
The Economics of Copyright Compensation Systems for Digital Use

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Preliminary version, 14th July 2013

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INTRODUCTION¹

It is unclear how best to compensate copyrights holders for online uses of works. In practice, rights holders have found it difficult to establish their exclusive rights in the ‘digital realm’. There have been many suggestions of alternative compensation systems (CS) for uses of copyright works in digital ICT networks.² Many economists have been sceptical about CS, and the economic literature on digital copying has mostly addressed the effects on demand for authorized copies and the case of copyright enforcement. There are good reasons for scepticism regarding the efficiency of CS. However, neither the status quo nor the alternative change option of greater public investments in copyright enforcement are self-evidently more appealing. That is why CS deserve serious attention.

This paper discusses core attributes of CS in the light of welfare economics and transaction cost economics. The general theme of the discussion is a *simplicity-flexibility trade-off* that arises when strengthening the position of rights holders through a CS. On the one hand, CS seek to reduce the costs of administering and trading copyrights online (which often seem prohibitively high in individual administration). To do so, CS arrangements would ideally be simple, general and permanent. On the other hand, standard copyright licenses 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 CS proposals, this paper prepares empirical research and seeks to inform the debate on whether – and under what circumstances – CS are the best available way to resolve current copyright conundrums in the digital realm.

BASIC MARKET CONDITIONS AND THE WELFARE ECONOMICS OF COPYRIGHT

Important elements of creative works tend to be inexcludable and non-rival in consumption. Creative works are quasi-public goods. 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), and suppliers need to deal with extensive uncertainty. Uncertainty and problems with inexcludability are aggravated by the typical cost structure of copyright industries, with high up-front costs of creating new

¹ We gratefully acknowledge financing by the Netherlands Organisation for Scientific Research. This is a preliminary version. Comments are very welcome.

² Grassmuck and Stalder (2003) contains a summary of the early literature. Quintais (forthcoming) presents a thorough, recent overview with a particular emphasis on legal considerations.

works and low, non-increasing costs of reproducing and disseminating existing. This has consequences for the welfare analysis related to copyright.

First and foremost, copyright seeks to mitigate inexcludability as one source of market failure by aggravating another: the market power of rights holders. Under 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 and will not be socially efficient in the long run. It is an intended effect of copyright to endow rights holders with some market power, so that they can charge prices above marginal costs. From a standard welfare economics perspective, copyright fights fire with fire. Therefore, copyright is generally a second-best option (Lipsey and Lancaster 1956; Towse, Handke and Stepan 2008) under market conditions that make the first-best situation of a statically optimal, perfectly competitive market unattainable, even though Liebowitz and Watt (2006) seem to suggest it could be the optimal first-best.³

Furthermore, a statically optimal, perfectly competitive equilibrium may not even be desirable in markets for creative works. Copyright is a means to safeguard socially efficient levels of investment in the creation of new, reproducible creative works (content creation) – a type of product innovation. Innovation is not an element of a statically efficient, perfectly competitive equilibrium (Schumpeter 1942). It is debateable to what extent real markets with incomplete competition, limited appropriability of innovations, uncertainty, and transaction costs in trading innovations approximate a socially efficient level of innovation, and to what extent the appropriability of innovations needs to be fostered by providing innovators with market power through intellectual property such as copyright.

Copyright systems are not the source of these inefficiencies compared to ideal-type, perfectly competitive markets. Copyright relates to these market conditions but it cannot entirely do away with all of them.

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).

According to the general theory of second-best (Lancaster and Lipsey 1956), we cannot rely on a reduction of one source of market failure to 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. Copyright policy needs to develop a trade-off between irreconcilable objectives. It is no strong criticism of any specific copyright system that it is associated with market failure, such as incomplete appropriability, uncertainty, transaction costs and market power. With

³ The first-best according to standard Paretian welfare economics would be a static equilibrium with perfect excludability of copyright works, without market power and with no transaction costs, including the costs of establishing excludability. This optimal, perfectly competitive market would exhibit marginal cost pricing for copies and would not allow creators to recoup the sunk costs of creation.

decreasing marginal utility, extreme expressions of any element traded-off against each other will regularly not coincide with an optimal solution. This also applies to CS. The question in applied research is whether any particular trade-off has a superior alternative under specific market conditions. The quality of an answer to this question depends on the quality of the information supporting the evaluation. That is why empirical evidence is important.

This is a qualifier but no reason to abandon the notion that markets are regularly the best way of allocating resources. Important advantage are that markets tend to be more adaptive to changing conditions than more centralized decision-making, and that decision-making rests with those facing the consequences of actions. That is, copyright policy should be restricted to those statutory interventions that will result in a net social welfare gain according to the best evidence available, and otherwise leave market mechanisms to operate.

WHY NOT RELY ON STATUTORY ENFORCEMENT?

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. It seems the main state intervention considered and discussed over recent years is greater public investment in copyright enforcement online. The French HADOPI-initiative and the UK Digital Economy Act are cases in point.⁴ However, as argued above, generating exclusive rights to creative works takes up scarce resources.

