
The Pioneering Approach of Jurists from the Berkman Center for Internet and Society

1.1. A critique of the maximalist doctrine of intellectual property

At the end of the 20th century, an ancient debate on the social compromise on which the first copyright legislation was based came back, with force, to the forefront. It originated in the United States. The Berkman Center for Internet and Society (BCIS) was the nerve center of this intellectual battle.

Created in 1998 at Harvard Law School, it brought together lawyers from prestigious universities, specialists in intellectual property and digital law, among whom the most well known are Pamela Samuelson, James Boyle, Julie Cohen, Yochai Benkler and Jonathan Zittrain¹. Other prominent intellectual figures of the time include constitutional lawyer Lawrence Lessig, libertarian activists such as John Perry Barlow², co-founder of the

1 Pamela Samuelson is Professor of Law and the Internet at the University of Berkeley. She is recognized for her pioneering work in digital intellectual property law. Julie Cohen, Professor of Law at Georgetown University, specializes in copyright law, Internet regulation and the governance of information and communication networks. She is a member of the Advisory Board of the Electronic Privacy Information Center. James Boyle is Professor of Law and co-founder of the Center for the Study of the Public Domain at Duke University. Jonathan Zittrain is Professor of International and Internet Law at Harvard University. He is a co-founder of the BCIS.

2 John Perry Barlow is also known for his *Declaration of the Independence of Cyberspace*, written at the Davos Forum in 1996 to protest a telecom censorship law signed by Vice President

Electronic Frontier Foundation³ and entrepreneurs such as Jimmy Wales, founder of Wikipedia. As Anne Bellon points out, within this place “two social universes, law professors and Internet activists, gathered around a critique of the evolution of intellectual property. They contributed to bringing about a counter-discourse that defends the information commons and the value of sharing” (Bellon 2017, p. 166, author’s translation).

The exchanges between these two communities, Internet experts and law professors, resulted in alliances around militant actions against the various laws on adapting copyright to the digital age that were passed in the United States in the 1990s. The BCIS, as a venue for the dissemination of theoretical and practical knowledge, is also “a structure of engagement where political discourse mixes with scholarly discourse” (Bellon 2017, p. 181, author’s translation). Subsequently, it has become an international model; other similar institutes have been established in different parts of the world. A Global Network of Internet and Society⁴ was created in 2012. Today, in France, the CNRS has just formalized the creation of a similar institute: the *Centre Internet et Société* (CIS)⁵, considered as a research unit of its own by the *Institut des sciences humaines et sociales*. Mélanie Dulong de Rosnay, director of this center, specializes in issues of digital commons and the link between regulation by law and regulation by technology. She coordinated a research project with one of the members of the BCIS, Juan Carlos de Martin, on the issue of the digital public domain (Dulong de Rosney and de Martin 2012), a theme directly related to the issue of cultural commons, as we will see. Their work is in direct line with the pioneering approach of BCIS jurists.

The intellectual production of these American jurists is consequently on this issue. We will refer here to the writings that we have found most enlightening on the question of the foundations of the political economy of cultural commons. The advantage of their approach is also to translate, on a practical level, into very concrete legal proposals, which have proved to have

Al Gore. He later became an activist in the libertarian cyberculture movement opposed to all forms of state censorship of the Internet.

3 The Electronic Frontier Foundation is an international non-profit organization whose purpose is to promote the protection of freedoms on the Internet. It was founded in 1990.

4 <https://networkofcenters.net/>.

5 Its objective is to build an interdisciplinary research aiming to shed light on the major technical controversies and the definition of contemporary policies related to digital technology, the Internet and, more broadly, to computer science. See <http://cis.cnrs.fr/>.

a decisive influence in the evolution of cultural creative practices in the digital ecosystem.

1.1.1. *The enclosure of the intangible commons of the mind*

Starting in the 1990s, the cultural and creative industries began to make a significant contribution to economic growth. This has made the US Congress particularly receptive to the arguments put forward by some lobbyists about strengthening intellectual property rights in the face of the rise of an economy where knowledge (in a broad sense) is now seen as the main driving force of long-term economic growth and development⁶. Thus, the prospect of creating new markets justified the ownership of all the intangible forms of knowledge that were at the heart of these new economic valorization processes. According to these jurists, the agreement given to the legalization of the extension of the scope of the patent to the human genome or to the patentability of software were emblematic illustrations of these new commercialization perspectives. For their supporters, the extension of the scope of intellectual property legislation was essential for supporting the new path taken by contemporary capitalism. For their detractors, such as Lawrence Lessig, Yochai Benkler, Pamela Samuelson and James Boyle, these developments in intellectual property legislation in the United States were considered alarming because they called into question the foundations of intellectual property.

These jurists are not opposed to the foundations of the liberal economy and the development of a knowledge-based economy. On the contrary, they are opposed to its excesses and downward spirals that inexorably lead to an “enclosure of the intangible commons of the mind”, as James Boyle (2003) put it. Recent developments in intellectual property legislation symbolize what they call a “maximalist teleology”, which stems directly from the ideology conveyed by the Washington consensus that markets and exclusive property are the *sine qua non* for economic growth. This growth is based on a rhetoric that equates ownership and economic progress. In this perspective,

⁶ The OECD defines knowledge-based economies as those that are directly based on the production, distribution and use of knowledge and information. Knowledge-based industries accounted for more than 50% of GDP in the OECD area as a whole at the end of the 1990s, up from 45% in 1985, and are growing faster than GDP in most countries (see data from “Tableau de bord de l’OCDE de la science, de la technologie et de l’industrie 1999 – Mesurer les économies fondées sur le savoir”, OECD, Paris).

the granting of exclusive property rights over all forms of culture or knowledge that can be valued in a market is considered the indispensable condition for their efficiency and for economic performance as a whole. However, intellectual property rights are fundamentally different from other property rights.

This approach aims to maintain a non-separation between liberalism and market fanaticism, as they point out, referring to the arguments put forward by the Nobel Prize for Economics winner Joseph Stiglitz. This economist rebels against the dominant idea that there is only one form of capitalism, only one “right” way to manage the knowledge economy. As they were imagined and put in place by the first legislation with Thomas Jefferson, intellectual property rights establish a form of social compromise. In other words, the restriction on the dissemination and use of knowledge (through the establishment of a temporary monopoly situation) is justified as long as it stimulates innovation dynamics and thus promotes growth. This social compromise is a kind of unstable balance that must therefore be preserved. Yet, in the field of knowledge, Stiglitz clearly shows that the beneficial effects of an increasing ownership of knowledge outweigh deleterious effects. They can even lead to a slowing down of innovation⁷. The production of information goods functions on the basis of inputs that are often themselves information. Reinforcing ownership of all these forms of goods therefore also implies reducing access to these inputs and/or increasing their acquisition price, which can have harmful effects on innovation dynamics. This is the observation already made by biologists Michael Heller and Rebecca Eisenberg⁸ in the field of biomedical research. Today, this

7 Joseph Stiglitz set out this idea in the following article: Grossman, S.J., Stiglitz, J.E. (1980). On the Impossibility of Informationally Efficient Markets. *American Economic Review*, 70, 393–404. He resumed his argument in detail in his book *Making Globalization Work* (2006). Let us quote this eloquent passage: “If patents are made as broad as possible, which is what patent seekers want, there is a real risk of privatizing what is within the public domain, since some (possibly much) of the knowledge covered by the patent is not really ‘new’. At least part of what is being patented, and therefore privatized, is knowledge that previously existed – part of common knowledge, or at least of the common knowledge of experts in the area. And yet, once the patent has been granted, the owner can charge others for using that knowledge” (Stiglitz 2006, p. 197).

8 Heller, M.A., Eisenberg, R.S. (1998). Can Patents Deter Innovation? The Anticommons in Biomedical Research. *Science*, May 1 In this article, they show that in a situation where a user needs access to several patented inventions to develop a product, or where intellectual property rights are fragmented among several owners, it can become very costly (in terms of

observation is even shared by economists considered to be orthodox, such as Nobel Prize winner Jean Tirole, who presented an argument similar to Stiglitz's about the ineffectiveness of a measure aimed at lengthening the duration of intellectual property protection on the incentive to create. In particular, in the field of software, he acknowledges that "since the investments have already been made, it is doubtful whether a strengthening of intellectual property has an incentive effect from an economic point of view" (Tirole 2016, p. 567, author's translation).

In the field of culture, the application of this maximalist conception of intellectual property is also detrimental because it leads, in the same way, to a breakup of the original compromise of the copyright law set forth in the American Constitution of 1790, where social progress comes before the protection of the author or inventor, as Lessig repeatedly reminds us. Article I, section 8 of this Constitution affirms, in fact, that "Congress has the power to promote the Progress of Science and useful Arts by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries" (quoted by Lessig (2004, p. 143)). This social compromise, at the very foundation of the functioning of the markets for intellectual works, is being broken due to a progressive accumulation of legislative measures strengthening the power of rights owners. The particular interest now takes precedence over the general interest. There is thus an inversion in the order of priorities and thus a distancing from the original spirit of the law.

First of all, Lessig blames the exponential increase in the average duration of copyright, which tripled in 30 years at the end of the 20th century. The end of the obligation for all authors to apply for renewal of this right, which was nevertheless written into copyright law from the outset, is also considered to be one of the essential causes of this lengthening: "In 1973, more than 85 percent of copyright owners failed to renew their copyright. That meant that the average term of copyright in 1973 was just 32.2 years. Because of the elimination of the renewal requirement, the average term of copyright is the maximum term" (Lessig 2004, p. 150).

transaction costs) for a research team to gather all the necessary authorizations to use the protected resources. Thus, these authors show that in the field of genetics in the United States in particular, this has resulted in an under-use of available resources, hence the idea of the tragedy of the anticommons, with reference to Hardin's paradox, which we will study later.

Following on from this, the scope of copyright has also expanded. Originally covering only certain areas by giving the author the right to “publish” the copyrighted work – a right that was violated if someone decided to republish the work without the author’s permission – it gradually extended to derivative rights, giving the author the right to control any “copying” of his or her work. Finally, the limitations restricting procedures have become more flexible and, in particular, the requirement that the work be registered before it can enjoy its protection has been abandoned since the United States ratified the Berne Convention in 1976. Since that date, all intellectual works are *de facto* protected by law.

If all these changes had resulted in socially or environmentally beneficial effects, they could have been justified. But the opposite is happening. In the field of commercial culture, this has led to a strengthening of the already dominant position of the cultural industry majors. Moreover, a large number of these legal developments are the result of intense lobbying by the cultural industries. The example of Disney is often cited as an emblematic illustration of this change. In the 1990s, this company lobbied intensely for an extension of the copyright law by 20 years, because all its favorite characters were going to fall into the public domain at the beginning of the 2000s. This proposal was endorsed in 1998 by the Copyright Term Extension Act (CTEA). It should be recalled that in 1976, when the United States joined the Berne Convention, the copyright term had already been increased to 50 years *post-mortem*.

1.1.2. The threat of disappearance of free culture in cyberspace

This proprietary spiral does not stop here. The emergence of the Internet has led to a new wave of regulation that is very damaging because it has further restricted what Lessig calls free culture, in other words, all cultural practices that are not regulated by law or authorized by law because they are part of this initial compromise of copyright law. Lessig provides a detailed demonstration of this throughout his work entitled *Free Culture: The Nature and Future of Creativity* (2000). This is a subject he knows well, since he himself defended in the American Court of Justice Eric Eldred, a computer scientist accused of having published works in his digital library, some of which, since the CTEA vote, were again protected by copyright (even though they had previously fallen into the public domain).

The digital ecosystem has radically changed the conditions for the production, distribution and consumption of information and culture. The exchange of digital files, consubstantial to the very existence of this environment, has experienced significant growth with the emergence of peer-to-peer technology, which, it should be remembered, was not originally designed to exchange files protected by copyright, nor to violate the law. Rather than try to take this new situation into account and find a compromise solution, the cultural industries have decided to wage a real war against the promoters and users of this type of platform. Lessig reminds us that the rejection of a new technology by the cultural industries is nothing new, citing the example of the strong reaction of music producers to the appearance of radio cassettes and then CD-ROMs. But this time, he argues that Congress took the copyright owners' side when it should have sought a balance between the interests of each, in accordance with the original spirit of the law.

The Digital Millennium Copyright Act (DMCA), passed in 1998, which legalized the use of technological protection measures (Digital Right Management, DRM) on intangible intellectual works protected by copyright, has also strengthened the control of rights owners over their works: "The DMCA was enacted as a response to copyright owners' first fear about cyberspace. The fear was that copyright control was effectively dead; the response was to find technologies that might compensate" (Lessig 2004, p. 177). However, this solution of legalizing the use of these technological barriers has devastating consequences, because it gives computer code a power to reinforce copyright law far beyond its usual prerogatives.

This DMCA legislation poses a significant risk of reducing the public domain⁹ in the digital ecosystem and its contiguous, fair use territories, as Pamela Samuelson points out: "Although not principally aimed at protecting public domain works, the DMCA has significant implications for the digital public domain and for territories contiguous to the public domain" (Samuelson 2003, p. 160). Indeed, since these technical measures constitute private means of regulation because they are controlled by market players (producers and publishers), there is no guarantee that they will scrupulously

⁹ The public domain consists of what is not or no longer protected by intellectual property (copyright or patent law). It includes all information and knowledge that cannot claim protection because it is not considered as works or inventions and all those whose term of protection has expired. The problem is that it has no positive definition from a legal point of view.

comply with the copyright principles protecting the existence of a public domain. Likewise, territories adjacent to the public domain, which are subject to fair use, are also threatened, because technology now allows absolute control of any copy of a protected work in the digital ecosystem. For Lessig, it is the domain of free culture that is under threat, which he prefers to the notion of digital public domain used by Pamela Samuelson. From a legal point of view, this notion was not stabilized and its perimeter was the subject of much discussion. Because of this law (DMCA), “cyberspace”, originally a free space protecting anonymity, freedom of expression and individual autonomy, has become a highly regulated space. In its early days, the (computer) code that made “law” on the Internet protected these values. This is no longer the case. The code now has an unprecedented power of regulation, thanks to the evolution of (legal) law, which has allowed it to extend its influence to entire areas of culture that were previously free of control¹⁰.

