helberger (2005), p. 31.
[264] Rose (2007), CBS Chief Isn't Worried About YouTube or Google — 'As Long as We Get Paid'.
[265] Akester (2009), p. 94.
[266] COM(2010) 245 final/2.

the US is four times the volume of those within the EU "because of the lack of legal offers and fragmented markets." The Commission therefore e.g. "intends to open up access to legal online content by simplifying copyright clearance, management and cross-border licensing."[267]

One of the perceived key problems in Europe was the *fragmented digital markets*; the Commission stated in the Digital Agenda that:

> Europe is still a patchwork of national online markets, and Europeans are prevented by solvable problems from enjoying the benefits of a digital single market. Commercial and cultural content and services need to flow across borders; this should be achieved by eliminating regulatory barriers and facilitating electronic payments and invoicing, dispute resolution and customer trust. More can and must be done under the current regulatory framework to weave a single market in the telecoms sector.[268]

The Commission concludes in the Digital Agenda that while consumers rightly expect being able to access content online just as they do offline, "Europe lacks a unified market in the content sector." To underline to scope of this problem, the Commission continues that "to set-up a pan-European service an online music store would have to negotiate with numerous rights management societies based in 27 countries." The reality within the EU is that consumers may not be able to purchase music and other content online across the EU due to the fact that the rights to do that are licensed on a national basis, separately for each member state.[269]

Further, the Commission calls for "innovative business models, through which content would be accessed and paid for in many different ways, that achieve a fair balance between right-holders' revenues and the general public's access to content and knowledge." The commission states that to put these into practice, it may not be necessary to pass new legislation but the contemplated new business models could be enabled contractually. Such developments leading to making a wide offering of legitimate content available could also work as effective measures to combat

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[267] EUROPA (2010) – Press Releases, Digital Agenda: Commission outlines action plan to boost Europe's prosperity and well-being.
[268] COM(2010) 245 final/2, p. 5.
[269] COM(2010) 245 final/2, p. 7.

piracy.[270] Therefore the Commission has tasked itself with the aim to "simplify copyright clearance, management and cross-border licensing by e.g. "[e]nhancing the governance, transparency and pan European licensing for (online) rights management by proposing a framework Directive on collective rights management by 2010."[271] This is well in line with the Commission Recommendation of May 18, 2005 on collective cross-border management of copyright and related rights for legitimate online music services (2005/737/EC).[272]

The Digital Agenda also looks into the international dimensions of online content delivery issues: The Digital Single Market in particular needs an external face because progress on many of the policy issues can only be made on an international level.[273] In this respect the Commission has tasked itself with the aim to e.g. "Work with third countries to improve international trade conditions for digital goods and services, including with regard to intellectual property rights."[274] Also Lincoff provides interesting insights on worldwide licensing.[275]

Having recognized the need to introduce multi-territorial licensing in order to improve the functioning of the internal markets in the EU, the perspective should be shifted from territorial licensing schemes to enabling EU-wide cross-border licensing. Also the Commission has said in the Reflection Document of October 2009 that "[a] wide and competitive Digital Content Market consisting of legal services, attractive offers and fair conditions would raise consumer confidence in online businesses and foster access to culture and knowledge across the EU".[276]

While a need to modernize the current EU copyright policy and legal framework to European digital markets making them more efficient and competitive has been

[270] COM(2010) 245 final/2, p. 8.
[271] COM(2010) 245 final/2, p. 9.
[272] 2005/737/EC, Commission Recommendation of 18 May 2005 on collective cross-border management of copyright and related rights for legitimate online music services.
[273] COM(2010) 245 final/2, p. 34.
[274] COM(2010) 245 final/2, p. 34.
[275] Lincoff (2008), pp. 49-51.
[276] A Reflection Document of DG INFSO and DG MARKT: "Creative Content in a European Digital Single Market: Challenges for the Future", p. 14.

recognized,[277] as a practical matter, there should be no legal obstacles for making this a reality, as both in international treaties in the field of intellectual property as well as relevant EU legislation, questions concerning rights licensing are primarily within the sphere of contractual freedom. The Berne Convention Articles 6bis and 14bis (2) (b) also state that economic rights may be freely assigned by the rights holders.

