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TRUCE IN THE COPYRIGHT WAR? THE PROS AND CONS OF COPYRIGHT COMPENSATION SYSTEMS FOR DIGITAL USE

CHRISTIAN HANDKE, JOÃO PEDRO QUINTAIS AND BODÓ BALÁZS

ABSTRACT. This paper discusses copyright compensation systems (CCS) – that provide licenses for downloading and non-commercial use of copyright works in return for a fee – in the light of welfare economics and transaction cost economics. Recent empirical studies suggest that CCS could improve social welfare at least for recorded music. The general theme of the theoretical discussion in this paper is a simplicity-flexibility trade-off. On the one hand, CCS seek to reduce the costs of administering and trading copyrights online. On the other hand, standard copyright licenses distort the market mechanism. This paper discusses the costs and benefits of various CCS proposals compared to alternative ways of managing copyright online.

1. INTRODUCTION

Rights holders have found it difficult to enforce exclusive rights in the ‘digital realm’. One alternative to copyright enforcement are copyright compensation systems (CCS), extending and adapting the system of private copying levies to cover Internet subscription. For over fifty years, in some territories surcharges have applied to sales of many tangible copying technologies – from blank music cassettes to DVDs, from VHS players to printing hardware – with the receipts collected and distributed among rights holders by copyright collective rights management organizations (CMO; for instance ASCAP in the USA or GEMA in Germany). In essence, these copying levies do not focus on controlling the use of copyright works but on raising compensatory income to right holders, where works are used in ways that are costly to monitor and control.¹ Today, private copying levies are common in major economies,

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¹Grassmuck and Stalder (2003) contains a summary of the early literature. Quintais (2017) presents a thorough, recent overview with a particular emphasis on legal considerations.

such as the USA, Canada and the majority of European countries (WIPO 2013).² With the diffusion of Internet access among private households, which often facilitates the dissemination of copyright works, legal scholars in particular have debated whether CCS should apply to different types of online use and target Internet subscriptions.

The few economists touching on the subject so far have been sceptical, and no CCS on Internet subscriptions have been introduced as yet. However, the protracted and divisive struggle over enforcing copyrights online – the copyright wars alluded to in our title – make CCS as an alternative to copyright enforcement more appealing. This paper discusses core attributes of CCS in the light of welfare economics and transaction cost economics. The general theme of the discussion is a simplicity-flexibility trade-off. On the one hand, CCS seek to reduce the costs of administering and trading copyrights online (which often seem prohibitively high with individual rights management). To do so, CCS arrangements would ideally be simple, general and permanent. On the other hand, standardizing and centralizing terms of copyright licenses with a CCS distort the market mechanism, as they replace the individual setting of prices and terms of trade. By laying out the costs and benefits of various CCS proposals, this paper seeks to inform the debate on whether – and under what circumstances – CCS are the best available way to resolve current copyright conundrums in the digital realm.

2. WHAT ARE COPYRIGHT COMPENSATION SYSTEMS?

CCS are a type of copyright management where the liability to pay royalties is not established by the use of copyright works itself. Instead payments become due with acquisition or use of more excludable, related goods and services (such as copying hardware or Internet subscription) or even through general taxation. Therefore, CCS are not directly concerned with the exclusivity of rights holders, nor with any obligation of the public to safeguard it.³

²In the EU, the private copying levy system is based on art. 5(2)(b) of Directive 2001/29/EC (OJ L 167, 22.06.2001 P. 0010 - 0019).

³Lessig (2002) refers to this approach as “compensation without control”.

The essential benefit of a CCS is that it generates rewards to rights holders for use of copyright works, where enforcement costs are too high to allow for direct market transactions.⁴ CCS can thus help sustain socially adequate incentives to create new works that have public good attributes (Gordon and Bone 1998; Towse et al. 2008). Another potential benefit is that CCS may reduce the risk of costly legal disputes for rights holders, users and suppliers of ICT and telecommunication services (Kingston 1995). The latter benefit requires CCS to establish legal immunity for participating users. With lower transaction costs and reduced legal risk, a CCS could also improve the utilization of existing works. In most countries, however, private copying levies do not legalize copying from unlawful sources, for instance from unauthorized peer-to-peer networks, and therefore do not establish legal certainty for common online activities by users (Quintais 2015).

Proposed CCS typically differ from private ordering – where individual rights holders transact directly with specific users – in two respects. First, they establish standardized terms for copyright licenses. For the general costs and benefits of standards, see Blind (2004) and Meeks and Swann (2006). Second, a CCS requires an organization that sets standard terms and administers copyrights. That is, CCS are a type of joint, standardized administration of a range of copyrights that is common-place with CMO, also known as collecting societies (Gervais 2010).⁵ Most CCS proposals are simply suggesting joint administration of copyrights for specific uses online. Arkenbout, van Dijk and van Wijck (2004) have argued that CMO may play a greater role with digitization. For surveys of the literature on collective copyright management, see Handke and Towse (2007) and Handke (2014). As a rule, CMO already

⁴The total costs to society of enforcing copyrights include any clash with fundamental rights such privacy, freedom of expression (online) for end-users and freedom to conduct a business for commercial users. These rights can be found, e.g., in arts. 7, 11 and 16 of the Charter of Fundamental Rights of the European Union. See Bracha and Syed (2014) for a theoretical framework that integrates the utilitarian and deontological copyright discourses.

⁵We use the term joint administration in the following – rather than collective administration – as it is not a given that the core services related to a CCS are operated by collectives of rights holders. Importantly, where the intermediary organization conducting a CCS is not operating under collective control of rights holders, the system is less distinguishable from private ordering.

administer some of their members' online rights, mostly for non-exclusive commercial use.⁶ CCS proposals predominantly concern private end-users and would change how the liability to pay royalties is established.

3. LITERATURE

3.1. The economics of copyright. Important elements of creative works tend to be non-excludable and non-rival in consumption. Rational copyright policy thus needs to strike a balance between the underproduction of new creative works and the underutilization of existing works (Novos and Waldman 1984).

A number of other market conditions affect the case for copyright. On the one hand, markets for copyrights are complex, with extensive product differentiation, incomplete product searches and differentiated preferences. This is associated with high transaction costs. Demand conditions regarding specific works are volatile and unpredictable (Baumol 1986; Kretschmer, Klimis and Choi 1999; Caves 2000; Towse 2003). Uncertainty and problems with non-excludability are aggravated by the typical cost structure of copyright industries, with high up-front costs of creating new works and low, non-increasing costs of reproducing and disseminating existing works.

These conditions bear on the welfare analysis related to copyright. First and foremost, copyright seeks to mitigate inefficiency due to one source of market failure (non-excludability) by aggravating another source of market failure (market power of rights holders).⁷ From a standard welfare economics perspective, copyright fights fire with fire. Therefore, copyright is generally a second-best option (Lipsev and Lancaster 1956; Towse, Handke and Stepan 2008)

⁶In the EU, some major rights holders have effectively withdrawn online rights from the conventional collective administration system based on interacting national monopolies, opting for bilateral contracts and joint ventures with a single CMO to administer their rights in multiple territories.

⁷Under perfect competition and marginal cost pricing, suppliers of quasi-public creative works cannot recover the sunk costs of creation. Investments in the creation of new works will fall below their socially desirable level. It is an intended effect of copyright to endow rights holders with some market power, so that they can charge prices above marginal costs.

under market conditions that make the first-best situation of a statically optimal, perfectly competitive market unattainable.

According to the general theory of second-best (Lipsey and Lancaster 1956), a reduction of one source of market failure does not reliably generate a welfare enhancing allocation of resources in the presence of other market failures. It follows that copyright systems are not appropriately evaluated in comparison to the ideal of a perfectly competitive market. Any copyright system will be socially inferior compared to the theoretical ideal of a perfect market, and it is no conclusive criticism of any copyright system that it does not approximate such a perfect market. Copyright policy needs to approximate the best available trade-off between irreconcilable objectives.

Another basic point is sometimes overlooked: establishing exclusive rights to inexcludable aspects of creative works takes up valuable resources that have alternative uses. In this sense, *exclusivity needs to be produced*. Landes and Posner (1989), for example, address copyright protection in terms of a production function, applying the standard assumption of decreasing marginal utility of investments in copyright protection. Government provision of copyright protection does not resolve that problem. Production of exclusivity by governments needs to be funded through taxes, which will distort the allocation of resources through markets (Blaug 2003).