Understanding the impact of this new legal law on cultural practices is not easy. It requires identifying, upstream, the different uses where copyright is activated, that is, each time a copy of a work is made. There are three possible scenarios:

- 1) uses not regulated by law because they do not involve copying, such as, for example, the fact of giving or lending a book;
- 2) uses not regulated by law but which still involve copying. This refers to all uses falling under fair use, or fair dealing, in other words, all uses falling under the exceptions to copyright;
- 3) uses regulated by law involving copying.

Cases (1) and (2) refer to what Lessig calls free culture and are at the heart of the social compromise of the original copyright law. However, according to him, a large majority of the uses falling under cases (1) and (2) are threatened with illegality in the digital ecosystem because of a “technical anomaly” that implies that all forms of sharing are now based on an act of copying, even in cases that do not fall under copyright law: “Because of this single, arbitrary feature of the design of a digital network, the scope of category 1 changes dramatically” (Lessig 2004, p. 161).

10 Lessig develops this argument in his book *Code Is Law and Other Laws of Cyberspace* (Lessig 1999a).

In case (1), lending a digital book, for example, implies making a copy; this potentially calls into question the principle of exhaustion of rights, which guarantees that exclusive rights to a copy of a work are extinguished as soon as a person comes into possession of it. Lessig gives the example of royalty-free works from his digital library. However, he notes that these works, which should not be subject to any kind of control by law, are in fact controlled by the code, that is, by the software used by the publisher, which sets its own standards for copying: “It is code, rather than law that rules” (Lessig 2004, p. 166). In other words, it is the publishers who now grant themselves unprecedented power thanks to the technique of controlling the use of works. This change of perspective was made possible by the DMCA law.

Case (2) refers to transformative uses considered as unregulated uses. These are also in danger of becoming regulated uses, once again, because in the digital ecosystem, these uses imply a copy and therefore a potential control of the code by those who own it. The exception to copyright, fair use, in US law allows a user to normally demand access to the work and its reproduction, despite the author’s opposition or lack of authorization, without paying any remuneration.

To show how these uses are now threatened, Lessig takes the example of creative fanfiction practices that are now threatened with illegality in the digital ecosystem: “Before the Internet, this was, in effect, a totally unregulated activity... But if you moved your club onto the Internet, and made it generally available for others to join, the story would be different. Bots scouring the net for trademark and copyright infringement would quickly find your site” (Lessig 2004, p. 181). By detecting all cases of copying of copyrighted works, the technique inevitably facilitates law enforcement and the ability of rights owners to sue copy users who have the burden of proving in court that their use is fair use. In US law, the boundaries of fair use are not enumerated by law, as is the case in France¹¹. The limitation to the owner’s monopoly is assessed *ex post* by the decisions of the courts. The justification may be economic, if the transaction costs are deemed prohibitive, or social, when the benefit to the community is estimated to exceed the owner’s loss. In

11 In French copyright law, the scope of so-called fair use concerns private copies, parody, pastiche, caricature, short quotations justified by the critical, polemical, pedagogical, scientific or informative nature of the work into which they are incorporated. For more details, see Benhamou and Farchy (2014).

the face of such a threat, and in view of the potential for heavy financial penalties, creative fair use practices are likely to be curtailed in the digital ecosystem.

Finally, the uses falling under case (3) are different from the first two, as they include all uses falling directly under copyright law. The stakes are therefore different. With the emergence of the Internet, the unprecedented ease of sharing cultural works at a lower cost has led to a strong reaction from representatives of cultural industries on the pretext that they were losing a colossal amount of their turnover due to acts of “piracy”¹². This is nothing new. But, for Lessig, here too, the application of the DMCA law has resulted in a very strong repression that goes far beyond the usual target of copyright law. However, not all sharing uses on these platforms imply a violation of the law in the strict sense, that is, the case where users use sharing networks as a substitute for purchase, which harms the benefit due to the rightful owner. Indeed, other cases may characterize a practice of sharing cultural content. The user can use the sharing network to get a sample of music that he intends to buy later (a rational use considering that cultural goods are experience goods). He can also use it to have access to content protected by copyright, but which is no longer sold on the market (so-called orphan works). The existence of these different cases inevitably makes the problem complex, which the DMCA law did not want to see.

With the exception of copying used for commercial counterfeiting, all other forms of sharing are socially beneficial. The challenge is therefore to find a way to remunerate artists and thus allow these forms of sharing to survive: “The question we should be asking about file sharing is how best to preserve its benefits while minimizing (to the extent possible) the wrongful

12 In his book *Du bon usage de la piraterie* (2004), Florent Latrive gives very enlightening illustrations of this battle against “piracy” and the virulent discourse of the representatives of the cultural industries: “The speeches denouncing copying are now of a rare virulence, such as the joint declaration of the Hollywood studios of Jack Valenti and the French Minister of Culture of the moment, Jean-Jacques Aillagon, at the 2003 Cannes Film Festival.... In Cannes that day, the aim was to sound the alarm against ‘piracy’, which every day is increasing insidiously on every continent and, by robbing rights owners, threatens creation and cultural diversity.... Who wants the victory of organized crime? The ruin of the authors? A halt to medical research? No one. The word pirate serves as a scarecrow, it sends back to the same bench of infamy the teenager who downloads a song in MP3 format and the owner of a clandestine record duplicating workshop in a Beijing suburb” (Latrive 2004, p. 11, author’s translation).

harm it causes artists” (Lessig 2004, p. 84). However, rather than thinking about a solution of compensation, the DMCA law has allowed for the opposite by giving the copyright owner complete control over all possible uses of his work. The law has sided with the cultural industries and their maximalist view of copyright. Jack Valenti, president of the Motion Picture Association of America (MPAA) since 1966, embodies this new stance of the cultural industries. He has defended before Congress the idea that intellectual property owners should have the same rights and protections as all other property owners in the nation. This is a resurgence of long-standing debates referring to a maximalist vision of literary and artistic property¹³.

This maximalist approach to intellectual property reduces free culture to a culture of permission. The existence of a real legal gray area introduced by the DMCA law makes it difficult for everyone to clearly distinguish between what is allowed and what is not, in terms of uses, in the digital ecosystem. In any case, this over-regulation can lead to the curbing of creativity and innovation. This is the main criticism addressed by all these jurists to the current copyright legislation in the digital ecosystem, which they consider inadequate in the face of the technological and anthropological changes underway. Again, they are not opposed to the cultural industries or the copyright legal system. They criticize the over-regulation of recent current laws that only reinforce situations of domination by the majors by providing them with the opportunity to obtain additional income and simultaneously hinder creativity and innovation in the cultural field. Based on this alarming observation, Lessig, like some of his colleagues, called up the notion of the commons to justify the existence of a new threat to culture and knowledge more generally.

1.2. The political economy of information commons

The criticism of the maximalist doctrine of intellectual property enunciated by the BCIS jurists as much as their defense of free culture is at the heart of a “political” economy of the information commons. Indeed, they use it as an entry point to justify a renewal of the ethical and anthropological foundations of the information and knowledge economy. While asserting the primacy of individual freedom as a social value, they defend the idea that the privatization and commodification of information, knowledge and culture are

13 See Latournerie (2001) for more details.

not the only arrangement defining the horizon of this new economy emerging in the digital ecosystem. The digital ecosystem challenges the usual conditions for the creation, distribution and circulation of information and opens up the possibility of an information economy based on new institutional arrangements known as information commons.

We choose to retain the term “information commons” because it is the term that Benkler and Boyle have used in their respective texts. As we will see, it applies differently to digital resources in the infrastructure, software layer and content areas. In this book, our attention will be focused on information content and, in particular, on resources in the field of works of the mind.

1.2.1. Shared ownership and individual freedom

It is above all to the jurist Yochai Benkler that we owe the development of the premises of this political economy of the information commons in *The Wealth of Networks*¹⁴. In this book, he devotes a significant part of his argument to justifying the proximity of his approach to liberal political thought. Let us recall that the latter aims, first and foremost, at preserving and activating individual freedom. However, Benkler emphasizes that precisely the networked information environment increases the capacity and autonomy of individuals by enlarging and diversifying the individual’s field of action. It strengthens the possibility for individuals to do things, by and for themselves. This wider range of actions that can be carried out in this environment, alone or together with others, increases the individual space of each person: “The belief that it is possible to make something valuable happen in the world, and the practice of actually acting on that belief, represent a qualitative improvement in the condition of individual freedom” (Benkler 2006, p. 137).

The “user” embodies this new posture in the relationship with the exchange and production of information. He sometimes takes on the role of producer and sometimes that of consumer. In both cases, “they are substantially more engaged participants, both in defining the terms of their productive activity and in defining what they consume and how they consume it” (Benkler 2006, p. 138). This increased space of freedom allows

14 This book was published in 2006 and was translated into French in 2009 at the Presses universitaires de Lyon.

each participant to form a more critical judgment and to make his or her own contribution to the evolution of the world. In the cultural space, this translates into the possibility of a new, more transparent and reflective form of popular culture.

This increase in individual freedom made possible by this information commons economy does not imply their adherence to a “rhetoric of the technologically sublime”. Technical determinism in the strict sense is based on an erroneous belief. Nevertheless, it is undeniable that digital technologies have an effect on material, social and intellectual living conditions, but this is done differently depending on the institutional ecology in which they are deployed:

Neither deterministic nor wholly malleable, technology sets some parameters of individual and social action. It can make some actions, relationships, organizations and institutions easier to pursue.... The same technologies of networked computers can be adopted in very different patterns (Benkler 2006, p. 17).

The political economy of the information commons defended in particular by Benkler also introduces new relations between property, market and freedom. Liberal thought considers (exclusive) property as indispensable to the exercise of individual freedom and the market as the institution most likely to bring about an efficient socio-economic order. Benkler questioned these two strong assumptions while maintaining the absolute priority of the principle of individual freedom. Property and the market are not institutional and organizational structures to be considered as natural data. The market must be evaluated in terms of its consequences on the exercise of individual freedom:

I am offering a liberal political theory, but taking a path that has usually been resisted in that literature – considering economic structure and the limits of the market and its supporting institutions from the perspective of freedom, rather than accepting the market as it is, and defending or criticizing adjustments through the lens of distributive justice (Benkler 2006, p. 16).

Here he joins Lessig’s theory, which shows how market regulation can lead to greater control over individual practices and thus over the exercise of

freedom. Similarly, property, often presented as a fundamental and natural institution for the efficient functioning of markets, is also revisited. Benkler introduces a different conception of property based on ethics of free sharing whose legitimacy is to preserve and strengthen the exercise of individual freedom. Property and markets should thus be considered as mere domains of human activity with their benefits and limitations: “Their presence enhances freedom along some dimensions, but their institutional requirements can become sources of constraint when they squelch freedom of action in nonmarket contexts” (Benkler 2006, p. 20). Information commons that are based on a conception of shared ownership are thus an essential institutional component of freedom of action in a free society.

Benkler acknowledges that liberal thought has given little importance to culture and has not provided any structured response to the many intellectual criticisms that have arisen throughout the 20th century. In particular, the field of cultural industries has been one of the main axes in the criticism of liberalism as an economic theory, especially in the critical current of the Frankfurt School initiated by Theodor Adorno and Max Horkheimer in the 1920s and which continued throughout the 20th century. The political economy of the information commons provides an answer to these criticisms because it shows how, while remaining within a liberal thought pattern, individuals are able to modify culture by making it more transparent and more inclined to reflection, doubt and questioning. It thus constitutes a response to the latent conflict between the expression of individual freedom and the regulatory framework on which the system of industrial cultural production depends. Everyone comes into the world in a cultural system, embodied in a shared repertoire of traditions and conventions on which social life is based, making the relationship with the other intelligible. For all that, culture is not immutable unconscious data that submits and thus constrains individual freedom. It can become a contested convenience, because it is also the product of a dynamic process of commitment on the part of those who form a culture. In this sense, culture constitutes a framework for negotiation modified by individuals through their communicational relationships. The challenge is to find institutional arrangements that promote the expression of cultural freedom while avoiding an overly hierarchical framework (which controls the interpretation of spaces of meaning) and an overly open framework (which would not allow the recognition of such spaces necessary for mutual intelligibility).

In his book *Remix*, Lessig also stresses the importance of free participatory culture as a means of expressing a fundamental value, freedom of expression: “They reflect upon a capacity for a generation to speak” (Lessig 2008, p. 56). Writing, in the traditional sense of putting words on paper, is the ultimate form of democratic creativity in the sense that everyone has access to the means of writing, which is part of the first fundamental form of learning. The effect on the person producing content can be very positive. Writing on the Web exposes a person to low praise and criticism, as well as the other way around. Writing on this medium means accepting that what you write is subject to debate. Such partisan practices thus encourage an ethics of democracy.

In this perspective, the political economy of the information commons offers a new framework of expression for the deployment of a popular culture that had been “the displacement of folk culture by commercially produced mass popular culture” (Benkler 2006, p. 295) throughout the 20th century. For the critical approach, these new modes of cultural expression stemming from a commercial logic constitute a threat that needs to be fought. For Benkler, property and commons are two institutional and organizational components essential to freedom of action in the cultural field that offer the possibility for everyone to express themselves and create within more complex agencies that are not necessarily reduced to a market logic in the strict sense of the term, but which can also include new forms of social production outside the market: “Their complementary coexistence and relative salience as institutional frameworks for action determine the relative reach of the market and the domain of nonmarket action, both individual or social, in the resources they govern and the activities that depend on access to those resources” (Benkler 2006, p. 24).

The deployment of open cultural practices and information commons does not directly threaten the traditional business economy in the digital ecosystem. What is at stake, however, is the State’s ability to make these different arrangements cohabit harmoniously by re-evaluating the institutional rules that condition their operation and their reciprocal relationships. Until now, the State has generally supported, through legislative measures, industrial players in commercial cultural production to the detriment of the creators of the information commons economy. In the current state of affairs, it must be noted that recent legislative measures have led to the reinforcement of existing mono-political situations without any convincing justification in terms of economic efficiency. Moreover, this excess of

regulation (through the creation of multiple standards) leads to slowing down creative dynamics and thus innovation processes. The State must change its philosophy of action and become an actor seeking to promote a balance in the deployment of these two cultural spheres. However, this can only be accomplished through minimal regulation ensuring that cultural markets promote the cohabitation of all forms of creativity: “Excessive regulation kills creativity. It stifles innovation. It gives dinosaurs a veto over the future. It squanders the extraordinary potential for democratic creativity offered by digital technology” (Benkler 2006, p. 81). Benkler points out, however, that the State also has a new legitimacy to finance and support social production outside the market, since the repercussions can now be more widely disseminated to increase general welfare.

