

Construction of Digital Commons and Exploration of Public Domain

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Abstract: The expansion of the rights of copyright owners caused by digital network technology greatly reduces the capabilities of users to obtain access and exploitation of the copyrighted information and works. Some commentators vigorously question and attack traditional systems, asserting that copyright law has never been of net benefit to society but rather served to enrich a few at the expense of creativity. Facing the widespread anti-copyright arguments and tendencies, scholars and critics therefore endeavor on searching for solutions that could restore the balance of interest between copyright owners and public users both within and outside traditional copyright regimes. Based on concepts of open licensing, scholars began to import alternative schemes under which authors reserve only part of their exclusive rights and license public users to exploit their copyrighted works upon satisfying the licensing conditions. This article will analyze the emergence of digital commons based on voluntary licensing scheme and its influence on restoring the continually shrinking public domain. It will firstly introduce anti-copyright tendencies and the emergence of open access projects which comprise digital commons. This article will then examine a well-known example of digital commons, namely, the Creative Commons, which provides authors the opportunity to release their works under a series of licenses. This article will finally analyze the influence of digital commons which are represented by projects, such as the Creative Commons, to the public domain.

1. Introduction

The traditional copyright laws have been developed with a one-size-fits-all approach to achieve their goal of promoting the progress of culture and useful arts. On the one hand, they grant an author with a series of exclusive rights to reproduce, distribute, publicly perform and display his/her works, make adaptations, and attribute the work to the creator him/herself. The copyright systems also endow authors the right to assign or license copyrighted works. On the other hand, the systems incorporate fair use/fair dealing doctrines and compulsory licensing schemes to guarantee access and exploitation of the copyrighted work by public users and encourage recreation. Copyright laws have established a limited term of protection upon expiration of which, the copyrighted works will enter the public domain and will be free for all to use. The copyright systems have been established with the purpose to well maintain a balance between copyright owners and users, thus motivating creative activities by copyright owners and in the meantime, promoting wide dissemination of works and information.

The development of technology greatly enlarges the capability to access and the range of expressive means by ordinary users,¹ and yet ironically expands the scope and duration of copyright protection. Subject matters under protection have expanded from traditionally paper-based works to many new types of media, such as digital music and motion pictures as well as software. The duration of protection has been extended from the original 14 years from publication of the work plus another 14 years if the author

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¹ Michael W. Carroll, *Creative Commons as Conversational Copyright*, INTELLECTUAL PROPERTY AND INFORMATION WEALTH: ISSUE AND PRACTICES IN THE DIGITAL AGE (VOL.1 COPYRIGHT AND RELATED RIGHTS, Peter K. Yu eds. 2007) at 445-461.

is alive to the creator's life plus 70 years. The emergence of digital technology and the internet has exacerbated the tension between benefits reaped by copyright owners and the interests of public users. The Digital Millennium Copyright Act (DMCA) of the United States imposes liability onto internet service providers (ISPs) and punishes circumvention of technological measures that control access and copying of copyrighted works as well as production and dissemination of technology or devices that facilitate the circumvention of technological measures. The European Union Information Society Directive, which was passed in 2001, addresses almost the same issues as the DMCA, including the provision of very limited exceptions to exclusive rights held by copyright holders and protection of technological measures. China follows the copyright reform in developed societies to deal with copyright problems in the digital network era by promulgating the Regulation on the Protection of the Right to Network Dissemination of Information (the 2006 Regulation).