Current legislation has provided rights holders with considerable scope to enforce copyrights. Rational rights holders invest in copyright enforcement up to the point where their expected private returns exceed costs. Specific enforcement measures vary widely between territories and have included: (1) injunctions against firms whose goods and/or services are related to copyright infringements; (2) cease and desist notices to firms or private households (sometimes including settlement agreements); (3) notice-and-takedown requests directed at online platforms for hosting allegedly infringing content; and (4) application of technical protection measures (TPM) aimed at preventing unauthorized copying or access to content. TPM

is currently common in streaming services for recorded music and audio-visual entertainment in many countries. Other ambitious, privately funded TPM – such as the iTunes store’s Fair-Play technology – have been abandoned. Persistent lobbying from rights holders for additional public enforcement measures (such as in the case of ACTA and TTIP), as well as for additional liability for online intermediaries,⁸ suggest that rights holders are dissatisfied with the level, costs and effectiveness of copyright enforcement they are able to generate themselves.

The state can adopt and mix several types of approaches to relate to digital use of copyright works, such as a *laissez faire* approach, legal and judicial support to private actions of various types, or more direct provision of related services (see also Arkenbout, van Dijk and van Wijck 2004). It seems the main state intervention considered and discussed over recent years is greater public investment in copyright enforcement online, often coupled with additional obligations on online intermediaries. The adoption of the ‘Enforcement’ Directive in the EU, the French HADOPI-run graduated response system and specific provisions in the UK Digital Economy Act are cases in point.⁹ However, establishing exclusive rights to creative works takes up scarce resources. If the government is to take on the production of excludability of copyright works online, one question is why this task should be any less costly if the public provides for it. Another question is how governments would identify an efficient level of excludability.¹⁰

⁸See European Commission, 14 September 2016, Proposal for a Directive of the European Parliament and of the Council on Copyright in the Digital Single Market, Doc. COM (2016) 593 final. Article 13 of this proposal places a series of additional obligations on online platform providers to impose filtering measures on content uploaded by users, while simultaneously reducing the scope of the liability immunity (or safe-harbor) for hosting providers available under Article 14 of the E-Commerce Directive (Directive 2000/31/EC, OJ L 178, 17.7.2000, p. 1–16). See Senftleben et al. (2015).

⁹See Directive 2004/48/EC (OJ L 157, 30.04.2004; Corrigendum OJ L 195/16, 02.06.2004). HADOPI stands for *Haute Autorité pour la Diffusion des Œuvres et la Protection des Droits sur Internet*, a government agency charged with managing a “three-strikes-and-you’re-out” graduated response system among French Internet subscribers between 2010 and 2013.

¹⁰In this context, a problem arises in public authorities’ relationship with rights holders. Rights holders enjoy most of the direct benefits from copyright protection. If the public takes on much of the costs in enforcing copyright, it might be in the interest of rights holders to call for greater protection – and thus greater expenditure on enforcement and other aspects of the administration of rights – than they would rationally pay for themselves. What is more, state provision of enforcement or regulation of markets for copyright works could motivate rent-seeking (see also Ramello 2005).

Finally, specific measures to enforce copyrights may have broader unintended consequences. For example, enforcement may require extensive monitoring of private use of ICT and with a punitive, adversarial connotation that will meet resistance. Overall, copyright enforcement aimed at inhibiting unauthorized use seems very costly at the current state of technology. This is a good reason to investigate alternatives.

3.2. The debate on CCS so far.

3.2.1. *Legal scholarship and closely related writing.* The academic debate on CCS has mostly started with legal scholars. Lunney (2001) was concerned that encryption based copyright enforcement could excessively restrict private copying if encryption techniques enjoy legal protection in their own right, which is the case with TPM in the USA and EU. Where due to ineffective encryption “more protection seems necessary to promote the ‘progress of science [and the useful arts]’”, he suggests a levy on digital copying technology run through a CMO.

Focusing on music, Ku (2002) argues copyright should not apply in the digital realm. He doubts copyright encourages content creation and believes that in contrast to offline markets, incentives to disseminate works online do not require fostering through copyright protection either. Should the results of abandoning copyright online be unacceptable, the author suggests implementing a CCS via a legislative instrument – labelled ‘Digital Copying Act’ – that would be based on revenue sharing between copyrights holders and suppliers of complementary goods and services.

Netanel (2003) proposes a ‘non-commercial use levy’ on file-sharing related goods and services to allow for unrestricted p2p file-sharing for private users. Participation is mandatory and the suggested scope is broad, including all copyright works except for software, and all substantive rights (with special requirements for modification rights). He observes that the costs of enforcing copyrights online often fall on third parties such as the taxpayer or Internet service providers (ISP), rather than the rights holders as the direct beneficiaries of copyright enforcement, which leads to inefficiencies. Netanel (2003) is also worried that rights

holders could use exclusive rights to oppose online uses for moral or political reasons, not just commercial ones. He hopes that compared to the status quo, a CCS could generate equivalent benefits at lower costs. He also suggests that a CCS could be more technology neutral.

Eckersley (2004) proposes a CCS run by public authorities, in which the distribution of revenues is subject to user voting rather than monitoring of use. He considers several options for setting prices for CCS, including contingent valuation methods.¹¹ Fisher (2004) developed particularly detailed suggestions on a tax-and-royalty system for commercial and non-commercial file-sharing. Aigrain (2008; 2012) also discusses a broad range of options for funding cultural production, including CCS.¹² Quintais (2017) argues for the introduction of a mandatory exception for the non-commercial use of works in EU copyright law.

3.2.2. *Economists' reservations.* Economists have been sceptical. Liebowitz (2003; 2005) criticizes CCS proposals, giving special attention to music and joint administration that is mandatory on the rights holder side, so that “the government requires that copyright owners make their works available to users, usually at a fixed price” (Liebowitz 2003). The author acknowledges imperfections in the status quo of the copyright systems but argues that CCS would offset the market mechanism and replace it with inferior price setting. This criticism can be extended to all terms of trade, which would be standardized under joint administration. Incidentally, the criticism extends to copyright law, and how it determines the general framework for the copyright system, such as the duration of copyrights, for example. The question is whether there are ways to mitigate this flaw in CCS or whether the benefits compared to alternative courses of action compensate for it. Liebowitz and Watt (2006) conclude their discussion of CCS as follows: “It is clear that this solution [CCS à la Netanel (2003) and

¹¹The CCS proposal is developed further in Eckersley (2012).

¹²Over recent years, CCS proposals have been considered by the Brazilian government and the German and Belgian Green parties for example. The Hargreaves Report for the UK government (Hargreaves 2011) suggested the government helps instigate a ‘Digital Copyright Exchange’, a model which is later refined in Hooper and Lynch (2012) and is currently under development in the UK.

Fisher (2004)] is one that should only be seriously examined after other avenues have proven fruitless. Additional work in this area would, of course, be most welcome.”

Merges (2004) also objects to compulsory collective licensing. In essence, he argues for a mix of individual administration and voluntary collective licensing, and calls for permissive regulation of CMO market power. He emphasizes the desirability of clear property rights and market mechanisms, glossing over the fundamental problem that it is costly to establish exclusive rights. Similarly to Liebowitz (2003; 2005), Merges (2004) argues that over the long term, private price setting will be far superior. He assumes that private price setting will be cheaper, which ignores that, with direct trading between rights holders and users, there would be many more transactions to bargain over than with joint administration. He also argues that private price setting will be “more flexible”. The latter point is the more convincing.

3.2.3. Empirical evidence. Much of the debate on CCS is not based on systematic empirical evidence. In surveys evaluated by Karaganis and Renkema (2012), Entertainment Media Research (2011) and STIM (2012), a substantial share of the respective samples report willingness to pay (WTP) equivalent to several Euro per month for some type of license to access copyright works online with fewer legal restrictions than today. None of these studies adhere to the recommended standard of contingent valuation of untraded goods (Arrow and Solow 1993; Alberini and Kahn 2009; Bateman et al. 2002).

