

Draft Discussion Paper

Code and (intellectual) property

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Discussion points

- Property as an institution is a complex organising idea that defines a set of relations towards a thing or persons, in a way that is accepted by society.
- The design of property law has evolved over the course of time in response to distribution and *fencing* techniques.
- In the context of copyright law, Lex Informatica could be one basis for private rule making in the sense of a self-regulatory regime. Precondition is that Lex Informatica complies with the requirements of a self-regulatory system (feasibility of delegation of rule making power to private parties, clearly defined organising idea, participation guaranteed, evaluation and monitoring procedures of private rule making power, and finally, clearly distinguishable rules to regulate social interaction).
- The EC Copyright Directive leaves some room for code as source of alternative rule making.
- Private rule-making concepts must not principally be unfeasible for the regulation of property in general, and specifically of property in intellectual resources (e.g. the example of first possession rules).
- It is not entirely impossible that participation could take place in form of an ‘electronic dialogue’.
- As opposed to controllers of code, users are, for the time being, poorly equipped to monitor and control private rule making power in form of Lex Informatica (transparency problem, lack of equal negotiation power, ‘paternalistic’ approach copyright law: not clearly carved out rights of access use – as opposed to e.g. the regulation of tangible property)
- It is very questionable if electronic rules are indeed such a useful tool to formulate information policy in property law because:
 - Code often serves many purposes at the same time
 - Code follows its own rules (standards).

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1. Introduction

Each society faces the problem of determining which, among the many competing claims on the resources available for use in that society, are to be satisfied, when, by whom, and under what conditions. In a private property system, a rule is laid down that, in the case of each object, the individual person whose name is attached to that object is to determine how the object shall be used and by whom. His decision is to be upheld by the society as final.¹

The concept of private property has developed together with the history of human societies. Since the first settlements, individual property has acquired a central meaning for societies.² Individual and public prospering is often inevitably linked to the existence (or non-existence) of one or another form of property in certain resources. Social relationships are defined in terms of ownership conditions (landlord-tenant, rightsholder-user, etc.) Property plays an important political role, and in the more modern history of property, the notion of private property is often directly associated with the existence of a functioning democracy.³ Closely related to this is the aspect of private property as one of the crucial symbols of and foundations for individual autonomy, including autonomy from the state as well as from fellow citizens. The importance of private property may be assessed from the fact that Article 17 of the Universal Declaration of Human Rights declares property to be a human right, as do most national constitutions.

The regulation of private property is also a powerful policy tool to influence the development a society takes, the allocating of and dealing with resources, to stimulate the realisation of certain economic or political goals, technological developments and socially or economically desirable behaviour (e.g. the efficient usage of resources, stimulation of investment and evolution, increase of overall welfare), to reward individual labour invested in certain resources (natural rights arguments) and to avoid conflicts. As such, the regulation of property in general, and especially of intellectual property, is exposed to a certain tension between

¹ Waldron, p. 39.

² E.g. Demsetz, referring to the development of private property rights in land among American Indians.

³ Cass. R. Sunstein, pp. 89, 92 subsq. With further references.

individual, private autonomy and governments in realising the personal/political agenda. On the one hand, private parties depend on the formulation of overarching rules that regulate their behaviour as regards resources, while on the other hand private parties seek to protect their own autonomy and interests. The resulting conflicts – together with the need to find the most efficient and effective procedures for the allocation of resources in response to social, technological and economic developments – result in continuous reassessments of the form an intellectual property order should take, the optimal ways to implement it and whether there are alternative, better solutions.

Could code (technology) show the way to a better solution? At the very heart of the ‘code as code’ discussion is the question whether rules embedded in code can have, in addition to their technical function, a social or democratic function in the sense that they could replace normative rules (see the chapter by L. Asscher). Code (technology) is not code (law). But, at least according to Lessig, code ‘can, and increasingly will, displace law as the primary defence of intellectual property in cyberspace’.⁴ Reidenberg goes even further by sketching a distinct role for technological measures.⁵ When commenting on the relationship between code and law, Reidenberg argues that law can play several roles with respect to code, namely to encourage the development of Lex Informatica, to sanction evasions of Lex Informatica and to use Lex Informatica as an effective substitute for law:

In essence, Lex Informatica and legal rules both parallel and overrule one another. This relationship means that policymakers must add Lex Informatica to their set of policy instruments and should pursue Lex Informatica norms as an effective substitute for law where self-executing, customised rules are desirable.⁶

With other words, the argument goes that code (technology) under certain circumstances could be as conclusive as code (law). Goal of this chapter is to examine if, and if yes, under which circumstances, intellectual property law (and more precisely: copyright law) might leave room for such a distinct role of code.

⁴ Lessig, p. 126.

⁵ Reidenberg, p. 565: ‘parallel rule system’.

⁶ Reidenberg, p. 578.

Within the previous chapters by R. Lambers and R. Leenes/ B. Koops), code was already discussed as an instrument in the information politics toolbox of governments to realise policy goals such as privacy and regulation of speech. Technology, however, can also be used by private players to define own, customised default rules. This latter aspect is what the following discussion of technological code and intellectual property law centres on, namely the viability and desirability of private, customised, self-enforcing, respectively self-regulatory rules for the management of intellectual resources. Technology as a means of private 'self-regulation' plays already now a role, for example, in youth protection, privacy protection but also in copyright law. And, copyright law and private self-regulation (as opposed to government regulation) is a discussion that is already being lead in context with contracts and copyright law.⁷ In practice, code (technology) and contracts will often come together when managing individual copyrights. According to the overall goal of this project, this chapter, however, will look at code (technology) in Reidenberg's sense as own, alternative source of private rule making - Lex Informatica. The chapter will show that there might be a distinct 'democratic' role for code, and that code-rules might differ in some important aspects from contractual rules as means of private self-regulation. It will also show, however, why code, after all, is not such a useful tool to realise information policy goals in copyright law.

This chapter examines the role that copyright law plays with respect to code, and the role it could play in the organisation of property. It examines at a more abstract level what the characteristics are of property, of code, where the borderlines are between private and public rule-making, and what the social and democratic potential is of electronic 'rule-making'. These questions gain an additional meaning in the light of the tense relationship between technological measures and traditional copyright law. Can controllers of code introduce new, privately made rules, override existing limitations or control resources which, so far, have not been subject to IP law? Whether or not users of code may override existing limitations and exceptions in copyright law – one of the prominent questions of the code discussion in the copyright field – depends to a great extent on whether it is desirable and legally feasible for an alternative rule system based on code to develop.

This chapter first analyses the relationship between legal and technological code, the role existing copyright laws assign to code and whether code (technology) leaves some room for

⁷ See e.g. the study by Guibault, with further references.

democratic, electronic rule-making. It then examines whether property rules could be distinguished in code. Two scenarios are presented. Code could be, first of all, a means to further differentiate existing copyrights: the exclusive right of making available can be further differentiated in making available a text for a day, to be read only twice, in read-only form, with unlimited permission to copy, etc. Here, code is primarily a means to exercise and enforce existing rights. The second, more interesting scenario – the one on which the analysis focuses – is code as the basis for alternative, private rule-making, quasi as a legitimate option to deviate from existing copyright default rules. The aim of this chapter is not to provide an answer but to initiate a discussion on whether the delegation of rule-making power to code controllers is democratically feasible and desirable from the information point of view.

2. Private property – a concept in motion

Property as an institution is a complex organising idea⁸ that defines a set of relations towards a thing or persons, in a way that is accepted by society.⁹ Irrespective of whether one follows more utilitarian or natural rights theories for the justification of private property regimes, a common argument in all theories is the social function of the property order.¹⁰ Demsetz pointed out that:

In the world of Robinson Crusoe property rights play no role. Property rights are an instrument of society and derive their significance from the fact that they help a man form those expectations, which he can reasonably hold in his dealings with others. These expectations find expression in the laws, customs, and mores of a society. An owner of property rights possesses the consent of fellow men to allow him to act in particular ways.¹¹

⁸ Waldron, p. 38, Harris, p. 55.

⁹ A basic distinction can be made between scholars who describe property rights as a relation ad rem (...) and those that describe property as a relation ad personam. See extensively in Eleftheriadis, with further references.

¹⁰ See extensively: Engel. Engel, p. 14: ‘Eigentum ist vielmehr eine Basisinstitution von Gesellschaften.’

¹¹ Demsetz, p. 347.

What rights and duties are finally assigned to the owner depends on the concrete object of ownership. Rights and duties can vary strongly from resource to resource,¹² but often they include the right of possession, the right of use and the right to draw profits, the right of transfer and the right to exclude others.¹³ One consequence of the social perception of property is that the concept of property inhibits not only rights but also duties.¹⁴ A property order seeks to mediate between the liberties of owners and those of non-owners, and according to the motives and objectives behind the decision to grant private property. It is up to society to decide how far the freedom to dispose over certain resources should reach, and where other protection worthy interests of third parties outweigh. Especially in the case of intellectual property regulation, the interests of the different parties can be very contradictory, namely to exclude others from accessing and/or using a particular resource and, on the other hand, to do just that: to access and/or use a resource without being forced to ask for anyone's authorisation. Hence, the need to find adequate mechanisms to balance the interests of all parties involved is particularly strong.¹⁵

A property order is not static but develops together with societal, economic and technological developments.¹⁶ Intellectual property law and, more specifically, copyright – which is the focus of this chapter – is an obvious example of an order that evolved in response to societal and technological developments.¹⁷ One development that has influenced the more recent genesis of copyright law is the digitisation of intellectual resources and distribution means. The US Digital Millennium Copyright Act, the WIPO Internet Treaties and the EC Information Society Copyright Directive all respond to the double impact of digitalisation on the existing practice of copyright holders. On the one hand, digitisation provides creators and other representatives of the creative industry with new ways to distribute their works in digitised form and via digitised distribution channels (Internet) and subject to new business models (e.g. pay-per-use, DRMs, etc.). On the other hand, the digitisation and distribution of works in

¹² Landes & Posner, p. 4.

¹³ Samuelson (1989), p. 370.

¹⁴ See already Locke: the owner has the right to use the work, but not to destroy the work as this would not be in conformity with the laws of nature according to which humans have received the gift of objects in order to use them. Who spoils a resource deprives others of the right of usage, Locke... See also Germany: concept of 'Sozialbindung'.

¹⁵ This is, for example, why the German constitution has reserved the regulation of property explicitly to the legislator (Article 14 (1) of the German constitution). Germany is, hence, an example where the regulation of property is considered of so eminent importance for society that a self-regulatory approach towards the regulation of property is probably prohibited, or at least only possible with strict safeguards of the public interest.

¹⁶ Lipton, p. 180. Demsetz, Mackaay (1996).

¹⁷ Instructive is the book by M. Rose, *Authors and Owners, The Invention of Copyright and the essays by D. Saunders and Strowel*.

digital (intangible) form also leads to a greater mobility of creative resources. Rightsholders find the distribution of intellectual resources more difficult to control. New, more sophisticated forms of copying and other forms of the unauthorised use of works (e.g. unauthorised redistribution and communication to the public) are responded to by issuing new, exclusive exploitation rights.

But it is not only the evolution of *production or distribution techniques* that can be the cause for new property rights: the evolution of techniques *to protect property rights* can also trigger the evolution of established property concepts. For example, the introduction of barbed wire in 1874 stimulated the parcelisation of unfenced ranges where cattlemen had previously run their herds at will,¹⁸ and fencing techniques played a central role in the issuing of exclusive rights in gold mines during the Californian gold rush.¹⁹ This is where code comes into play. Code – in the given context – refers to technical copy control, user control (watermarks, cookies, spyware), access control systems and similar technologies (see the technical chapter – Hans). Code, in the context of intellectual property rights, has often been referred to as a form of electronic fencing. Similar to fences in the offline world, electronic access control techniques (encryption, scrambling, password techniques) can be used to effectively exclude third parties from access to intellectual resources. Code therefore plays an important role in the enforcement of IP in an environment where, as some scholars claim, ‘the ability to copy could not be better, and where the protection of law could not be worse’²⁰ – meaning the Internet. The available techniques include those to prevent certain forms of unauthorised use (copying, redistribution), measures that control access to works (conditional access) and measures that allow for the tracking and monitoring of usage (watermarking, metadata) (for a detailed overview, see the technology chapter). But the functionality of electronic copy protection and access technologies is even wider and goes far beyond the *defence* against unauthorised use. Digital Rights Management Systems (DRMs) - that will be at the focus of this chapter - establish an increasingly sophisticated architecture of technical user identification, verification and authorisation, access and usage control, management of consumer relationships control and tracking of protected contents. The overall goal is to control who uses what types of digital content when, where and how. This also means that with the increasing sophistication of

¹⁸ See already Ellickson, p. 1330.