The evidence from private technical protection measures (TPM) and litigation-based enforcement is that the costs of enforcing copyrights are substantial. Current legislation provides rights holders with considerable scope to enforce copyrights.⁵ Rational rights holders invest in copyright enforcement up to the point where their expected private returns exceed costs. CMO as representatives of rights holders are typically organized in national monopolies so that they could exploit much of the economies of scale in copyright enforcement. Nevertheless, it appears that many privately funded enforcement measures have not been profitable in the digital realm. Ambitious TPM have been abandoned over recent years. At the current state of technology, the level of copyright enforcement that rights holders are willing and able to produce is quite limited. 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.⁶

⁴ HADOPI stands for Haute Autorité pour la Diffusion des Œuvres et la Protection des Droits sur Internet, a government agencies charged with copyright enforcement among French Internet subscribers between 2010 and 2013.

⁵ What is more, TPM enjoy legal protection in their own right, so that may not be circumvented in most major economies. This increases their effectiveness as an enforcement tool because in addition to their technical function, TPM circumvention is associated with a litigation risk for users.

⁶ In 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

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.

WHAT ARE ALTERNATIVE COMPENSATION SYSTEMS?

The point of CS is to generate rewards for rights holders when another party makes use of copyright works without the rights holder and user interacting directly. That is, CS try to increase the remuneration of rights holders. CS are not directly concerned with rights holders' control of access or any obligation of the public to safeguard control. Therefore, CS are fundamentally different from enforcement measures that seek to inhibit unauthorized use.⁷

Proposed CS typically differ from private ordering – where individual rights holders transact directly with specific users – in two respects. First, CS are characterized by standardized terms for copyright licenses rather than individual bargaining. Second, CS involve an intermediary organization that sets standard terms and administers copyrights. While the extent of standardization and the scope of the central intermediary's responsibilities may vary, standardization through a central agency is the essence of CS.

Joint, standardized administration of a range of copyrights is familiar from collective administration by so-called copyright management organizations (CMO), also known as collecting societies (Gervais 2010).⁸ The novelty aspect of CS proposals has sometimes been exaggerated. Most CS are simply suggesting collective administration of copyrights for specific uses online, with variations for example in the voluntary or mandatory nature of participation by various stakeholders.

As a rule, CMO already administer many of their members' online rights. The expansion of the existing infrastructure for collective rights management to the Internet has not been straightforward, however. Arguably, the specific market conditions online require a revision of CMO operations and should enable technological innovation in the provision of their services. There have also been lengthy negotiations about the terms and prices of online licenses, both between CMO members and between CMO and commercial online users regarding the terms and prices of copyright licenses for online use. In 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

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.

⁷ Lessig (2002) refers to this approach as “compensation without control”.

⁸ We 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 CS should be operated by collectives of rights holders.

territories. Looking at spontaneous market developments, it is hard to make out where joint administration of copyrights for online use is desirable and what the adequate scope of CMO would be. The main signal is that there is some dissatisfaction with the status quo.

EXEMPLARY CS PROPOSALS

Lunney (2001) is concerned that privately run encryption based copyright enforcement – an aspect of technical protection measures (TPM) – could excessively restrict private copying if encryption techniques enjoy legal protection in their own right. His preferred scenario is weak encryption with some scope for circumvention and an ‘honour system’ that relies on copyright signalling that extensive copying is socially undesirable and the ability of consumers to regulate themselves. With hindsight, it seems that TPM has not proven excessively effective in spite of legal protection so that the current situation resembles Lunney’s (2001) preferred scenario. In case “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, acknowledging problems relative to a functioning market regarding efficiency, fairness and incentives for technological innovation.

Focusing on music, Ku (2002) argues copyright should not apply in the digital realm. He doubts whether copyright encourages creativity. He believes that in contrast to offline markets, incentives to disseminate works online do not require encouragement through copyright. Should the results of abandoning copyright online be unacceptable, he considers a CS he calls the ‘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 points to the costs of enforcing copyrights online. He observes that these costs often fall on other 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 use for moral or political reasons, not just commercial ones. He sets the target that a CS generates equivalent benefits as the status quo at lower costs, including technology neutrality.

Eckersley (2004) proposes a CS run by public authorities and where distribution is subject to user voting rather than monitoring of use. He considers several options for setting prices for CS, including contingent valuations studies. Fisher (2004) developed particularly detailed suggestions on a non-commercial use levy for p2p file-sharing, and Aigrain (2008) discusses a broad range of options.⁹

⁹ Over recent years, CS 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 government helps instigate a ‘Digital Copyright Exchange’. At the moment, voluntary administration

Liebowitz (2003; 2005) criticizes CS 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 CS would offset the market mechanism and replace it with an inferior price setting. This is a convincing point. It can be extended to all terms of trade, which would be standardized under joint administration. Incidentally, it should also apply to copyright law, and how it determines the general framework for copyright administration, such as the duration of copyrights, for example. The question is whether there are ways to mitigate this flaw in CS or whether the benefits of joint administration compensate for it. Liebowitz and Watt (2006) conclude their discussion of CS as follows: “It is clear that this solution [CS à la Netanel (2003) and 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 he 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 exclusive rights are difficult to establish. Merges (2004) arrives at this conclusion by arguing that “markets for digitized works do not suffer from market failures” due to transaction costs. This counters the popular notion that compulsory licensing of copyright works online would “pay off big in the short term” by reducing the costs of transactions. Clearly, digital ICT has the potential to reduce the costs of trading copyrights. However, this requires the costly provision of enabling services such as directories of works and negotiations regarding the terms of trade. Furthermore, Merges (2004) discusses enforcement of exclusive rights separately from other sources of transaction costs. 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 individual negotiations between rights holders and users are much more frequent without joint administration. He also argues that private price setting will be “more flexible”. The latter point is the more convincing.