Handke, Bodó and Vallbé (2016) present the results of a discrete choice experiment among a representative sample of the Dutch population that does adhere to important contingent valuation standards. The study covers a large range of CCS options. The basic result is that average WTP for a CCS license for private use of copyright works on digital ICT networks is above €9 per household/month just for recorded music. This is a multitude of average per household expenditure for recorded music of €1.74. The authors conclude that a well-designed CCS could provide an annual net welfare gain compared to the status quo of ca. €600 million (over €35 per person) to be distributed between rights holders and users. That

is a large amount compared to the market value of copies and streams for recorded music of €144 million according to IFPI (2013). The result is particularly noteworthy since commercial online music services such as Spotify were widely used in the Netherlands when the data was collected. Apparently, CCS are often perceived as a superior alternative.¹³ In as far as stated preference data goes, this provides a strong signal that CCS deserve more serious attention.

4. HOW TO EVALUATE CCS?

If copyright policy takes effect in a world of second-bests, rational copyright policy is based on comparing a number of options in order to identify the option that is associated with the greatest social welfare. CCS are a sub-set of some of these options.

Within the sub-set of CCS, a recurrent theme for the welfare analysis is a simplicity-flexibility trade-off, which is useful to appreciate the various CCS attributes and even their interactions. The main benefits of CCS are about simplification and thus reducing transaction costs, by creating large bundles of rights that are traded under standardized, transparent and stable terms. The main drawbacks of CCS concern the lack of flexibility and the inevitable mismatch between (a) the theoretical, optimal terms of trade for specific, heterogeneous works and at specific periods in time, and (b) standardized terms of trade with joint rights management. An important aspect of these drawbacks regard dynamic effects: over time, standardization with a CCS could inhibit market participants' ability to gather information on changing circumstances and devise appropriate responses as conditions change.

However, the very point of joint management of copyrights, including CCS options, is that under real market conditions, transaction costs are often too high for markets to operate. Where joint management of rights mitigates that problem, a realistic reference point to evaluate joint rights management is not a theoretically optimal market but incomplete markets due to transaction costs, including costly and incomplete enforcement of copyrights.

¹³See also Vallbé, Bódo and Handke (2015), who report that especially users of digital music services have a strong preference for a CCS.

To avoid mismatch and enable responsiveness, it is desirable that: first, users can change their payments depending on their use (or valuation) of the license; second, rewards to rights holders are proportional to the use of their repertoire (or its value); third, all stakeholders are able to experiment and reap a substantial benefit from developing valuable novelties. For the time being, simplicity/standardization seems irreconcilable with flexibility, tailoring to specific, heterogenous works, and responsiveness over time.

Furthermore, a CCS would be easier to establish if it not only increased total social welfare but also improved the position of all types of stakeholders simultaneously. This is not so much a question of seeking out a Pareto optimum – in a second-best constellation with many heterogeneous stakeholders, the Kaldor-Hicks compensation test provides the more useful evaluation criterion. This rather concerns the political economy of copyright policy, where policy-makers deal with divergent interests of rights holders, commercial users and IT firms, as well as many end-users (voters). We discuss four main types of stakeholders in the following.

4.1. Rights holders. For rights holders at large, the question is whether a CCS would generate profits that exceed those under the status quo, including the changes due to a CCS license in related markets and in the production costs. Costs should fall, since reproduction, distribution and retailing costs for rights holders under a CCS should be lower than in conventional markets. The most extreme example is file-sharing, where much of the reproduction, distribution and retailing is conducted by end-users – a stark contrast from the market for CDs, for example.

4.2. Users. For users, the question is whether the CCS license to use works online is of greater value than the costs of the license. Transaction costs per user would have to be low, regarding the great number of end-users and the large share of users with a low WTP. A CCS entails several potential benefits to users. First, in most proposals a CCS would offer the private utility of legal certainty when using works online: a broader and more clearly defined range of use of protected works would be feasible without the need to acquire explicit rights

holder consent or facing legal risk. This benefit would be maximized if all works and common unauthorized types of use were covered, which would be feasible with a compulsory license for all rights holders. However, it is of course imaginable that only some works and types of use were included into a CCS (say only the right to download, not to upload), or even that a CCS would charge users without ‘legalizing’ unauthorized use, similar to some levies on copying equipment in existence today (Liebowitz 2005). Such limitations would reduce any benefits of a CCS for end-users. Second, a CCS could cater for any preference of users to reward creators of valuable works (Rochelandet and Guel 2005; Hennig-Thurau, Hennig and Sattler 2007; Fetscherin 2009) or for reducing social conflict over copyright. Third, a CCS could mitigate any problem with underproduction of quasi-public goods. It could ensure that as many as possible of those valuing access to works contribute to the costs of producing them, rather than the option of free-riding dominating on an individual level, which may leave most stakeholders worse off and adversely affect social welfare.

4.3. Taxpayers. Taxpayers often finance the legal process and parts of the judicial process. These costs could decrease with a CCS that proves widely acceptable or simply excludes litigation between individual rights holders and users regarding copyrights administered under a CCS. On the other hand, as the administration of the system would be a natural monopoly, costly statutory regulation would be necessary, and there could even be a case of some state provision of services related to the CCS.

4.4. Online distributors and retailers of copyright works. Finally, specialized online distributors and retailers such as Apple’s iTunes store, Amazon, Spotify and so on, would lose the advantage of offering authorized services and face costs of change. With a CCS, legal certainty for users and some compensation of rights holders would be less important as distinguishing features of authorized services. Online retailers would mostly have to compete with currently unauthorized services (including ‘amateur production’ in the case of file-sharing) by offering more convenient access and related services such as recommendation systems. As

a matter of principle, as long as creators are adequately compensated, the dissemination of creative works should be conducted by whoever does so most efficiently.

Overall, there is little point in trying to establish the adequate scope for joint administration on the basis of desk research. Both the market conditions and CCS proposals are too complex. Instead, Eckersley (2004) recommends market research and experiments. The survey-based research summarized in section 3.2.3 documents that consumers have considerable WTP for a CCS compared to current market income.

5. SPECIFIC ATTRIBUTES OF CCS

Any CCS can be addressed as a combination of several attributes and their expressions (Handke, Bodó and Vallbé 2016; Quintais 2017). In the following, we discuss a number of the most fundamental attributes and their welfare economic implications.

CCS raise a great number of challenging questions regarding the scope and exact terms of administration. This complexity is not unique to CCS, however, but an aspect of copyright systems more generally. Complexity is an argument against copyright, not just against CCS. For example, there are no hard and fast lines between the goods that fall under copyright protection and those that should not. The same holds for the decision of what copyrights to administer individually or jointly. Any CCS would aim to reduce complexity, simplify everyday tasks of stakeholders in managing copyrights and make the copyright system more transparent. The question is whether that can be done without an excessive loss of flexibility and adaptability.

5.1. The scope of a CCS.

5.1.1. *Types of works.* Typical product characteristics of creative works and market conditions differ substantially across established categories, such as recorded music, literary texts, films and other audio-visual entertainment, news reporting and so on. Most proposed CCS include recorded music, including the musical work, fixations of performances and phonograms. A

couple of CCS proposals suggest a broader range of works be included, such as films and tv programs or literary text. Software is explicitly excluded in widely debated proposals.¹⁴

5.1.2. *Substantive rights.* Copyright regulates a number of distinct uses. In the online environment, particularly relevant uses are: (1) the downloading or streaming of works, which concerns the reproduction right; (2) communicating or making works available to others (e.g. uploading); and (3) the modification of works. Many CCS were presented as ways to ‘legalize file-sharing’, which implies downloading and usually uploading with impunity.

With modification rights a CCS would cover so-called user-generated content, which regularly draws on copyright works but entails a creative (and at least to a certain extent transformative) contribution by the user. For modification, moral rights of attribution (to the author) and the integrity (of the work) may also be particularly important in many national laws, especially in continental Europe. Nevertheless, whether modification rights should be dealt with in a CCS still raises the same basic question as with rights to reproduce and communicate/make available to the public: does a CCS generate enough revenues for rights holders to compensate them for any disutility from unauthorized use, and here in particular the presence of unauthorized follow-up creation (see Rushton 1998)?

5.1.3. *Commercial versus non-commercial use.* Most CCS proposals focus on large-scale non-commercial or not-for-profit uses by individuals. These can be ‘private’ or ‘public’. For instance, downloading and streaming in households or within a close circle of family or friends often qualify as ‘private’ and may fall under the private copying levy. Conversely, uploading and online sharing constitute communication or making available of copyright works to the ‘public’.