¹⁹ Umbeck (with reference to the Californian gold fields), p. 57: ‘[A]ll private ownership rights are ultimately founded upon the ability to forcefully exclude potential competitors. Force, not fairness, determines the distribution of wealth in a society.’ Umbeck, however, also admits that his study does not provide an optimal test for a general theory of force.

²⁰ Lessig, p. 125

technologies to control access to and the usage of electronic information, it is possible to exercise a new form of exclusive control over intellectual resources. Code controllers can now formulate their own (technological) property rules to *determine the behaviour* of users of intellectual resources. These rules are written in a language that each user is able (or forced) to understand, irrespective of cultural and language differences, namely machine language or ‘code’.

Bentham observed once that “property and law were born together, and would die together.” Our present common understanding of property – particularly in continental legal systems – is still that of a legal concept (although this chapter will also touch upon the economic concept of property). Parliaments issue the rules according to which exclusive property rights are assigned and administered. But the particularities of code have inspired discussions about whether code ‘can, and increasingly will be the new ‘language’ with which to explain to consumers what they may and may not do with information? Scholars repeatedly pointed out that technological code could be used to write one’s own individual property order.²¹ Some scholars have already drawn the conclusion that the prospects of electronically (privately self-)ordered information markets would offer ‘a graceful exit strategy from copyright regime’.²² Are we witnessing the shift from a public, black-and-white property order to private, electronic rule-making - an order where (technological) code becomes *lex*? Does *Lex Informatica* really offer such a graceful exit from public meddling with intellectual resources? Or is there a tendency to overestimate the potential of DRMs to create binding rules, and is it more likely that they would lure us on a path where we would have to stumble through a complex and confusing network of electronic obstacles and fences?

²¹ Burk & Cohen, p. 51; Elkin-Koren (1998), p. 1158.

²² John Cahir, ‘The moral preference for DRM ordered information markets in the digitally networked environment’, presentation at the Twelfth Annual Conference on International Property & Policy, 15-16 April 2004, Fordham University School of Law.

3. Code and code

At first sight, recent initiatives in copyright law treat technological measures primarily as a tool to enforce existing copyrights. Starting with the WIPO treaties, a number of legal initiatives at national, regional and international levels have embraced technological measures as a tool to assist the holders of copyrights and related rights in their fight against piracy.²³ Article 11 of the WIPO Copyright Treaty requires contracting parties to provide adequate legal protection and effective legal remedies against the circumvention of effective technological measures that are used by authors in connection with the exercise of their rights. For the EU this rule is expressed in Article 6 of the Copyright Directive. The Directive bans not only the circumvention of effective technological measures, but also such preparatory activities as manufacturing, importing, distributing, selling, renting, advertising for sale or rental, or possessing such devices for commercial purposes. § 1201 of the US DMCA is in the same vein. This provision prohibits the circumvention of technological measures as well as preparatory activities (manufacturing, importing, offering to the public, providing or otherwise trafficking in any technology, product, service, device, component or part thereof).

A closer analysis of the present relationship between code (law) and code (technology), however, reveals that code can be more than merely an enforcement mechanism, and that private electronic rule-making can compete with public rule-making autonomy. To begin with, until now, national legislators have made a very conscious decision not to add the right to control access to the catalogue of exclusive exploitation rights ('copyright').²⁴ This is in order to stimulate the dissemination of works for the benefit of consumers and other creators (derivative works). In this respect, copyright has differed from conventional property rights which traditionally include the right to authorise access to, for instance, one's premises. Now, the European Copyright Directive in

²³ See e.g. EC Copyright Directive, Recital 47.

²⁴ But see e.g. the US anti-circumvention rules, which explicitly address electronic access control. As the Berman report explained, Congress did not prohibit the circumvention of copy controls; in the case of unlawful circumvention, the infringer will be liable for copyright infringement anyway. But if access to the work was unauthorised, this subsequent legitimate use should not be an excuse for circumvention, Berkman report, p. 34. See also Article 6 (1) and (3) European Copyright Directive.

Article 6 (3): Technological measures shall be deemed ‘effective’ where the use of a protected work or other subject-matter is controlled by the rightholders through application of an access control or protection process, such as encryption, scrambling or other transformation of the work or other subject-matter or a copy control mechanism, which achieves the protection objective

and the US DMCA in

§ 1201. Circumvention of copyright protection systems (a) Violations Regarding Circumvention of Technological Measures. — (1)(A) No person shall circumvent a technological measure that effectively controls access to a work protected under this title. The prohibition contained in the preceding sentence shall take effect at the end of the 2-year period beginning on the date of the enactment of this chapter

explicitly address access control techniques, in addition to technological measures that prevent, for example, unauthorised copying or distribution. With the integration of factual access control into the regime of copyright, copyright law is confronted with a novel set of problems that still need to be addressed, namely the accessibility of intellectual resources.²⁵ This illustrates another difference between copyright law and the regulation of property in, for example, land. Unlike copyright law, the rules on landownership already address a possible conflict between access to a resource and public interests. Examples are the enactment of the right of way, restricted access rights in the case of rental apartments, access to public thoroughfares, must carry rules etc. But also in, for instance, media law, possible conflicts between exclusive control over resources (broadcasting licences) and the public interest in the accessibility of such resources were foreseen and responded to.²⁶

One of the major controversies in the copyright/technological code discussion is the delineation between public and private ‘rule-making’, that is, the question to what extent code

²⁵ This the more so since in Europe broadcasters and providers of information society services benefit, in addition, from the provisions of the EC Conditional Access Directive, which prohibits the circumvention of any electronic access control techniques that are used to protect remuneration interests, and irrespective of exclusive rights in the contents so distributed are subject to restrictions under copyright law

²⁶ For example, Article 3a of the Television Without Frontiers Directive is dedicated to the question how to prevent the usage of electronic access control compromising the broad availability of certain contents in the public interest. Article 3a Television Without Frontiers Directive authorises Member States to draw up ‘lists of important events’. The lists identify contents that may not be made subject to electronic access control unless they are available elsewhere in unencrypted form. For more detail, see Helberger (2002). Helberger, Controlling access to information, doctoral thesis, to be published.

must respect the existing limitations and exceptions inherent in the legal IP order. Code gives its controller at least the factual possibility to exercise control even beyond the limitations and exceptions as laid down in copyright law. Examples are the possibility to prevent private copying, to access an encrypted text for the purpose of parody or criticism, to control access to or usage of works for which the protection period has expired, to extend control to resources that, so far, are not subject to IP law (e.g. trade secrets, unpatented inventions, public domain information) or to control consumptive use. With other words, in addition to a purely supportive or facilitating role, code could play a more independent role, namely it can modify existing or *manifest new property* ‘rules’ that have not existed so far or have not existed in this form. The control over users’ behaviour is shifted into the hands of private parties, and so far there are no (or only a few) explicit rules that outline the autonomy of the controllers of code to shape new rules, and the need to respect formally codified choices representing the public interest.

Article 6 (4) of the Copyright Directive addresses the relationship between code (law) and code (technology). According to Article 6 (4) of the Copyright Directive, it is up to rightholders to solve any conflicts between the use of code and copyright exceptions and limitations:²⁷

[n]otwithstanding the legal protection provided for in paragraph 1, in the absence of voluntary measures taken by rightholders, including agreements between rightholders and other parties concerned, Member States shall take appropriate measures to ensure that rightholders make available to the beneficiary of an exception or limitation provided for in national law [...] the means of benefiting from that exception or limitation, to the extent necessary to benefit from that exception or limitation and where that beneficiary has legal access to the protected work or subject-matter concerned.²⁸

²⁷ Even more difficult to understand are the thoughts of legislator behind European Conditional Access Directive. CA also used to protect IP. Good example that control of access does affect also other interests, broad access to information, + i.e. the element that is also in most DRMs.

²⁸ Article 6 (4) Copyright Directive states that ‘[n]otwithstanding the legal protection provided for in paragraph 1, in the absence of voluntary measures taken by rightholders, including agreements between rightholders and other parties concerned, Member States shall take appropriate measures to ensure that rightholders make available to the beneficiary of an exception or limitation provided for in national law [...] the means of benefiting from that exception or limitation, to the extent necessary to benefit from that exception or limitation and where that beneficiary has legal access to the protected work or subject-matter concerned.’

But the Directive does not address situations in which technological code is used to control access to and/or the use of intellectual resources that have intentionally been left in the public domain (laws, government information, public information and data, works for which the protection period has expired, etc.).²⁹ And Article 6 (4) of the Copyright Directive does not apply to a number of exceptions that were originally introduced to protect freedom of expression interests, such as reproduction made by the press, communication to the public or making available published articles on current economic, political or religious topics or broadcast works or other subject matter of the same character, quotations for purposes such as criticism or review, use of political speeches, use for the purpose of caricature, parody or pastiche, etc. Article 6 (4) of the Copyright Directive also does not define what "legal access" is. Are controllers of code entirely free to determine the terms and conditions of access? Or does the notion of "legal access" implies that there can be (/ought to be) situations where users must have a legitimate right to access? All together, controllers of code, at least in theory, might have considerable discretion to replace normative regulations with private rule-making. And they would do so with the approval of Article 6 of the Copyright Directive. This assessment is apparently shared (for the US copyright field) also by some US scholars, including Cohen and Burke, who say that 'to the extent that the DMCA appears to legitimate technological controls over copyrighted works, without regard to their effect on public policy, the statute effectively grants rubber-stamp approval to such private legislation.'³⁰ One could of course argue against that, that were I to fence in a piece of land (or information) that does not belong to me, or were I to exercise control to which I am not entitled, I would be acting against the law, and therefore such behaviour is simply not permissible. But, as the recent discussion on copyright law and contracts illustrates, the matter is more complicated than that. For the online environment, contracts have been discussed as an alternative discovery procedure and as a means to customise property rights.³¹ And, indeed, the European Copyright Directive makes this argument its own in Article 6 (4), which further reads:

The provisions of the first and second subparagraphs shall not apply to works or other subject-matter made available to the public on agreed contractual terms in such a way that members of the public may access them from a place and at a time individually chosen by them.

²⁹ For a map of the public domain, see Samuelson (2003a).

³⁰ Burk & Cohen, p. 51.

³¹ See extensively Guibault, Perritt, p. 433 subse.

The provisions of the first and the second subparagraph refer to the duty of rightsholders to ensure the exercise of certain exceptions. This duty does not apply to works that are provided online and on demand and on agreed contractual terms, apparently leaving some room for private rule-making and to modify the existing balance between exclusive control and certain exceptions in copyright law. Background to the provision is the idea that instead of adhering to a predefined copyright law order, rightsholders could offer consumers differentiated prices and usage conditions. It was argued that customisation of the property order by means of contract would allow consumers to select the terms that they feel fair and appropriate so that in the end both parties could reach an agreement about the use of certain intellectual resources.³²

With respect to code (technology) Reidenberg referred to "the social process by which customary uses evolve". While in the legal regulatory regime private contractual arrangements could be used to deviate from the law's default rules and to customise the relationship between parties, Lex Informatica would also offer customisation.³³ Could the next version of the EC Copyright Directive, thus, read:

"The provisions of the first and second subparagraphs shall not apply to works or other subject-matter made available to the public *using technological measures to control access to, and/or use* in such a way that members of the public may access them from a place and at a time individually chosen by them."?

³² Prins, p. 147.

³³ Reidenberg, p. 567.