THE CASE FOR COLLECTIVE RIGHTS ADMINISTRATION¹⁰

CS proposals basically call for the administration of copyrights in a standardized manner, which requires a central agency managing this standard. This is what existing collecting societies do, which are usually run as non-profit collectives with extensive membership control by rights holders. Collective administration of copyright is common practice in some markets for copyrights, for example for public performance rights of musical works or reproduction rights for compositions. The basic principle is to bundle copyrights from a

of some online rights through established CMO who operate in the offline market is the norm. So far, no mandatory CS for online use of copyright works has been adopted.

¹⁰ This section draws heavily on Handke (2013).

number of different, independent rights holders, and to market them under a single license. Some CMO came about spontaneously – without extensive government intervention to set them up – even though it has sometimes taken decades for new types of uses to be covered. The economic rationale for CS is very similar to that for collective rights administration; see Handke and Towse (2007) and Handke (2013) for surveys of the literature.

Benefits of jointly managing copyrights

The standard argument for administering copyrights in a standardized manner and through a central agency is that this reduces the number of transactions and/or the average costs per transaction, enabling more mutually beneficial transactions to take place (Hollander 1984; Besen, Kirby and Salop 1992). Several types of transaction costs are affected by collective administration (Handke 2013).

- *Search costs* are the costs of identifying and gathering information on potential trading partners. Collective administration facilitates these tasks as users and rights holders only need to interact with a single organization, the CMO, rather than with many individual trading partners.
- *Contracting costs* are associated with negotiating and writing agreements. Collective administration reduces the number of contracts where it bundles a large repertoire into a single license. It also reduces the negotiating costs by offering standard terms of trade.
- *Monitoring costs* are typically defined as the costs of monitoring compliance with an agreement, and *enforcement costs* are the costs of dealing with a trading partner found in breach of an agreement. In markets for copyrights, the need for monitoring and enforcement is more pervasive than in markets for more excludable goods and services. Rights holders do not only have to monitor and enforce compliance among a set of existing trading partners. They also need to identify and deal with unauthorized users of copyright works who do not (yet) have a license.¹¹ To do so effectively by himself/herself, each copyright holder would have to monitor the use of copyright works among a great number of potential users – say hundreds of radio stations or thousands of bars. A collecting society that simultaneously monitors use of copyright works on behalf of many rights holders helps to avoid a multiplication of efforts and may thus reduce the average monitoring and enforcement costs per rights holder substantially. For individual users, it may not always be desirable if use of copyright works is monitored and enforced by effective collecting societies. However, users' risk of conflict and litigation may be reduced with effective collective administration, where it brings up a standard, blanket license that covers virtually all relevant works under well-known terms (Besen and Kirby 1989; Watt 2000). What is more, effective and general enforcement enables the private production of quasi-public goods as it resolves the dilemma that private incentives to

¹¹ It is debatable how the costs of detecting and dealing with unauthorized use of copyright fits into the conventional classification of transaction costs. They could be seen as search cost or as monitoring and enforcement costs.

free-ride dominate the individually and socially optimal decision to contribute to the costs of supplying inexcludable, quasi-public goods.

Another potential benefit is that collective bargaining for rights holders through CMO allows rights holders to strike more beneficial deals with users than they could individually. Collective administration inhibits price competition between copyrights holders and thus increases their market power. In this sense, collective administration increases the intended effect of copyright to endow rights holders with some market power. This is only a benefit if without collective bargaining, rights holders cannot secure sufficient revenues to encourage socially optimal levels of investments in the creation of new works. Among other things, this is contingent on the state of copying technology and market power on the user side.¹²

Costs of joint administration of copyrights

Joint administration of copyright and CS eventually mean that standard prices and conditions are adopted for a range of differentiated goods and services. This may be associated with misallocation of resources, as the example of standard pricing illustrates. In standard price theory, a single price for a differentiated range of works will only maximize revenues to those specific works with unit price elasticity of demand at this price. Charging the same price for differentiated goods will lead to an inefficiently low supply of works for which the optimal price would be higher or lower. The social benefit of CS relative to individual administration should thus depend on the extent to which the optimal solutions for specific works differ from the standards set, and rights holders with 'extreme' repertoires may find participation unattractive.

Furthermore, exploiting vast economies of scale, CMO will tend to enjoy some market power. Existing CMO are regulated through general provisions of competition law or through some specific measures, which are costly to implement.¹³ As argued below, effective regulation may restrict CMO in financing innovation. CMO may also be subject to inertia and slow decision-making in large organizations.