Joint administration is more likely to be efficient where direct trading between rights holders and users would require many costly transactions and WTP is low. Then with direct trading

¹⁴A pragmatic reason why software is not included may be that the growth of the industry suggests that there is no apparent need to alter the IP regime fundamentally. Eckersley (2004) argues that it would be harder to distribute licensing revenues for software because works tend to be the result of cumulative work.

many mutually beneficial exchanges would not come about. The sheer number of end-users thus makes it probable that joint rights administration is efficient among this type of users. There tend to be fewer commercial users, however, and they will regularly have a higher WTP. It may thus make sense to distinguish commercial and non-commercial use and to treat them differently.

However, it is tricky to define what constitutes ‘non-commercial’, as users can benefit from traffic to their websites in many different ways and may change their status over time. Furthermore, there is no automatism that any conventional definition of private or non-commercial use would reliably coincide with the range of users for which joint administration would be more efficient.

Rights-holder dominated CMO also conduct collective bargaining. This function could be important to counter professional users with market power, such as online retailers (Hollander 1984; Besen, Kirby and Salop 1992; Watt 2000; Handke 2014; 2015). Ideally, licensing conditions would be neutral between non-commercial and commercial use, to ensure that tasks are conducted by the most efficient agents.

Regarding all these aspects of the scope of CCS, the theory of product bundling suggests that greater bundles allow suppliers to appropriate more of the surplus in a market under typical market conditions in copyright industries: monopolistic competition, imperfect correlation between individual preferences and low marginal costs (McAfee et al. 1989; Bakos and Brynjolfsson 1999). This could be a side-effect of ‘one-stop-shops’ for all copyrights (and related rights in the continental European jargon), as suggested for example by Seay (2010) or Hargreaves (2011). Then again, diseconomies of scope may set in for the administration of copyright online, say because suppliers of very different types of copyright works find it hard strike agreements with each other.

5.2. Stakeholder control over the scope of CCS.

5.2.1. *Mandatory or voluntary participation.* The aim of copyright is to mitigate problems with private financing of public goods. By decreasing transaction costs, a CCS with voluntary participation of users might encourage some payments due to moral considerations and enlightened self-interest. With ineffective enforcement, free-riding could still be individually rational. It is desirable but uncertain whether a CCS with voluntary user participation would perform well in terms of the social coordination to provide for quasi-public goods. Therefore, strong incentives for users to participate are probably necessary. Making participation mandatory for all citizens would also be inefficient, as it would require those to pay whose private utility from a CCS license would be lower than the price of the license. Price discrimination and tying obligations to contribute with purchases of essential complements, such as ICT services, could mitigate the problem but will not resolve it entirely with differentiated user preferences. Mandatory CCS participation with a refined pay-per-use system would come closest to simulating a functioning market (see the discussion on flexible pricing below).

Regarding rights holders, there may be less of a case for any obligation to participate. A CCS aims to compensate rights holders for unauthorized use that cannot be efficiently inhibited. If the administrative duties or any price of participation were low enough, participation would be rational for most rights holders. The main task for participating rights holders would be the registration of works with the relevant CMO. Other expenses of the CMO could be covered by deduction of CCS revenues. There are two caveats to voluntary rights holder participation. First, users may disproportionately value absolute legal certainty with a comprehensive CCS (see the discussion on ‘flexibility in rights holder participation’ below). Second, mandatory participation on the rights holder side would minimize the costs to the public due to legal and judicial conflicts between individual users and rights holders within the scope of the CCS.

Voluntary rights holder participation could be combined with severe restrictions on rights holders to sue CCS licensees with regards to uses covered by the CCS, even for rights holders who do not participate. This would avoid the coercive measure of making rights holder participation mandatory, while offering legal certainty to CCS licensees and reap most of the costs savings from a CCS solution to the legal/judicial ‘copyright battle’. However, from the legal perspective, that solution would likely amount to an unacceptable reduction to minimum exclusive rights granted in international treaties and national laws, as it would entail the elimination of civil remedies currently available to rights holders, such as injunction, seizure and damages. A more feasible approach could be to keep the full range of remedies intact to rights holders participating in the CSS and limit it for non-participating rights holders, in relation to infringement of their rights by CSS licensees. This could mean, for example, that non-participating rights holders could have reduced access to preliminary injunctions against online intermediaries and would be restricted in their use of statutory damages or access to punitive damages. This last approach would be more legally compliant at the international and national levels, while achieving the desired goal. Naturally, if the objective is legal certainty for end-users, the same goal could be achieved by a traditional collective rights management model: provide users with a license that includes an insurance against infringement claims from rights holders not participating in the system.

5.2.2. *Flexibility in rights holder participation.* Shavell and van Ypersele (2001) suggest that a CCS would be more efficient and more desirable for rights holders if it allowed them to move works in and out of joint administration. Flexible participation could mitigate the problem of standardized terms of trade for highly differentiated goods and services. Hits, blockbusters and bestsellers have very different demand schedules from the vast majority of works, for example, and demand for specific copyright works tends to vary substantially over time (Kretschmer, Klimis and Choi 1999). Rights holders may thus find it worthwhile to charge different prices over the product life-cycle, which could require them to move in and out

of joint administration.¹⁵ What is more, voluntary and flexible participation for rights holders could diminish the market power of CMO with regards to rights holders, and experimentation would provide a constant test whether individual administration is preferable for some works and rights holders.

Nevertheless, this may not be a practical approach. First, it would raise the same issues with costly enforcement that a CCS tries to circumvent, if for a smaller repertoire. What is more, flexible rights holder participation would be associated with greater search costs, as users would have to establish the current status of any work they wish to use under the CCS to be sure to avoid legal conflict.¹⁶ The value of a non-comprehensive CCS license to users would thus fall proportionally more than the value of the works not included into the CCS license. CMO would also incur costs for dealing with works moving in and out of joint administration (so that there should be charges for rights holders who instigate a status change). This is yet another example of the simplicity-flexibility trade-off.

5.2.3. Technical protection measures (TPM). Many rights holders, authorized distributors and retailers of works try to monitor or inhibit unauthorized use through a variety of technical means, such as encryption software. CCS typically provide users with legal safety from copyright enforcement. Few proposals have discussed the implications of TPM for CCS. TPM currently enjoy legal protection. In practice, this could conflict with the benefits of a CCS to users of providing legal certainty and less restrictions on access. Extensive legal protection for TPM thus seems incompatible with a CCS as it could allow rights holders to restrict uses authorized by a CCS.

¹⁵A related issue is that some arrangements in CMO also ensure that the most prolific rights holders contribute disproportionately to the operation costs of the CMO; for a brief discussion, see Handke (2014). Flexible rights holder participation could conflict with these arrangements.

¹⁶Another complication is how any signal regarding the status of a work would reach consumers. CCS adoption would certainly occur in a limited territory. Not all foreign websites could be expected to signal whether specific works are currently administered under a domestic CCS license.

TPM do not seem particularly effective or popular at this stage.¹⁷ As long as that holds, there may be little conflict between TPM and CCS in practice. The issue could become more important should TPM become more widely adopted and effective.

Under a CCS with fixed user charges, more effective TPM would erode the value of the CCS license to users. This should be reflected in lower user fees. In more refined CCS, contributions and payments to rights holders are proportional to measures of unauthorized use of specific works. In that case, there would be less incentive for rights holders to apply TPM and user fees would reflect changes in the effects of such measures on unauthorized use.

A general ban on TPM might not be necessary, and enforcing it could be costly. A key benefit of CCS is that it reduces the need for enforcement. It would not necessarily be an improvement to reduce enforcement costs on the user side (aimed at inhibiting unauthorized use without compensation to rights holders) while generating new enforcement costs on the rights holder side (aimed at inhibiting the application of TPM where users pay for a CCS license). However, in CCS where participation is mandatory on the user side, legal protection of TPM should be removed. Otherwise, users could end up paying for a license that is of no practical value, where TPM effectively inhibits access and their circumvention is associated with legal risks irrespective of a CCS license being in place.