4. Code as code

As mentioned, the present legal discussion still perceives technological code primarily as a tool to protect existing copyright claims against the rest of the wide and borderless electronic world, ignoring the fact that code, in praxis, does much more than blindly enforce existing normative rules. In fact, the notion of *Lex Informatica* already implies a further reaching social and regulating function of technological rules. Could DRM rules be ‘lex’ in the sense of a viable substitute for law to regulate the behaviour of content users on the Internet? For the electronic media (the Internet, as well as e.g. broadcasting) self-regulatory models are enjoying growing popularity.³⁴ One of the reasons self-regulatory models seem so attractive in certain fields is the wish to stimulate the acceptance of and compliance with rules where traditional means of monitoring and enforcement are less effective or are too expensive. The idea is that the chances for voluntary compliance with rules are better where participants have an own interest in doing so, and/or where people feel that the procedure for enacting rules are fair and balanced. Direct participation in the rule-making process can be a factor to improve acceptance.³⁵

In Chapter 1 (L. Asscher), it was explained that to qualify as *lex* (be it in form of government regulation, be it in form of self-regulatory rules)– or at least to fulfil a similar function – code would have to be more than a technological programme. It would need to possess certain qualities that, as such, also characterise legal rules: it would have to be normative – its rules must have a binding effect on the parties involved and would have to receive social consent. It would have to be institutionalised – procedures must be in place according to which rules are formulated and agreed upon. And it would have to be coercive – its rules would have to be enforceable.³⁶ The chapter concluded that technology could express normative rules provided it fulfils a number of requirements that also characterise normative rules. In the following, it is examined whether DRMs and similar techniques used in the field of copyright could qualify as ‘lex’ in this sense, and if so, what this could mean for copyright regulation, notably are

³⁴ The notion of self-regulation is used for the given context in the broadest possible form in the sense of private rule making, including self-regulatory models with different degrees of organisation (e.g. on the one end of the spectrum self-regulation of the advertisement industry (as an example of a high degree of organisation), and on the other end of the spectrum contracting), as well as different degree of government involvement (ranging from co-regulation to private contracting).

³⁵ Interesting the analysis in Jensen, p. 540 subsq., with further references.

³⁶ Perritt p. 432, citing Ratz.

self-enforcing, customised property rules in this field both viable and desirable? It is not the intention of this section to argue that copyright law could be completely replaced by private law-making. The section examines whether the process of technological rule-making and customisation is sufficiently democratic and balanced to justify modifications of the existing legal order similar to, for example, the process of contracting. The section, furthermore, does not discuss the question whether concepts of self-regulation or co-regulation would be considered to effectively transpose the provisions of the EC Copyright Directive, nor does it discuss to what extent and under which conditions individual national constitutions would allow any delegation of rule-making power to private parties. It also does not discuss competition law and policy aspects related to self-regulatory models. Nor does it offer concrete proposals for the regulatory toolbox.³⁷ Instead, it provides arguments pro and contra the idea of Lex Informatica as a means of private rule-making for dealing with intellectual resources.

4.1 Private rule-making and information policy

Private rule-making in the form of privately made rules has gained new prominence in the legal discussion as a serious regulatory alternative for electronic information markets.³⁸ This is not to say that privately made rules are a concept that is particularly new to our legal orders. As Slawson observed:

Our society is controlled to a greater extent than we normally realise by privately made law which gains its legitimacy from the consent of the parties governed by it. The laws of contract, collective bargaining, incorporation, partnership and private association all permit the delegation of law-making power to private individuals.³⁹

However, law-makers, policy-makers and scholars have recently come to realise that the application and enforcement of traditional legal rules in an electronic environment (notably

³⁷ Insofar, it is referred to the excellent study by Schulz & Held.

³⁸ See e.g. Article 16 E-Commerce Directive, Article 27 Data Protection Directive, EC references; EC Action Plan promoting safer use of the Internet. McGonagle, p. 10. Also, Reidenberg and Lessig. Elkin-Koren (1998), p. 1156 subseq. (with respect to contracts and private ordering).

³⁹ Slawson, p. 536.

the Internet) often does not lead to satisfactory results. This is because of the ubiquity and non-territoriality of the medium (while national authority is restricted to a particular territory and/or citizenship), its fast-changing and dynamic character, the lack of experience on the site of law makers and enforcement authorities, the web's anonymity, the anarchistic mind of the netizens and their reluctance to accept government-imposed rules, paired with the difficulty of enforcing formal rules in the first place.

There are good reasons to argue that under certain circumstances self-regulation of the private sector could be more efficient, better fit the electronic environment, are more practical to apply on a global level or enhance voluntary compliance and therewith reduce rule-making and enforcement costs.⁴⁰ Cyber-democrats have repeatedly pointed out that the network community might very well be in the state to design its own rules and governance, at least in certain areas (private initiatives against the use of spam are one example, initiatives to protect individual privacy is another;⁴¹ in broadcasting media, the regulation of youth protection is often based on concepts of self-regulation (in combination with technological measures!). Lengthy parliamentary procedures could be avoided, limited territorial sovereignty would no longer be a problem, and the interactive character of the net would allow for a more direct and effective participation. Also, the Internet offers new opportunities for participation of private parties in rule making processes.⁴² The netizens could model the virtual world according to their own preferences and base its governance on principles of decentralisation and direct democracy.

This is to say, social consent does not necessarily have to be expressed in the form of parliamentary laws. Parliament can also decide to grant some organising power to the private parties directly involved, for example by establishing systems of co-regulation, by acknowledging the freedom of contract or by legitimising other forms of private rule-making (e.g. customisation, contracting, etc.). One can also define consensus and private law-making processes in a less formalistic way. This process can be also understood as a 'social dialogue' where a democracy is 'defined not merely by formal political institutions, but as a process of 'discursive will formation', participation is no longer confined to a narrowly defined political realm, but is instead perceived as an activity that can be realised in the social and cultural

⁴⁰ See extensively e.g. in Perritt; Schulz & Held, p. A-8.

⁴¹ E.g. Verisign offers now 'private registration' with the effect that the domain, address and private data of the person who registers with Verisign will be not disclosed.

⁴² Elkin-Koren (1996), p. 1162.

spheres as well.⁴³ This is to say that it is not written in stone that parliamentary processes are necessarily the most efficient and effective ways of drafting a fair, balanced and just property order.⁴⁴ There may be other, more efficient ways to arrive at a collective consensus about the allocation of certain resources and the principles that this process should follow.⁴⁵ A precondition is the existence of an effective discovery procedure.⁴⁶ At the heart of such a discovery procedure is a mechanism that enables and supports effective interaction between individual preferences and constraints on resources and information available.⁴⁷ Code: discovery procedure or permission language?⁴⁸

The discussion about private rule-making is still underway, and for the time being there is no uniform definition or concept. It would exceed the scope of this study to provide an adequate account of the state of this discussion. Proposed (or already implemented) solutions differ from sector to sector and from country to country.⁴⁹ At the heart of the concept of private rule-making, however, is a change of roles of the parties involved: regulatory power is passed from the sovereign to private parties. At the same time, no private law-making model exists in a law-free space, there is always some element of delegation of regulatory power from the sovereign to private parties (or at least toleration)⁴⁸ involved, its degree depending on the public policy interests for a particular sector.⁵⁰ Consequently, there is also always a need to define the boundaries between the state (sovereign) and private parties. Different degrees of sharing responsibilities between public and private parties are thereby possible. The degree of participation of private parties directly involved depends on how far states actively ensure that

⁴³ Elkin-Koren (1996), p. 231, 234 subs., 235 subs. explaining how cyberspace can promote and facilitate the social dialogue. Engel, 43. Critical: Fromkin, p. 631, Radin (2003), p. 15. Christainsen, p. 524. Engel, p. 10, 15-16.

⁴⁴ Critical also Radin (2003), p. 15 subs. See also Christainsen, p. 523: ‘no fixed line can be drawn to separate law and morality. Morality refers to certain rules that ought to guide human conduct, regardless of whether these rules are articulated and enforced in a formal way. Law, on the other hand, is the formal enterprise of making certain rules explicit and then seeing that some attempt is made to enforce them.’ Interesting also the essay by Acemoglu.

⁴⁵ See also Radin (2003), p. 17. CED report, p. 76. Engel, p. 40, 42: ‘Man kann deshalb auch sagen: das Eigentum ist ein Steuerungsinstrument. In dieser Formulierung sollte nicht mehr verwundern, dass immer mehr private Substitut fuer das staatliche Eigentum entstehen. Denn auch sonst wandert Steuerung ja vom Staat weg.’ And further, at p. 42: ‘Denn fuer die soziale Funktion macht es keinen Unterschied, ob ein Veruegungsrecht staatlichen, privaten oder hybriden Ursprung hat.’

⁴⁶ Christainsen, p. 500 subs.

⁴⁷ Christainsen, p. 524. However, Christainsen goes too far when comparing rights and the law to prices and quantities as both could be seen as social outcome. Goal of a legal order is not exclusively the optimisation of the realisation of individual preferences; other, overarching goals play a role, too, e.g. to the realisation of public goals such as the broad availability and wide dissemination of information, consumer welfare.

⁴⁸ Samuelson (2003), p. 42.

⁴⁹ Schulz & Held, p. A-4; ITER, p. 36, McGonagle, p. 2.

⁵⁰ Perritt, p. 427, explains the relevant differences between private parties and a sovereign.

acceptable and effective solutions are achieved, notably to what extent regulatory power has been delegated to private parties. In some cases (e.g. in co-regulatory models) states exercise more influence and control.⁵¹ In other cases, parties are left widely free to design their own, private rules. One of the most prominent examples of private rule-making is contracting, as was mentioned when discussing Article 6 (4) of the Copyright Directive: the state guarantees and protects freedom of contract. This enables private parties to design own rules in relation to the contract partner(s). At the same time, states can impose certain requirements concerning how parties exercise this freedom (e.g. form requirements, revocation, validity rules, etc.) or even restrict the contractual freedom (e.g. mandatory licensing obligations, interconnection obligations, etc.).

Although the discussion about private rule-making is still underway, there is at least some agreement about the crucial elements of any successful private law-making model (be it real self-regulation or co-regulation). First of all, delegation of regulatory power must be **feasible** for this field. There is the need for clearly defined **organising idea**. The **desirability** of self-organisatory models depends on whether private rule making is a promising route towards the realisation of such an organising idea. Therefore it is needed a system of rules to effectively realise this idea, and some form of organisation between the members of the self-regulatory system. **Participation** is a key word in this context. Private law-making procedures must be designed in a way to allow for effective, rule-making procedures among participants. This is not only to balance all the interests involved, but also to ensure acceptance among the players. As in any regulatory system, principle acceptance by its subjects is essential for the stability and functioning of that system. Finally, there should be some element of **evaluation and control** that allows private parties to monitor rule-making and prevent abuse, and the state to interfere if the system threatens to fail.⁵²

4.2 When is delegation of regulatory power legally feasible?

⁵¹ McGonagle, p. 2. Schulz & Held, p. A – 5. For further suggestions for a ‘toolbox’ for governments to implement co-regulation, see Schulz & Heldp, p. D-7.

⁵² Perrit, p. 426; McGonagle, p. 4; Schulz & Held, p. A-4; Nota Wetgeving voor de elektronische Snelweg, p. 181.