The efficient scale and scope of joint administration of copyright

Joint administration of copyrights is a means to exploit economies of scale in administering and trading copyrights. This is achieved through reducing the complexity that market participants are faced with when they trade in standardized terms through a central agency. Simplification usually comes at the cost of limiting the options available for setting prices and terms of trade, and adapting these to specific circumstances between a rights holder and a potential user. This cannot be rectified by voluntary participation in CS because flexibility on one side means greater complexity on the other. Joint administration can lower transaction costs – and enable many mutually beneficial transactions that would not be financially viable – but will inhibit customized trades and price competition. We refer to this as a *simplicity-flexibility trade-off*.

¹² If so, the execution of market power by CMO may have to be more restricted when dealing with fragmented end-users than with large, commercial users.

¹³ CMO are typically set up as non-profit organizations under collective control by rights holders, which limits the execution of market power by the CMO against rights holders.

The joint administration of copyrights is probably a natural monopoly. Important aspects of the administration of copyrights are homogeneous information services that can largely be automated using digital ICT, similar to a stock market, for example. With high fixed costs and non-increasing marginal costs, only a single supplier achieves productive efficiency with minimum average costs (Watt 2010). What is more, indirect network effects entrench the position of incumbent CMO. This is consistent with the observation that existing CMO are organized as national monopolies (or duopolies in a few cases).

Another analogy is core networks for network utilities: CMO provide a standing, scale-intensive infrastructure like the pipes for gas and water or the cables in electricity. An important difference is that the content traded through CMO is differentiated, and it is a simplification to speak of a single market for several copyright works.¹⁴ Then, the limiting factor in the size of CMO are probably not rising marginal costs in providing homogenous services (like directories of works and rights holders, monitoring of use of copyright works and organizing money transfers) but demand for flexibility and customized solutions in the terms of trade. Where ICT reduces fixed costs or makes the marginal cost schedule flatter, the absolute cost advantage of joint rights administration would be lower and stakeholders would tolerate less costs due to any mismatch between standardized terms of trade and terms considered preferential for the specific repertoire and use in question.¹⁵ Finally, protracted decision making in large organizations may inhibit innovation in large CMO and result in diseconomies of scale.

CS AND THE STATE

The cautioning failure of private provision

The state has a substantial role to play in most CS proposals, as they suggest a way of administering copyrights that stakeholders have not developed spontaneously. A strong objection to CS proposals is that spontaneous behaviour by those directly concerned provides the best indication of efficiency.

The economic literature on innovation discusses a number of obstacles that may inhibit the efficient development of new products and processes. First, indivisibility due to high fixed development costs and economies of scale may discourage the development of a CS. Second, due to regulation of CMO, the joint administration of copyrights is subject to limited supplier appropriability. That means CS would generate positive externalities similar to those of public goods. What is more, competition regulation may obstruct the provision by for-profit firms with relevant expertise such as major rights holders, digital retailers or

¹⁴ Markets for copyright works are quite complicated as there are often several standing core networks through which works reach end-users – say a CMO, an Internet service providers and an online retailer.

¹⁵ Defection is most financially attractive for rights holders with a large repertoire (so they can exploit some economies of scale outside of the incumbent CMO) for which the profit maximizing terms of trade diverge from those offered by the CMO. The same holds for users with a large market share. However, a CMO can of course adapt its terms to prevent defection and with several competing CMO, price competition should reduce the total surplus appropriated by rights holders.

ISP.¹⁶ Third, the pricing of creative works is tricky and bargaining may be inconclusive. Fourth, market power of incumbents with vested interests in the status quo may inhibit the adoption of a socially efficient CS. Last but not least, we may simply be in a transition period and it is unreasonable to assume that a momentous and scale-intensive project like setting up a CS would come about without a protracted period of preparations and negotiations. Of course, whether any CS would be efficient and what would obstruct its adoption remains purely speculative at this point.

Identifying obstacles to innovation would have important policy implications. If problems with adoption were due to bargaining breakdown, government intervention should focus only on bringing about an initial deal (through arbitration or in the extreme through statutory definition of terms of trade for a limited period). If a discouraging combination of indivisibility with limited appropriability were the main problem, the state could help finance the development costs or release regulation, and so on.

Caution is required with any top-down, government heavy approach. It is an exaggeration, however, to insist that ‘the market’ would have conclusively indicated no CS would be socially desirable.

The need for anti-trust policy

A permanent reason for a strong role of the state is the market power of CMO. A typical way to regulate natural monopolies is to allow for full exploitation of economies of scale by a single supplier, coupled with regulation to limit the exploitation of market power. Another aspect of anti-trust regulation is not yet fully appreciated in the CMO literature: a CMO could collude or integrate with specific users or rights holders to manipulate the standard terms of trade for jointly administered rights in their favour.¹⁷ Given the central role a CS would play in digital markets for copyright works and related goods and services, this is to be avoided to safeguard competition between rights holders and commercial users.

Some CS proposals foresee direct provision of services by the state (Eckersley 2004). Most suggest that the state should encourage private provision by a new or an existing CMO (under tight regulation). In any case, the prospect of effective regulation will inhibit the private financing of the development costs of CS, so that some state support may be necessary in the initial stage.¹⁸ Another question is whether public authorities should oblige rights holders or users to participate – see the discussion of mandatory participation below.

Finally, there is an important distinction between temporary state interventions and permanent regulations. Temporary intervention may be necessary to help cover setting-up

¹⁶ For better or for worse, in the European Union, the Commission Recommendation 2005/737/EC on the collective cross-border management of copyright and related rights for legitimate online music services prevented the concerted provision of collective rights administration by the existing CMO.