The Roundtable on the Online Distribution of Music on October 19,2009, which was chaired by Neelie Kroes, the Commissioner for Competition, produced a joint statement where the participants set out general principles concerning the future of online music distribution in Europe. The Roundtable participants included Amazon, BEUC, EMI, iTunes, Nokia, PRS for Music, SACEM, STIM and Universal. After the Rountable, some of the participants made a joint statement purporting to announce certain steps which would lead to improvements in European counsumers' access to online music. The joint statement provided that the parties:

- committed to pursuing new EU licensing platforms comprising the repertoires of several collecting societies. These platforms should consolidate the widest possible repertoire in their catalogues and should be based on voluntary cooperation among right owners,
- agreed that collective rights managers should adhere to certain objective, transparent and non-discriminatory criteria to allow other entities to deliver multi-territorial licences,
- set up a working group to create a common framework for the identification and exchange of rights ownership information. This will make it easier for commercial users to identify the relevant right owners and secure the necessary rights.[278]

The EU has also initiated a public consultation on "Content Online" 2009-2010 where it was recognized that obstacles for online delivery exist and "illegal downloads on a

[277] Communication on Creative Content Online in the Single Market, COM (2007) 836 final: "A significant move occurred within the framework of the i2010 strategy, presented by the European Commission in June 2005 as the new initiative for EU policy for the Information Society and media for the years up to 2010. Several initiatives relevant to intellectual property in general, and copyright in particular, have been taken in this context. With a view to supporting and encouraging the development of creative content online services in Europe, the Commission launched a public consultation on "Content Online in the Single Market" in July 2006, complemented by an independent study on "Interactive Content and Convergence". This process resulted in the Communication from the Commission on Creative Content Online in the Single Market of 3 January 2008."

[278] Europa, Press Release, Competition: Commission's Online Roundtable on Music opens way to improved online music opportunities for European consumer.

large scale can jeopardize the development of an economically viable single market for digital content. Finally, there needs to be much more encouragement for legal cross-border offers."[279]

To genuinely improve the competitiveness and efficiency of the European content sector and to create a functional digital single market, the scope should be shifted from concentrating on the level of protection, to facilitating access in a commercially feasible way online. The EU and the governments have, as discussed in the 2008 OECD policy guidance document cited above, a role in developing "enabling factors" to support development of economy. Also the IVIR Study "The Recasting of Copyright and Related Rights for the Knowledge Economy" pointed this out, as follows: "[o]ne might even go a step further and argue that the process of harmonization, which has led almost inevitably to approximation at the highest level of protection found in the EU, has had a detrimental effect on the internal market by creating more and further-reaching rights that are exercised at the national level, and therefore serve as obstacles to the free movement of goods and services."[280]

A good recap on the discourse on copyright and the internet is the views provided in ICC's "Intellectual Property Roadmap for Business and Policy Makers - Current and emerging intellectual property issues for business".[281] Already in the preface the authors conclude that "[t]he most striking changes are those resulting from the impact of new technologies on society and business."[282]

7.2 Current Trends in the Music Business

The latest figures from IFPI (International Federation of the Phonographic Industry), an organization representing the recording industry worldwide, show that while recorded music revenues saw a decline of 7 % in 2009 globally, certain individual markets saw also growth and digital sales is the key driver in the path to increased sales and revenues. The recording industry revenues worldwide saw a fall of 3.2 % in

[279] European Commission, Public consultation on "Content Online" 2009-2010.
[280] Hugenholtz et al. (2006), p. 22.
[281] ICC (2010).
[282] ICC (2010), p. v.

2009 when the US and Japan are excluded.[283] To some extent this can probably be attributed to the economic downturn affecting e.g. the US markets.