One important general quest in the discussion about private law-making is to identify sectors where the delegation of law-making powers to private parties is feasible. First experiences already exist in, for example, the fields of youth protection and advertisement regulation, privacy protection, consumer protection, telecommunications regulation, technical standards, etc.⁵³ But not every situation, right or resource lends itself equally well for establishing alternative systems of private participatory regulation. Rather, the success and efficiency of self-regulatory concepts will depend on the rights and values in question, as well as on the goals behind their regulation. Some rights are of such a fundamental nature that governments face particular responsibilities that they cannot easily delegate to private parties/the private sector. Very much depends on the value that society assigns to a right and/or resources.⁵⁴ The more important a resource for the economic, societal, cultural or democratic development and prosperity of a society, the more severe the obligations for governments to protect this resource and/or to realise the public policy interests in this resource. In other words, the more intense the public interest in the existence of certain rights, the more difficult it should be for states to rid themselves of their responsibility for guaranteeing the value in question, and the less easily the regulation of this particular resource should be left to the mercy of individual, private interests. For example, the usage of certain broadcasting frequencies is subject to strictly regulated distribution and usage rules, while the usage of less popular frequencies remains unregulated. Vice versa, property in nuclear power plants is far more strictly regulated than is the ownership of dogs, because the potential dangers for the public that can result from the control of a nuclear power plant are more serious than the dangers posed by a single dog. Other important factors are the characteristics of a sector or situation, notably whether the interests between the different groups involved differ more or less strongly and whether other characteristics of the sector suggest or prohibit private regulation (e.g. dynamics of the sector), availability of adequate information to facilitate the tasks of the responsible enforcement institutions (e.g. governments) as well as legal reasons (e.g. the principle of non-governmental interference with the content of media).⁵⁵

Having said that, the value that a society assigns to a particular right and/or resource can be subject to change. One example is privacy. Since the start of the ‘war against terror’, both society and policy makers tend to attach less value to privacy than they do to other goods,

⁵³ For case and country studies see the study by Schulz & Held. For a discussion of the concept of co-regulation and examples see also the article by T. McGonagle.

⁵⁴ McGonagle, p. 3, with further references.

⁵⁵ Schulz & Held, p. D-2.

such as public safety. Similarly, it cannot be excluded that the perception of the value of private property changes (as it did, for example, under Marxism and Communism). An example more relevant to the given context is the democratisation and broad availability of fencing techniques through such systems as Microsoft's Palladium. Such systems could contribute to a gradual change in the common social and moral perception of property in intellectual resources. Suddenly, every single user could impose access control or control the use of his writings, photos, e-mails, collections, etc. Eventually, the original perception of copyright law as a standardised and (purposefully) limited set of property rights would be forgotten, as would its idea to grant exclusive exploitation rights without making intellectual resources entirely exclusive.

For the time being, information or intellectual resources are considered an essential ingredient for social, cultural, democratic, economic (knowledge-based economy) and personal development. Intellectual resources are also the basis for the creation of other intellectual resources. Thus, the dissemination of such resources plays a crucial role in the cultural development of an information society. Access to information in all its forms is necessary in a democracy. To be informed is the personal capital of the citizens of the information society, and access to and use of information is the key to successfully managing one's personal and social life. Finally, intellectual resources are increasingly recognised as valuable commodities and as the material from which our knowledge-based economy is made. Accordingly, it is commonly accepted that the most important rationale of the copyright system is to promote the production and dissemination of culture and knowledge in society.⁵⁶ This is why copyright law, more than other property orders, is characterised by a well-developed ideology of sharing, in return for the assignment of certain exclusive exploitation rights. Rightsholders have a predefined duty to share their creations with others. This rationale is reflected in the limitations and exceptions of copyright law. It is also reflected in the way copyright law is designed (exploitation rights are limited in time, no copyrights in facts, ideas, etc.) as well as in the fact that copyright law does not include (as other property orders do) a right to control access to contents. Copyright law is intended to achieve a balance between two goals: to assign authors exclusive rights to authorise certain types of use – namely the exclusive rights to acquisition, use and disposal⁵⁷ – and the need to limit ownership in intellectual resources

⁵⁶ Hugenholtz, p. 10. CED report, p. 61.

⁵⁷ Mossoff, p. 34. It is not the intention of this article to discuss the various theories behind intellectual property law, namely the arguments of the exclusionists and the followers of the bundle of rights theory. This article

where the interest in free usage of such resources is preponderant.⁵⁸ Any form of private rule-making alternative would have to take into account that the concept of property is that of a complex organising social concept which involves an element of balancing the different private and public policy interests involved, especially in the case of intellectual resources.

This is not to say that private rule-making concepts must be principally unfeasible for the regulation of property in general, and specifically of property in intellectual resources. There already exist examples of alternative means of assigning and administering resources, directly, without a representative and according to own, self-governing rules or in the form of group ownership. Ellickson describes the example of close-knit groups that directly manage land resources for their members (though customs and laws).⁵⁹ The lobster gangs of Maine are another example cited in academic literature.⁶⁰ Even more closely related to the example of intellectual property laws is the aforementioned discussion of contracts as a means to customise property rights and a basis for an alternative (private) rights order for the online environment.⁶¹ The acknowledgement of contractual modifications serves the demand for more flexible, individualised solution; whereas cost arguments and the need for self-enforcing, transparent solutions gave rise for another kind of 'private property rulemaking' in form of first possession rules:

First possession rules grant legitimate ownership claims to the party that gains control over certain resources before others do.⁶² Examples are the law of the finder, adverse possession, certain cases of regulation of property in unsurveyed public land, wild animals, treasures, natural resources, and frequencies, as well as the law of intellectual property.⁶³ As such, first possession rules are relevant mainly in the context of the initial manifestation of property over unclaimed goods.

follows the opinion of Mossoff, saying that under existing copyright laws the right to exclude refers to the various things that one does with the copyrighted work, namely the granting of exclusive usage rights (p. 34). Burk & Cohen, p. 43 subsq.

⁵⁸ Note: Free in this context must not necessarily mean 'free of charge', but free from the requirement to acquire prior authorisation.

⁵⁹ Ellickson.

⁶⁰ James M. Acheson, in: *Perspective on Property Law*, p. 141

⁶¹ See extensively Guibault, Perritt, p. 433 subsq. Slawson, p. 529 subsq.

⁶² Lueck, p. 393. Mackaay (2002), p. 5.

⁶³ For a detailed analysis and examples of the rule of first possession, see Lueck.

A person has possession of something if that person knows of its presence and has physical control of it, or has the power and intention of controlling it (see more extensively below).⁶⁴ So far, information – as an intangible resource – and possession are notions not easily used in one and the same context.⁶⁵ The introduction of technological measures, however, could bring about a change. Technological measures such as electronic access control are designed to establish control over information or information products in a way that puts its/their controller in a position very similar to that of somebody who, for example, fences a piece of land.⁶⁶ The controller of code is in a position to defend his factual position and to effectively exclude others from accessing the thus protected information, or to prevent other forms of usage.⁶⁷ For the given case, first possession rules could play a role, for instance, in the context of the commodification of public domain material.

Even more relevant to the given context, however, are the reasons why national regulators/courts have favoured first possession rules for certain sectors (including intellectual property law: ‘first creation’ or ‘first invention’). From the economic point of view, first possession rules can be a means to economise on enforcement costs in the establishment of rights, especially where it is still unclear what resources are valuable, respectively commercialisable.⁶⁸ Rules of first possession were also popular in cases where the enforcement of normative property rules appeared to be too difficult or too expensive. From the legal point of view, first possession rules could serve as an alternative way out of public interference with particular resources.⁶⁹ Also, the act of possession is considered a sort of statement that communicates in clear terms that someone claims a certain resource.⁷⁰ First possession rules thereby serve to enhance legal certainty and clarity especially with respect to resources that are not well known yet and are difficult to delineate or to control. This also explains why, in law,

⁶⁴ The ‘Lectric Law Library’s Lexicon, available at <http://www.lectlaw.com/def2/p057.htm> .

⁶⁵ Compare e.g. Rose, p. 186. But see also Samuelson (1989), p. 370, arguing that it does not unduly strain the definition of the word to say that a person possesses information, e.g. when the keeper of a secret refuses to tell the secret to others.

⁶⁶ See also Lueck who speaks of possession in context with intellectual property and airwaves, Lueck, p. 417, 419, with further references.

⁶⁷ One example is an electronic database on court decisions that is offered on a subscription basis. Access to the database is made subject to an automated authorisation process. Without authorisation the access requester has little possibilities to access the data contained in the database (unless the data is available elsewhere).

⁶⁸ Lueck, p. 415.

⁶⁹ Compare Lueck, p. 419 for the case of the broadcasting spectrum.

⁷⁰ Rose, p. 184 subseq.

the notions of possession⁷¹ and property are often closely interwoven. In the case of doubt, factual control over a particular resource can serve as proof or indicator of ownership. At least with tangible objects, the transfer of legal property usually requires the new owner to perform an act of establishing possession. Adverse possession can even cause an owner to lose his property.⁷²

There are some parallels between digital intellectual resources on the Internet and the aforementioned cases of un-owned land, cattle and treasures: high enforcement costs, or more generally, difficulties of enforcement on the worldwide web and the need to seek effective discovery procedures. And first possession rules are apparently also the basis for Mackaay's suggestion of an 'experimental rights order'.⁷³ Mackaay argues that new fencing techniques are an opportunity to adapt existing copyright law to changed circumstances or even to create new ('experimental') property rights:

Fences of some sort – they may be ditches – are a necessary and normally also sufficient condition for creating property rights. New fencing techniques make new property rights viable or old ones more viable. ... Fences may be physical stops. In the world of software, copy protection and encryption are such fences.⁷⁴

He argues that the intellectual property order must not be static and that it is not the task of the legislator to maintain an order that has proven to be unworkable (this is what he calls the 'realism of law'). The inability to effectively protect and enforce intellectual property rights on the Internet by legal means could, seen 'realistically', be an indicator that the existing order is imperfect. In this case, according to Mackaay, it should be left to interested parties to experiment with solutions that do work.⁷⁵ This logic of 'build/mind your own fence' is not new. It has been already applied in the context of property rights in land. Already Ellickson pointed to the relation between property and the advances in technologies for marking,

⁷¹ A person has possession of something if the person knows of its presence and has physical control of it, or has the power and intention of controlling it, The 'Lectric Law Library's Lexicon, available at <http://www.lectlaw.com/def2/p057.htm> .

⁷² Rose, p. 184. Merrill.

⁷³ Burk & Cohen, p. 53, pointing out the problem of possible conflicts between first possession rules and public land policy, and that consequently statues were enacted that did not only protect the fences but that also prohibited the unauthorised enclosure of public land; with further references. On the problem of dissipation: Lueck, p. 395 subsq.

⁷⁴ Mackaay (1996), p. 16.

⁷⁵ Mackaay (1996), p. 20. The role of legislators in this context was, first of all, to wait, and then to acknowledge the new rights once sufficient experience was gained.

defending and providing boundaries.⁷⁶ He observed that, in accordance with the efficiency thesis, the invention of technologies for marking, defending and providing boundaries led to an intensification of private property establishment. Ellickson used the example of the introduction of barbed wire in 1874, which stimulated the parcelisation of unfenced ranges where cattlemen had previously run their herds at will (reduction of transaction costs of private property regimes).⁷⁷ Of course, land and information as resources differ considerably. Nevertheless, they do have something in common: their public and communal value for society. With both resources, there is strong interest in finding the most effective and efficient modes of assigning property in a way that optimises the realisation of both powerful individual private and public interests for the sake of the overall benefit for society - be it in the form of government made or privately made rules.

4.3 Participation

To return to Mackaay's argument: establishing a fence is a unilateral activity in which only one party – the party erecting the fence – participates. From the legal point of view, the party erecting the fence still can claim only possession, no property - unless there were legally binding rules in place saying that a person that builds an electronic fence around certain information would gain property rights in such information. These two concepts – mere physical control (possession)⁷⁸ and property – must not be confused. The distinction might be less obvious if one has an economic understanding of the concept of property. As Mackaay himself points out, the economic understanding of property is far broader than the legal understanding (law as a legal concept):

Wherever someone has the more or less exclusive control over some resources, allowing him or her to do with it and to collect the gains or suffer the losses resulting there from, he or she has, to all intents, a property right in the broad sense economists give to the term, whatever its legal name.⁷⁹

⁷⁶ See also Ostrom, p. 46.

⁷⁷ Ellickson, p. 6.

⁷⁸ A person has possession of something if the person knows of its presence and has physical control of it, or has the power and intention of controlling it, The 'Lectric Law Library's Lexicon, available at <http://www.lectlaw.com/def2/p057.htm> .

⁷⁹ Mackaay (1996), p. 16. Mackaay (1982), p. 38.