¹⁷ This type of manipulation would be particularly likely if joint administration was conducted directly by major rights holders or users.

¹⁸ Effective regulation of CMO would drive the price of their services down towards marginal costs. The better this is achieved, the less scope the CMO will have to finance the development costs of innovations. This may be a particular problem over coming years, as advances in ICT offer much scope for innovation in joint administration of rights.

costs of a CS or to break bargaining deadlocks in markets for copyright works. More permanent regulation is needed to inhibit the exploitation of market power by CMO.

HOW TO EVALUATE CS?

Theory

Copyright policy takes effect in a world of second-bests. Rational copyright policy will be based on comparing a number of options in order to identify the option that is associated with the greatest social welfare. CS is a category of some of these options.

The preferred CS is that which offers the best solution to the simplicity-flexibility trade-off. It would reduce transaction costs through creating large bundles of rights that are traded under standardized, transparent and stable conditions. It would avoid mismatch between optimal terms of trade for specific works at specific periods in time and standard terms of trade in joint administration. It would also retain market mechanisms to allow for appropriate responses to changing conditions. For avoiding mismatch and enabling 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, standardization seems irreconcilable with avoiding mismatch and responsiveness.

Paretian welfare economics provides an elegant short-cut regarding the social welfare analysis. Compared to the status quo, any CS would increase social welfare that makes either rights holders, users or other stakeholders better off, and none of these groups worse off. We do not incorporate potential distribution effects within these groups.¹⁹

For rights holders at large, the question is whether a CS would raise revenues that exceed revenues under the status quo, including the changes due to a CS license in related markets and changes in the production costs. Production costs should fall, since reproduction, distribution and retailing costs for rights holders under a CS 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.

¹⁹ Including distribution effects would complicate the analysis. Given the great diversity of stakeholders, it seems virtually impossible that any change to the copyright system would make no individual stakeholders worse off. In line with our premise to compare CS to real-world alternatives, any CS should pass the Hicks-Kaldor compensation test. Given imperfect information on the disutility of stakeholders, a CS should also not perform worse than the status quo with respect to distributive efficiency where the distribution of revenues to rights holders is proportional to the use value of the repertoire they supply. A CS that would not achieve this would not only make some high value suppliers worse off but could also adversely affect the supply of works, leaving users worse off. Therefore, it is necessary to exploit the opportunities of digital ICT to effectively monitor use and distribute revenues accordingly. Hicks-Kaldor compensation tests may be distorted by endowment effects.

For users, the question is whether the CS license to use copyright 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 willingness to pay. A CS entails several potential benefits to users. On the one hand, in most proposals a CS would offer the private utility of legal certainty when using works online (even though it is of course imaginable that a CS could charge users without providing legal certainty for related uses, similar to some levies on copying equipment in existence today (Liebowitz 2005)). On the other hand, a CS could cater for any preference of users to reward creators of valuable works (Rochelandet and Guel 2005; Hennig-Thurau et al. 2007; Fetscherin 2009) or for reducing social conflict over copyright. Furthermore, a CS could mitigate any problem with underproduction. It could ensure that as many as possible of those valuing access to copyright 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.

Tax payers often finance the legal process and parts of the judicial process. These costs could decrease with a CS that proves widely acceptable or simply excludes litigation between individual rights holders and users regarding copyrights administered under a CS. On the other hand, as the administration of a CS 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 CS.

Finally, specialized 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. Their value proposition relative to unauthorized services would no longer be based on legal certainty for users or any preference of users for compensating creators. They would have to compete with unauthorized services (including 'amateur production' in the case of file-sharing) by offering more convenient access and related services such as recommendation systems. As long as creators are adequately compensated, the dissemination of creative works should be conducted by whoever does so most efficiently.

If no CS offers welfare gains to at least one group of stakeholders while not leaving the others worse off, we are left with the challenging task of comparing the utility of stakeholders through a Hicks-Kaldor compensation test (which is implicit in a search for Pareto efficient improvements by comparing the position of two groups with potentially diverse positions within them). However, the division of surplus between users and rights holders may not be a zero-sum game. Falling revenues to rights holders could also leave users worse off if it leads to underproduction of new works. It is debateable whether stated or revealed preferences of users fully reflect this long-term effect. On the other hand, CS could encourage intrinsically motivated creativity and facilitate market entry by newcomers by lowering transaction costs and reduced uncertainty with more stable terms of trade. Furthermore, the net effect on user and producer welfare needs to be related to changes in the costs to the public associated with different CS options and alternative ways to administer the copyright system.

Empirics and the preparation and introduction of CS

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 CS proposals are too complex.²⁰ Instead, we suggest market research and experiments, similar to Eckersley (2004).

As argued above, the introduction of CS is prone to the familiar problems with innovation due to incomplete appropriability and uncertainty. Market research to evaluate and define the most promising set-up of a new CS is a case in point. Private incentives to conduct this type of research will be insufficient. Public funding may be required to instigate this preparation for CS.