5.3. Financial aspects: pricing, payment vehicles and distribution of revenues.

Who pays, the manner of payment, the amount due, and the distribution of receipts are all important aspects of a CCS, affecting the efficient allocation of resources. All these financial aspects are subject to a simplicity-flexibility trade-off.¹⁸

5.3.1. *Payment vehicle.* Several payment vehicles have been suggested, such as more or less well-targeted taxes (Eckersley 2004; Fisher 2004), levies on Internet subscription or relevant

¹⁷At this time, it is unclear whether applications of blockchain technology will enable more efficient TPM (Bodó, Gervais and Quintais 2018).

¹⁸This paper does not discuss the way that a CMO finances its operations. For a general discussion on this issue, see Handke (2014).

ICT hardware (Netanel 2003), or revenue sharing with suppliers of goods and services that are complementary to unauthorized use of copyright works online (Ku 2002).

Revenue sharing is already practised with major streaming sites (YouTube) but subject to prolonged negotiations and intransparency. For commercial users of recorded music, the financial and time costs of establishing a license with rights holders are substantial (KEA 2012). Revenue sharing arrangements do not deal with private use, including certain instances of file-sharing.

Several CCS proposals consider tying payments with charges for Internet subscription (perhaps subject to connection speeds or actual data transmission). We focus on this option. End-users will probably pay relatively modest amounts for a blanket license. Keeping transaction costs low is very important to make it worthwhile to conduct low-value transactions at all. At the same time it is desirable to approximate contributive efficiency, where payments vary according to the use or valuation of the rights and works supplied under the system.

Users would not have to conduct an additional payment for the license if it were bundled with their Internet subscription. For users, transaction costs associated with this payment vehicle would be modest. Furthermore, it is much easier to monitor Internet subscriptions and to oblige CCS contributions for subscribers than to inhibit unauthorized use of works online. This payment vehicle could be an effective way of enforcing user participation. Even with an opt-out for Internet subscribers to avoid coercion and allow for some self-selection by users, considerable payments might be raised if CCS participation were set as the default option. However, voluntary participation by users coupled with ineffective enforcement may not perform well enough.¹⁹

Another advantage of this payment vehicle is that it provides a crude means to target charges to the likely beneficiaries of online uses. However, Internet access has other functions beyond the use of works. Bundling of Internet and CCS subscriptions would reduce the

¹⁹According to a choice experiment conducted by Handke, Bódo and Vallbé (2016), among a representative sample of the Dutch population over 40% would voluntarily pay €5 for a CCS license for recorded music online.

elasticity of demand for CCS licenses and diminish the responsiveness of suppliers to the value that users put on their works, probably with greater effects on the market for the CCS, as copyright works account for a smaller part of the bundle's total use value. Some Internet subscribers with low WTP for the license will still be obliged to pay if participation is not voluntary. That would be a set-back compared to the status quo.²⁰

Tying CCS payments with Internet subscription requires the cooperation of ISP. Often the plan is to oblige ISP to collect the license fee and forward the money to a CMO. Some resistance and the equivalent of principal-agent problems should be expected. It may be justifiable to regulate ISP to cooperate if necessary, as the demand for their services should increase with the accessibility of copyright works online.

5.3.2. *The amount collected under a CCS license.* The overall welfare effect of a CCS hinges on whether it can make rights holders and users better off simultaneously. It is improbable that all stakeholders would be better off to generate a Pareto improvement in a narrow sense. For instance, rights holders and retailers with a vested interest in the existing infrastructure could see their individual position deteriorate. However, a CCS could pass the Kaldor-Hicks compensation test, according to which the utility to those who gain would exceed the disutility to those who are worse off compared to the status quo. Due to the scalability of money, the price of a CCS to users has a central coordination role.

One obvious benchmark is comparison to the status quo. As a whole, rights holders would for instance not be worse off with a CCS that does not increase their costs and distributes amounts that are no lower than current rights holder revenues. Strictly speaking, the analysis would have to address profits but as Caves (2003) observes, production costs and thus profits are almost impossible to establish in creative industries.²¹ However, it seems reasonably

²⁰The problem could be mitigated through a pricing scheme where no payment is due with minimal use.

²¹The economic literature on public regulation acknowledges the problem that regulators are often ignorant about production costs (Weitzman 1974; Baron and Myerson 1982). According to Caves (2003), even insiders in the creative industries face asymmetric information about production costs, so that profit sharing between collaborators is usually not an option. The typical solution is revenue sharing.

certain that, under a CCS, production costs of rights holders should not increase. Then revenues at the status quo provide a reasonable indication of the lower bound of the CCS revenues required for rational rights holders to participate voluntarily.

A more common suggestion is to aim for total CCS distribution amounts that would fully compensate rights holders for lost profits from unauthorized use online, rectifying market failure due to inexcludability (Netanel 2003). The principle is sound, but total lost profits are harder to gauge. Besides the problem with incomplete information on production costs, the counterfactual of rights holder profits without unauthorized copying is difficult to establish.²²

As Liebowitz (2005) points out, even if the amount collected under the CCS would be set appropriately regarding the best available information from relevant markets at the time, this type of information would not be available anymore once a CCS starts to operate. This could lead to great inefficiencies over time.

A more sustainable way to establish the adequate prices and collection amounts would be to conduct contingent valuation studies to establish users' WTP and the true economic value of a CCS license. Of course, such a survey-based estimation will not be perfect and prices should not be set to minimize user surplus. To sustain some market coordination, voluntary user participation is even better (Handke, Bodó and Vallbé 2016).

Current revenue levels give an indication of the lower bound of a CCS distribution amount that is acceptable to rational rights holders, and contingent valuation studies provide an indication of the upper bound of CCS payments that is be acceptable to users. Any CCS amount would be welfare increasing if it fell between these two values (after deduction of the CCS' operating costs).

The efficient division of surplus between users and suppliers is tricky and the market for copyright works is no exception – see Watt (2010; 2011) for a thorough discussion. A particular

²²At the status quo prior to the introduction of a CS, there will be considerable unauthorized copying. Otherwise, no CCS would need to be considered. Furthermore, any CCS would affect the demand in related markets, which may affect harm and thus the compensation needed (Liebowitz 2005). In addition, Kretschmer (2011) argues that prices for copyright works already reflect some unauthorized copying, which limits the scope for additional compensation through a complementary CCS.

complication according to economic theory is the long-term effect of rights holder profits on investment in new creations, and how it affects user welfare. However, a precise estimate of the optimal surplus split is not required to establish whether a CCS provides a social welfare gain compared to the status quo, as long as total surplus increases and neither rights holders nor users are worse off.

5.3.3. *Price flexibility.* It is desirable to approximate contributive efficiency, where users pay according to their valuation of the license so that changes in their utility affect suppliers and lead to adaptation. Whether user participation in the CS is voluntary or mandatory is central for the efficiency of pricing.

A standard pricing scheme in CCS proposals is to charge a fixed monthly amount to potential users (a “flat-rate”) – for example all Internet subscribers. For instance, Gervais (2004) calculates with 5 US\$ for a CCS covering file-sharing of music. This type of pricing would come close to mandatory participation and perform badly in terms of contributive efficiency. It would probably be worse than conventional pricing for commercial users in collective rights management, where users are charged a fixed amount per estimated instance of use. A fixed fee per user would also be less responsive to user valuation than markets for physical media carriers (CDs and DVDs for example) or digital media stores (such as the iTunes store or the Amazon Download Store), where users are charged per download. It would be more similar to subscription services that have become the dominant model for recorded music and audio-visual entertainment (IFPI 2018), but without giving users a full choice on whether to participate. Then the effect of a flat fee would be to largely offset the market mechanism regarding the overall amount paid to rights holders. Charging all households a fixed fee would come close to fixing the amount society spends on online use of works. Tying payment to a very valuable, multi-purpose service such as Internet access would have a very similar effect. Rights holders would still compete for their share in the amount distributed by the CMO (see

below). Competition with substitutes outside of the CCS would be stifled, which over time would probably lead to substantial misallocation of resources.

An opt-out for users would mitigate that problem. A pay-per-use system, where a user's CCS license fee depends on reasonably sophisticated measure of the scale and scope of her use (e.g. Sobel 2003), would be even better in this respect. However, precise monitoring on individual user level would not only be very expensive to accomplish. It also raises serious privacy issues that fall beyond the typical scope of economic analyses (Kretschmer 2011).