Consequently, from the legal perspective, mere factual control or possession does not say much about the existence of a property right (although it may lead to, for example, a change in the burden of proof).⁸⁰ A number of conclusions could follow from this assumption: The first is that even if the scope of Article 6 (4) Copyright Directive is limited to a selected catalogue of restrictions, this still does not mean that the remaining exceptions and limitations in copyright may be legitimately overridden. Who fences resources, be it land, be it information, that does not belong to her or that she is not entitled to control, acts in the first place against the property order (as to the conditions under which alternative orders might be acceptable, see the discussion below).⁸¹ This is also the reason why the use of code must not *per se* affect the public domain character of information (this, of course, also depends on the definition of public domain. For the given context, public domain is understood as information that is not subject to any private rights of exclusion and everyone is privileged to use it).⁸² The mere fact of having factual control over public domain material still does not grant any legally binding claims as regards a certain resource. The information remains principally in the public domain, and everybody is free to use it and to make it available elsewhere (another question is whether consumers do have the possibility to find those resources elsewhere. Where this is not the case, exclusive (access and/or usage) control could have indeed the effect to reduce the public domain).

For possession to be recognised (and protected) as property in the legal sense, it needs what Demsetz referred to as the ‘consent of fellow men’.⁸³ This is a logical consequence of the idea of property as a social concept. It is up to society to decide how far the freedom to have control over certain resources should extend, and where the other protection-worthy interests of third parties outweigh such freedom.⁸⁴ This societal decision can take the form of laws (e.g. in form of property laws or first possession rules). In a democracy, society is commonly represented by a parliament, which comprises elected representatives of the citizenry. Citizens have the possibility to indirectly participate in the process of rule-making and to bring in, via

⁸⁰ In this sense also Eleftheriadis, p. 34.

⁸¹ Mackaay, p. 6, Engel, p. 40.

⁸² Niva Elkin-Koren (2001), p. 196, with further references to the definition of and theories on the public domain. Gibbons (1998), p. 6-7, also argued that broadcasting is another example of a commons, as it benefited the whole community, but it was difficult to determine particular individuals’ willingness to pay for it, as with traditional broadcasting there is always the possibility to free-ride and get the programme for free (non-rivalry).

⁸³ Demsetz, p. 347. See also Notes, p. 859: ‘dialectic of relationality’. See also the extensive discussion in Eleftheriadis, p. 35-41.

⁸⁴ Rawls, A Theory of Justice, in: *Perspectives on Property Law*, p. 102 subseq. Demsetz, p. 350 subseq.

the parliament (at least in the best of cases), own interests and preferences.⁸⁵ Waldron explains why this is so important:

Everything would depend on whether people accepted it [ownership] and were prepared to abide by its fundamental rule. Partly this would be a matter of the acceptability of the name/object correlation. People would not be happy with an arbitrary correlation or one which did not assign their name to any object worth using. That is a matter for the theory of justice.⁸⁶

In other words, the allocation of property is not only a matter of who fences first or who is able to build the stronger fences: it is also a matter of justice and morality. One indicator of the extent to which a property order is just and moral is how well it manages to balance the various conflicting individual and public interests in the allocation of resources. One important task for a property order is to balance the interests and freedoms of all parties involved. Only then can the order be expected to be ‘upheld by the society as final.’⁸⁷

Perritt elaborated on that point using the example of contracts. Perritt argued that contracts could provide the framework for a complete legal system.⁸⁸ According to Perritt, however this is the case only where rules are the result of participatory decision-making (negotiation), when they set certain standards (contract rules) and when they are enforceable. This opinion can be, for example, also supported by Slawson, who says that:

Contract law [i.e. contract rules] can therefore meet the requirement of democratic consent if a contract is defined as the parties manifestation of mutual assent to one another – which is exactly the definition the law in theory already applies.⁸⁹

⁸⁵ Radin (2003), p. 6. Elkin-Koren (1999) further explains the different possible natures of participation (e.g. voting), concluding that an understanding of participation in the sense of the ability to participate in a meaningful way in generating the rules affecting a citizen would be the more sophisticated understanding of the political process, and that this understanding would acknowledge the presence of will formation processes in the collective decision-making processes themselves, Elkin-Koren (1999), p. 1173. See also Buchanan, p. 23, referring to political activity as a particular form of exchange.

⁸⁶ Waldron, p. 39. In a similar direction points Hart when saying that it was a very important feature of a moral right that the possessor of it is conceived as having a moral justification for limiting the freedom of another so that rights express moral claims which it is deemed appropriate to enforce.

⁸⁷ Waldron, p. 39.

⁸⁸ Perritt, p. 433.

⁸⁹ Slawson, p. 543. But see also Buchanan, p. 47 subseq. on the likelihood of voluntary co-operative arrangements (who cannot be discussed more in depth in the frame of this chapter).

Slawson takes this argument further, and concludes that: '[t]he conclusion to which all this leads is that practically no standard forms, at least as they are customarily used in consumer transactions, are contracts.'⁹⁰ Even if one does not support that final conclusion, it confirms that participation is a crucial element in the making of property rules: rules must to some extent be negotiated among group members (as opposed to being unilaterally imposed rules) and they must realise certain standards, principles and considerations of greater generality and of importance in the public interest. This point is made very clear also by Ellickson, who observed that the ability of groups to assign and administer property rights in land works best in close-knit groups (thereby specifying Demsetz' s theory of property). The reason is that a group comprising persons who know each other is able to act cooperatively and to communicate about and monitor the individual behaviour of members of the group with view to particular resources. This enables them to meaningfully participate in the process of solving the difficult organisation problems that the allocation of property poses.⁹¹

Effective participation is also an argument scholars use to explain why contracts might be suitable only to a limited degree for shaping an alternative copyright order.⁹² One is the observation that the digital network environment does not necessarily lead to more participation. It can also lead to more standardisation, and in the end further reduce consumer choice. Click-wrap or shrink-wrap licenses reduce consumer choice to a 'take it or leave it' choice (not to speak of the question whether such contracts are considered valid).⁹³ Proponents of this assumption display a deep distrust in the ability, or rather: will of the market to generate sufficiently individualised rules.⁹⁴ The way the argument goes is to wonder whether the market alone would regulate access to, and use of information in any satisfactory way. It then concludes that this is not the case because cost and efficiency arguments would be incentives for information provider to offer information at standardised terms, instead of making room for an individual bargaining process. From a purely economic point of view, this assumption might be correct. From an information policy point of view, this way of arguing, however, might be

⁹⁰ Slawson, p. 544.

⁹¹ Ellickson, p. 1349 subseq.

⁹² Another argument, which cannot be dealt with in this study is the question of the boundaries between contracts and the democratically established statutory order. The ability to divert from the existing legal order can go as far as the parties enjoy freedom of contract, or as far public policy arguments are not opposed to such a diversion (Perit, p. 436-437. The question is then to what extent the rules of copyright law (notably its limitations and exceptions) are or are not imperative. Guibault, who examined this difficult topic in depth, found that the answer varies from country to country, and depends not only on a country's approach to copyright protection but also on its approach to the principles of freedom of contract (Guibault, p. 291).

⁹³ Critical also Guibault, p. 203 subseq.. Slawson, p. 544. Radin (2003), 12. Elkin-Koren (1998), p. 1180.

⁹⁴ Elkin-Koren (1998), p. 1180: "Consent in market processes, however, is fictional."

too narrow. It ignores that, departing from the idea of private rule making in the sense of a self-regulatory process (as opposed to government regulation), parties might have actually an interest in offering individualised terms and conditions. Departing from this perspective, the question is less whether the market could successfully replace the legislator but whether participants themselves are able and willing to do so. Certainly, economic and cost-efficiency considerations will play a prominent role, but there are other motives at stake, too. Incentives can be the wish to avoid government involvement (see e.g. Article 6 (4) of the EC Copyright Directive that 'threatens' with initiatives in case controllers of code do not undertake action to make the exercise of certain exceptions possible). Another reason can be that other service providers (e.g. such that do not use technological measures) offer more favourable conditions to users, and that this might be an incentive for users of DRMs and similar technologies to offer attractive and differentiated terms and conditions. Finally, the problem that the creative industry is facing now is a serious acceptance model. Despite of, or perhaps rather in reaction to, increasingly broad legal and technological protection the industry is complaining about piracy and a low morality among the netizens when it comes to respecting intellectual property rights. As mentioned previously, one of the reasons self-regulatory models seem so attractive in certain fields is that they enhance the acceptance of and compliance with rules where traditional means of monitoring and enforcement seem to fail. Participation in rule making processes can enhance the chances that people respect the rules because they trust that rules reflect to a certain degree their own choice and preferences.⁹⁵ Property rules and societal acceptance of these rules are not only a matter of morality and justice: they are also a matter of practicability and efficiency. A property order is more likely to be effective where it is more or less accepted by society (unless not upheld by force).⁹⁶ Where there is a lack of collective consensus, the social and financial costs of enforcing this order against the will of the rest of the world very likely would become prohibitively high. As the CED states: 'protection of intellectual property is inherently a social contract. In order for a stable and self-enforcing intellectual property system to exist, the social contract must be one that reflects our collective views.'⁹⁷ This is why it is also in the interest of rightsholders to implement code in a way that respects the interests and preferences of users.

⁹⁵ Interesting the analysis in Jensen, p. 540 subseq., with further references.

⁹⁶ But see Umbeck (with reference to the Californian gold fields), p. 57: '[A]ll private ownership rights are ultimately founded upon the ability to forcefully exclude potential competitors. Force, not fairness, determines the distribution of wealth in a society.' Umbeck, however, also admits that his study does not provide an optimal test for a general theory of force.

⁹⁷ CED report, p. 76

Another question is if automated participation processes could make participatory processes more cost efficient (so that the argument of standard form contracts reducing transaction costs does not any longer apply), and therefore could eventually offer more room for participation than online contracts alone.

4.4 Code and participation

For Lex Informatica, the process of rule-making takes the form of an electronic dialogue: this is the programming of code and the social process by which customary uses evolve. Customisation of code takes place by means of technical configuration.⁹⁸ The question is to what extent consumers have the freedom to customise code, namely to design code in a way to also accommodate their will, and in a form that is acceptable to them.⁹⁹ The precondition was that code would not consist of inalienable rules, but would leave room for choice and participation.

Unlike code in the sense of law, technology (code) has no message of its own; instead it is a tool to convey a message in machine-readable form. What the message is – namely what the rights that authors wish to exercise are – is the task of the programmer and/or user of code to define: the ‘business rules’. He can do so, for example, in form of metadata or rights expression language (the most prominent example is the extensible rights markup language – XrML). XrML allows the expression of who may use a digital content under which conditions and in what way and for different points in the distribution and production chain. Code can translate the statutory rights of a copyright holder into a machine-readable and, even more important, user-effective form. In other words, code can translate legal dos and don’ts into a language that each user is able to understand, irrespective of cultural and language differences. The language of code is rather explicit and speaks for itself: by encrypting a text, a piece of music or a video, or by applying copy control or similar measures, the user of code signals to potential users of a resource what exactly is it that he claims to ‘own’. With the increasing sophistication of code, it can provide for more and more fine-grained

⁹⁸ Reidenberg, 567.

⁹⁹ Notes, p. 865: ‘The question of freedom is focused on how one is empowered to participate in structuring one’s will.’ Sharing this opinion; Slawson, p. 550: “Government with the consent of the governed” must imply a reasonable measure of freedom in the governed not to consent or it fails to distinguish a democratic government from one which is not.’

differentiations: publishers of newspaper articles can determine that a particular dossier may be accessed for 3.40 euros, read for one hour, copied three times and not be redistributed via e-mail. Consumers could choose between downloading a file of music that they cannot copy or, if they are willing to pay a higher fee, a file that they can copy and play on multiple devices, etc. But code must not only translate existing statutory rules. It must also be a means to impose individual terms and conditions of use/access that are defined by the user of the code himself, according to own goals and objectives. Possibly, these can be new 'rights' that as such are not legally defined (e.g. to control access to information, implement usage restrictions on works for which the protection period has expired or other public domain material).