1.2.2. A new mode of information production

1.2.2.1. An information structure conducive to the creation of the commons

The modes of production and distribution of free cultural resources are deployed within a networked information economy. This third mode of production organization, alongside the market and the company, contributes to the production of information commons in the digital ecosystem.

In the digital ecosystem, the technical conditions for the production and dissemination of information, knowledge and culture have been radically modified. In the 20th century, the cost structure of creating, producing and distributing information resources in markets required significant capital investments that contributed to the development of a highly concentrated economy (which is particularly the case for cultural industries). Now, with digital infrastructure, capital structure for the production and distribution of information, culture and knowledge is decentralized. The physical capital necessary for its overall functioning is now largely held by end-users (with their computers) connected to each other through the Web. This novel decentralized structure thus facilitates the individual or collective production and distribution of these resources, which are no longer reserved for the few owners of capital as in the information and cultural industry of the 20th century. On the other hand, as already mentioned, an important condition for the deployment of such an information economy, and of these new modes of production of commons on the scale of content (cultural, information,

knowledge), is the prior existence of an infrastructure (at the physical level) which itself is at least partly common, that is, not entirely privatized.

In this digital environment, the mode of production of the commons is deployed within the framework of a networked information economy that operates on the basis of a new conception of non-exclusive shared ownership. This mode of production corresponds to what Benkler calls a commons-based peer production, the latter being defined as specific institutional forms of structuring rights of access, use and control of resources:

Commons are specific types of institutional arrangements that govern the use and disposition of resources. Their main characteristic is that no particular person has exclusive control over the use and disposition of a particular resource (Benkler 2003, p. 6).

As he himself mentions, his approach on land commons is close to the original approach of the economist Elinor Ostrom's, who very probably inspired¹⁵ him. However, he rightly emphasizes that the modes of regulation of information commons are not identical to those of land commons. He thus proposes a typology of commons, which, according to him, is based on two distinct criteria: their degree of openness and their mode of regulation. The ocean, the air, the highways, knowledge and culture are open commons: "The most important resource we govern as an open commons, without which humanity could not be conceived, is all of pre-20th century, and much of contemporary science and academic learning" (Benkler 2003, p. 7). Conversely, the land commons described by Ostrom are in limited access to a clearly defined group. The second parameter is the degree of regulation of the commons. Ostrom's land commons are regulated by more or less elaborate rules (some formal, others stemming from social conventions). The information commons deployed in the digital ecosystem vary widely in their degree of regulation. Some are not governed by any rule as resources in the public domain. He calls them open access commons. Others, as we shall see, are based on the existence of rules and social norms of regulation.

¹⁵ Let us recall that it was in 2003 that Benkler wrote for the first time on the political economy of the information commons, in a special issue of a collection of articles following the Duke colloquium initiated by James Boyle and with Elinor Ostrom as the guest of honor.

1.2.2.2. *Economic value and openness of information commons*

Carol Rose (1986), Associate Legal Officer at the BCIS, provided a very enlightening analysis dedicated to the question of the value generated by knowledge and cultural commons. Her argument is to defend the hypothesis that the value of these information resources is correlated with their degree of openness: the more open they are, the more they are used and the more their value increases because they will be a source of positive externalities. Shared resources can create, depending on the context, more wealth and opportunities for society than if they were privately owned. Decreasing control over these resources implies a proportional increase in their social as well as economic value. This principle runs counter to one of the traditional pillars of the knowledge economy, which bases the efficiency of information markets on privatization and maximum control over its resources. In this respect, Carol Rose refers to the work of economist Richard Posner as one of the instigators of such a posture¹⁶.

The decentralized production of the commons contributes to the generation of social value, which can then be reappropriated with a view to economic valorization through innovation processes in the networked information economy. This idea is particularly present in Lessig's work: "Commons also produce something of value. They are resources for decentralized innovation" (Lessig 2001, p. 99). In the field of works of the mind, free cultural practices are new sources of creativity and, as such, they are a potential lever for innovation dynamics that create economic value. In particular, he insists on the fact that actors in the industrial information economy can then exploit this dynamic of social value creation. Moreover, Lessig asserts that his plea for free culture is synonymous with a defense of a free market: "The charge I've been making about the regulation of culture is the same charge free marketers make about regulating markets" (Lessig 2009, p. 76). Over-regulation harms creativity and stifles innovation; "it wastes extraordinary opportunity for a democratic activity that digital technology enables" (Lessig 2004, p. 222). Entrepreneurs who want to innovate in this space cannot do so safely. It is therefore essential to be able to break the chains that hold back these new creative spaces.

16 "Exclusive private property is thought to foster the well-being of the community, giving its members a medium in which resources are used, conserved and exchanged to their greatest advantage. There is nothing new about this set of ideas; Richard Posner, a modern-day proponent of neoclassical economics, remarks that the wealth enhancing value of property rights has been well known for several hundred years" (Rose 1986, p. 711).

1.2.2.3. *An unprecedented collaborative production mode*

The production modes of information commons do not only follow individual logics, a certain number of which are based on original forms of collaborative organization. Open source software is the archetypal example: “The best-known examples of commons-based peer production are the tens of thousands of successful free software projects that have come to occupy the software development market” (Benkler and Nissenbaum 2006, p. 395). But other information sources are produced according to a similar logic of collaborative organization.

In the digital ecosystem, a growing number of projects to produce information commons is based on collaboration between actors who decide to pool their time, experience and creativity. In the scientific field, Benkler gives the example of two projects: SETI@home, an experimental scientific project using the power of connected computers – 4.5 million users from 226 countries – to catalog astronomical radio signals with a view to identifying extraterrestrial intelligence, and Clickworkers, a project initiated by NASA enlisting tens of thousands of individuals to identify Martian craters. In the field of content creation, the Wikipedia encyclopedia, the Dladshot platform (technological newsletter) or the Gutenberg project (digital library project) are also cited as emblematic illustrations.

All these production modes of information commons are part of what can be called the non-market social economy for several reasons. On the one hand, the producers of these resources are not necessarily professionals and, in any case, they are not financially compensated for their respective contributions. On the other hand, the production of such information commons is not oriented towards the search for profit by the designers of the platforms that host these voluntary contributions. In legal terms, these contributions often fall within the field of associations. The donation is the preferred form of remuneration.

1.2.2.4. *An expansion of the mode of production of information commons*

How can such production be the dominant organization of the networked information economy? We can indeed be led to suppose that because of the voluntary nature of these productions, individual contributions are random and are destined to be confined to the margins of information production systems. Benkler devotes a significant part of his writings to justifying the relevance and efficiency of this type of production. The digital ecosystem

promotes the activation of social behaviors that, from the peripheries, progressively dominate the networked information economy.

The figure of *homo oeconomicus*, at the heart of the dominant paradigm in economics since Adam Smith, which is that of an individual whose action is entirely oriented towards the search for his individual interest (profit, personal satisfaction, etc.), is called into question by the existence of such social behaviors within the networked information economy. Debates have taken place on the decisive elements of social behavior in the world of free software. For some (Lerner and Tirole 2002), social behaviors can be brought back to the logic of *homo oeconomicus* because even if volunteer developers are motivated by access to a position or social recognition, this indirectly translates the search for an economic gain that can serve as a lever for obtaining future employment. Conversely, others (Lakhani and Wolf 2005) show on an empirical basis that their action is motivated by the search for pleasure through intellectual stimulation, the improvement of their skills or the feeling of being part of a community. Benkler is clearly in favor of these results.

In the field of software, the fact that a growing number of developers are now being paid by their companies to participate in the production of free software does not call into question the foundations of such a collaborative system, which is therefore part of a hybrid economy. On the one hand, the latter have a high degree of autonomy and significant room to maneuver in the management of their activities. On the other hand, this cohabitation remains possible “as long as the principle of reward at the basis of such production, which is not monetary but intangible – the respect and admiration of one’s peers, the power to influence the development of a project – remains intact for unpaid developers” (Benkler 2006, pp. 185–186). However, although much importance is attached to this first argument, it alone cannot account for the effectiveness and sustainability of this type of social production in the digital ecosystem. Indeed, this philosophical debate on the decisive elements of social behavior invariably restricts this question to an individual motivation dimension.

There are also other factors that play an equally important role in the growth of these information commons, which are as much a matter of the properties of the digital ecosystem as of the mode of governance of these social productions. Indeed, regardless of the nature and extent of the contributors’ social motivations, everyone must work to earn money and

provide for their basic needs at the very least. The time that each person devotes to it being thus necessarily reduced in the face of these unavoidable economic constraints, this constitutes an undeniable brake on these dynamics of social production. However, it has been shown that the organization of collaborative production is based on two characteristics that play a decisive role in explaining their growth: modularity and granularity. Indeed, the social production of such information commons takes the form of a sum of independent modules allowing the different contributors to choose autonomously the nature and extent of their participation according to their desires and available leisure time. This mode of social production thus relies on the cooperation of a large number of contributors, each acting according to their possibilities and desires. Moreover, it is based on production modules whose granularity, that is, the individual time and effort that must be invested to produce them, is low. This second organizing property of social production is essential because, as Benkler notes, conversely, “if the finest-grained contributions are relatively large and would require a large investment of time and effort, the universe of potential contributions decreases” (Benkler 2006, p. 101). While these properties of granularity and modularity are common to open-source software, they are also at the heart of how Wikipedia works. Conversely, Benkler cites the failure of the Wikibooks collaborative textbook production project, also designed by Jimmy Wales:

Very few texts there have reached sufficient maturity to the extent that they could be usable as a partial textbook, and those few that have were largely written by one individual with minor contributions from others... The minimum time requirement required of each contributor is therefore large, and has led many of those who volunteered initially to not complete their contributions (Benkler 2006, p. 101).

The second property that explains the deployment of information commons in the digital ecosystem concerns the mode of governance of these resources. In these modes of social production, collaborative production goes far beyond the simple aggregation of individual contributions, but requires real inter-individual coordination. While the technical structure of the digital ecosystem facilitates its deployment because of the modularity and granularity of projects, it must also be reinforced by the existence of social norms that promote overall coordination and minimize anti-social behavior. However, these social norms are neither those of the market (since these

commons develop outside the market), nor those that would be imposed by a hierarchy (a commons does not rely on centralized regulation like a company). In fact, the coordination of individual productive activities takes place through organizational rules and routines that have gradually emerged through collective learning.

Benkler takes the example of Wikipedia. He points out that its creators did not enact a set of normative rules for the community of contributors, apart from the principle of neutrality, which requires for each article an impartial presentation of the different opinions or hypotheses on a given subject. These have evolved over time as the community interacted and communicated, as this social system became increasingly complex and contributions grew: “We cannot deny that it grew from nothing into a major global collaboration among thousands of contributors and is a system that is fundamentally collaborative and built on discussion and mutually shared norms” (Benkler 2011, p. 158). For Benkler, Elinor Ostrom’s work has provided insights into how cooperative standards are easier to meet when individuals have the opportunity to participate collectively in their development¹⁷. This dimension is fundamental because it conditions the sustainability of all social information production in the digital ecosystem. However, the contribution of the BCIS’s legal experts remains relatively modest on this issue of governance compared to the contribution of Ostrom, as we will see below.

1.3. The creative commons in the field of works of the mind

1.3.1. *Incarnation of free culture practices*

Creative communities are one of the components of information communities in the digital ecosystem, in the more restricted field of intellectual works. They all embody expressive forms that fall within the field of free culture. Lessig defines them as resources that anyone can use without asking permission. They cover resources belonging to the perimeter of free culture:

By “the Commons” I mean a resource that anyone within a relevant community can use without seeking the permission of

¹⁷ Numerous research works have developed this aspect in the specific case of Wikipedia. Among them are the work of Cardon and Levrel (2009), Broca (2013) and Cardon (2017).

anyone else. Such permission may not be required because the resource is not subject to any legal control (it is, in other words, in the public domain). Or it may not be required because permission to use the resource has already been granted. In either case, to use or to build upon this resource requires nothing more than access to the resource itself (Lessig 2006, p. 198).

Such creative commons are not consubstantial with the digital ecosystem. Indeed, they originate from the first copyright legislation that sought to promote a balance between a space dedicated to the development of the commercialization of intellectual works (linked to their privatization) and a space dedicated to the development of free culture or creative commons¹⁸. It is not because the technological environment is changing that this founding principle should disappear. From the outset, the law has protected the possibility of creating commons, and the challenge today is to continue to do so by adapting the structure of cyberspace by removing its excessive power of control.

A “read only” culture, emblematic of the commercial culture developed by cultural industries throughout the 20th century, is developing, without suppressing it, a “read write” culture. These two types of culture have an unprecedented potential for development in the digital ecosystem. Lessig (2008) devotes an entire book, *Remix: Making Art and Commerce Thrive in the Hybrid Economy*, to describe the historical evolution of these two forms of culture. The “infernal machines” of the early 20th century enabled the development of a new, reproducible and commercial culture. For some, they also weakened a form of amateur culture in the sense that, from that point on, the relationship with culture placed everyone in the position of “consumer” rather than “producer”. Culture would have lost its democratic scope by becoming the product of an elite, of a cultural monarchy. Lessig quotes a famous 20th century American music composer, John Sousa, whose fear was that children would become indifferent to the practice of music if it could come into the home without work or effort: “Amateurism, to this

18 “We can architect cyberspace to preserve a commons or not. (Jefferson thought that nature had already done the architecting, but Jefferson wrote before there was code.) We should choose to architect it with a commons. Our past had a commons that could not be designed away; that commons gave our culture great value” (Lessig 2006, p. 198).

professional, was a virtue – not because it produced great music, but because it produced a musical culture: a love for, and an application of, the music he re-created, a respect for the music he played, and hence a connection to a democratic culture” (Lessig 2008, p. 27).