5.3.4. *Distribution of revenues.* Another financial aspect of CCS is the distribution of revenues among rights holders (once the operating costs of the CMO are covered). Arguably, distributive efficiency can be approximated more easily than contributive efficiency. That is because making the distribution share of rights holders proportional to use requires only anonymized monitoring of a reasonably large representative sample of users. Using digital ICT, monitoring costs would be relatively low. Furthermore, privacy concerns would be much weaker with monitoring of random sample (who could be asked for consent if that would not invite manipulation) and anonymized data analysis. It seems that a CCS could perform much better in terms of distributive efficiency than traded collective administration of rights. It could also perform better in this respect than other traditional retail markets for copyright works, where higher transaction costs inhibit trading, and users purchase durable experience goods but their subsequent use (after familiarizing themselves with their personal utility of this work) is not directly reflected in the financial rewards for suppliers.²³

To be sure, fair remuneration of copyrights holders and efficient distribution of revenues from joint rights management is a challenging issue. For instance, markets for copyright works tend to generate a highly skewed distribution of attention and income that may not reliably reflect the intrinsic value of copyright works – perhaps due to informational cascades

²³As an alternative to monitoring of use, Eckersley (2004) suggests that rewards to creators could also be distributed on the basis of voting by users. He also discusses several problems with such a procedure. The costs for users associated with voting and the difference between revealed preferences and stated preferences are particularly worrying.

(Bikhchandani et al. 1992) or herd behaviour of users (Banerjee 1992). Considering the ex ante position of risk-averse right holders, joint rights management could mitigate inefficiencies by allowing for a pre-determined, more even distribution of revenues among participating rights holders than what ex post metrics of actual use would imply (Watt 2010; 2011; 2014).

5.3.5. *Summary of key issues in the financial aspects of CCS.* In summary, there is a paradox regarding the financial aspects of CCS. The very problems with monitoring of use and enforcement of copyrights that make CCS appealing also mean that CCS would probably be associated with less efficient pricing than under the status quo in traditional markets of copyright works.²⁴ In other words, CCS would perform badly in terms of contributive efficiency. The paradox is that CCS should allow for much more distributive efficiency than under the status quo if revenues are distributed to rights holders on the basis of representative, continuous data on the actual use of works, rather than the binary signal of whether works have been acquired or not (and with incomplete pre-purchase information).

This discussion of financial aspects brings up two issues where it seems more appropriate to speak of dilemmas rather than trade-offs. First, voluntary participation on the user side would probably fail to have a sufficiently large impact on the rewards to rights holders and incentives to supply new creative works. With mandatory participation on the user side and a flat price, the market mechanism would be stifled and great allocation inefficiencies could build up with changing user preferences over time.²⁵ The solution could be to charge for a CCS license based on measure of use. Pay-per-use pricing could ensure responsiveness of CCS license prices and the supply of creative works to changing user preferences. The second dilemma is that enabling the market mechanism in this manner would require extensive monitoring of

²⁴However, it may not be a meaningful exercise to compare a CCS for online use of works with traditional markets for copyrights, where unauthorized use was more contained in many major economies.

²⁵As discussed above, voluntary or flexible participation on the rights holder side would not only enable market mechanisms. It would also be associated with greater transaction costs for the CMO and would thus make participating rights holders and users worse off.

private information transactions online and on a personalized level, which raises prohibitive privacy concerns.

5.4. Regulation and organizational form. Due to economies of scale in rights administration, CMO could enjoy great market power, and extensive statutory regulation would be necessary to mitigate the resulting inefficiencies. This concerns transparency and efficiency of CMO operations (for example in the pricing of licenses and the distribution of revenues and the handling of user data). The performance of existing CMO differ widely (Rochelandet 2003) and getting them to operate reasonably efficiently may be a challenge in some places. Users' WTP and rights holders' willingness to participate will depend on the perceived efficiency of CMO, which is subject to regulation. Eckersley (2004) – and to an extent Fisher (2004) – even argues for direct state provision for the collection and distribution of CCS revenues.

Regulation of CCS is even more essential than for traditional collective administration. On the one hand, in contrast to joint administration of rights related to commercial use (say by broadcasters or ICT firms), it is not apparent what organization could effectively bargain on behalf of private end-users other than the state. The convention of CMO operating as collectives controlled by rights holder-members is suitable to ensure a desirable performance of CMO towards rights holders. Membership control also needs to be safeguarded by public regulation, as there are incentives for incumbent members to discriminate against newcomers (Besen, Kirby and Salop 1992). On the other hand, private use of copyright works online is replacing large parts of the traditional retail market for physical copies of copyright works, where collective rights administration played an ancillary role (Liebowitz 2005).²⁶ With a CCS, the part of the market for copyright works under joint administration would increase considerably. Again, it is crucial that effective statutory regulation is in place.

²⁶Liebowitz (2005) points out that large related markets constitute a safety valve for inefficient pricing under joint administration of rights.

Finally, empirical research suggests that end-users' WTP for copyright works decreases with the impression that the original creators do not receive much of the revenues generated (Rochelandet and Guel 2005; Hennig-Thurau, Hennig and Sattler 2007; Fetscherin 2009). Some CCS proposals suggest regulation of the share to be paid out to original creators rather than to corporate rights holders and other intermediaries (Lunney 2001; Ku 2002; Litman 2004). This could be seen as a way to diminish market power of intermediary firms. It would also conflict with the freedom to contract and the efficient allocation of risk between creators (i.e. authors and performers) and intermediary firms, and in particular make it harder for creators to raise external financing. However, if favourable conditions to original creators increase users' WTP enough, they could still be an efficient option and even make both types of rights holders better off.

6. CONCLUSIONS

Opinions on how to administer copyrights online diverge widely. Some argue that a system based on property rights, freedom of contract and the market mechanism is generally superior in determining the adequate allocation of resources to the production of creative works (Merges 2004). Others argue that exclusive rights to creative works are simply incompatible with 'the nature' of computer technology (Eckersely 2004) and that 'file sharing is here to stay' (von Lohman 2004; 2008). Over the 19 years since Napster burst onto the scene, no level of copyright enforcement online has been established that would satisfy most stakeholders. Producing excludability of information goods online can be very costly and statutory enforcement will not resolve that problem.²⁷ In this context, alternatives to enforcement deserve serious attention.

CCS seek to arrange for the financial rewards to creators and subsequent rights holders rather than inhibiting unauthorized use. They are basically a form of joint administration of

²⁷At the current stage of development, blockchain technology is also not a viable solution to this problem, and there are reasonable doubts it ever will be (Bodó, Gervais and Quintais 2018).

copyrights online, and invoke a simplicity-flexibility trade-off. The main advantage of CCS is that they reduce transaction costs in the administration of rights through standardization. This includes easier enforcement of compensatory payments, either from end-users when payments are tied to more excludable services than the online use of works, or from a smaller number of commercial users in the case of revenue sharing. Reliable, universal and non-discriminatory standards in trading rights could facilitate market entry, amateur production and foster competition between creators and disseminators of creative works. The main disadvantage is that CCS restrict stakeholders' scope for varying the terms of trade for copyright works, which distorts the market mechanism.

There are several sources of market failure in markets for copyright works online and CCS can be complex. To establish whether CCS would be welfare increasing requires empirical research. The existing stated-preference data suggests that at least for recorded music, a CCS could provide a substantial welfare gain (Handke, Bodó and Vallbé 2016). Much work remains on identifying the best CCS set-up, adequate collection sums and the likely welfare implications of CCS. Much of this will only be determined with proper experiments that produce revealed-preferences data. Unfortunately, the complexity of the copyright system makes it very hard to conduct experiments without legal risks. Continuous application of contingent valuation studies and experimentation could also mitigate the main weakness of CCS after more general adoption: the lack of responsiveness to changing conditions relative to functioning markets. Even more promising is the solution suggested and tested empirically in Handke, Bodó and Vallbé (2016). They suggest a CCS could be voluntary on the user side. If users can opt-out, rights holder revenues would depend on the demand for CCS licenses and ensure greater responsiveness of rights holders to user needs. This would mitigate the problem that a CCS would replace the market mechanism with centralized control over the amount spent on recorded music (Liebowitz 2004; Merges 2004). Handke, Bodó and Vallbé's

(2016) results suggest that over 43% of the Dutch population would voluntarily purchase CCS for €5 per month.²⁸

This paper focuses on economic aspects of CCS. The development costs of CCS would be substantial, even though some of the conceptual work is found in the academic literature. Clearly, the costs of changing laws can be high and will have to be considered. Rationally, a CCS would only be adopted if the discounted future value of any efficiency gains would compensate for these development costs. A limitation of this paper is that it hardly discusses the compatibility of various proposals with national, regional and international law.²⁹ Whether any CCS would fit through the thicket of rights and complex legislation is another important debate to be had, where empirical evidence suggests that CCS could make society better off in a digital age.