The increase in the rights of copyright owner facilitated by digital network technology greatly reduces the means of users to obtain access and exploitation of the copyrighted information and work. Some commentators have explicitly questioned and criticized the traditional system by asserting that copyright laws have never been provided benefits to society, but rather serve to reward a few at the expense of creativity.² Copyright opponents further promote anti-copyright debates and draw public attention to the issue of copyright reform. One famous instance of an anti-copyright movement was Grey Tuesday which occurred on February 24, 2004. The activists intentionally violated a copyright of EMI through *The White Album* by distributing MP3 files of a mashup album called *The Grey Album*.³ Over 400 sites participated in the Grey Tuesday movement, with protesters stating that "The Grey Album illustrates a need in revision in copyright law to allow sampling under fair use of copyrighted material or proposing a system of fair compensation to allow for sampling".⁴ Similar to *The Grey Album* activists, social and political groups also suggested proposals to their governments to reform the system of copyright enforcement and compensation. The French group, Association des Audionautes, proposed that France should legalize peer to peer file sharing and compensate artists with a surcharge on ISP fees.⁵ In addition, seven Swedish Parliament members from the Moderate Party proposed the complete decriminalization of online file sharing in a Swedish tabloid.⁶ Internet corporate entities, such as YouTube, Viacom and Google, obviously would not oppose copyright and may cooperate to remove online copyrighted works upon requests but could decline to actively enforce copyright by asserting that they did not have the power to prevent the uploading and downloading of copyrighted material.⁷

Commentators who do not support severe copyright protection and enforcement argue that authors create not only because of economic incentives and monetary compensation, but also because of their desire to share thoughts and earn recognition from peers. Many authors have continued to write even if they do not think there is a market for publication. Current copyright laws discourage the wide dissemination of the works of authors. Other arguments perceive freedom of knowledge as a fundamental human right and advocate for the release of copyright for free culture and free communication. In face of the widespread anti-copyright arguments and tendencies scholars and critics therefore endeavor to search for solutions that could restore a balance of interest between copyright owners and public users both within and outside traditional copyright regimes. Within the system, suggestions focus on allowing appropriate exceptions for circumvention of technological measures, establishing reasonable safe harbors for ISPs, and redefining copyright limitations and exceptions. Based on copyright doctrines and legal concepts outside the intellectual property regime, scholars have begun to import alternative schemes under which authors reserve only part of their exclusive rights and license public users who could then exploit their copyrighted works upon satisfying the conditions of the license.

This article will firstly introduce the alternative schemes that are established based on copyright norms, but outside traditional copyright frameworks. Well-known examples include open source software and the Creative Commons. Then this article will take the Creative Commons as an example to further examine how this alternative scheme works, the benefits that it will bring to the dissemination of works and free communication, and whether it has latent disadvantages that should be of concern. Finally, this

² *Anti-copyright*, available at <http://en.wikipedia.org/wiki/Anti-copyright> (last visited Apr. 15, 2010).

³ *Id.*

⁴ *See supra* note 2.

⁵ *See supra* note 2.

⁶ *See supra* note 2.

⁷ *See supra* note 2.

article will discuss the influence of alternative schemes on the public domain, in an attempt to point out the positive role that these digital commons play in enriching the public domain and the effect of the expansion of the public domain in turn to boost the use, remix and recreation of copyrighted material.

2. Alternative Schemes: Digital Commons

In the late 1980s, Professor Richard Matthew Stallman from the Massachusetts Institute of Technology (MIT) proposed the term “free software” by launching the GNU’s Not Unix! (GNU) project, in an attempt to create a free for use computer operation system. Later, in 1989, Stallman drafted the GNU General Public License (GNU GPL) under which software developers may publish their software with the license which allows anyone to freely use the software, make new revisions, run on new operating systems, share with others or market the software. Relevant provisions in the GNU GPL also apply to the derivative software designed based on the original free software. A non-profit organization, the Free Software Foundation, was established to support the operation of free software and dedicated to popularizing the concept of freeing and opening software. Stallman insisted on the ideal that all software should be freely available, analogous with “free” as in “free speech”, not as in no cost, such as “free beer”.⁸ In 1998, a group of individuals advocated that the term “free software” be replaced by “open source software” (OSS) as an expression which is less ambiguous and more in line with the corporate and business world.