Lessig is not the only one to make such an observation. In his book *Convergence Culture*, Henry Jenkins (2013) reaches similar conclusions. The commercialized forms of entertainment that emerged in the second half of the 19th century in the United States drew heavily on traditional, amateur cultural productions. They gave rise to cultural industries by producing a culture adapted to the greatest number of people. At the same time, however, they also reduced the popular cultural practices of the past to a form of “clandestinity” (Jenkins 2013, p. 170). In reality, the practice of a participatory amateur culture in the 20th century did not disappear, but it was crushed by another form of culture, a so-called mass culture, which provided access to an unparalleled quantity and diversity of culture. This new culture is also called “read only”, because it introduces a form of passivity in the reception of works symbolizing cultural consumption in the 20th century¹⁹. For a not insignificant part, it has been transformed into a professional and commercial culture, leading to a new relationship with music, making the listener a simple consumer and no longer an active participant (in the sense of a cultural content creator).

At the dawn of the 21st century, the emergence of new digital technologies facilitated the awakening of an amateur popular culture that had lost its scope in the 20th century. Borrowing from the language of geeks, Lessig calls it the “read write” (RW) or remix culture. If in its forms of expression, this culture is new, it often corresponds to a translation in the digital ecosystem of existing sampling practices in the field of music and “collage” in the artistic field. The explosion in the number of blogs also constitutes, in the field of written media, an illustration of this RW culture.

Regardless of the expressions of this RW culture, from the point of view of traditional esthetic standards, both Jenkins and Lessig recognize that this participatory culture is often of poor quality or discloses content of very

19 Both Jenkins and Lessig do not in any way question the numerous studies on reception that have demonstrated the absence of passivity of the receiver. Rather, their aim is to defend the fact that the transceiver-type communication scheme confines each of the two categories of actors to a specific function: to produce or to consume.

uneven quality. But this is not the point, because the point of developing a participatory culture is to have beneficial effects on society. This is why it must be protected from any attempt to enclose it by considering it as a commons.

1.3.2. Institutionalization of free culture: Creative Commons licenses

Protecting and promoting free culture practices in the digital ecosystem requires legal recognition. However, based on the observation that politicians had tended to act in the direction of strengthening control over access to cultural resources in the digital ecosystem and that it seemed that legislators were not inclined, in the near future, to defend the existence of cultural commons, some legal experts at the Berkman Center have invented a legal solution that would nevertheless allow free culture to flourish. This solution makes it possible to create creative “public commons” through a legal subterfuge consisting of using a non-exclusive license based on private law (contracts), whereby the creator authorizes, without requesting prior permission, the copying of his work by a third party (while still acknowledging his authorship) as well as certain associated uses:

Creative Commons has used private law to build an effective public commons. Creative Commons offers copyright holders a simple way to mark their creative work with the freedoms they intend it to carry. That mark is a license which reserves to the author some rights, while dedicating to the public rights that otherwise would have been held privately. As these licenses are nonexclusive and public, they too effectively build a commons of creative resources that anyone can build upon (Lessig 2006, p. 199).

The creators of these licenses, Lawrence Lessig, James Boyle and Hal Abelson, all three members of the BCIS²⁰, drew heavily on open-source software licenses. Lessig says the creation of Creative Commons, a Massachusetts-based non-profit organization based at Stanford University, “aim[s] to build a layer of reasonable copyright on top of the extremes that

20 Hal Abelson is also one of the founding members of the Free Software Foundation, which invented free software licenses.

now reign. It does this by making it easy for people to build upon other people's work, by making" (Lessig 2002, p. 117). Creative Commons (CC) licenses are recognizable in the form of labels associated with computer-readable metadata of cultural content.

In legal terms, they do not consist of overturning copyright legislation, but of circumventing it. They simply offer more freedoms, beyond what traditional fair use also allows. They imply that the creator agrees to lose some control over his work and, in the first place, his right to exclude anyone from copying. However, they do not imply a total loss of control. With this new system of ownership, the creator has the ability to decide himself on the degree of freedom granted by users to use his work. In this sense, these licenses offer the possibility not only to reconstruct but also to broaden cultural commons in the digital ecosystem. Cultural commons characterize both resources that can be used without prior permission (but threatened), such as those in the public domain, and new resources created in the digital ecosystem and voluntarily shared.

Associated with these licenses is the emergence of a broader conception of property where the social relationship, embodied here by sharing, takes precedence over the relationship of the individual to the object, as the economic law specialist Pierre Crétois points out:

A right to administer access to property is, at its core, a translation of the owner's right to control his or her thing, a right seen as a social relationship rather than a mere right to preserve independence from others. The owner's power of control certainly gives the right to exclude anyone, but also to include according to the same principle: it is therefore a social relationship (Crétois 2014, p. 325, author's translation).

The foundations of this license are very close to those created by the free software movement. Lessig makes no secret of it. First of all, he borrowed the adjective "free" to describe culture, as Stallman had previously done for free software. He devotes the first chapter of his book *The Future of Ideas* (2001) to the history of this movement, to the specificity of these licenses in terms of regulation and to their economic value.

His objective is then to show that these characteristics can be extended to other types of content:

This feature of open code, however, is not limited to code. The lesson of open code extends to other contents as well. As we will see when we consider the law of copyright, this balance between free and controlled resources is precisely the balance that the law must strike in intellectual property contexts generally (Lessig 2001, p. 72).

Free licenses, first and foremost the GPL/GNU license invented by Richard Stallmann, have thus strongly inspired the creators of Creative Commons licenses in the development of their content. In concrete terms, these licenses authorize the use of content by a third party without the latter being obliged to request authorization from its creator. In the field of software, they guarantee users four freedoms: they can freely use, copy, modify and distribute (including modified versions)²¹.

In the same vein, CC licenses all allow, at a minimum, the possibility of copying cultural content without asking permission from the creator (this is the CC clause). Second, they are distinguished by the degree of permissiveness they allow. With this new system of ownership, the creator has the possibility to decide for himself the degree of freedom granted to users of his works. He can choose a license that allows any use, as long as the attribution of authorship is given. This is the license called CC BY, which is the one that gives users the greatest freedom of use. However, other CC licenses allow, on the other hand, us to restrict to a non-commercial use (NC clause), with or without modification of the original work (ND clause)²². Finally, to ensure that the CC-licensed cultural resource remains shared once it has been appropriated by other users, the creator can attach the SA (Share Alike) clause to it. Such a clause avoids ownership of a shared resource. Thus, this licensing system opens up a wide spectrum of possibilities that outline new creative ecologies, both commercial and non-commercial, depending on the licenses chosen by the creators. These licenses can be used as much for individual creations as for collective creations. In all cases, by their plasticity

21 For a detailed discussion of these licenses, see Sébastien Broca's book *Utopie du logiciel libre* (2013).

22 For a detailed explanation of all Creative Commons licenses, visit the official website at <https://creativecommons.org/>.

and variety, these CC licenses have the function of accompanying free creative practices in the digital ecosystem and the (re)construction of new cultural commons.

Let us take the example of the Wikipedia encyclopedia. All articles, “multi-handed” products and open access systems are protected by a Creative Commons type property system. Originally, Jimmy Wales, its founder, had chosen to protect published articles with the GPL license, originally used for free software. It was only in 2009 that the Wikimedia Foundation, which manages Wikipedia, adopted the CC BY-SA (authorship – share alike) license for its content. This is a *sine qua non* condition for any contributor who wishes to publish a new article. This choice is consistent with the objective of collaborative writing on each article, each contributor being invited to intervene in discussion spaces to enrich in turn the articles published according to a continuous process. Sharing with modification is therefore mainly aimed at the community of contributors. The SA clause means that any user, contributor or not, can access the content, as well as republish it in its entirety on the condition that he leaves it himself under the same type of license. This clause conditions the development of a common cultural heritage. It should be noted, however, that Lessig does not specify whether only creative practices using the SA clause fall within the scope of the commons. In this sense, he pays more attention to the question of the construction of the commons than to their sustainability and the modalities of their governance. Now, this is a question that can legitimately be asked, because if the stake is to protect a whole set of resources from possible threats of privatization, this clause constitutes a very effective defense. This point is now being debated in the circle of defenders of the commons, who do not all share the same position.

1.3.3. *The modalities of cohabitation with the commercial cultural economy*

The creative commons economy is not easy to grasp, because while it brings together creative and sharing activities in the non-market economy, it has also spread beyond this boundary in what Lessig calls a hybrid economy. In both cases, the main actors are the voluntary contributors who create cultural content (text, sound, image), essentially amateurs, and the hosting and distribution platforms for this content, which institute a new form of re-intermediation. The central intermediation function devolved to producers

and publishers in the cultural industries is fading or even disappearing altogether to give way to direct relations between creators and the actors of sharing and distribution. In the digital ecosystem, the cultural economy of the commons is rather a combination of several arrangements that maintain singular links with the commercial cultural economy.

1.3.3.1. *The non-market arrangements of creative commons: unfair competition?*

The non-market arrangements of the commons include all the practices of creation, sharing and distribution of free cultural content, whether individual or collective, which do not give rise to economic transactions in monetary form, whether at the level of creators or sharing platforms. These different activities are not without effect on the commercial cultural economy, as they introduce, without intending to do so, a form of indirect competition that destabilizes the production routines of the traditional players in the cultural industries markets. For BCIS jurists, these practices do not constitute a form of unfair competition, even if they have often been perceived as such. They inevitably introduce a questioning of the economic models that until now have structured these industries without, however, implying their disappearance. A cohabitation is possible, but it is still necessary that the latter be able to develop their strategies to, at worst, survive or, at best, take advantage of the existence of these new creative arrangements. Let us give a few examples, each of which sheds light on this question.

The very significant growth in the early 2000s of networks for exchanging cultural content files via peer-to-peer platforms, which was mostly part of the non-market economy (the platforms did not derive direct profits from their activity), was considered a major threat to the music industry in particular, which was the first to be affected by these practices. Faced with the rise of creative forms of sharing and transformative practices that could harm their trade, the actors of these cultural industries then lobbied the legislator for a new legal framework to eliminate these forms of competition that they considered unfair.

For BCIS jurists, rather than condemning these practices as illegal, it is more judicious to offer them a new institutional framework that would lead to the deregulation of amateur creativity and thus facilitate a harmonious cohabitation. In particular, they argue that rights owners could receive compensation for potential losses related to this legalization in return for the

legal recognition of amateur practices of sharing copyrighted works. Both Benkler and Lessig refer to academic William Fisher's²³ proposal for a principle of compensation in the form of a global license financed by a tax or by the federal budget²⁴ to legalize and finance the sharing of cultural works in non-market arrangements. While they reject the idea that this principle could replace the copyright regime, they admit that it could facilitate the functioning of a more competitive market: "This competitive regime, with a back screen to ensure that artists do not lose, would facilitate a great deal of innovation in the distribution of content" (Lessig 2009, p. 120).

On the other hand, if a commercial platform uses the products resulting from this amateur creativity for commercial purposes, one leaves the strictly non-market framework and must then remunerate the authors directly. Lessig gives a very clear example: "If a parent has remixed photos of their child with a song by Gilberto Gil (as I have done on numerous occasions), then when YouTube makes the amateur remix available to the public, Gil must be compensated in some way" (Lessig 2008, p. 256). The problem is that the law considers amateur sharing illegal but, at the same time, provides a form of immunity to sharing platforms that are not responsible for the hosted content and therefore have no form of obligation to compensate rights owners arising from making it available for undifferentiated uses²⁵.

The emergence of Wikipedia, emblematic of a mode of social production of cultural commons taking shape in a non-market setting, has also gradually contributed to shaking up the routines of traditional actors. Wikipedia, it should be remembered, is produced by thousands of volunteer contributors who cooperate to producing a cultural commons. The fact that each article is protected by a Creative Commons license is the main marker of a sharing

23 William Fisher is a Harvard professor and a specialist in intellectual property. He is also the current director of the Berkman Center for Internet and Society. He wrote a book in 2004, *Promises to Keep: Technology, Law and the Future of Entertainment* (Stanford University Press).

24 As will be shown in Chapter 2, the idea of a global license has been the subject of much attention and debate but has not, with rare exceptions, attracted the support of cultural industry representatives.

25 This point will be discussed in more detail later because today, the latest European legislation on copyright revision dating from 2019 has endorsed the principle of the need for commercial platforms to enter into agreements with rights owners (in return for remuneration for the platform) so that their users can use their content without being threatened with prosecution.

economy, with each user being able to appropriate the content without asking permission. The contents of the encyclopedia are also distributed by a technical platform that is financed outside the commercial sphere by donations. It is undeniable that the rise of Wikipedia and its appropriation by a growing number of users has contributed to strongly destabilizing the traditional markets for encyclopedias, which had already had to adapt their economic model to the digital ecosystem (Shapiro and Varian 1999). Here, too, we are in a configuration where economic players, such as the *Encarta* encyclopedia proposed by Microsoft or the oldest English encyclopedia, *Britannica*, find themselves confronted with a singular situation: “Both companies found themselves in competition with a business model that simply did not exist a decade ago; a model so implausible that it is theoretically could not exist, or so we thought until just a few years ago” (Benkler 2011, p. 212). The founders of Wikipedia neither wanted nor imagined they could destabilize the encyclopedia market. For some time, moreover, it was the object of much criticism regarding the low quality of the articles offered compared to the expertise of traditional encyclopedias. However, the progressive audience of this open encyclopedia has gradually upset the players in place, who have been forced to change their strategy and, in turn, to be creative in order to hope to remain on the market.

Finally, the commercial cultural economy can even benefit from these non-market agencies of the commons. For this to happen, these commercial actors must agree to reduce their control over the cultural content they produce and recognize that this strategy can be a source of economic value by offering them the opportunity to expand the boundaries of their market. For example, a creator can, in fact, see the value of his cultural property increase if he decides to make it exist in both market and non-market economies. Lessig cites the example of Cory Doctorow, a science fiction author, who distributed his latest novel for free on his blog under a Creative Commons license the same day it was offered for purchase in bookstores. By offering potential consumers the opportunity to appropriate it in digital format, it increases its value because the book is an experience good. However, in this case, it requires adapting the contracts between creators and publishers who, most of the time, do not authorize this type of hybrid practice. In the case of music, Sacem in France prohibits an artist from adopting such practices.