Private businesses routinely conduct market research in order to establish user valuation of goods and services. Results inform decisions on market introduction, on the most promising product characteristics and bundle of products, before these products are traded. Regarding government policy and the provision of public goods, contingent valuation studies are popular tools to establish the full economic value of untradeable, public goods. Empirical results on total economic value and willingness to pay for CS with different set-ups will help establishing whether any specific CS would probably be welfare increasing, and which set-up would be most efficient.

The conceptual work presented in this paper constitutes a first step in this process. It prepares for contingent valuation user surveys, discrete choice experiments being the state of the art. The results indicate the value of a CS to users and how different CS attributes affect them. Rights holders and policy makers can then establish whether a CS could be welfare increasing. If so, the next step would be controlled experiments with limited adoption of the most promising CS option among a representative sample. Results of these experiments could also provide information on substitution effects of CS on other markets for copyright works, which is hard to produce in surveys but important for establishing the effect on rights holder welfare. Results need to be compared to the status quo, and alternative changes in copyright policy such as digital abandon of copyrights, or greater investments in copyright enforcement.

Depending on the results, this staged empirical process might encourage full adoption of a CS. Given the high stakes and the uncertainty that preparatory empirical research will not do away with entirely, CS should probably be phased in gradually. Initial limits could include the scope of works and rights, adoption among groups with a high willingness to pay, territorial limitations and voluntary participation for rights holders and users at least initially. However, the discussion of the specific CS attributes below suggests that a more comprehensive CS will probably be most efficient.

This approach is similar to Eckersley (2004), who also suggests a phased, experimental period of adoption. However, we extend that argument: while the scope of CS could be increased gradually with positive early results, an experimental attitude should be permanent. The main weakness of the CS would be their inflexibility and lack of responsiveness to change. Regular empirical work on the outcome of CS and the possibility of revisions could mitigate that problem somewhat. It is perfectly feasible, for example that in the course of technological change, CS should be abandoned or reduced in their scope. The technological environment is too unstable to hope for permanent solutions. However, a CS could

²⁰ The scope of collective administration of rights online probably does not provide a good indication, as the conditions in 'digital markets' differ in a way that is not fully understood.

increase stability and efficient allocation of resources, which could benefit technological innovation related to markets of copyright works as well.

SPECIFIC ATTRIBUTES OF COMPENSATION SYSTEMS

Any CS can be addressed as a combination of several attributes and their expressions. In the following, we discuss a number of the most fundamental attributes and their welfare economic implications.

CS raise a great number of challenging questions regarding the scope of CS and the exact way in which they are administered. This complexity is not unique to CS, however, but an aspect of copyright systems more generally. Complexity is an argument against copyright, not just against CS. For example, there are no hard and fast lines between conventional categories of creative works and other goods and services that should fall under copyright and those that should not. The same holds for the decision what copyrights to administer individually or jointly. Any CS would aim to reduce complexity, to simplify the 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.

The scope of a CS

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 CS include recorded music and authors' rights as well as recording artists' rights. A couple of CS proposals suggest a broader range of works be included, such as films and tv programs or literary text. Software is explicitly excluded in the most popular proposals.²¹

Substantive rights

Copyright regulates a number of distinct uses. Online particularly relevant uses are: the downloading or streaming of works, which implies reproduction; making works available to others as downloads or streams (uploading); the modification of works. Many CS were presented as ways to 'legalize file-sharing', which implies downloading and usually uploading with impunity.

²¹ A 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.

With modification rights a CS would cover so-called user-generated content, which regularly draws on copyright works but entails a creative contribution by the user. For modification, moral rights related to the integrity of creators may be particularly important. Nevertheless, whether modification rights should be dealt with in a CS still raises the same basic question as with reproduction and making available rights: does a CS 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.

*Private and commercial use*²²

Most CS focus on ‘private use’ that is not associated with any immediate financial benefit to the (end-)user. Joint administration is more likely to be efficient in situations where individual administration would require many more costly transactions. The sheer number of end-users means that search, monitoring and enforcement costs can be very high relative to the willingness to pay of this type of users (individual bargaining being practically out of the question). There will be fewer commercial users, however, and they will regularly have a higher willingness to pay. It may thus make sense to distinguish private and commercial use and to treat them differently.

However, it is tricky to distinguish private from commercial use, 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 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, which could be useful to counter professional users with market power (Hollander 1984; Besen, Kirby and Salop 1992; Watt 2000). If licensing conditions would be better for either private or commercial use, the division of household production and commercial production would be distorted. In any case, the interests of rights holders and commercial users online may often be aligned wherever commercial users generate private use that is compensated for under the CS.

Regarding all these aspects of the scope of CS, the theory of product bundling suggests that greater bundles allow suppliers to appropriate more of the surplus in a market. 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 in the administration of copyright online, say because suppliers of very different types of copyright works find it hard strike agreements with each other.