Physical sales of recorded music declined by 12,7% worldwide. In contrast to those figures, digital sales of recorded music increased by 9 % in 2009. The rise in digital sales has led to the current value of digital music market to cumulate so that it is now more than ten-fold compared to the digital market value back in 2004. According to IFPI, 25,3% of revenues come from digital music distribution channels globally; in the US, digital music market accounts for 43% of the recorded music revenues. Digital sales have seen strong growth in 2009: in excess of 30 countries the growth rates were double-digit figures, and in a total of 17 markets, including Argentina, Australia, Austria, Denmark, Finland, Singapore, Sweden and UK, the growth exceeded 40%.[284]

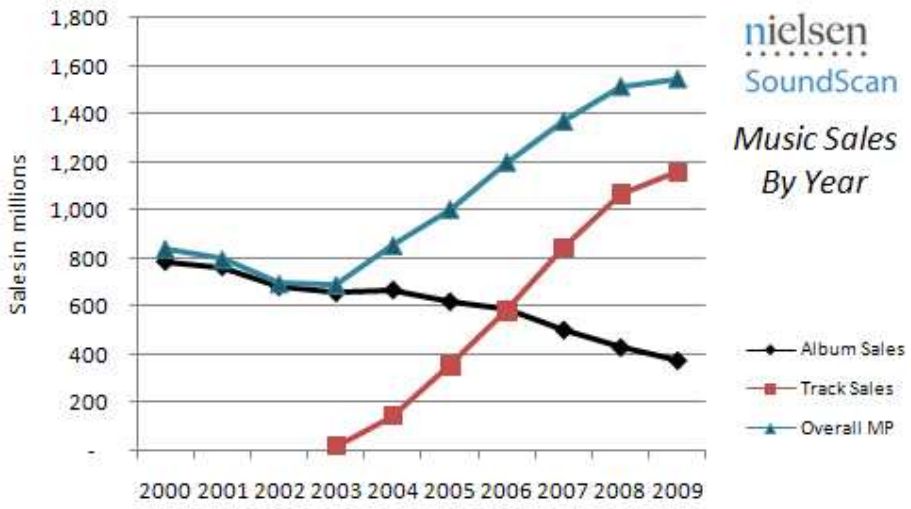
The IFPI Digital Music Report 2010 further clarifies the developments behind the figures and goes on describing the developments concerning digital music distribution. Whereas there were less than 50 licensed digital music services in the year 2003, in 2009 the number of licensed digital music services for legitimately obtaining content online exceeds 400 services. Simultaneously the catalog available in those digital music services has increased from 1 million tracks in 2003 to more than 12 million tracks in 2009.[285]

The past years have, in addition to the growth in numbers, also seen diversification of business models; so the variety of different types of services available for consumers has also seen a rise. According to the IFPI Digital Music Report 2010, three key developments characterize the year 2009, those being: “the roll-out of more DRM-free services, continued growth in digital album offerings and the introduction of variable pricing.”[286] IFPI summarized the state of affairs by stating that “[n]ew

[283] IFPI (2010 A), IFPI publishes Recording Industry in Numbers 2010.
[284] IFPI (2010 A), IFPI publishes Recording Industry in Numbers 2010.
[285] IFPI (2010 B), p. 6.
[286] IFPI (2010 B), p. 8.

licensing deals help push digital music sales to 27% of global revenues - but piracy is damaging investment in artists"[287]

Looking back, according to the RIAA[288] there has been a growth in digital music formats already during the year 2006, with 586 million digital singles downloaded, which amounts to a 60 percent increase when compared to 2005. There were also 28 million albums downloaded, an increase of 103 percent. The industry's revenues gained from various mobile formats grew to $775 million with an 84 percent increase and subscription service revenues totaled to $206 million, showing a 38 percent increase versus the year before. The declin e in physical sales was, according to the RIAA 2006 Shipment Report, partially compensated for by the growth gained in digital revenues.[289] Currently, in the US, according to Nielsen "digital music accounts for 40% of all music purchases in 2009; up from 32% in 2008".[290] The below graph provides an overview of the music industry developments in the US during the past decade (years 2000 – 2009):



Source: The Nielsen Company (2010).[291]

[287] IFPI (2010 A), IFPI publishes Recording Industry in Numbers 2010,
[288] The Recording Industry Association of America (RIAA).
[289] RIAA, 2006 Shipment Report.
[290] The Nielsen Company (2010), p. 4.
[291] The Nielsen Company (2010), p. 7.