Producers can also reap substantial benefits at another level. Lessig cites the example of ccMixter (in the United States), a non-profit community music site promoting remix culture, which offers CC-licensed content and is funded by donations from contributors. This type of sharing platform can also build a new kind of relationship with producers who can find new artists to produce while minimizing the transaction costs (mostly research) associated with finding new talent: “When labels discovered artists in ccMixter and then signed them to record deals or contracts, the work the artist had freely licensed continued to be free. Indeed, sometimes the very same song was licensed both commercially and noncommercially. This helped the commercial. More artists and record companies will do the same in the future” (Lessig 2008, p. 226).

1.3.3.2. *Hybrid arrangements of creative commons*

There is a part of the cultural economy that produces commons that is based on a so-called hybrid mode resulting from the production of voluntary contributors who will create content, individually or collaboratively. By using CC licenses, contributors signal that they belong to a sharing economy. However, the platform that makes cultural content accessible will monetize this content for its own benefit (and not on donation or public funding). From this perspective, there is a strong porosity with the world of the commercial cultural economy without being able to be fully assimilated into it. Indeed, these hybrid arrangements are distinguished by the willingness of the actors to preserve the separation of these two spheres, market and non-market.

However, this boundary is unstable and threatens to collapse if no attention is paid to the specific conditions under which it is maintained. In particular, contributors may no longer be willing to produce cultural content on a voluntary basis if they feel that they are merely free inputs to a commercial economy. In other words, the agents of the commercial economy (the platforms) that exploit the value created by voluntary contributions must ensure that they maintain an ecosystem that promotes sharing by proposing operating rules that encourage contributors to create. They must seek to understand and internalize the norms of the community they are exploiting: “A key element to a successful hybrid is understanding the community and its norms. And the most successful in this class will be those that best leverage those norms by translating fidelity to the norms into hard work” (Lessig 2008, p. 184). It is at this level that Lessig’s approach

reflects the importance he places on community. If the standards that structure them are not internalized by commercial platforms, then there is a risk of dilution of the commons due to the gradual disappearance of contributors.

Benkler agrees with Lessig's point of view, stating that one of the challenges in maintaining these collaborative modes lies in the company's ability to organize a benevolent and non-hostile relational mode, since users cannot be directed like traditional workers. He referred to the world of Open Source, taking the example of companies like Red Hat or IBM, which have been able to develop an original symbiotic relationship with communities of Open Source software developers and make significant economic profit from it. However, he points to the same condition as Lessig: "If a company exploits its community by failing to contribute its fair share or to respect the community dynamics, it will ultimately alienate the community and the system will fall apart" (Benkler 2011, p. 219). Maintaining a mutual relationship of trust is an absolute condition for the survival of a business that uses free inputs from a community of volunteers.

Both Lessig and Benkler are betting on a reinforced cohabitation in the medium term if market organizations adapt and internalize these new conditions of production and distribution of knowledge and culture. If the world of free software is the emblem of this hybrid economy, the cultural sphere is also seeing the deployment of such economies. Among the examples given, two of them seem particularly interesting to us because they clearly reveal the stakes involved in cohabiting with the commercial cultural economy.

First and foremost, they are commercial platforms that economically exploit the value created by the contributions of a community of volunteers. In 2008, at the time when Lessig raised this issue in his book *Remix*, the photo-sharing platform Flickr seemed to him to be an emblematic case of this hybrid economy with strong growth potential. Conversely, the failure of the Ofoto platform created by the company Kodak attests to the difficulty of articulating a community logic and a 100% commercial model. The goal of Flickr was above all to build a community by facilitating the sharing of photos between its members. From the outset, 80% of the photos published were in sharing mode thanks to the use of Creative Commons licenses. Unlike Ofoto, Flickr did not have control over the photos hosted on its

platform. A feeling of community belonging (more or less strong) was a central element in the choice of this platform by the contributors. When Flickr was bought by Yahoo! in 2005, the goal was not to turn the platform into a commercial site and make a maximum profit. While Yahoo! could have extracted considerable value in the form of advertising revenue due to the platform's very large audience, the company chose a less profitable business model in the form of subscriptions to some of its contributors (in exchange for significant storage space) that allowed it to remain in this hybrid²⁶ arrangement.

The challenge is to bring this feeling of reciprocity to life, based on mutual benefit for each of the stakeholders. Amateur photo creators have a public space for visibility and sharing in exchange for their free sharing of the content they create: "Every company building a hybrid will face exactly the same challenge: how to frame its work, and the profit it expects, in a way that doesn't frighten away the community. 'Mutual free riding' will be the mantra, at least if the value to both sides can be made clearer" (Lessig 2008, p. 237).

The question of "rewarding" voluntary contributors is not, however, excluded from consideration, but, according to Lessig, applying a principle of retribution is not an effective solution because the ethics of contribution and sharing are not the same as those of business ethics. Removing this distinction amounts to jeopardizing the hybrid economy, which would gradually dissolve within the commercial economy. We will see later that this condition of non-remuneration is not so obvious. We can indeed imagine that, just as the platform monetizes its content without making the search for profit its top priority, contributors can also have the possibility of being remunerated without necessarily harming their initial motivations for sharing. Why indeed could such a principle be considered valid for one of the players and not for both?

A final example shows the difficulty for commercial cultural actors to understand how they can benefit from an alliance with hybrid arrangements. Many "fandom" platforms have been created on the Web, such as the

26 The Flickr platform has undergone major changes since this period. Recently, it has undergone a major transformation since its managers wanted to remove all content produced before a certain period. A negotiation took place with the Creative Commons foundation so that photos shared with such a free license could be kept.

famous *Daily Prophet* newspaper, created by a 13-year-old girl, Heather Lawver. It brought together publications from young teenagers from around the world who wrote stories based on the *Harry Potter* saga. While the author, Joanne Rowling, welcomed these new spaces of fanfiction, her producer, Warner, who wanted to control all forms of products derived from the work, did not agree. This led to what has been called “The Potter War”, which Henry Jenkins recounts in detail in his book on the culture of convergence. After a phase of negotiations, an agreement was reached. Warner finally agreed not to sue this amateur newspaper. After a long learning process, the production company understood how it could interact with and even benefit from fan communities. Fans were a significant part of the marketing budget that Warner did not have to pay for: “Warner had learned that being less restrictive with its intellectual property strengthened fans’ loyalty to the brand and, hence, the return to its artists” (Lessig 2008, p. 211). It would be interesting to extend this reflection by evaluating how, today, the world of geek culture cohabits with the commercial world²⁷.

Ultimately, the creative commons economy is deployed through multiple agencies, none of which is intended to replace the traditional cultural economy. The harmonious coexistence between these different spheres is, however, conditioned by the learning of new regulatory rules by commercial cultural actors (cultural industries such as intermediation platforms) who must now coexist with amateurs in a totally new way, as the latter are no longer confined to their exclusive function as consumers.

New implicit ethical norms must indeed regulate these new cultural spaces and, in particular, confirm the feeling that everyone is in a mutually advantageous situation. The contributor must have the feeling of being “compensated” in one way or another for his or her voluntary “work”, which is then exploited by a third party. This compensation need not necessarily be monetary. Likewise, the search for profit should not be the primary objective of the economic exploitation process of the platforms hosting the shared cultural content. For, in this case, the feeling of exploitation by volunteers

27 We can cite several works in information and communication sciences that question the development of the phenomenon of fan and geek cultures from the point of view of creative activity and production of works (fanfictions, *mashups*, remixes). See the synthesis written by Mélanie Bourdaa: Bourdaa, M. (2015). Les fan studies en question: perspectives et enjeux. *Revue française des Sciences de l'information et de la communication*, 7.

may jeopardize these hybrid economic models. Without saying so explicitly, this question refers to the institutional form of governance of these platforms. The cultural content platforms of the hybrid economy cannot be companies like any other. This raises the question of their legal status and their modes of financing. Are all economic models compatible with this hybrid economy?

The writings of the American jurists at the BCIS have had the merit of questioning the foundations of the cultural economy in the digital ecosystem. They have opened up a range of questions that have given rise to a genuine research program on the question of the cultural commons' economy (more broadly, intangible commons) as a new space for the creation, production and distribution of cultural content in a digital environment. Their contributions are multiple. They have stressed the importance of creating the conditions for an institutional ecology favorable to the development of such an economy, requiring the intervention of the legislator to amend the copyright law in order to reduce control over cultural content by showing that this can be a new lever to foster new forms of creativity and innovation. Although inevitably destabilizing the behavioral routines of the economic actors dominating cultural markets, the different facets of the cultural commons economy do not constitute a direct threat.

1.4. Propagation in the intellectual and militant sphere in France

In France, since the beginning of the 2000s, intellectuals of diverse origins, all militant within associations or collectives oriented towards the defense of freedom on the Internet, have contributed to propagating in the public space some of the strong ideas of BCIS jurists. This militant "commonsphere" invested in the public space on the occasion of the debates that accompanied two major bills on the adaptation of copyright to the digital ecosystem. We will evoke these two periods in France where the pioneering approach of the BCIS jurists was mobilized to defend, on the one hand, the legalization of non-commercial sharing with the proposal for the establishment of a global license (in the framework of the DADVSI law (2005)) and, on the other hand, the institutional recognition of information commons (in the framework of the law for a digital Republic (2016)).

1.4.1. The challenge of legalizing non-market sharing

1.4.1.1. Contextualization of the DADVSI law

A first intellectual battle took place in the French public space during the process of implementation and examination of the DADVSI (*droit d'auteur et droits voisins dans la société de l'information* – copyright and related rights in the information society) (2005) and HADOPI laws (“Creation and Internet” law promoting the dissemination and protection of creation on the Internet) (2009). These two laws from the beginning of the millennium in France had a twofold stated objective: to adapt copyright to the digital age and to promote the financing of creation. It all began in 2002 when the government entrusted the CSPLA (*Conseil supérieur de la propriété littéraire et artistique*) with a mission to transpose European Directive 2001/29 on the harmonization of certain aspects of copyright and related rights in the information society.

Following this preparatory work, a draft law was adopted by the Conseil des ministres on November 12, 2003. It provides that technological measures may prohibit purely and simply all private copying in the context of works distributed by an on-demand service, or if the user who wants to make the copy has not lawfully acquired the work. Technological measures may also limit the number of private copies of an original work not distributed by an on-demand service (CD, DVD) to a single copy. The DADVSI law also warns of three years in prison and a fine of 300,000 euros for anyone who proposes, uses or makes known, directly or indirectly, a tool or piece of information, to neutralize a technical measure, regardless of the purpose pursued by the user. Such acts are assimilated in the law to counterfeiting offences, offences which are accompanied by a presumption of guilt.

The core of the project has therefore focused on the legalization of additional legal protection for rights owners in the form of DRM (Digital Right Management) as a means of combating all forms of downloading of protected works on peer-to-peer platforms. Exceptions were considered as possible options by the directive. In the end, the government law retained only two of them: the exception for disabled people authorizing them to translate works without requesting prior authorization and the legal deposit of web pages with the BnF (Bibliothèque nationale de France) and INA.

1.4.1.2. *The space for debate and controversy*

This DRM legalization project has sparked many debates and controversies in the public space, initiated by actors from different horizons: the Libriste movement (in particular, the French section of the Free Software Foundation with the association April), certain actors from the cultural industries grouped within a militant collective, as well as intellectuals such as Philippe Aigrain and Valérie Peugeot, who are militant for the protection of information commons on the Internet within associations such as Vecam and Quadrature du Net.

As early as 2002, the Libriste movement had set up a powerful citizen lobby through a website (Eucd.info) that proposed critical analyses of the law in order to alert the public to the harmful social and economic consequences of the European Directive and the DADVSI law. Their main criticism concerned the fact that cultural uses (reading or listening to digitized works) and its exceptions (notably the exception for private copying) would henceforth be transformed into contractualizable rights that could be arbitrarily limited by technology. On a practical level, they demonstrated strong citizen activism by contacting numerous members of parliament and putting a petition online that obtained more than 100,000 individual and collective signatures. The echo of their actions went beyond the strict framework of the software world.

For Sébastien Broca, a specialist in information and communication sciences (ICS) of open-source software:

Librarians succeeded in starting a public debate about the threats to individual liberties linked to “internet policing” and about the new culture economy that was born from the irruption of digital exchanges. They brocaded the attitude of the music and film majors, accused of wanting to maintain at all costs their economic model, based on scarcity and control of usage (Broca 2013, p. 179, author’s translation).

On the side of the representatives of the cultural industries, while most producers, audiovisual and multimedia broadcasters and publishers defended this project, authors, artists and performers did not form a homogeneous group like the collective management societies. In particular, a collective under the name Alliance Public-Artistes, bringing together Adami and

Spedidam²⁸ as well as the association UFC-Que choisir and the Union nationale des associations familiales, undertook collective action for recognizing the legalization of non-market sharing on peer-to-peer platforms. In 2005, they created a dedicated site to present their project, defending a compensation system in the form of a global license: “The global license is an authorization given to Internet users to access cultural content (music, images, films, texts) on the Internet and to exchange it between them for non-commercial purposes in exchange for a remuneration paid to artists when they pay their monthly Internet subscription”.²⁹ We find here the idea previously defended by Lessig and Benkler. Introducing this new principle of financing creation implied *de facto* the legalization of acts of remote downloading by recognizing that they fall under the exception for private copy, on condition that they remain in a strictly non-commercial framework. Internet access providers would be the entities responsible for collecting, via their subscription, the sum intended to compensate for these acts of private copying.

The Alliance Public-Artistes collective had committed itself in favor of a so-called optional global license, not generalizable to all Internet users. Each one, at the time of his subscription, should promise not to engage in acts of downloading likely to be exempted from a supplement. On many occasions, the members of the collective have regularly intervened in the space of parliamentary debates. They have also requested a report validating the legal feasibility of a global license. They mention on their website an Ipsos poll, which shows that three quarters of French people are in favor of such a compensation principle.