In the case of code, rules can be laid down by, for instance, the author himself who has purchased/licensed a certain DRM solution (off-the-shelf solution); this can be an intermediary who sells the products of the author without owning the content himself (e.g. the operator of a database or a pay-TV service). Code can even be programmed by individual users, as in the case of Microsoft's trusted computing platform, Palladium. Here, each individual author of documents can determine digital rights for each document individually. On the other hand, it is also important to note that for users it is not necessarily apparent who has defined the business rules. Often, users will not even be aware that code has been implemented (e.g. the use of filters or, if DRMs have been implemented, directly in the user hardware, which is subsequently not able to perform certain functions (example: trusted computing)).¹⁰⁰

But choice and participation presuppose knowledge. If users are not aware that code is being used, they cannot be said to have a choice. In the technical chapter it was explained that code could be implemented in such a way that users do not notice that it exists. Code could be implemented in the user's hardware, as in the case of 'trusted' computing. The user must not even be aware of updates or of the fact that his computer provides a security check (e.g. checks whether any untrusted programs (e.g. peer-to-peer software, viruses) are running) and that the machine notifies content providers of the current state of the system. Nor will users necessarily know whether content is protected by watermarks or fingerprints, whether it is

¹⁰⁰ Part of the idea of trusted computing is that the content itself signals how it is protected (XrML). Note: Trusted computing must not have anything to do with DRMs, but it can provide a secure environment for the implementation of DRMs.

encrypted,¹⁰¹ or whether net filters prevent them from accessing unauthorised contents. Choice and participation also require knowledge of how to exercise choice. In a society where the majority of participants are not capable of disabling cookies or installing a spam filter, one can not expect to find the necessary knowledge to customise code: to be able to customise code, one has to understand how it works.

Even if users understood code, code would have to allow them to effectuate their will/choice. Otherwise, the choice of the user of code would have been imposed on him or her, and no social bargain or social contract would have been concluded. In other words, code would have to allow for interaction between the users of code and users. For example, users can choose whether or not to accept cookies that collect personal data, and they can choose the configuration of filters used to prevent children from accessing harmful content, etc.¹⁰² But for obvious reasons, user interference with the configuration of copy control systems, access control or monitoring devices is very much what rightholders seek to avoid. Property is about the exercise of *exclusive* control. Code, in this context, is designed to preserve exclusivity. Technological protection measures would not be very effective if users could decide to respect them in certain situations and not in others. Moreover, anti-circumvention rules not only ban circumvention activities, but also prohibit the production and distribution of the tools. To summarise, technological measures to protect copyrights do not leave much room for negotiation about the extent of rights, and users cannot easily change code in a way to also adhere to their preferences and interests.

But copyright owners could do so. The function of code should not necessarily be to impose unilaterally own terms and conditions, and code must not per se be used to impose and enforce only restrictions on users. Maybe, with increasing sophistication code could once be better adapted to also accommodate user interests than is now the case. For example, there are initiatives seeking to develop a symmetric rights expression language to provide the ‘vocabulary’ necessary to express not only the rights of copyright holders but also the exceptions and limitation provided for in copyright law. Initiatives are underway to build symmetric rights expression languages that are able to express not only the interest of

¹⁰¹ For example, cable operators and broadcasters increasingly tend to encrypt the signal for security and intellectual property reasons for the time of the transport and de-crypted in the user device or headstation, users do not even have to notice that encryption was used.

¹⁰² Reidenberg, p. 567, 568.

rightholders but also certain recognised social norms regarding the use of works.¹⁰³ Code users could anticipate user interests and customise code in a way that provides them with a range of differentiated choices (e.g. price differentiation, added value, different modalities of usage, etc.). With a click of their mouse, users could choose from a menu of differentiated options and start the automated procedure that best reflects their individual preferences. The question is again the same as with contracts: will users and programmers of code offer consumers such differentiated choices? Or will the sector, even if the technical possibilities are in place, behave in the opposite way and embrace standardised routines?¹⁰⁴ The answer depends on such factors as the size of transaction costs, whether rightholders find that more differentiated systems are the basis for profitable business models and whether consumers are willing to accept less sophisticated menus, but also the degree of competition with e.g. not DRM protected information services.

Another question is how broadly one defines choice. To accept or not to accept might also be a choice.¹⁰⁵ User refusal to accept systems of copy control or service conditions expressed by code can be a very powerful tool to indicate their unwillingness to accept the restriction of their user rights by code. After all, it is the users of such systems that seek to entice users to buy their material. Naturally, the controller of code will seek not to impose any terms and conditions that users will not be willing to accept. Having said that, there are also situations where users do not even have this choice. This can be a situation that the content in question is not available elsewhere. If users wish to access that particular piece of content, they depend on the service/entity that offers it. Also, because software-based protection schemes are inherently weak, there is a trend in DRM development to implement the security functions also in the lower levels of the Internet architecture (e.g. the use of net filters) or in the hardware. Also here, users have minimal freedom of choice.

Finally, users can be left without a choice if they find themselves in a technical lock-in situation. One important issue with code, therefore, is the format or standard in which code is implemented and written. Often, different players and other consumer equipment devices

¹⁰³ See extensively the article by Mulligan & Burstein. *Critical Samuelson* (2003), p. 42; Koelman, p. 245, Burk & Cohen, p. 55. It should also be mentioned, however, that implementing exceptions and 'fair use' limitations into code is the more difficult the more open such rules are formulated (as is the case with the US DMCA concept of fair use).

¹⁰⁴ On the question whether DRMs will favour customisation or have the opposite effect, namely standardisation of contractual terms, see Radin.

¹⁰⁵ Critical e.g. Cohen, p. 1126.

respond only to certain standards. If a player does not understand the language in which content is encoded, the respective user finds himself in a lockout situation. For example, the choice of a proprietary decoder technology can have the effect that certain broadcasts cannot be received by subscribers to a cable network or by citizens from another state (territorial aspect), etc. The other way round, if the player's software or the user's device supports only certain standards, users could be locked in to one particular technology. Owners of an iPod have no choice but to play music that uses the iTunes DRM scheme. Once the region code in a DVD player is switched to a particular region, DVDs from other regions cannot be played. Subscribers to pay-TV services can receive only services that are supported by the proprietary API of their set-top box. Trusted computing systems will transmit contents only to 'trustworthy environments', etc.

To conclude, with DRMs, copy protection and access control technologies, the source of rule-making is either the programmer of code, the rightsholder or an intermediary, and the process of customising code often lacks interactivity and the characteristics of a 'social bargain'. Having said that, there is a growing awareness that unilateral enforcement schemes might be less easily accepted by consumers and finally fail in the market. Consequently, developers are working on possibilities of making code more responsive to the preferences of users, and to better balance the interests of code controllers and users and to offer consumers more freedom of choice. It remains to be seen to what extent these developments will lead to the increased participation of users in the process of customisation and electronic rule-making.

4.5 Monitoring of private rule-making

Participation in self-regulatory structures does not end with the involvement in the rule-making process itself, but extends to the reciprocal monitoring of the way participants exercise control, and the availability of effective procedures to interfere. On the side of the controllers of code, code is not only a tool to *control* user behaviour¹⁰⁶ but also to *enforce* intellectual property rights. Code plays an important role in the enforcement of IP rights insofar as it can overcome a number of problems of IP protection in a digital environment that

¹⁰⁶ There are various technological measures that facilitate monitoring the individualisation of single users (e.g. recognition of IP address, geographic origin, watermarks, GUID), the identification of works (watermarks) and the actual monitoring of the usage of works (e.g. cookies).

law is not able to effectively address (i.e. territoriality, enforcement, and adaptation to technological, market conditions). By reserving the right to determine who may access, copy or distribute a piece of information under which conditions to the programmer/controller of code, code manifests a factual exclusivity position for the controller of code. The code controller can factually exclude others from any form of usage that is not authorised by him.

Code enforcement does not depend upon the initiative of judicial or police bodies. The controller of code takes enforcement into his own hands. Code can be truly international and effective irrespective of national borders – a further attraction of code in comparison to statutory rules. Nobody needs to know a foreign national copyright law in order to understand that access to a particular database is granted only after feeding the system with one's credit card number (which is accepted all over the world). Code can enforce and sanction at the same time. Code can disable the normal functioning of consumer hardware or software and cause lasting harm. Other technological measures are designed to cut consumers off electronic communications networks (e.g. peer-to-peer networks) in the case of alleged infringements. Private parties are principally not bound to the same principles of proportionality and legitimacy that state and police enforcement powers are. One interesting question for further research in this context is to what extent states can be obliged to link the delegation of rule-making power to obligations of fair and proportional enforcement.

The other way round, consumers have little chance of sanctioning users of code. Recent pieces of anti-circumvention regulation at regional and international level require Member States to effectively ban the availability of circumvention tools. Even where national legislation foresees a 'right to hack' (e.g. Canada, the US, Denmark), if users feel that the use of technological measures is in conflict with their legitimate interests, this right does not include a guarantee that adequate circumvention tools are in place. But also the legal position of users as regards code is still very unclear. It is questionable whether users are equally well equipped to defend their interests and position. So far, it is unclear to what extent users can claim to have a right to exercise certain forms of usage of intellectual resources. Individual, respectively public interest objectives concerning users of copyrighted works are usually expressed in form of limitations and exceptions to the rule. Insofar, copyright differs from other property orders that have carved out clear rights of the public (e.g. rights of way, rights of inhabitants of rental flats, access rights in media and telecommunications law, etc.).

Also, the ability of consumers to act as controlling party is often severely reduced by the lack of transparency. Often, users are not even aware that electronic control takes place – until they try to play a CD in the ‘wrong’ player, watch a film on DVD in a region other than the one in which the DVD was sold, instruct their computer not to accept any cookies or read a document that is protected in a way that is incompatible with their browser. In the worst case, while consumers still believe that they live in a world ruled by traditional copyright law, new ‘code’ in the form of technological measures might have taken the lead. But even if users are aware of the presence of code, they may lack the ability to understand technological code, namely the way code is programmed, what those programs effect, etc.

4.6 Property as an organising concept – the desirability of private property rule-making

Even if, in theory, code offers sufficient room for participation, the question still remains how much private law-making is desirable in the given context, and whether Lex Informatica is a suitable alternative for the realisation of the objectives behind the regulation of intellectual property (or more precisely, copyright).

According to the understanding that underlies this chapter, a property order plays an important role as an allocation and conflict solving mechanism. The idea behind a property order is to organise social interaction between owners and non-owners with respect to particular resources,¹⁰⁷ and in pursuit of the realisation of not only individual welfare but of a common public interest. Property law is an organising concept with an organising idea and an organising structure and the appropriate tools to realise this idea. In the case of copyright law, the organising idea is the allocation of intellectual resources, and the creation of incentives for the production and broad dissemination of intellectual resources. The particular interest information policy importance of copyright law results, inter alia, from the fact that intellectual resources are increasingly considered being valuable commodities and as the material from which our knowledge-based economy is made, as well as because of its social, democratic and cultural importance. Accordingly, it is commonly accepted that the most important rationale of the copyright system is to promote the production and dissemination of culture and knowledge in society.¹⁰⁸ The tools to realise these objectives are binding, distinguishable rules that formulate objective situations in which the control over the use of certain resources is assigned to an individual or institution. Copyright law establishes standardised, general rules about the allocation and usage of intellectual resources: the law provides a standardised list of recognised entitlements and the possible range of their exploitation.¹⁰⁹ The same is true for the limitations and exceptions to the scope of copyright (e.g. use of a text fragment for quotation or criticism, copying for private use, etc.).¹¹⁰ Copyright law operates with standardised rules and describes objective situations (formulated from the position of, ideally, a ‘neutral’ party – the legislator). This is a way to provide for

¹⁰⁷ Harris, p. 56. Engel, p. 40.

¹⁰⁸ Hugenholtz, p. 10. CED report, p. 61.

¹⁰⁹ Radin (2003), p. 1.

¹¹⁰ See Merrill & Smith, p. 1 subseq. however, also are pointing out that the *numerus clausus* principle is not too strong, at least in the area of intellectual property rights, with reference to the *International News Services v. Associated Press* case.

some degree of clarity and legal certainty for the actors involved. From the economic point of view, a standardised order can help to lower transaction costs. From the moral point of view, the law provides some easily accessible, centralised guidelines to assess what is ‘right’ and ‘wrong’: everybody can find out what the rules are (e.g. by simply looking into the copyright law). As such, copyright law also influences our common notion of the extent of the rights to which a copyright owner is entitled.