Stakeholder control over the scope of CS

Mandatory or voluntary participation

The point of copyright is to mitigate problems with the private financing of public goods. By decreasing transaction costs, a CS with voluntary participation of users might encourage

²² Following the convention in the literature on CS, we refer to non-commercial use in households as ‘private’, not to be confused with ‘private firms’.

some payments due to moral considerations or enlightened self-interest. With ineffective enforcement, free-riding would still be individually rational. It is desirable but unlikely that a CS 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 CS 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 CS participation with a refined pay-per-use systems 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 CS 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 CS revenues. There are two caveats to voluntary rights holder participation. First, users may disproportionately value absolute legal certainty with a comprehensive CS (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 CS. Voluntary rights holder participation could be combined with severe restrictions on rights holders to sue CS licensees with regards to uses covered by the CS, even for rights holders who do not participate. This would avoid mandatory rights holder participation, while offering legal certainty to CS licensees and reap most of the costs savings from a CS solution to the legal/judicial ‘copyright battle’.

Flexibility in rights holder participation

Some suggest that a CS would be more efficient and more desirable for rights holders if it allowed them to move works in and out of joint administration.²³ This is an extension of the binary choice whether a rights holder participates or not. 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.²⁴ What is more, voluntary and flexible

²³ ... suggests that novelties in particular would be excluded from the CS. This might benefit many rights holders who could charge higher prices since demand tends to be greatest for novelties. However, for new works published by anyone without a great reputation and/or a substantial marketing campaign, the optimal price in the initial marketing period would be quite low and higher prices may only be profit maximizing if enough of a buzz develops over time.

²⁴ A 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 (2013). Flexible rights holder participation could conflict with these arrangements.

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 CS 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 CS to be sure to avoid legal conflict.²⁵ The value of a non-comprehensive CS license to users would thus fall proportionally more than the value of the works not included into the CS 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.

Technical enforcement measures (TPM)

Many rights holders, authorized distributors and retailers of copyright works try to monitor or inhibit unauthorized use through a variety of technical means, such as encryption software. CS are typically providing users with legal safety from litigation-based copyright enforcement. Few CS proposals have discussed the implications of TPM for CS. TPM currently enjoy legal protection of their own. This makes it hard for CS to provide legal certainty to users, so that legal protection for TPM seems incompatible with a main value proposition of CS to users. Legal protection of TPM should be removed with the introduction of a CS.

TPM seems not particularly effective at this point. As long as that holds, there is little conflict between TPM and any CS. The issue could become more important should TPM become more widely adopted and effective.

Under a CS with fixed user charges, more effective TPM would erode the value of the CS license to users. This should be reflected in lower user fees for the CS license. In more refined CS, contributions and payments to rights holders are more 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 automatically adapt to changes in the effects of TPM on unauthorized use.

Any ban on TPM would have to be enforced. A key benefit of CS is that it reduces the need for copyright enforcement among end-users. It would undermine this benefit if enforcement on the user side were replaced by anti-TPM enforcement on the rights holder side. This should be avoided.

Financial aspects – pricing, payment vehicles and distribution of revenues

²⁵ Another complication is how any signal regarding the status of a work would reach consumers. CS adoption would certainly occur in a limited territory. Foreign websites could hardly be expected to signal whether specific works are currently administered under a CS license.

Who pays, the manner of payment, the amount due, and the distribution of receipts are all important aspects of a CS, affecting the efficient allocation of resources. All these financial aspects are subject to a simplicity-flexibility trade-off.²⁶

Payment vehicle

Several payment vehicles for CS have been suggested, such as more or less well-targeted taxes (Eckersley 2004; Fisher 2004), levies on Internet subscription or relevant ICT hardware, or revenue sharing with suppliers of goods and services that are complementary to unauthorized use of copyright works online (Ku 2002). It is important to note that hereby CS replace the inexcludable, private use of works online as the compensation incidence, facilitating the enforcement of compensation entitlements.

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 file-sharing.

Several CS proposals consider tying CS payments with charges for Internet subscription (perhaps subject to connection speeds or actual data transmission), and we will focus on this option. End-users will probably pay relatively modest amounts for a CS 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 CS.

Users would not have to conduct an additional payment for the CS if it were paid in combination with the payment for 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 CS contributions for subscribers than to inhibit unauthorized use of works online. This payment vehicle could be an effective way of enforcing CS participation by users. 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 CS participation were set as the default option. However, voluntary participation by users coupled with ineffective enforcement may not perform well enough.

Another advantage of this payment vehicle is that it provides a crude means to target charges to those most likely to benefit from online use of copyright works. However, Internet access has many other uses than use of copyright works. Bundling of Internet and CS subscriptions would reduce the elasticity of demand for CS 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 CS, as copyright works account for a smaller part of the bundle's total use value. Some Internet subscribers with low willingness to pay for the CS will still be obliged to pay if the CS participation is not voluntary. That would be a set-back compared to the status quo.²⁷

²⁶ This paper does not discuss the way that a CMO finances its operations. For a general discussion on this issue, see Handke (2013).

²⁷ The problem could be mitigated through a pricing scheme where no payment is due with minimal use.

Tying CS payments with Internet subscription requires the cooperation of Internet service providers (ISP). Often the plan is to oblige ISP to collect the CS 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.

The amount collected under a CS license

One starting point for the discussion of efficient amounts a CS would have to raise is comparison to the status quo. As a whole, rights holders would not be worse off with a CS that does not increase their costs and distributes amounts that are no lower than those without the CS. 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.²⁸ However, it seems reasonably certain that under a CS, production costs of rights holders should not increase. Revenues at the status quo provide a reasonable indication of the lower bound of revenue levels for rights holders under a CS that would not be welfare decreasing for this type of stakeholders.