This idea of a global license, initially defended by BCIS jurists, had also found a favorable echo among militant associative actors such as Philippe Aigrain and Valérie Peugeot. Together with the European deputy and former minister Michel Rocard, Jacques Robin, founder of Transversales Sciences Culture, and Patrick Viveret, member of Transversales Sciences Culture, they co-wrote an article in the newspaper *Libération* on July 29, 2004, expressing their opposition to the DADVSI law³⁰.

28 Adami and Spedidam are civil societies for the administration of performers’ rights.

29 www.lalliance.org/pages/2_1.html.

30 A summary is available at: <https://vecam.org/archives/article335.html>.

Philippe Aigrain, an intellectual figure with an eclectic background, in turn researcher–computer scientist, entrepreneur, employee of the European Commission, expert on free software issues and essayist, is the one who contributed to making the Berkman Center’s approach to free culture and creative commons known in French intellectual circles in the early 2000s. He had become aware of the theories of the Berkman Center’s jurists very early on. In 2003, he wrote a column in the newspaper *Libération*, entitled “Pour une coalition des biens communs” (For a Coalition of Common Goods), in which he advocated the formation of a political alliance in favor of the protection and promotion of all forms of cooperative production of high social utility information commons, threatened by an information capitalism that privatizes all forms of knowledge, headed by multinationals with ever-increasing financial power. The same year, he edited a special issue of the *European Journal for the Informatics Professional* with the Spanish researcher Jesus Gonzales Barahona, on the theme of Open Knowledge. Yochai Benkler was invited to participate in this issue and presented a summative version of his seminal article “The Political Economy of Commons”. Philippe Aigrain subsequently published two books, *Cause Commune* (2005) and *Sharing Economy* (2012), in which he sets out his vision of commons and the solutions to be implemented to protect them and promote their development with the introduction of a creative contribution.

1.4.1.3. *From global license to creative contribution*

Like the global license principle, this idea of creative contribution is based on a mandatory lump-sum mutualized financing and establishes a disconnection between uses and payment. However, it differs from it in terms of purposes, management and distribution modalities. The creative contribution is not a principle of compensation for right owners, but rather a new form of remuneration not so much exclusively for the latter as for all creators, amateurs in particular, who deliberately choose to make the product of their cultural creative activity freely available. It is conceived as a new form of financing for digital creative culture promoting the creation of knowledge commons.

For its creator, Philippe Aigrain, the primary challenge is to promote quality cultural production in all media, which is sustainable in the medium term in a world where everyone’s cultural commitment is increasingly important. Many contributors to cultural commons do not seek direct monetary remuneration, because they are sensitive to other forms of symbolic

remuneration and because they devote part of their lives to “leisure” and not to their work activity as such (the one that gives them an income). However, such so-called amateur production can only develop and participate in cultural diversity if it finds levers of remuneration so that everyone can devote more time to it, a guarantee of essential learning in order to hope to increase the overall level of quality. In terms of management modalities, as this license is not anchored in intellectual property law, it is not intended to be managed by collective management societies, as envisaged for the global license, but rather by an independent and transparent body. Finally, while the global license is based on a strict distribution of right owners according to the assessed levels of downloads, the distribution of the creative contribution is based on actual usage and establishes a principle of correction, so as to protect cultural diversity. A fraction could even be used to finance cultural projects or organizations.

Such a creative contribution license would also prevent the economic value created by amateur cultural production left freely accessible from being captured and reappropriated by actors who know how to monetize this content by making the wheels of the attention economy turn to their advantage, as Lionel Maurel³¹ points out in support of this proposal. A final interesting argument is also put forward. According to him, this legalization would make it possible to promote strictly decentralized exchanges that could balance the growing trend towards centralization (stemming from the activity of distribution platforms).

1.4.1.4. *The outcome of controversies*

Let us now return to the outcome of the DADVSI law. Even though it was opposed to any form of legalization of sharing, even non-commercial, the debate on the public space, then relayed in the parliamentary space around this proposal for a global license, had a surprising effect since two identical legislative amendments in favor of this proposal (each carried by a different political party, UMP and PS) were tabled and received, to the surprise of all, a majority vote a few votes apart. But this parliamentary *coup de théâtre* ended with a final episode in March 2006, when the parliamentary session reopened, which put an end to this amendment legalizing non-market sharing

31 All these arguments are developed on an article in his blog at the following address: <https://scinfolex.com/2012/11/06/reponse-aux-arguments-du-parti-pirate-suedois-contre-la-licence-globale>.

by voting a contrary amendment. It was the repressive aspect that was finally ratified with the possibility of prosecuting the authors of file exchange software likely to allow the illegal exchange of works (which undermined the principle of technical neutrality) and the principle of a three-year prison sentence and a 300,000 euro fine for any Internet user who illegally made works available with peer-to-peer software.

While this proposal for a global license has only had ephemeral institutional recognition, it must be said that the space for debate has not ended with its early disappearance. It returned to the forefront during the Hadopi law in 2009, without more success, only to be definitively rejected a few years later in the Lescure report (2013), which was to serve as a basis for a new bill on cultural exception II³². In this respect, a very didactic map of the controversies surrounding this question of global licensing has been proposed by the medialab of Sciences Po Paris³³. However, this report did not deny the interest of legalizing non-market sharing in the face of the crisis of confidence that had developed between the cultural industries and some of their public:

The legalization of non-market exchanges would promote access for everyone to all cultural content available online and would valorize the notion of disinterested sharing... The test introduced in return for the legalization of exchanges, whether in the form of compensatory remuneration or a 'creative contribution', would provide creators with a substantial source of income (Lescure 2013, p. 31, author's translation).

This report refers not only to the principle of global licensing but also to the principle of a creative contribution proposed by Philippe Aigrain (2012) in his book *Sharing, Culture and the Economy in the Internet Age*. Solving this crisis was even the major axis of this report. In this perspective, it invited taking into account the difference between occasional downloading practices for purely private purposes and without the objective of enrichment and the lucrative activities deployed by certain Internet actors who systematically exploit the distribution of counterfeit cultural goods.

32 For more details, refer to the cartography of the controversy published by the médialab Sciences Po Paris: <http://controverres.sciences-po.fr/archive/licenceglobale/etape-6/index.html>.

33 <https://controverres.sciences-po.fr/archive/licenceglobale/>.

Despite this observation, the report concludes that not only does the legalization of non-market trade raise legal obstacles³⁴ that would amount to calling into question the 2001 European Directive, but that it also faces economic and socio-technical obstacles. In particular, the coexistence of legalized non-market exchanges and a commercial offer seems difficult to envisage, at least in the short term, because if all content became free instantly, then paying platforms would have difficulty attracting customers. Another argument put forward is the excessive financial amount of this proposal for a creative contribution for certain households if it were to concern all content protected *a priori* by copyright. Finally, the report is concerned about the technical measures to be implemented, which would consist of systematically observing traffic, which could be detrimental to the respect of individual liberties. Thus, he argues rather in favor of the sustained development of subscription offers (in the form of music streaming, subscription video-on-demand, etc.) which, compared to the introduction of private global licenses, “seems more respectful of the freedom of rights owners but also of users, who can thus choose the type of content as well as the type of services they wish to have access to” (Lescure 2013, p. 355, author’s translation). In the medium term, however, it is accepted that financing through a creative contribution of a “free” offer may be conceivable....

1.4.2. The challenge of legal recognition of the information commons

A few years later, another intellectual battle led by commonsphere activists in France focused on the issue of positive recognition of the information commons. Initially, this proposal appeared during an online consultation opened by the *Conseil national du numérique*, whose Vice-President at the time was Valérie Peugeot. She was not included as such in their subsequent report

34 In order to make such a proposal legal, it was necessary either to recognize the legality of the principle of exhaustion of rights in the digital ecosystem, stipulating that the exclusive rights of the owner disappear on the first sale or first circulation of the medium containing the protected work, provided that this circulation was carried out by the owner of the rights or with his consent, or to introduce a new exception to copyright for private copying. However, the report concludes that both of these eventualities run counter to European Directive 2001/29/EC. Indeed, the latter stipulates that copyright and related rights are not exhausted in the digital ecosystem, nor does it provide for this possibility for private copying in the list of optional exceptions. The revision of this Directive is the only possible way forward, and therefore, in other words, a solution that is unlikely to be envisaged in the short term.

“*Ambition numérique*” (digital ambition), although the report³⁵ states that commons based on collective action and a mode of production and of common governance constitute both a new political space and a new relationship to value, which is essential to support. It reappeared on the scene during the consultation phase on the Internet in the context of the bill for a Digital Republic³⁶ (*République numérique*). This project, led by Secretary of State Axelle Lemaire, aimed to develop a legal framework to build a true “data economy”. As mentioned by the common property activist Lionel Maurel in his detailed account of the genesis of this proposal³⁷, Axelle Lemaire wanted a proposed article to be submitted for discussion on the information commons. The choice was then made to convene article 714 of the Civil Code, which deals with “common things” in order not to confine the commons to the field of intellectual property. Their positive recognition would allow an easier recourse to the judge to counter all attested copyfraud practices. This is how the first proposal of Article 8 came about, which was filed on the *République numérique* platform:

The following fall within the common domain of information:
1) information, facts, ideas, principles, methods, discoveries, data, as long as they are subject to public disclosure in compliance with the laws and regulations in force and are not protected by a specific right; 2) objects protected by an intellectual property right, or by another exclusive right, whose legal protection period has expired; 3) information from administrative documents that are publicly disseminated.

In this formulation, it can be seen that it comes close to the definition of the structural public domain as defined by the association Communia. On the other hand, it excludes from its perimeter the so-called voluntary commons. In its initial form, this proposal had only a very limited lifespan. It was quickly modified following ministerial discussions, which, according to Lionel Maurel,

35 Conseil National du Numérique (2015). *Ambition numérique*. Pour une politique française et européenne de la transition numérique [Online]. Report, June 2015. Available at: <https://contribuez.cnumerique.fr/sites/default/files/media/CNNum--rapport-ambition-numerique.pdf>.

36 Legifrance (2016). Loi no. 2016-1321 du 7 octobre 2016 pour une République numérique [Online]. Available at: www.legifrance.gouv.fr/affichLoiPubliee.do?idDocument=JORFDOLE000031589829&type=general&legislature=14.

37 Maurel, L. (2017). La reconnaissance du “domaine commun informationnel”: tirer les enseignements d’un échec législatif [Online]. Available at: <https://hal.archives-ouvertes.fr/hal-01877448/document>.

removed what constituted the essential elements of this founding proposal. Subsequently, a collective under the name of Soutons les communs, bringing together 13 associations, some of which were previously mentioned such as Quadrature du Net, SavoirsCom1 and Vecam, made proposals for amendments to this article. Box 1.1 presents a summary³⁸ of these proposals.

1) Introduce criminal sanctions for infringements of the ICD (Information Common Domain) in the same way that there are sanctions for copyright infringement.

2) Include faithful reproductions of two-dimensional works in the definition of the ICD, because too often the acts of digitization of public domain works constitute a pretext for claiming new rights that hinder the reuse of reproductions.

3) Avoid the legalization of copyfraud, because as it stands, Article 8 paradoxically risks leading to the legalization of abusive reappropriation practices: if the information, facts and ideas cannot be the direct object of a property right, on the other hand, if they are included in a database, the database can be the object of a property right.

4) Recognize a legislative existence for voluntary commons, that is, resources voluntarily shared by their creators (in particular works under Creative Commons) in order to protect them against any attempt at abusive reappropriation.

5) Create a national public domain registry to identify intellectual works in the public domain through the BnF (Bibliothèque nationale de France), which, through its catalogs, has a large amount of metadata for calculating the duration of rights.

**Box 1.1. Proposed amendments to Article 8 of the Law
on the Digital Republic (République numérique)**

Following these proposals, Internet users were called upon to react. Article 8 was the one that received the most comments and 80% of favorable opinions. However, a strong coalition of representatives of rights owners (SEPM, SACD, SNEP, SNE) strongly opposed it and lobbied hard to have Article 8 removed from the bill, claiming that it presented the public domain as the rule, with intellectual property being relegated to the realm of the exception. French law was, in their view, effective in combating abusive intellectual property claims. In the end, the fate of Article 8 was sealed by an

38 http://soutenonslesbienscommuns.org/contributions/#SAVOIRS_COM_1.

arbitration rendered by Matignon, who decided to withdraw it before the bill was introduced in parliament. Institutional lobbying was victorious over citizen lobbying, at least in this intellectual battle.

Along the way, some of the representatives of the commonsphere recognized that this Act nevertheless advanced the commons in the field of knowledge. Valérie Peugeot expressed her views on this subject a year later on Vecam's website. First of all, she asserted that the inclusion "of the word 'commons' in law is neither an operational necessity nor an imperative for the commons to survive and develop. On the other hand, we formulate the hypothesis that this statement is necessary so that the diversity of the practices of the commons, which make up their richness but also their weakness, can set in motion a dynamic of collective construction of a unifying political horizon"³⁹. With regard to the law for a digital republic, it also recognizes a real advance concerning the commons in the field of scientific research. Indeed, this law formalizes the institutional recognition of the principle of open access for public research (Article 17), allowing researchers to freely disseminate their scientific works, mostly financed by public funds, while respecting a period of exclusivity for the benefit of the publisher of 6 months for science and technology and 12 months for the humanities and social sciences. It also authorizes "text and data mining", that is, the right for researchers to use tools for massive and automatic searches of document corpuses, which constitutes a second encouraging exception to copyright. Although there are regrets that this law may have a limited scope by not making free publication mandatory, which is left to the free choice of the author, it recognizes that, henceforth, "knowledge can be explored by digital methodologies to feed the next generation of research, thus dissociating the intellectual property rights of scientific publishers from the usage rights of researchers"⁴⁰.

Undeniably, these multiple intellectual battles have contributed to bringing to the forefront the socio-economic stakes, in terms of innovation and creativity, related to the protection, recognition and enhancement of common knowledge and culture. By way of illustration, we would like to give two examples.

39 Peugeot, V. (2016). Facilitatrice, protectrice, institutante, contributrice: la loi et les communs [Online]. Vecam, September 29, 2016. Available at: <http://vecam.org/Facilitatrice-protectrice-institutante-contributrice-la-loi-et-les>.