Under the GNU licenses of free software and OSS, certain criteria must be fulfilled to distribute the license-governed software. First, the software under the license can be freely redistributed, either by means of making physical copies or disseminating via the internet.⁹ The software program must contain a source code which must be in a form that can be redistributed or modified by a subsequent programmer.¹⁰ Computer language can be simply divided as source code and object code. The former is a higher programming language and the latter is the resulting machine language.¹¹ One only needs the latter to run a computer program, but in order to modify a program, one needs to change the former. The source codes of privately-owned software are not freely available. In order to modify the original software or write new software based upon the preexisting material, one must resort to the holder of the original source code for the authorization. The availability of source codes reduces the cost and time that are required to create a new program. Secondly, licensees are allowed to modify the software and redistribute their derivative software in the modified form.¹² If redistributed, the modified program must be governed by the same license. Redistribution under different licenses is deemed as copyright infringement which will result in banning of further dissemination. This is the viral effect of the GPL.¹³ Under the viral effect, software programmers are forbidden to exclusively control the GPL-governed software. The viral effect reflects Stallman’s ideal of making all software freely available. Thirdly, additional conditions are not allowed to be added onto the license either by inserting additional words or through additional licenses.¹⁴ Moreover, software can be distributed via any technology, either through physical copies or the internet.¹⁵ The terms of the open source license cannot state preference or decline certain technologies. Fourthly, commercial use will not be excluded by open source licensing.¹⁶ Nor will certain persons or groups be excluded from access and use of OSS.¹⁷

There are several views that explain why digital commons such as OSS have become reality and are endorsed by many people. The mainstream view is that OSS will help to provide monetary or non-monetary rewards in combination with business entrepreneurship and social functions. Although the writing of OSS may not directly reward the programmer, related activities are based on his/her access and

⁸ Maurice Schellekens, *Free and Open Source Software: An Answer to Commodification?*, THE FUTURE OF THE PUBLIC DOMAIN: IDENTIFYING THE COMMONS IN INFORMATION LAW (Lucie Guibault and P. Bernt Hugenholtz eds. 2006), at 303-324.

⁹ Open Source Definition, Art 1 “Free Distribution”, available at <http://www.opensource.org/docs/osd> (last visited Mar. 12, 2011).

¹⁰ *Id.*, Art 2 “Source Code”.

¹¹ Schellekens, *Free and Open*, *supra* note 8.

¹² *Supra* note 9, Art 3 “Derived Works”.

¹³ Schellekens, *Free and Open*, *supra* note 8.

¹⁴ *Supra* note 9, Art 7 “Distribution of License”.

¹⁵ *Supra* note 9, Art 10 “License Must Be Technology-Neutral”.

¹⁶ *Supra* note 9, Art 6 “No Discrimination Against Fields of Endeavor”.

¹⁷ *Supra* note 9, Art 5 “No Discrimination Against Persons or Groups”.

use. For example, a dedication to the OSS community could help a programmer establish his/her reputation. The reputation will in turn benefit the professional development of the programmer. Corporations or companies could exploit OSS for their hardware production and earn profits. Hardware production could in turn promote the advancement of the industry. The OSS could also be used by governments or non-profit organizations for certain needs and their own purposes, so that they will no longer need to spend their limited funds on purchasing expensive commercial software. Regardless of the specific reason that supports OSS, the open source model provides an alternative way that falls within legal frameworks, but bypasses the series of exclusive rights under traditional intellectual property systems. This alternative way ameliorates the confrontation of interests between copyright holders and public users.

In following the free software and OSS movement, a series of projects or events have enlarged that promote the anti-copyright tendencies of the public. Some typical projects include the Creative Archive License of the British Broadcasting Corporation which allows public users to download certain archived content for non-commercial use; Open Audio License created by the Electronic Frontier Foundation (EFF) and Ethymotics Free Music License which make music works freely available to public users; and the Open Publication License of the Open Content Project which mainly provides free documents, but offers licensors the option to restrict the distribution of derivative works. Influenced by the numerous digital commons projects that advocate for open access to copyrighted works and inspired in part by the GNU GPL, the Creative Commons was born and later became a world renowned licensing scheme that is widely used by creators, corporations, public users as well as the aforementioned free access projects.

3. Construction and Promotion of Creative Commons

The Creative Commons, a non-profit organization was founded in 2001 by Professor Lawrence Lessig and a board of cyber law and intellectual property experts with financial support from the Center for the Public Domain. In 2002, the Creative Commons released a set of licenses and encouraged creators to adopt these licenses that authorize the public to freely exploit and revise their works upon complying with the licensing conditions. Based on the philosophy that “private rights (are used) to create public source”, the Creative Commons aims to attain an appropriate balance between the copyright field where all rights are reserved and the public domain where no rights is reserved, that is, some rights reserved.