7.3 Paradigm Shift and Social Aspects of Music Consumption

In the internet interaction, shared experiences and sharing between peers is a key paradigm. In his article Peter Troxler suggests an interesting model where creative industries may develop and implement a business model around open content. One of his examples is Nine Inch Nails, an American industrial rock band which has chosen a non-traditional way to monetize their music. They have released The Slip, their album from 2008, under a Creative Commons Attribution-Non Commercial-Share Alike license for free. The free download version features 10 of the total of 36 songs included on the whole album. The full version of the album is available in various paid-for options. People may download the full version for $5. And as an alternative there are different versions of the album in a physical format, including an "individually numbered 2 disc, 6 panel digipak" and a "gatefold vinyl release [that] contains 1 LP (180 gram vinyl) and a 24-page booklet".[292]

Consumers' experiencing added value from such offerings is backed by findings from a 2009 study from the University of Hertfordshire where the authors suggest that despite using digital music services, at least the people in their focus group (14-24 year-olds) still "want to own music on physical formats".[293] Even though 85% of the surveyed P2P downloaders said they are willing to paying for an unlimited "all-you-can-eat MP3 download service", 78% of them also said that they would not be interested in paying for streaming music online.[294]

A paradigm shift in business models may include a shift from restricting use to licensing access. Spotify and YouTube are examples of services where content distribution is not based on selling units but instead of monetizing consumption. On-demand services employing an access-based model for content distribution are seen as a compelling offering. Here it should also be noted that the majority of consumers are not willing to pay for digital music, at least not based on the subscription model and thus e.g. subsidies as an alternative model for payments should be considered.[295]

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[292] Troxler (2009).
[293] Bahanovich and Collopy (2009), p. 6.
[294] Bahanovich and Collopy (2009), p. 6.
[295] PaidContent (2010), The Key To Making Free Music Services Work.

A Forrester Research analyst, Mark Mulligan, has opined that ”free music services will get there, but only as a part of a three-tier monetization hierarchy” In this model the first tier would be the premium, which would offer the highest average revenue per unit (ARPU) but would remain the smallest in size. The second tier would be subsidized services where telecoms and device manufacturers can include the cost of the content or service either partially or entirely into the product or service offered to the end-user. This would be the best alternative in terms of balance of scale and ARPU. The third tier would be ad supported offerings which may reach the widest audiences but also have the lowest ARPU.[296]

“Music access” is seen as a compelling legitimate alternative to piracy. Music is bundled[297] with services and devices, or offered at no cost to the consumer on an advertising-supported basis. This low “average revenue per user” and high volume approach is seen as one of many hybrid revenue models rather than a single model for the future.[298] Also Shira Perlmutter, the IFPI Head of Global Policy stated at the IFCLA 2010 conference held in Helsinki (June 11,2010) that "[w]e want to make sure that consumers have a lot of choice of legal alternatives for music online."

Considering ad backed content distribution, Lady Gaga has become the first artist to have her music videos viewed over one billion times online. All combined, the views of her videos exceed one billion.[299] Monetizing the attention is possible as YouTube monitors proprietary content on its service and their Content Management tools give rights holders a way of controlling the use of their content online, on YouTube. Rights holders may e.g. “Identify user-uploaded videos comprised entirely OR partially of their content” and “[c]hoose, in advance, what they want to happen when those videos are found. Make money from them. Get stats on them. Or block them from YouTube altogether.”[300] The Economist also summed up rather well the

[296] PaidContent (2010), The Key To Making Free Music Services Work.
[297] O'Hear (2010), Spotify signs exclusive deal with Finnish telco TeliaSonera for its Premium offering.
[298] IFPI (2010 B), p. 5.
[299] Axon (2010), Lady Gaga First Artist with One Billion Online Video Views.
[300] YouTube, Content ID. See Margaret Stewart, YouTube's head of user experience, talk on TED: http://www.ted.com/talks/margaret_stewart_how_youtube_thinks_about_copyright.html; upon detection, rights holder may choose to have the content rememoved or monetize it by placing ads in the context of the video where the music is used.

fragmentation and different monetization strategies: "[s]ome will find a way of profiting from scale, while others will carve out dedicated audiences and lucrative niches. There need not be a single right way to do things."[301]

In a recent article by Accenture, "Content and the Cloud", the consultancy company found that content consumption is increasingly on-demand-based and that emerging cloud computing has high potential to make an impact on the future ways for consuming content. As "Apple's iPod device and iTunes delivery system set a standard that captured consumers and completely altered the business model", now cloud computing could have a sizeable impact on future delivery methods. In the paper it was found that people consume content through a wide variety of channels and that leveraging this multi-channel approach means the need to adopt a business model enabling service providers to "recoup revenue from a highly segmented audience".[302]