40 *Ibid.*

In 2012, Sacem and the Creative Commons France association signed an agreement authorizing members of this collective management organization to place their works under one of the three Creative Commons licenses that allow the distribution of works for non-commercial purposes. Since January 1, 2012, Sacem has registered 1,356 works under Creative Commons licenses, which have been added to its repertoire by 138 of its members (authors, composers, directors and publishers, mainly men, who own a total of 12,461 works). However, this still represents a very small portion of its rights owners. The non-commercial restriction has been the subject of some strong criticism from defenders of free culture, such as the association *Musique Libre*, which publishes the *Dogmazic* platform⁴¹. Lionel Maurel is also concerned about the vague interpretation that can be given to the non-commercial use clause, as it is likely to hinder collective uses. Libraries, for example, cannot use pieces of music under NC license to sound their spaces without paying royalties to Sacem, within the framework of the general performance contract that normally binds them to the collective management society. In spite of this, this agreement is the beginning of recognition for an institution that has always expressed a strong reluctance towards the emergence of free licenses.

The second example that we thought it interesting to cite is the report commissioned from Joëlle Farchy in 2017 by the CSPLA⁴² on an inventory of the state of play on the use of open-source licenses in the cultural field. Generally speaking, the recommendations proposed are in the direction of a better recognition of creative practices using this type of license. Among them, we can note the importance given to a better communication of these licenses to the public, the creation of a collective management organization dedicated to creators who opt for free licenses, or the possibility of making projects under free licenses eligible for public funding (such as CNC or CNL). The succinct conclusion given to this report shows a step forward in the recognition of free culture by institutional actors such as the CSPLA:

All of these concrete proposals aim to include free licenses, which are contractual tools that are sometimes still controversial, in the structure of common projects and specific

44 www.numerama.com/magazine/21469-l-accord-sacem-creative-commons-sous-le-feu-des-critiques.html.

42 Farchy, J. (2017). *Les licences libres dans le secteur culturel*. Mission report for the CSPLA, December.

cultural productions. Behind the rough appearance of legal-technical tools, the stakes are high: the emergence of collaborative or transformative works, the development of participatory artistic projects, dissemination to a wider public, new opportunities for value creation, or even improved accessibility, outreach and enhancement of public institutions' resources (Farchy 2017, p. 58, author's translation).

We cannot end this section without mentioning the new European Copyright Directive that was ratified in March 2019. It is clear that the issue of free culture and cultural commons is no longer at the center of the debate. It has moved to the level of the strong tensions existing between the cultural industries and the digital giants. However, the voice of commonsphere activists has also made itself heard to defend, after some hesitation, this directive and, in particular, Article 13 (now 15), which requires platforms to enter into agreements with rights owners so that they are remunerated when a user posts on the platform a work (a text, a song, a film, etc.) for which they hold the rights. This obligation profoundly transforms the status of the GAFA. La Quadrature du Net and Lionel Maurel⁴³ defended the idea that this law was not a defeat for a free and open Internet and for the dissemination of knowledge commons. From a status of passive hosts benefiting from an attenuated responsibility towards the acts committed by their users, commercial platforms will now have to assume responsibility for the contents they disseminate, even if they are not directly responsible for putting them online, because it is indeed the centralized and lucrative platforms such as Facebook or YouTube that are targeted. Thus, even if it is true that the possibility of using filtering mechanisms (which already exist for these platforms) can constitute an obstacle to freedom of expression, we can also question the very existence of such freedom on these platforms, which already subject their users to the growing influence of an algorithmic logic.

1.5. Recent extensions of the BCIS approach

Building on the pioneering work of Boyle, Lessig and Benkler on information and creative commons, several research programs have been conducted at the European level by researchers with close ties to the BCIS.

46 <https://scinfolex.com/2018/09/15/la-directive-copyright-not-a-don't-go-for-internet-free-and-open/>.

Although an explicit filiation has never been named as such, it is nevertheless very present in the questions and issues raised.

The first major research program that followed on from this work is called *Communia*. It is coordinated by Nexa, the Research Center for Internet and Society of the Polytechnic University of Turin (equivalent to the BCIS), and brings together 50 organizations (universities, libraries, archives, etc.) from the European Union, as well as from countries outside Europe such as the United States and Brazil. The BCIS is part of this network through the contribution of one of its founders, Richard Nesson. By proposing to shed light on the issue of the public domain in the digital ecosystem, this research program contributes to clarifying conceptual proximities and divergences with the emerging notion of information commons.

The second European program that we will discuss later is also in line with the work initiated by the BCIS jurists, because it raises the question of the need to deploy common elements at the level of network infrastructure to promote the deployment of a real cultural commons economy in terms of content. This is the *netCommons Project*⁴⁴, coordinated by the University of Trento (Italy), which is part of the European H2020 horizon. Five other European universities are involved, including CNRS researchers such as Mélanie Dulong de Rosnay. This program aims to study the conditions for deploying community digital infrastructures as new forms of common areas that can be used for the development of new technologies to become, in the long term, complementary networks, or even substitutes for the dominant infrastructure model based on a strong socio-economic domination in terms of services by Web giants.

1.5.1. *The digital public domain: the perimeter of cultural commons*

Communia is a thematic network on the Digital Public Domain (DPD) funded by Europe (2007–2009)⁴⁵. Echoing James Boyle’s pioneering

44 <https://netcommons.eu/>.

45 “COMMUNIA Thematic Network has been working for over three years at becoming a European point of reference for theoretical analysis and strategic policy discussion of existing and emerging issues concerning the public domain in the digital environment – as well as related topics, including, but not limited to, alternative forms of licensing for creative material; open access to scientific publications and research results; management of works whose authors are unknown (i.e. orphan works).” See: <http://communia-project.eu/about.html>.

approach to defending the public domain, this program advocates the proposal for a positive definition (from a legal point of view) of the public domain so that it can be protected from any attempt to “enclose” it. It reiterates the importance in the digital ecosystem of fostering open access to information resources. One of the objectives of this program is to make policy recommendations to strengthen the public domain in Europe in line with the European digital agenda.

Their main argument in favor of a positive recognition of the DPD is socio-economic. As Giancarlo Frosio points out, drawing on the work of economist Rufus Pollock⁴⁶, who founded the Open Knowledge Foundation⁴⁷: “Value can be extracted from the structural and functional aspects of the public domain” (Frosio 2012, p. 10). Frosio takes up the theory of the economist Joseph Stiglitz, according to which knowledge is a public good producing positive externalities, which can disappear if markets seek to control knowledge excessively. A market that excessively privatizes information will be less efficient in the allocation of resources in society because the information facilitating this allocation will be harder to find. Most importantly, these digital public domain resources have a positive economic value. The use, or reuse, of public domain resources increases their economic value by offering a set of free resources that can give rise to innovation dynamics and new business models. For all these reasons, the protection of the DPD will also have a social value by allowing greater access to culture. We find here the liberal vision underlying Benkler’s analysis in particular.

In this perspective, Communia’s main conceptual contribution is to propose a definition of the wider public domain and to link it directly to the notion of cultural commons within their *Public Domain Manifesto*. The Digital Public Domain (DPD) is defined, in a broader sense, by two components:

46 Pollock, R. (2006). *The Value of the Public Domain*. UK Institute for Public Research Policy.

47 The Open Knowledge Foundation is a non-profit association under British law promoting free culture created in 2004. It provides technical tools such as CKAN, which enables the hosting of metadata associated with data catalogs, enabling governments, for example, to provide a catalog of their public data quickly and cheaply. It also offers legal assistance in the choice of licenses for open source content.

– the structural DPD, which includes all works that are outside the scope of copyright (facts, ideas, etc.) and those for which the term of protection has expired;

– the functional DPD, which groups together “voluntary commons”, in other words resources that have been voluntarily made freely available by their authors and resources resulting from the reuse of copyrighted resources but which fall within the scope of exceptions (such as fair use).

These two components constitute our cultural heritage and thus form a kind of “global cultural commons” according to Mélanie Dulong de Rosnay and Juan Carlos de Martin: “The emergence and growth of an environmental movement for the public domain and, in particular, the digital public domain, is morphing the public domain into the commons. The public domain is our cultural commons” (Dulong de Rosnay and de Martin 2012, p. 8). On the other hand, user rights are not the same in each case, and therefore governance is also different. The structural PD is a commons where all uses in terms of reuse are possible, whereas the functional PD is a commons built with rights of use that can be more or less permissive.

In terms of recommendations, the preamble to the presentation of their research program states that the European Digital Agenda is fully in line with their conception of the DPD by supporting the following principles: the digitization of the European cultural heritage with the support of the Europeana digital library, the necessary simplification and clarification of copyright on a European scale, in particular on orphan works, the promotion of cultural diversity and creative content in the digital⁴⁸ environment. Communia’s main recommendations for strengthening the digital public domain, as set out in their *Manifesto*, are in line with the theses defended by BCIS jurists, among which: reduce the duration of copyright protection to

48 “In drafting these policy recommendations, COMMUNIA shares very much the vision of Neelie Kroes, European Commission Vice-President for the Digital Agenda, that “[c]ulture is the peak of human creativity and a source of collective strength” and “we want ‘une Europe des cultures.’” The promotion of the public domain is empowering that “collective strength” and the European public domain is quintessential of “une Europe des cultures”. The riches of digitization may multiply endlessly our cultural collective strength. However, new enlightened policy approaches and solutions are needed to reap the benefits of the present groundbreaking technological advancement. Again, the words of the European Commissioner Kroes powerfully convey the agenda of a modern digital Enlightenment that COMMUNIA aspires to propel with the help of the Commission”. Citation from the Communia website, available at: <http://communia-project.eu/final-report/annex-iii.html>.

promote access to shared culture and knowledge, take into account the effects on the public domain of any change in the scope of copyright, any content that falls into the public domain in its country of origin must be recognized as belonging to the structural public domain in all other countries of the world, any false infringement of the public domain must be punished by law. Finally, it should be noted that several other European⁴⁹ projects, initiated during the same period, are in line with the Communia network's *Public Domain Manifesto*.

This creative revolution that the members of the Communia network are calling for also implies that socio-technological dimensions (and not only those related to the legal dimension of copyright) be taken into account. In the foreword to *The Digital Public Domain*, Charles R. Nesson, one of the founders of the BCIS and professor of law at Harvard, states that the most important recommendation made by the Communia network is the need to develop a digital registry of cultural content that allows any potential user to determine at zero cost which content is copyrighted and which is in the structural or functional public domain: "Seen from the perspective of users of the public domain, the greatest legal constraint on dissemination of public knowledge is from the threat of copyright litigation" (Nesson 2012, p. 12). Such a registry would allow everyone to be able to reuse content in a creative perspective without fear of legal action by potential rights owners. In this perspective, Communia proposes that each country, with the support of the Europeana digital library and the major European universities, initiate such a registry with, in a second step, the possibility of aggregating them in a global consortium.

We can note that the Creative Commons association has worked in this direction by working on the implementation of a search engine⁵⁰ that allows contents to be found easily under CC license or belonging to the public domain. It is defined as a tool for creators who not only want to discover but also reuse free resources with ease and confidence:

49 The Europeana Foundation, which published the Charter of the Public Domain in 2008; the LAPSI project, which brings together a network of reflections on the access and reuse of public sector information in the digital environment; the Rightcom project on the economic and social impact of the public domain; the DARIAH project (Digital Research Infrastructure for the Arts and Humanities) with the aim of fostering digital research between the humanities and the arts; the ARROW project aimed at finding ways to clarify and easily identify the state of copyright on works; and finally the DRIVER project, which proposes to build an infrastructure and a search engine for all open scientific communications.

50 <https://ccsearch.creativecommons.org/>.

The vision centers on reuse – CC will prioritize and build for users who seek to not only discover free resources in the commons, but who seek to reuse these resources with greater ease and confidence, and for whom in particular the rights status of these works may be important. This approach means that CC will shift from its “quantity first” approach (front door to 1.4 billion works) to prioritizing content that is more relevant and engaging to creators.⁵¹

Source	Domain	# CC Licensed Works
PhyloPic	http://phylopic.org	3,463
Flora-On	https://flora-on-on.pt	5,501
Rawpixel	https://www.rawpixel.com	6,355
Thorvaldsens Museum	http://www.thorvaldsensmuseum.dk	8,912
Culturally Authentic Pictorial Lexicon	http://capl.washjeff.edu	15,142
Animal Diversity Web	https://animaldiversity.org	15,554
McCord Museum	http://www.musee-mccord.qc.ca/en	21,872
World Register of Marine Species	http://www.marinespecies.org	23,716
Thingiverse	https://www.thingiverse.com	29,624
Rijksmuseum	https://www.rijksmuseum.nl/en	29,999
Cleveland Museum of Art	http://www.clevelandart.org	32,643
Sketchfab	https://sketchfab.com	37,903
Brooklyn Museum	https://www.brooklynmuseum.org	61,503
Museums Victoria	https://museumsvictoria.com.au	85,575
Digitalt Museum	https://digitaltmuseum.no	266,672
DeviantArt	https://www.deviantart.com	271,362
SVG Silh	https://svgsilh.com	276,966
Metropolitan Museum of Art	https://www.metmuseum.org	500,738
Geograph Britain and Ireland	https://www.geograph.org.uk	1,244,387
Behance	https://www.behance.net	6,479,672
Wikimedia Commons	https://commons.wikimedia.org	23,749,024
Flickr	https://www.flickr.com	349,021,635

Table 1.1. *List of content provider sites under open license*⁵²

51 <https://creativecommons.org/2019/03/19/cc-search/>.

52 <https://ccsearch.creativecommons.org/>.

To date, it provides access to content in the form of open licensed or public domain images from open APIs and the common crawl database. Table 1.1 provides a list of data providers.

Within these 22 data vendors are very disparate entities. We find museums, such as the Rijksmuseum (Amsterdam) or the Metropolitan Museum of Art (New York), which have a proactive policy in terms of reusing their digital heritage, amateur platforms for “royalty-free” photos with the largest provider of content in Creative Commons format, Flickr (which alone accounts for more than 90% of the content accessible by this search engine), platforms such as Behance dedicated to designers, amateurs and professionals, without forgetting Wikimedia Commons (which accounts for 6% of content).

At this stage, it might be interesting to have more information on how the algorithm underlying this search engine was built and the actual uses it has developed. Let us recall that this last point is an essential aspect on which the arguments of the defenders of a cultural commons economy are based. But how can such a study be implemented?