Let us assume for a moment that society decides to acknowledge code as the basis for a self-enforcing, customised property order. What form would such an order take? What would be its guiding principles, the organising idea behind it? And would code (technology) be indeed such a useful tool to realise this organising idea? In the following, two major concerns are discussed, namely the lack of a clearly defined organising idea and the possible consequences of a decentralisation of the organisation of property.

4.6.1 Much organisation without an organising idea

A commonly made argument is that the guiding principles and motives behind rule-making depend not at least on who is making the rules. In the case of statutory property laws, the rules are made by parliament. In the case of parliamentary rules, parliament acts as arbiter between different, conflicting private interests;¹¹¹ and parliament is generally bound to certain overarching constitutional or non-constitutional principles of the form a property order should take, respectively of how to balance freedoms and interests of the parties involved. Even if a controller of code would not impose any terms and conditions he anticipates consumers will not be willing to accept: the sum of all these interests is still not identical with an overarching public interest or welfare (e.g. protection of cultural production, incentives to create ‘non-popular’ or ‘mass-attractive’ works, etc).¹¹² Very likely, aspects of individual utility and prosperity would take a prominent position.¹¹³ Also, private rule makers are principally less restricted in the way decisions are taken, whereas the way private decisions are taken is far more exposed to individual conflicts of interests, and the problem of unequal negotiation

¹¹¹ See e.g. Noam, Wentzel on public choice theories.

¹¹² See for example the problem of the so called tragedy of the commons, where individual self-interest diverges from the common good.

¹¹³ It would exceed the scope of this chapter to examine to what extent private rule-making would permit or rather hinder the realisation of general copyright law objectives. More detailed on this question, Cohen, p. 35. Different opinion, Engel, p. 42.

power. Also, private parties are probably not directly bound to a constitution or to human rights treaties (it would exceed the scope of this article to discuss to what extent constitutional obligations would apply indirectly also to private parties).

But there is another aspect that, so far, has received little attention in the legal discussion: code serves many interests. Code follows its own objectives or – better – the different objectives of its controller. Access control, monitoring techniques and even electronic copy controls can be used to protect interests other than the protection and/or manifestation of property. The same technique can be programmed to serve various functions, even simultaneously. Often, this can even be a contrary function, such as the use of access control to protect secrecy while collecting individual user information. Also, some forms of code are renewable, revocable or perceptive to remote policy enforcement;¹¹⁴ technologies of control can be updated and changed, sometimes even without the knowledge of the user.¹¹⁵

There are various reasons for using code, ranging from legal and contractual obligations (youth protection, exclusive licensing protection, security of data and communication) over censorship and editorial decisions to economic reasons (targeted marketing and advertising strategies) and internal corporate solutions for secure communications.¹¹⁶ The use of technological measures such as DRMs to serve to identify users and to collect private information about users will be discussed in the chapter on code and **privacy** of this study (by R. Leenes & B. J. Koops). Apple's strategic use of the proprietary standard FairPlay was already briefly discussed. As Apple Senior Vice-President Phil Schiller remarked in an interview: 'Just trying to have a business around downloadable music would be tough'; and

¹¹⁴ Seth Schoen, *Trusted Computing: Promise and Risk*, available at http://www.eff.org/Infra/trusted_computing/20031001_tc.pdf (last visited 3 April 2004).

¹¹⁵ E.g. the Microsoft Licensing Product Use Rights (PUR) (version: January 2004), p. 26 (II. Extensions, 2. Digital Rights Management) state: 'If the DRM Software's security has been compromised, owners of Secure Content ('Secure Content Owners') may request that Microsoft revoke the DRM Software's right to copy, display and/or play Secure Content. Revocation does not alter the DRM Software's ability to play unprotected content. A list of revoked DRM Software is sent to your computer whenever you download a license for secure Content from the Internet. **You therefore agree that Microsoft may, in conjunction with such license, also download revocation lists onto your computer on behalf of Secure Content Owners.** Microsoft will not retrieve any personally identifiable information, or any other information, from your computer by downloading such revocation lists. Secure Content Owners may also require you to upgrade some of the DRM components in the Software ('DRM Upgrades') before accessing their content. When you attempt to play such content, Microsoft DRM Software will notify you that a DSRM Upgrade is required and then ask for your consent before the DRM Upgrade is downloaded. Third party DRM Software may do the same. If you decline the upgrade, you will not be able to access content that requires the DRM Upgrade; however, you will still be able to access unprotected content and Secure Content that does not require the upgrade' (original emphasis). Available at <http://download.microsoft.com/download/a/5/f/a5fc3270-2fe6-4536-b228-6b333ab8569d/pur.pdf>

¹¹⁶ Extensively, see the study from Helberger & Van Eijk.

‘The iPod makes money. The iTunes Music Store doesn’t.’¹¹⁷ Dissemination of music can also be used as a strategy to sell hardware, and the use of a proprietary DRM is part of this strategy.¹¹⁸ DRMs are *also* a tool to secure Apple’s market shares in the digital music markets, both hardware and music, through restricted interoperability (a very similar strategy can be observed in, for example, European pay-TV markets¹¹⁹). Whether this strategy will be viable in the long-term is another question.¹²⁰ Recent DMCA case law in the USA, however, confirmed that DRM controllers use the technology for competitive purposes.¹²¹

Another market-strategy-related motive for using code is the use of technological protection measures to reinforce territorial borders in a principally ubiquitous environment such as the Internet. This is to restrict the **territorial availability** of content. The example of pay-TV has been mentioned. Here, electronic access control is also used in order to demarcate different national markets and to protect a competitive market position. Region codes with DVDs or games are another example of this strategy (see technical chapter). By programming code in a way to restrict transborder flow (see technical chapter), users of code can protect not only their intellectual property rights but also their own territorial market. Code can be used to **restrict access** to particularly popular, and therefore commercially attractive, contents. This practice has an immediate effect on the availability and accessibility of such contents. Another motive for using electronic access control is to **monopolise consumer attention**. Using code, service and network operators are able to directly target programming, advertisement and promotions at subscribers by geographical area or market segment, or according to personal preferences.¹²² Technical or contractual lock-ins are means to establish an exclusionary relationship with users, and to discourage them from switching to other services/providers of content.

¹¹⁷ <http://news.com.com/2100-1041-5092559.html> (last visited: 3 April 2004).

¹¹⁸ Berkman Center for Internet & Society, Harvard Law School, iTunes, How copyright, contract, and technology shape the business of digital media – a case study, Green paper, V.1.1, 30 March 2004, available at: <http://cyber.law.harvard.edu/media/uploads/53/GreenPaperiTunes03.04.pdf>.

¹¹⁹ For pay-TV markets, the European Access Directive imposes severe restrictions on users of electronic access control. CA operators are subjected to strict access obligations on CA operators and the EC reserves the right to undertake standardisation initiatives. Furthermore, the Directive imposes restrictions on the way CA producers exercise intellectual property rights in the technology, e.g. by imposing a mandatory licensing obligation and the condition that licensing agreements may not discourage equipment producers from implementing common interfaces (to make consumer equipment compatible with different CA systems). More detailed in: N. Helberger, Controlling access to information, to be published.

¹²⁰ Berkman Centre, p. 42 subseq., also pointing out that the statutory anti-circumvention provisions further support that strategy.

¹²¹ See Aibo dog case (block innovation), garage openers case (block interoperability), lex mark case (market power, leverage), Mod chip (protect competitive position).

¹²² O’Driscoll, p. 14.

What is common to all of the above-mentioned motives for the use of code is that they are guided by very different (additional) interests and goals than only the establishment and protection of a particular property order. Partly, they can contradict or modify acknowledged principles of copyright law. For example, even if existing copyright laws are still national in character, they cannot control the transborder dissemination of works.¹²³ Also, the electronic control of access to information does not sit particularly well with the traditional concept and objectives of copyright law; nor does copyright law discriminate between protected works that are of more or less interest to the public.¹²⁴ Partly, technological measures are simply used to optimise a business model and differentiate existing rights. What is important to realise, however, is that in the end there might be not *one* organising idea but many. The task of code is no longer (and probably never was) just to describe a relation between a person and an object. Unlike traditional fences, code is a very flexible, multipurpose device. If code is acknowledged as a means to organise social interaction, one also has to acknowledge the fact that the rules laid down by code emanate only partly from the wish to protect property rights. The risk is that code can be used in a way to extend exclusive control far beyond what is necessary to protect legitimate property claims. When code is implemented for different reasons, or when it is not exactly clear what reasons code serves, code is even less transparent and renders more difficult an assessment of whether its use is proportional and legitimate. In the worst case, there is much organisation without an organising idea.

4.6.2 Individualisation and decentralisation

Provided that a) rightsholders are more or less free to use code to modify private property rules, that b) equal negotiation power on all sides favours a fair, balanced compromise, and c) that all parties involved benefit from the freedom to formulate situation-tailored rules and conditions, the outcome will probably be a decentralised order: the rights and duties of copyright holders would be customised and differ from case to case, depending on the

¹²³ Consequently, in France region codes are not classified as DRMs, vgl implementation report.

¹²⁴ Insofar, copyright law might face in the future problems that are comparable to the problems media regulators are confronted with: how to ensure the free flow of information and the broad availability of certain contents that are deemed of public interest. It is interesting to notice that Article 3a of the Television Without Frontiers Directive has responded to the situation in form of 'lists of important events'. The lists identify contents that may not be made subject to electronic access control unless they are available elsewhere in unencrypted form. More detailed, see Helberger, Brot und Spiele, ... ; Controlling access to information.

negotiation partner, negotiation power, the intended usage, the location, the time, etc. For each transaction, new rules could apply. But users would also find it difficult to predict the rules for the next transaction, with this or with another content provider. Nor would users be certain that the code's users do not change the technical and/or contractual rules. For the layman, it would be very difficult to see whether certain behaviour is permissive or not.¹²⁵ To complicate things further, users could not even be sure that the rules were not changed in the course of a commercial relationship: Revocation and renewability have become standard features of many DRMs.¹²⁶ The process of defining and enforcing individual rights relations in such a decentralised system could be extremely complicated and expensive. One function of the property order – namely to reduce information costs for other market participants, including consumers – would be lost.¹²⁷

Of course, one could also argue the opposite way: the particular advantage of code is to provide a cost-effective tool to outline the borders and to make it very clear to the layman when he oversteps the realms of legitimate (read: authorised) behaviour.¹²⁸ Still, probably the most prominent reason why code is increasingly popular among holders of intellectual property rights is that it is not only a tool to *express* but also a rather effective tool to *enforce* intellectual property rights. Code enforcement does not depend on the initiative of judicial and police bodies. In other words, there simply might be no need to know or to predict the rules for each transaction. Transaction and enforcement costs could be kept low. Code would be able to express rights and limitations in a machine-readable and truly international language that could be understood by citizens of all nations; and it would also provide the means of immediate enforcement.

The problem remains that for parties involved in a decentralised system it would be more difficult to assess whether rules and conditions are appropriate and acceptable. Again, the multitude of possible relationships between different parties towards the same piece of content renders the sector increasingly non-transparent. At the same time, society would lack the lighthouse function of one common standard that could serve as orientation for all participants to judge what is moral, fair and socially acceptable. In particular, copyright law as

¹²⁵ See Waldron, p. 42.

¹²⁶ Grassmuck, p. 7, with various examples.

¹²⁷ Merrill & Smith, p. 10 subsq. p. 23.

¹²⁸ In this sense, Engels, p. 42. See also Merrill & Smith, p. 13 subsq., pointing out that standardisation imposes its own costs, that enforcing standardisation can therefore frustrate parties and that therefore optimal standardisation is needed.

an objective standard would lose its authority, or would at least become more and more disintegrated the more it was put at the disposition of individual transactions.¹²⁹ The broad availability of access control and copy protection techniques also for individual private users could further accelerate a mutation of the common notion of the concept of intellectual property as a standardised and purposefully limited set of property rights. This situation would be as contrary to the spirit of copyright as is the idea that on the Internet everybody is entirely free to get what he or she wants at the click of a mouse.