The 2009 Accenture Global Content Study surveyed industry executives who pointed to a common conclusion: future revenue growth in the multi-device world depends on delivering the right quality and genre of content to the right consumers over the right platform. This requires, firstly, deep customer insight to develop and target offerings across the relevant delivery channels; and secondly, the ability to serve those channels at low marginal cost, which provides for a scaleable infrastructure for content delivery.[303] Nevertheless, an alternative view on cloud-based distribution, as discussed above provides that "multiple device usage is niche in the extreme," perhaps as much a challenge as an opportunity for cloud-focused entrants.[304]

Given the developments taking place in the market place, a need to better adjust revenue models to the changes we're seeing in the society can be recognized. In 1998 the authors cited below recognized the value of experiences, as opposed to only products, to customers. They state that *"[a]n experience occurs when a company intentionally uses services as the stage, and goods as props, to engage individual*

[301] The Economist (2010), Charging for content: Media's two tribes.
[302] Accenture (2010), p.1.
[303] Accenture (2010), p. 1.
[304] Digital Music News (2010), Forrester: This Multi-Device Mania Thing Is a Myth...

customers in a way that creates a memorable event. Commodities are fungible, goods tangible, services intangible, and experiences memorable."[305]

Experiences can be characterized as the next step in the progression of economic value; experiences combined with companies' traditional offerings to improve their sales.[306] Here, the experience of consuming the media could be more valuable to the customers than the service of being merely delivered the media for subsequent consumption. E.g. Spotify adds a social layer to music listening, compared with CDs or music download services, where it is possible to share playlists online.

8. Concluding Remarks

8.1 Conclusions

DRM makes price discriminating possible and thus features differing products according to end-users' tastes and ways to consume: single-use etc. It also enables vendors to distribute content to preview and for promotional purposes. Nevertheless, vendors need to be sensitive to customers' expectations. DRMs in – at least in their present form – may be a technology of a transitional period introduced by an industry that is trying to stick to the old ways while things around are drastically changing. As a historical analogy, the introduction of firearms in the battlefield led to increased efficiency of troops – and thus, to increased losses rendering the traditional tactics inefficient. Maybe there is a need for music industry to reassess their strategy. The rights management technology has the potential for lowering both transaction costs regarding the distribution of digital media and making enforcement of protected rights more efficient. Nevertheless also in this situation fair use rights provided by copyright law need to be taken into account.

With respect to private copying and "fair compensation" for the use of copyrighted works, in the Infosoc Directive recital 35 levies on digital devices and media are discussed in connection with DRM/TPM schemes. The recital provides that no double

[305] Pine and Gilmore(1998), Welcome to the Experience Economy.
[306] Pine and Gilmore(1998), Welcome to the Experience Economy.

fees on consumers should be imposed when private copying is managed through DRM and private copying is technically prevented. More specifically, recital 35 provides that “rightholders should receive fair compensation to compensate them adequately for the use made of their protected works or other subject-matter” but also states that “[i]n cases where rightholders have already received payment in some other form, for instance as part of a license fee, no specific or separate payment may be due. The level of fair compensation should take full account of the degree of use of technological protection measures referred to in this Directive.”

No bullet-proof systems exist so far; it is more about making users aware of engaging in unauthorized activities. If the goal is to achieve 100 % certainty of people not being able to access or copy digital content, this might prove to be ”fighting against windmills” resembling the quest of Don Quixote de la Mancha; maybe this disillusionment will vanish. In this regard – as in a society in general – a certain level of illegal activity or borderline cases is to be expected to occur but it is doubtful that those would make the society unable to function or deprive the creators their incentives to create. Looking at the other side of this activity it might also function as testing the limits for fair use. In Europe one aspect to consider is also whether the lack of interoperability between DRM systems and the incompatibility of different devices caused by that, result to a barrier to trade within the internal market, which indeed might be the case here.

So far online download services have offered content with their own proprietary DRM protection, which effectively locks down their customers to use certain software and possibly even hardware to play the music. More than about copyright protection, this gives the impression of attempting to secure market shares. With lots of negotiations and changes taking place regarding online distribution of music it will be interesting to see what is the fate of DRM systems in this sector; the technology has advantages as well as disadvantages just like any other technology but eventually it is a business decision for the record labels and distributors whether or not to implement DRM in their media. Of course creators and other rights holders need protection and incentives to create but on the other hand: is locking up the content the best – the most efficient way to deal with these risks? Because by locking up their content they effectively lock themselves outside the market.