Indeed, in the absence of systematic identification of the users of this search engine, it seems difficult to us to realize it. Finally, there is also the question of the visibility of this search engine in the space of the Web, where the search for information is dominated by commercial search engines with Google in a quasi-monopolistic situation.

1.5.2. Network infrastructure as a commons

Yochai Benkler was one of the first to stress the importance of network infrastructure as an indispensable lever for the deployment of cultural commons at content level⁵³.

In a way, this netCommons research program aims to explore this issue more closely by starting with an in-depth field analysis of case studies of emerging community networks:

53 See Benkler, Y. (1998). Overcoming agoraphobia: building the commons of the digitally networked environment. *Harvard Journal of Law and Technology*, 11(2), Winter.

Community networks (CNs) started appearing in the 1990s, as the internet was growing in popularity. They have been called by many names: free networks, alternative telecom providers, do-it-yourself internet service providers (ISPs), etc., but basically, it is about managing telecommunications as a commons, that is, a resource produced and maintained collectively, rather than held privately.⁵⁴

These networks are defined as local telecommunication infrastructures set up according to a bottom-up logic by groups of people (the community) allowing them to connect to the Internet and offering digital communication services.

The particularity of these community networks is also to provide a guarantee of transparency on the flow of personal data and their reuse. Several community networks are thus examined. A certain number of them have been built to cope with the lack of a possible connection to the Internet network in certain territories. For example, Guifi.net was created in 2004 in the Spanish region of Osona to solve the difficulties of broadband access in these rural areas. In terms of technical infrastructure, this network has established connections through Wi-Fi routers and a set of geographically close people who decided to deploy their own network by interconnecting different nodes (houses, offices, libraries). Today, it is considered to be the largest citizen Wi-Fi network in the world. As of December 2016, it included more than 32,500 active hubs, most of them in Catalonia, as well as many others in Valencia, the Balearic Islands, Madrid, Andalusia, Asturias, and the Basque Country. Many of these networks are projects initiated by hackers belonging to associative networks carrying the values of free culture and DIY (Do It Yourself).

In this research program, the notion of the common is explicitly invoked to refer to the fact that these networks are built and governed collectively (rather than privatized through the commercial entities that are Internet service providers). The challenge of this research program is to study the characteristics of these so-called “collective” modes of production and

54 Dulong de Rosnay, M., Treguer, F. (2018). Telecommunications Reclaimed: a hands-on guide to networking communities. *Internet Society*. Available in CC BY on www.net.commonsworld.org.

governance in order to identify the invariant forms, as well as those that over time prove to be the most efficient. The researchers of the netCommons project began this reflection by taking as a starting point the conceptual model of common pool resources of the contemporary theorist of the commons, Elinor Ostrom:

The theoretical framework of the commons in general, and of commons-based peer production in particular, is a reference for the development, management, and scientific analysis of CNs (community networks) ... the underlying principle behind CNs is the firm conviction that the CPR framework presents the optimal way to run a network, as a critical resource for the development and sustainability of a community. CPRs were studied in depth by E. Ostrom.⁵⁵

These community networks are an illustration of what they call artificial digital commons and are defined as rival and non-exclusive resources. The governance of these commons is based on the action of several groups of actors⁵⁶ each characterized by specific bundles of rights. These artificial digital commons fulfill an essential function, which is to provide citizens with the means to build and participate in a self-organized way in social connection and access to knowledge and means of communication. The commons approach allows this research program to assess in a comparative perspective which community networks are the most sustainable.

The exploration of this infrastructural dimension seems essential to us. It is unquestionably one of the essential axes of a research program on the

55 The first deliverable of this project is very instructive in this respect, as it puts into perspective, while adapting it, Ostrom's theory in the case of digital commons: www.netcommons.eu/sites/default/files/d1.1_reportexistingcn_dlv.pdf.

56 "The volunteers, the initiators of the project, due to their lack of economic interests, are responsible for the operation of the tools and mechanisms of governance and oversight. The professionals bring in quality of service, and their customers bring the resources which make the ecosystem economically sustainable. Public administrations are responsible for regulating the interactions between the network deployment and operation, and public goods, such as public domain occupation. All participants that extract connectivity must contribute infrastructure, directly or indirectly, and can participate in the knowledge creation process": www.netcommons.eu/sites/default/files/d1.1_reportexistingcn_dlv.pdf, p. 22.

cultural commons⁵⁷, because it raises the question of the articulation between the nature of networked infrastructure and the modes of production and circulation of knowledge and culture. A community network infrastructure as studied here is not a necessary condition for the deployment of a cultural commons economy, which, as has been shown, has been able to emerge and deploy itself within a commercial network infrastructure. However, if the conditions for cohabitation with the commercial economy actors prove difficult over time, preventing their growth or even their very existence, then we may wonder whether such infrastructures do not constitute fortresses likely to guarantee their existence in the medium term.

1.5.3. Remuneration of volunteer contributors

A final avenue for extending the pioneering work of the BCIS addresses the issue of compensation for voluntary contributors to the production, individually or collaboratively, of cultural commons. The cultural commons economy is based on the cohabitation of non-market and hybrid platforms, each of which hosts diverse content produced by volunteer contributors, individually or collectively. Following the approach of the BCIS pioneers, two researchers associated with the BCIS, Primavera De Filippi⁵⁸ and Samer Hassan⁵⁹ (2014), have begun to reflect on the advantage of remunerating voluntary contributors in the case of platforms based on collective contributions such as Wikipedia, Creative Commons, CouchSurfing or Open Street Map, which they call Commons-Based Peer Platforms (CBPP) in reference to Benkler's pioneering approach. We see here that we are going beyond the strict framework of intellectual works, and therefore beyond our narrow understanding of the notion of cultural goods. Nevertheless, their analysis seems interesting to present here, as it places the question of perennality and the enrichment of the commons in a broader perspective encompassing all existing forms.

57 We refer the reader to the first deliverable of the project, available online at www.netcommons.eu/sites/default/files/d1.1_reportexistingcn_dlv.pdf.

58 CNRS Researcher at CERSA (*Centre d'étude et de recherche en sciences administratives et politiques*) of the Université Paris 2. She is also associated with the BCIS. Her work focuses on the legal implications of distributed architectures such as blockchains and how they could contribute to new forms of governance.

59 Professor at the Complutense University of Madrid. He is also associated with the BCIS.

De Filippi and Hassan's approach focuses on the analysis of Commons-Based Peer Platforms (CBPP) as defined by Benkler. They defend the idea that it might be relevant to construct a metric evaluation of each contributor's social value to the commons platforms, as this could encourage individual incentives to contribute and thus promote the enrichment of the commons. This estimate could constitute a kind of reputational capital that the contributor could also bring to bear on the market.

This individual indicator of social value is not part of a market price system because it could be counterproductive. Indeed, introducing monetary remuneration linked to the influence of each person's contributions to these CBPPs could introduce undesirable individual opportunistic behaviors that could jeopardize this sharing ecosystem. If some contributors are paid directly according to their production, then others will no longer want to contribute for free; moreover, since money is scarce, this may lead to strong individual competition instead of collaboration. Finally, another undesirable effect would be to encourage contributors to focus on projects that are considered the most remunerative. This individual indicator of social value is also not based on a non-material reward system (reputation, administrative rights, privileges) because this would not improve the voluntary contributor's (economic) situation. It would be at the interface between the non-market sharing ecosystem and the market by providing rewards that are non-transferable (not based on a monetary equivalent), but that the market would nevertheless be able to recognize (and therefore internalize). From this perspective, De Filippi and Hassan propose an alternative metric of value to that provided by the market (the price system) that is based on two principles:

- social value emerges from within the network of actors contributing to CBPPs;
- social value is subjective, that is, based on the cross-perception of contributors to other CBPPs.

This indicator is constructed in several stages. The first consists of constructing a quantitative social value indicator associated with each CBPP community. The second step is to assess the individual social value of each estimated contributor in a common metric, the Sabir.

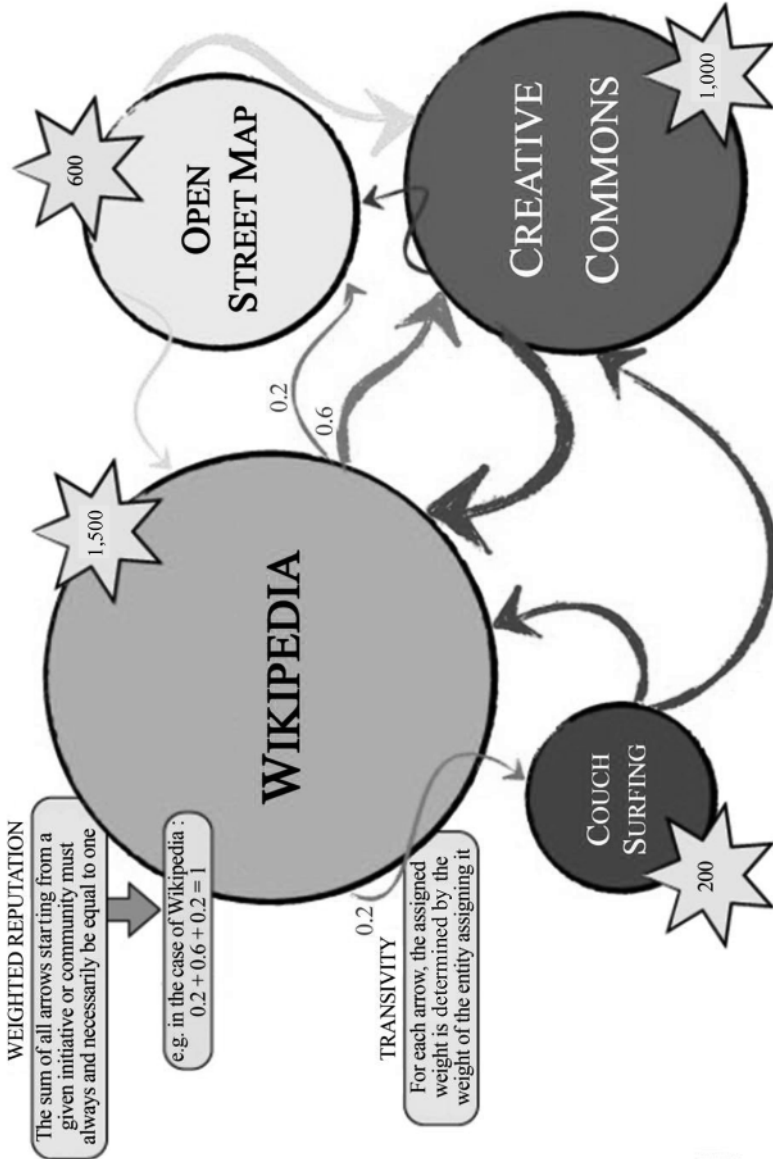


Figure 1.1. Example of social values for different Commons-Based Peer Platforms.
For a color version of this figure, see www.iste.co.uk/pelissier/commons.zip

Let us take a look at some elements of their demonstration. At the beginning is an ecosystem composed of a predefined number of CBPPs (e.g. Wikipedia, Creative Commons, Europeana, Flickr). Each community allocates vouchers to the other CBPPs of their choice by assigning them a weight (knowing that the sum of these relative weights must be equal to one). By applying a popularity principle similar to pagerank, a social value can be calculated for each CBPP (e.g. Wikipedia: 5,000, Creative Commons: 2,000).

Second, each contributor to the CBPPs receives non-transferable tokens from the governance of the various CBPPs. Each community is free to decide the number of tokens it produces and how it distributes them, knowing that in each case this is based on an internal reward mechanism based on gratitude and appreciation. In order to make the value of everyone's contribution comparable, the value of each token is translated into a common denominator of value, the *sabir*: “*Sabir* can essentially be regarded as a proxy for value in the Commons-based economy. Just like prices do in the market economy, *Sabir* allows for individual contributions to be assessed and compared according to a common denominator value (which remain distinct from the market)” (De Filippi and Hassan 2016, p. 11). For example, Wikipedia could award its tokens according to the various possible contributions: creation of articles, revision, etc. (De Filippi and Hassan 2016, p. 11).

The value of a token for a community associated with a commons is the ratio between the social value associated with that community (CBE) and the total number of tokens produced by that community. It can be noted that it is therefore not in the interest of the community to produce too many tokens, as this will lower the value of the token it produces.

Like the price system used as a proxy for economic value, the *sabir* system as a proxy for the social value of the commons is based on a decentralized logic with no central authority responsible for assigning the value of resources, which will spontaneously contribute to the emergence of positive externalities. In fact, this system for estimating the social value of commons platforms and each contributor's social value is of interest above all because it constitutes a kind of common language, a form of interface between the universe of commons and that of the market that allows everyone to be in a mutually beneficial relationship: voluntary contributors can put their estimated social value to use on the market and receive (non-monetary)

rewards in the form of a free offer of goods or services from economic actors who wish to value this type of action. It is assumed that the more companies recognize this new system of social evaluation, the more it will allow everyone to increase the time devoted to contributing to the commons:

Over time, a positive feedback loop will therefore be established, as market entities that support (or sponsor) the commons will gain reputation within the commons ecosystem. This might, ultimately, bring more and more market players (whether or not they are themselves CBPP contributors) to purchase their goods or services on the market, knowing that, by doing so, they are also helping the commons (De Filippi and Hassan 2014, p. 12).

A number of questions remain unanswered when reading this thesis⁶⁰. However, its merit is that it opens up a central question, the remuneration of contributors, and proposes a formalization based on the construction of a social value indicator. We shall see in the next chapter how this question is also a central preoccupation of the representatives of the Ostromian approach to the commons. But it will become apparent that the perspective adopted is fundamentally different from the one presented here.

⁶⁰ Certain points seem to us to need to be clarified, in particular on the modalities of attribution of vouchers by each community of commons to the other commons. Indeed, it can be assumed that this is the responsibility of the governance of these commons and that specific rules (such as voting) should prevail. But nothing is said in this article to that effect. Similarly, in the construction of the social indicator, the social value of a common at time t being based on the social value of other commons, defined at time $t - 1$, we may wonder how the social value of the common or commons created at time $t = 0$ is defined.