The existence of certain common standards (in the form of laws, general principles, and considerations) facilitates the orientation and assessment of the legitimacy of certain situations. As such, the existence of common standards also serves to protect individual parties, notably parties with lesser negotiation power. Standards are therefore particularly important where the conflict between different interests is strong – as in the case of intellectual property law – and where the process of rule-making does not allow for a form of democratic participation. With a similar argument Slawson, for example, demanded that “contracts by imposition”, as they might be called, ought to be seen as partially adhesive and enforced only to the extent that their adhesive terms can be shown to conform to standards in the public interest.¹³⁰

Standardisation plays a role also in the technical context. A lack of adequate interoperability solutions for code could have the effect of ‘freezing’ a decentralised order, once it has been established. Also here, control over a proprietary DRM standard can be used to lock in consumers technically or contractually with the offer of a particular provider, while making it more difficult to switch between competitors.

This is to say that code follows also its own rules – rules dictated by machines: standards. The ability of two or more systems or components to exchange information and to perform their required functions while sharing the same hardware or software environment requires that the systems understand each other’s language or standard. This is also true for code in the form of copy control, access control or related technologies. Examples from the pay-TV sector, Microsoft’s Palladium or Apple’s iPod illustrate that standardisation can have important

¹²⁹ Radin, p. 7

¹³⁰ Slawson, p. 556. See also the suggestion by Perrit, p. 436, to consider private contracts that contravene public policy as being not enforceable.

implications for the information landscape. Files can be stored encrypted on a hard drive in such a way that only the DRM client that created them will be able to make use of them. Remote attestation can prevent any program other than a publisher-approved DRM client from ever receiving a particular file in the first place.¹³¹ Users of the Apple iPod are forced to buy music from Apple's own iTunes site. iPod is the only player that supports the FairPlay DRM, and it does not support any of the dominant standards used by other digital music services, nor does it license its own format to rivals.¹³² Because code follows its own rules, the definition of the relations between 'works', rightsholders and users is not only the outcome of societal consent but is also to a substantial extent dictated by standards. As such, code is not only a matter between its controller and the user of intellectual resources; it is exposed to a whole range of influences, such as market and technical developments, standardisation bodies and government-mandated initiatives. The number of parties participating in the rule-making process (public and private standardisation bodies, technology developers, equipment producers, rightsholders, lawmakers, etc.) will be increasingly difficult to oversee.

The consequences for the overall objective of copyright legislation – namely the dissemination of cultural content (irrespective of national borders) – and the efficiency of code to realise those goals can be unfavourable. The interoperability and compatibility of devices and applications are often not transparent to consumers. With the use of code to protect intellectual property, the structure of a self-enforcing electronic order is no longer merely a question of the scope of property rights, but also a question of the technical standards used and whether they are interoperable with users' reception devices. The role that technical standards play in code is also a problem with Mackaay's approach, namely an experimental rights order based on 'technological fences', in other words, code. Once such an order has been established by one player, it is difficult to change by other parties. The interaction of interested parties to experiment with new rights, which Mackaay described, can easily be frustrated by the lack of adequate interoperability solutions or open standards.

¹³¹ Seth Schoen, *Trusted Computing: Promise and Risk*, available at http://www.eff.org/Infra/trusted_computing/20031001_tc.pdf (last visited 3 April 2004).

¹³² News.Com, *Real's Glaser exhorts Apple to open iPod*, available at http://news.com.com/2100-1025_3-5177914.html?tag=mainstry (last visited: 3 April 2004).

5. Conclusion

At first sight, it looked like a simple, innocent electronic fence. It turned out to be a genie that has escaped from its bottle. The creative industry, legislators, policy makers and academics, after rubbing their eyes once or twice, saw a powerful force materialise in front of them. It promised them solutions to many of the troublesome problems the Internet had recently thrown up. One of the problems was the protection and enforcement of intellectual property rights in a savage, virtual world. Legislators were quick to embrace this new force and to give it a place in the legal order. Soon, scholars announced that code would replace law, also, and particularly, in intellectual property. Now that the first dust has settled, the information community has suddenly become aware of how little it actually knows about this genie, and about its powers (if it is indeed powerful) and where it is leading us to.

Code will take its place in the management of intellectual property rights. In fact, it has already done so. The market has discovered code not only as an enforcement mechanism, but also as a means to optimise business models and to modify existing property rules according to its interests. DRMs are no longer digital rights management solutions: they are multipurpose DIMs (digital information management) solutions. Against this background, the attitude of the Copyright Directive can be described as, in the best case, naïve if not misleading: electronic rights enforcement is only one of the many roles of electronic access control, copy control and monitoring tools, and protection against piracy only one of the many goals they serve .

This chapter examined the question whether code could be ‘lex’ in the sense that it can formulate distinguishable and socially acceptable property rules. The analysis departed from the assumption that cyberspace principally supports self-regulation/private-rule making, and that an increase in self-regulatory elements and more participation of all parties involved, notably users might help to remedy one of the major flaws of the present system: the lack of acceptance and voluntary compliance. Acceptance is of major interest for controllers of code, as for them acceptance of electronic rule making is not only a matter of justice and morality, but also for strategic reasons: Acceptance is a matter of survival in a competitive environment where consumers tend to be suspicious if not reluctant about technological protection measures; and law makers (Articles 6 (4), 12 (1) Copyright Directive) exercise some pressure, too, on code controllers to design DRMs in balance with public interest objectives. DRMs

may offer certain opportunities to facilitate participation and customisation. This is because automatised choices and better participatory models more viable, less costly and therefore more attractive. There is a growing awareness also among programmers and users of DRMs that consumer and user acceptance of DRMs is a necessary pre-condition for the commercial success and feasibility of business models based on DRMs. This and more practical reasons (machine language: international language, enforcement + sanctioning mechanism included, etc.) is, why at least in theory, Lex Informatica might seem to some like an attractive concept also in the field of copyright law.

Certain fields of law are more perceptible to Lex Informatica than others. A closer analysis has shown that technological code, at least for the time being, is not an effective substitute for statutory property rules ('realism of code') and this has to do with the particular characteristics of property as a social organising concept. Property as an institution is a complex organising idea¹³³ that defines a set of relations towards a thing or towards persons, and in a way that is accepted by society.¹³⁴ The social character of a property order implies not only that a property order must be balanced, reflecting the interests of the social groups involved. It also means that society participates (indirectly (e.g. voting) or directly (e.g. through customisation)) in the allocation of resources, and that the way rights are allocated and exercised is upheld and accepted by society. Code-based self-executing rules are, at least for the time being, customised only in rare cases. This is a) because users lack the knowledge required to customise code (and sometimes they are not even aware that code is used); b) because of obstacles that are embedded in the technology itself; and c) because of contractual and technical obstacles in the form of lock-ins that restrict users' ability to exercise choice. Code and the procedures that lead to its existence lack the qualities of formal rule-making, such being participation procedures and the possibility to manifest social consent/dissent, transparency of rule-making as well as an adequate system of sanctions and control by both the parties involved and the legal authorities. Having said this, probably in the medium to long-term future, technical possibilities, as well as pressure by the market and legislators (see

¹³³ Waldron, p. 38, Harris, p. 55.

¹³⁴ A basic distinction can be made between scholars that describe property rights as a relation ad rem (...) and such that describe property as a relation ad personam. It cannot be the purpose of this article to further discuss this distinction (see insofar the articles of Eleftheriadis, with further references).

e.g. Article 6 (4) Copyright Directive) could stimulate code developers and controllers to update code from permission management¹³⁵ to real rights management.

But even then the question remains whether code is indeed such a useful tool to realise information political goals, here for the field of copyright law. Often forgotten in the legal discussion is what property law actually is: not only a social but also an organising concept. As such, a property order plays an important role as a conflict solving mechanism. To successfully order social relationships a property order must comply with a number of conditions: a property order must be able to precisely identify also for the layman the claim. A property order will clearly identify a proprietor and determine distinguishable rules for the kind of and limits to exclusive rights he is entitled to exercise. Finally, one purpose of a property order is to set a certain standard so that participants are able to assess in advance of what is fair, just and balanced. The value of code to organise social interaction (not to speak of complex commercial interactions) in the sense of a self-organising order is limited for a number of reasons. The use of code is, in most cases, the result of an individual decision in pursuit of own commercial strategies, rather than the result of an overarching organising concept and organising idea. Also, one central source of property rules (such as copyright law) provides for a certain level of clarity, legal certainty and transparency, something that a property regime based on code (and contract) probably cannot provide. But most importantly: code is likely to follow its own rules (standards) and a whole range of different objectives, apart from the protection of property rights and at the same time.

For the time being, as attractive, useful and multifunctional DRMs may be, this does not justify their use to override the existing legal order. ‘Possession’ might be the root to title, but there is no title where it is not acknowledged as such, and according to the rules that govern a democratic society. The intensity of the discussion around the relation between code and code indicates that legislators at the national, the regional and the international level have failed to make clear the boundaries between public and private law-making. Property is a social organising concept, and it is still up to states to define the boundaries of property rights. Interestingly, in other fields of information law (notably media and telecommunications law) legislators were less reluctant to indicate where the use of technological measures conflicts with public policy interest. One example is Article 3a of the Television Without Frontiers

¹³⁵ See Samuelson (2003a), p. 42.

Directive, which prohibits the usage of electronic access control for programmes that are considered of particular interest to the public, and that are not elsewhere available on free TV. Another example is Article 6 of the Access Directive (access obligations), which addresses possible conflicts between usage of certain technological measures (here: electronic access control for digital broadcasting services) and functioning competition and the availability of a diverse content offer. But also in other fields of property law, states have carved out clear rights and entitlements as regards someone else's property, provided such are needed in the public interest. Examples are the right of way and the special provisions that apply to tenants. Not convincing are also the objections of users of code that code is not able to implement the existing structure of copyright law, notably its exceptions. Maybe those objections are not even much longer true, as demonstrated by new initiatives in the field of symmetric rights expression languages. In any case, it is still the property order that dictates how to place the fence, and not the fence that dictates the property order.

Two conclusions can be drawn from this: 1) a self-enforcing property regime based on code is not desirable and the role of code should not go beyond the enforcement of existing exclusive rights (neither a particularly new nor a very realistic conclusion - code is often far more than just an ordinary electronic fence); and 2) code is not per se 'unsocial' or in conflict with the existing intellectual property order. Current market trends suggest that DRMs/DIMs will be the basis for a range of new electronic services based on content, and that their use will increase further in the coming years. These developments can improve consumer welfare and lead to more differentiated and secure exploitation schemes for electronic content that consumers find attractive and useful. Code can allow rightsholders to further differentiate existing rights and, in so doing, promote the creative industry and dissemination of such contents. And perhaps there will even be a time when the procedures leading to codes existence have sufficient democratic qualities to gain social acceptance.

Having said that, *if* states should ever wish to add Lex Informatica to their information policy toolbox, the importance of information for our society, as well as of a clear concept of property regulation, require:

- that states retain in any case a certain level of control (' co-regulation') about private law making in this field, and that legislators demarcate clear boundaries between private and public interest (i.e. carve out clear ' rights of way' in case code is used),

- and thereby providing one common standard, allowing private parties involved to assess the adequacy and legitimacy of code usage;
- to the extent that states support Lex Informatica, they also should provide effective means for monitoring and eventually interfering with the way private rules are made,
- that initiatives be taken to make the usage of code more transparent (in particular, inform users if code is used, what the incorporated rules are, who made the rules, the purpose of the rules, etc.);
- that the development of technological solutions that can accommodate both users and consumer interests be stimulated;
- that the usage of code in a way to enhance choice and participation of users be stimulated;
- that the lack of adequate interoperability solutions be prevented from rendering choice and participation impossible.

In a democratic state, "self"-regulation in property law cannot emerge in a legal vacuum. The idea of genies materialising simply out of a bottle is a tale from Thousand and One Nights.

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