REFERENCES

- Aigrain, P. (2008)**, *Internet & Creation: Comment Reconnaître les Echanges Horsmarché sur internet en financant et Remunérant la Creation*, Cergy-Pontoise: InLibroVeritas.
- Aigrain, P. (2012)**, *Sharing - Culture and the Economy in the Digital Age*, Amsterdam: Amsterdam University Press.
- Alberini, A. and J.R. Kahn (2009)**, *Handbook on Contingent Valuation*, Cheltenham, UK: Edward Elgar.
- Arkenbout, E., F. van Dijk and P. van Wijck (2004)**, “Copyright in the Information Society: Scenario’s and strategies”, *European Journal of Law and Economics*, 17(2); 237-49.
- Arrow, K. and R. Solow (1993)**, *Report of the NOAA Panel on Contingent Valuation*, Washington, DC: National Oceanic and Atmospheric Administration.
- Bakos, Y. and E. Brynjolfsson (1999)**, “Bundling Information Goods: Pricing, profits, and efficiency”, *Management Science*, 45(12); 1613-30.
- Banerjee, A. (1992)**, “A Simple Model of Herd Behaviour”, *Quarterly Journal of Economics*, 107; 797-812.
- Baron, D.P. and R.B. Myerson (1982)**, “Regulating a Monopolist with Unknown Costs”, *Econometrica*, 50(4); 911-30.

²⁸For evidence of voluntary payments for copyright works, even when works are available for free, see El Harbi, Grolleau and Bekir (2014).

²⁹For a legal discussion see e.g. Peukert (2005), Bernault and Lebois (2005), Roßnagel et al. (2009) and Quintais (2017). Oksanen and Välimäki (2005) argued that CCS would not be feasible because they are inconsistent with international treaties and because dominant rights holders would resist in order to safeguard their “control of markets”.

- Bateman, I.J., et al. (Eds.) (2002)**, *Economic Valuation With Stated Preference Techniques: A manual*, Cheltenham, UK: Edward Elgar.
- Baumol, W.J. (1986)**, “Unnatural Value: Or Art Investment as a Floating Crap Game”, *American Economic Review*, 76(2); 10-14.
- Bernaut, C. and A. Lebois (2005)**, “Peer-to-peer File Sharing and Literary and Artistic Property: A feasibility study regarding a system of compensation for the exchange of works via the Internet”. University of Nantes. Available at <http://alliance.bugieweb.com/usr/Documents/RapportUniversiteNantes-juin2005.pdf>
- Besen, S.M. and S.N. Kirby (1989)**, “Compensating Creators of Intellectual Property – Collectives that collect”, Santa Monica, CA: The RAND Corporation.
- Besen, S.M., S.N. Kirby and S.C. Salop (1992)**, “An Economic Analysis of Copyright Collectives”, *Virginia Law Review*, 78(1); 383-411.
- Bikhchandani, S., D. Hirshleifer and I. Welch (1992)**, “A Theory of Fads, Fashion, Custom and Cultural Change as Information Cascades”, *Journal of Political Economy*, 100; 992-1026.
- Blaug, M. (2003)**, “Welfare Economics”, in R. Towse (Ed.), *A Handbook of Cultural Economics*, Cheltenham: Edward Elgar; 476-81.
- Blind, K. (2004)**, *The Economics of Standards – Theory, evidence, policy*. Cheltenham, UK: Edward Elgar.
- Bodó, B., D. Gervais and J.P. Quintais (2018)**, “Blockchain and Smart Contracts: The missing link in copyright licensing?”, *International Journal of Law and Information Technology*, 26; 311-36. <https://doi.org/10.1093/ijlit/eay014>
- Bracha, O. and T. Syed (2014)**, “Beyond Efficiency: Consequence-sensitive theories of copyright”, *Berkeley Technology Law Journal*, 29(6); 229-315.
- Caves, R. (2000)**, *Creative Industries – Contracts between art and commerce*, Cambridge MA: Harvard University Press.
- Caves, R. (2003)**, “Contracts Between Arts and Commerce”, *Journal of Economic Perspectives*, 17(2); 73-83.
- Eckersley, P. (2004)**, “Virtual Markets for Virtual Goods: The mirror image of digital copyright?”, *Harvard Journal of Law and Technology*, 18; 85-166.
- Eckersley, P. (2012)**, “Digital Copyright and The Alternatives: An Interdisciplinary inquiry”, Melbourne: University of Melbourne.
- El Harbi, S., G. Grolleau and I. Bekir (2014)**, “Substituting Piracy with a Pay-What-You-Want Option: Does it make sense?”, *European Journal of Law and Economics*, 37(2); 277-97.
- Entertainment Media Research (2011)**, “2011 Digital Entertainment Survey”, London: Wiggin LLP.
- Fetscherin, M. (2009)**, “Importance of Cultural and Risk Aspects in Music Piracy: A cross-national comparison among university students”, *Journal of Electronic Commerce Research*, 10(1); 42-55.
- Fisher III, W.W (2004)**, *Promises to Keep – Technology, law, and the future of entertainment*, Stanford: Stanford University Press.
- Gervais, D. (2004)**, “The Price of Social Norms: Towards a liability regime for file sharing”, *Journal of Intellectual Property Law*, 12; 39-74.

- Gervais, D. (Ed.) (2010)**, *Collective Management of Copyright and Related Rights (2nd Edition)*, Alphen aan den Rhein: Kluwer International.
- Gordon, W.J. and R. Bone (1998)**, "Copyright", in B. Bouckaert and G. De Geest (Eds.), *Encyclopedia of Law and Economics*. Cheltenham, UK: Edward Elgar; 189-215.
- Grassmuck, V. and F. Stalder (2003)**, "Models for Alternative Compensation for Entertainment Content: A critical review". Available at http://www.vgrass.de/wp-content/uploads/2011/06/03-12_vg-felix_models-berkmann-fin.pdf.
- Handke, C., B. Bodó, B. and J.J. Vallbé (2016)**, "Going Means Trouble and Staying Makes it Double: The value of licensing recorded music online", *Journal of Cultural Economics*, 40(3); 227-59.
- Handke, C. (2015)**, "Digitization and Competition in Copyright Industries: One step forward and two steps back", *Homo Oeconomicus*, 32(2); 209-36.
- Handke, C. (2014)**, "The Economics of Collective Copyright Management", in R. Watt (Ed.), *Handbook of the Economics of Copyright*, Cheltenham, UK: Edward Elgar; 179-204.
- Handke, C. and R. Towse (2007)**, "Economics of Copyright Collecting Societies", *International Review of Intellectual Property and Competition Law*, 38(8); 937-57.
- Hargreaves, I. (2011)**, "Digital Opportunity: A review of intellectual property and growth", London, UK: Intellectual Property Office.
- Hennig-Thurau, T., V. Hennig and H. Sattler (2007)**, "Consumer File-Sharing of Motion Pictures", *Journal of Marketing*, 71; 1-18.
- Hollander, A. (1984)**, "Market Structure and Performance in Intellectual Property: The case of copyright collectives", *International Journal of Industrial Organization*, 2(3); 199-216.
- Hooper, R. and R. Lynch (2012)**, "Copyright Works. Streamlining Copyright Licensing for the Digital Age", London, UK: Intellectual Property Office.
- IFPI (2018)**, "Music Consumer Insight Report", available at <https://www.ifpi.org/downloads/Music-Consumer-Insight-Report-2018.pdf>
- Karaganis, J. and L Renkema (2012)**, *Copy Culture in the US and Germany*, New York: The American Assembly.
- KEA /Vrije Universiteit Brussel (2012)**, "Licensing Music Works and Transaction Costs in Europe". Available at <http://www.keanet.eu/docs/music%20licensing%20and%20transaction%20costs%20-%20full.pdf>
- Kingston, W. (1995)**, "Reducing the Cost of Resolving Intellectual Property Disputes", *European Journal of Law and Economics*, 2(1); 85-92.
- Kretschmer, M. (2011)**, *Private Copying and Fair Compensation: An empirical study of copyright levies in Europe*, London, UK: Intellectual Property Office.
- Kretschmer, M., G.M. Klimis and J.C. Choi (1999)**, "Increasing Returns and Social Contagion in Cultural Industries", *British Journal of Management*, 10; 61-72.
- Ku, R.S. (2002)**, "The Creative Destruction of Copyright: Napster and the new economics of digital technology", *University of Chicago Law Review*, 69; 263-324.
- Landes, W.M. and R.A. Posner (1989)**, "An Economic Analysis of Copyright Law", *Journal of Legal Studies*, 18(2); 325-63.