One central aspect in this regard is to note that when we discuss DRM, there are no separate "digital rights" and everything needs to be drawn from the copyright legislation. Naturally, copyright needs to be protected but while doing that the balance between the rights of the copyright owners and the users needs to be kept in mind. How to best regulate the intersection of copyright and technology? Like one author expressed it: "*[i]n this brave new world of potentially perfect control, issues of privacy, free speech and consumer protection must also be considered. Allowed to proceed unchecked, technological 'self-help' may dry up much of the common well of information and knowledge which copyright was originally created to protect.*"[307]

8.2 Suggestions

Online music service providers assume contractual freedom by default as the legal methodology applied to confirm their control over content and make their protection later on certain. Use of content obtained through licensed services is regulated by their Terms of Service to declare the company's claims regarding ownership and intellectual property rights over content and activity by consumers – the end-users e.g. with respect to transferring the content to different platforms. One solution to this situation in European context would be to apply the European mixed mode of regulation comprising industry self-regulation, such as codes of conduct for online services and establishing harmonizing regulatory instruments at the Union level to protect the end-users' rights in order to maintain the balance between creators and users of creative contents.

In order for rights holders to be able to efficiently commercially exploit their content, it should be possible to make it available on current and future media platforms. This way it can be ensured that various consumer groups with varying preferences as to their media consumption can be reached. On the other hand, content should be made available on various markets – and especially in the EU across borders to facilitate efficient functioning of a digital single-market. Such availability requires efficient rights clearance systems. All these contribute to services that aim to live up to consumers' expectations, making content available easily and at competitive prices

[307] Esler (2002), pp. 1-2.

and offer users freedoms that facilitate various use cases so that consumers are not tied to only use content on e.g. certain devices.

Eventually it boils down to finding an economically feasible business model. If online music services fail to live up to consumers' expectations and deliver the value and experiences that users desire, the level of protection granted to creative content and the various technological protection measures – the DRM schemes and such – may well prove an insufficient answer to the worries the music industry has today with respect to declining revenues if the product they are willing to deliver does not attract users. That is to say, that to captivate customers, services need to get traction from a compelling value proposition.

At this point, given for example the number of countries participating in the ACTA negotiations, it may not be likely that such a consensus could be found among a larger group that establishing a novel, digital transmission right, as discussed by Lincoff, or such could be agreed upon. And, as also the Finnish Ministry of Education has concluded in its 2009 report, entitled "Legislative means for eliminating illicit file-sharing", the current legislation is so new that its impacts should be studied more in order to determine its efficacy and how better to tackle illegal P2P – as well as how to better manage rights related to creative content online. Currently, in my opinion, an emphasis should be put on making the current rights management system function more efficiently, i.e. leveraging the potential of digital single-market within the EU and possibly studying the possibility of even worldwide licensing mechanisms.

This study suggests that instead of increasing the level of copyright protection, a more beneficial approach both for the rights holders and the users could be one where the existing rights are utilized more efficiently, meaning cross-border licensing and employing new models for content delivery. In order for rights holders to be able to efficiently commercially exploit their content, it should be possible to make it available on current and future media platforms. This way it can be ensured that various consumer groups with varying preferences as to their media consumption can be reached. On the other hand, content should be made available on various markets – and especially in the EU across borders to facilitate efficient functioning of a digital single-market. Such availability requires efficient rights clearance systems. All these

contribute to services that aim to live up to consumers' expectations, making content available easily and at competitive prices and offers users freedoms that facilitate various use cases so that consumers are not tied to only use content on e.g. certain devices. All in all, making music ubiquitous and licensing access instead of restricting use is among the key considerations in making digital sales and efficient exploiting of creative content take off.

* * *

”Innovation makes enemies of all those who prospered under the old regime, and only lukewarm support is forthcoming from those who would prosper under the new. Their support is indifferent partly from fear and partly because they are generally incredulous, never really trusting new things unless they have tested them by experience.”

- Niccolò Machiavelli
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