A more common suggestion is to aim for total CS 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 considerably harder to gauge. Besides the problem with incomplete information on production costs, the counterfactual of rights holder profits without unauthorized copying is very hard to establish.²⁹

As Liebowitz (2005) points out, even if the amount collected under the CS 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 CS 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' willingness to pay and the true economic value of a CS license. Of course, such a survey-based estimation will not be perfect and prices should not be set to minimize user surplus.

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

²⁸ The 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.

²⁹ At the status quo prior to the introduction of a CS, there will be considerable unauthorized copying. Otherwise, no CS would need to be considered. Furthermore, any CS would affect the demand in related markets, which may affect harm and thus the compensation needed (Liebowitz 2005). In addition, Kretschmer (2011) points out that prices for copyright works already reflect some unauthorized copying, which limits the scope for additional compensation through a complementary CS.

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 more thorough discussion. A particular complication according to economic theory is the long-term effect of rights holder profits on investment in new creations, and how this affects user welfare.

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 CS proposals is to charge a fixed monthly amount to potential users – for example all Internet subscribers. Gervais (2004) calculates with 5 US\$ for a CS 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 MP3 store), where users are charged per download. It would be more similar to subscription services that have become more popular for recorded music and audio-visual entertainment of late, 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 CS 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 CS license fee depends on a 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 analysis (Kretschmer 2011).

Distribution of revenues

Another financial aspect of CS is the distribution of revenues among rights holders (once the operating costs of the CMO are covered). 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. Monitoring costs would be relatively low. Furthermore, privacy concerns would be much weaker with monitoring of a random sample (who could be asked for consent if that would not invite manipulation) and anonymized data analysis. It seems that a CS 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 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.³⁰

Summary of key issues in the financial aspects of CS

In summary, there is a paradox regarding the financial aspects of CS. The very problems with monitoring of use and enforcement of copyrights that make CS appealing also mean that CS would probably be associated with less efficient pricing than under the status quo in traditional markets of copyright works.³¹ In other words, CS would perform badly in terms of contributive efficiency. The paradox is that CS should allow for much more distributive efficiency than under the status quo if they would distribute revenues 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.³² The solution could be to charge for a CS license based on measure of use. Pay-per-use pricing could ensure responsiveness of CS 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 private information transactions online and on a personalized level, which raises prohibitive concerns about privacy.

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 inefficiencies due to the execution of this market power. 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. The willingness to pay of users and the willingness to participate of rights holders will depend on

³⁰ As 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.

³¹ However, it may not be meaningful to compare a CS for online use of works with traditional markets for copyrights, where unauthorized use was more contained in many major economies.

³² As 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.

the perceived efficiency of CMO, which is subject to regulation. Eckersley (2004) even argues for direct state provision for the collection and distribution of CS revenues.

Regulation of CS 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 an 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; Handke 2013). 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).³³ With a CS, 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.

Finally, empirical research suggests that end-users' willingness to pay for copyright works decreases with the impression that the original creators do not receive much of the revenues generated. Some CS 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). 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 and intermediary firms, and in particular make it harder for creators to raise external financing. However, if favourable conditions to original creators increase users' willingness to pay enough, they could still be an efficient option and even make both types of rights holders better off.

CONCLUSIONS

Opinions on how to administer copyrights online diverge widely. Some argue that a system based on property rights, freedom to 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 (Eckersley 2004) and that 'file sharing is here to stay' (Lohman 2004). For about 15 years, 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. In this context, alternatives to enforcement deserve serious attention.

CS seek to arrange for the financial rewards to creators and subsequent rights holders rather than on inhibiting unauthorized use. CS are basically a form of joint administration of copyrights online. They invoke a simplicity-flexibility trade-off. The main advantage of CS is

³³ Liebowitz (2005) points out that strong related markets constitute a safety valve for inefficient pricing under joint administration of rights.

that they reduce transaction costs in the administration of rights through standardization. This includes easier enforcement of compensatory payments, either by end-users when payments are tied to more excludable services than the use of copyright works online, or by a smaller number of commercial users in the case of revenue sharing. Reliable, universal and non-discriminatory standards in trading rights would facilitate market entry, amateur production and foster competition between creators and disseminators of creative works. The main disadvantage is that CS 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 CS can be complex. To establish whether CS would be welfare increasing requires empirical research, and we propose contingent valuation studies to estimate their full economic value for users. Results will help to identify the best CS set-ups, estimate collection sums and the likely welfare implications of CS, and support the decision whether CS should be tested in proper experiments. Continuous application of contingent valuation studies and experimentation could also mitigate the main weakness of CS after more general adoption: the lack of responsiveness to changing conditions relative to functioning markets.

This paper focused on economic aspects of CS. The development costs of CS 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 CS would only be adopted if the discounted future value of any efficiency gains due to a CS would compensate for these development costs. A missing dimension in this paper is the compatibility of various proposals with national and international law.³⁴ Whether any CS would fit through the thicket of rights and legislation is another important debate to be had, once there is a reasonable indication that CS could make society better off in a digital age.

³⁴ For a legal discussion see Peukert (2005), Oksanen and Välimäki (2005) argued that CS 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".

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