- Lessig, L. (2002)**, *The Future of Ideas – The fate of commons in a connected world*, New York: Random House.
- Liebowitz, S.J. (2003)**, “Alternative Copyright Systems: The problems with a compulsory license”. Available at <http://www.utdallas.edu/~liebowit/intprop/complpff.pdf>
- Liebowitz, S.J. (2005)**, “MP3s and Copyright Collectives: A cure worse than the disease?”, in W. Gordon, L. Takeyama and R. Towse (Eds.), *Developments in the Economics of Copyright: Research and analysis*, Cheltenham, UK: Edward Elgar; 37-59.
- Liebowitz, S.J. and R. Watt (2006)**, “How Best to Ensure the Remuneration of Creators in the Market for Music? Copyright and its alternatives”, *Journal of Economic Surveys*, 20(4); 513-45.
- Lipsey, R.G. and K. Lancaster (1956)**, “The General Theory of Second Best”, *Review of Economic Studies*, 24; 11-32.
- Litman, J., (2004)**, “Sharing and Stealing”, *Hastings Communications & Entertainment Law Journal*, 27; 1-48.
- Lohmann, F. von (2004)**, “Voluntary Collective Licensing for Music File Sharing”, *Communications of the ACM*, 47(10); 21-4.
- Lohmann, F. von (2008)**, “A Better Way Forward: Voluntary collective licensing of music file sharing (Version 2.1.)”. Available at <https://www.eff.org/wp/better-way-forward-voluntary-collective-licensing-music-file-sharing>
- Lunney Jr., G.S. (2001)**, “The Death of Copyright: Digital technology, private copying, and the Digital Millennium Copyright Act”, *Virginia Law Review*, 87; 813-920.
- McAfee, R.P., J. McMillan and M.D. Whinston (1989)**, “Multiproduct Monopoly, Commodity Bundling, and Correlation of Values”, *The Quarterly Journal of Economics*, 104(2); 371-83.
- Meeks, G. and G.P. Swann (2009)**, “Accounting Standards and the Economics of Standards”, *Accounting and Business Research*, 39(3); 191-210.
- Merges, R.P. (2004)**, “Compulsory Licensing vs. the Three ‘Golden Oldies’ – Property rights, contracts, and markets”, *Policy Analysis*, 508; 1-15
- Netanel, N.W. (2003)**, “Impose a Noncommercial Use Levy to Allow Free Peer-to-Peer File Sharing”, *Harvard Journal of Law and Technology*, 17; 2-84.
- Novos, I.E. and M. Waldman (1984)**, “The Effects of Increased Copyright Protection: An analytic approach”, *Journal of Political Economy*, 92; 236-46.
- Oksanen, V. M. Välimäki, M. (2005)**, “Copyright Levies as an Alternative Compensation Method for Recording Artists and Technological Development”, *Review of Economic Research on Copyright Issues*, 2(2); 25-39.
- Quintais, J.P. (2015)**, “Private Copying and Downloading from Unlawful Sources”, *IIC – International Review of Intellectual Property and Competition Law*, 46; 66-92. <https://doi.org/10.1007/s40319-014-0295-7>
- Quintais, J.P. (2017)**, *Copyright in the Age of Online Access: Alternative compensation systems in EU law*, Amsterdam: Kluwer Information Law Series.
- Peukert, A. (2005)**, “A Bipolar Copyright System for the Digital Network Environment”, *Hastings Communications and Entertainment Law Journal*, 28(1); 1-80.

- Ramello, G. B. (2005)**, “Intellectual Property and the Markets of Ideas”, *Review of Network Economics*, 4(2); 161-80.
- Rochelandet, F. (2003)**, “Are Copyright Collecting Societies Efficient? An evaluation of collective administration of copyright in Europe”, in W.J. Gordon and R. Watt (Eds.), *The Economics of Copyright – Developments in research and analysis*, Cheltenham UK: Edward Elgar; 176-98.
- Rochelandet, F. and F. le Guel (2005)**, “P2P Music Sharing Networks: Why the legal fight against copies may be inefficient”, *Review of Economic Research on Copyright Issues*, 2(2); 69-82.
- Roßnagel, A., S. Jandt, C. Schnabel and A. Yliniva-Hoffman (2009)**, “The Admissibility of a Culture Flat-Rate under National and European Law”, Institute of European Media Law (EML) in collaboration with The Project Group for Constitutionally Compatible Technology Design (provet) at the University of Kassel. Available at http://malte-spitz.de/wp-content/uploads/2013/05/emr_study_culture_flat_rate.pdf
- Rushton, M. (1998)**, “The Moral Rights of Artists: Droit moral ou droit pécuniaire?”, *Journal of Cultural Economics*, 22(1); 15-32.
- Seay, J.E. (2010)**, “Legislative Strategies for Enabling the Success of Online Music Purveyors”, *UCLA Entertainment Law Review*, 17; 163-79.
- Senftleben, M.R.F., L. Bently, G. Dinwoodie, C. Geiger, J. Griffiths, A. Kur and L. Zelechowski (2015)**, “The Recommendation on Measures to Safeguard Freedom of Expression and Undistorted Competition: Guiding principles for the further development of EU trade mark law”, *European Intellectual Property Review*, 37(6); 337-43.
- Shavell, S. and T. Van Ypersele (2001)**, “Reward versus Intellectual Property Rights”, *Journal of Law and Economics*, 44; 525-47.
- Sobel, L.S. (2003)**, “DRM as an Enabler of Business Models: ISPs as digital retailers”, *Berkeley Technology Law Journal*, 18(2); 667-95.
- Swedish Performing Rights Society – STIM (2009)**, “Pirates, File-Sharers and Music Users. A Survey of the Conditions for New Music Services on the Internet”.
- Towse, R. (2003)**, “Cultural Industries”, in R. Towse (Ed.), *A Handbook of Cultural Economics*, Cheltenham: Edward Elgar; 170-77.
- Towse, R., C. Handke and P. Stepan (2008)**, “The Economics of Copyright Law: A stocktake of the literature”, *Review of Economic Research on Copyright Issues*, 5(1); 1-22.
- Vallbé, J.J., B. Bodó and C. Handke. (2015)**, “Knocking on Heaven’s Door – User preferences on digital cultural distribution”. Available at <http://ssrn.com/abstract=2630519>
- Watt, R. (2000)**, *Copyright and Economic Theory: Friends or foes?*, Cheltenham, UK: Edward Elgar.
- Watt, R. (2010)**, “Fair Copyright Remuneration: The case of music radio”, *Review of Economic Research on Copyright Issues*, 7(2); 21-37.
- Watt, R. (2011)**, “Revenue Sharing as Compensation for Copyright Holders”, *Review of Economic Research on Copyright Issues*, 8(1); 51-97.
- Watt, R. (2014)**, “Fair Remuneration for Copyright Holders and the Shapley Value”, in R. Watt (ed.), *Handbook on the Economics of Copyright: A Guide for Students and Teachers*, Cheltenham: Edward Elgar; 118.

Weitzman, M.L. (1974), “Optimal Rewards for Economic Regulation”, *American Economic Review*, 68; 683-91.

WIPO / World Intellectual Property Organization (2013), “International Survey on Private Copying”, Geneva: WIPO.

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