As the Creative Commons licensing was designed based on American copyright and the use of the licenses had spread internationally, the organization launched the Creative Commons International in 2003 with the purpose to facilitate the linguistic and legal localization of the original license provisions in jurisdictions other than the United States. The Creative Commons International allows slight revisions to the license provisions by importing countries according to their domestic copyright laws as long as the revisions are consistent with the philosophy of the standard licenses. The localized licenses are supposed to be publicly discussed in the domestic community and approved by the Creative Commons organization.

3.1 Creative Commons Licenses

The basic licenses of the Creative Commons (CC) contain four different elements: (1) Attribution, which means that users under this license element must give attribution as required to the creator of the work being used. Users are permitted to copy, distribute, display and perform the copyrighted works as well as make derivative works. (2) NonCommercial, which means that users can only use the work for non-commercial purposes. Users must first obtain the creator’s permission if their use is expected to be commercial. For example, “Gus published his photograph with a noncommercial license. Camille incorporates a piece of Gus’s image into a collage poster. Camille is not allowed to sell her collage poster without Gus’s permission”.¹⁸ (3) NoDerivatives, which means that users are allowed to fully use the work except to make derivative works. In the previous example, Camille must first obtain permission from Gus to incorporate his image into her own poster, if there is a NoDerivatives clause attached. (4) ShareAlike, which means that users who make derivative works based on the copyrighted work must distribute their derivations under the same terms that govern the original work. By using the previous example again, if

¹⁸ See www.creativecommons.org (last visited Dec. 21, 2010).

the copyrighted photograph of Gus was licensed under a CC Attribution-NonCommercial-ShareAlike license, Camille, who incorporated the image of Gus as part of her collage poster, must also distribute her work under a CC Attribution-NonCommercial-ShareAlike license.

The Creative Commons licenses are a combination of these four fundamental elements. Twelve different combinations are possible. However, the elements NoDerivatives and ShareAlike cannot simultaneously appear in one license, since ShareAlike only applies to derivative works. If derivation is prohibited, there will not be any derivative work that can be licensed under the same terms that govern the original work. Therefore, there are in total eleven kinds of licenses in the 1.0 Version. They are Attribution; Attribution-NonCommercial; Attribution-NoDerivatives-NonCommercial; Attribution-NonCommercial-ShareAlike; Attribution-NoDerivatives; Attribution-ShareAlike; NonCommercial; NoDerivatives-NonCommercial; NonCommercial-ShareAlike; NoDerivatives; and ShareAlike. Since the data shows that 98% of licensors chose licenses that contained the element Attribution in the practical use, the updated 2.0 and 3.0 Versions all included Attribution as a required element, in combination with the remaining three elements to form six different licenses. The six licenses are Attribution; Attribution-NonCommercial; Attribution-NoDerivatives-NonCommercial; Attribution-NonCommercial-ShareAlike; Attribution-NoDerivatives; and Attribution-ShareAlike. The reduction of the type of licenses will make selection by copyright owners more focused and easier.

The Creative Commons is recently porting and localizing its 4.0 Version licenses. Further adaptation intends to make licenses operate globally, ensuring that they are robust, enforceable and easily adopted worldwide, to maximize interoperability between CC licenses and other licenses to reduce friction within the commons, and to allow the updated licenses to endure for the foreseeable future. In particular, the new version makes the following changes: including database rights that have been established in some jurisdictions; making definition of adaptation clearer under which synchronization of musical works in time-relation with a moving image is adaptation but collections and technical modifications are not; aggregating all rights beyond copyright and neighbouring rights that are affected by the license through waiver, such as moral rights, other copyright-like rights named ancillary rights and rights to collect royalties via collecting societies; allowing for customized disclaimers of warranties and limits on liabilities; retaining the reformation and severance provision in the event a provision cannot be enforced as written; and deleting some unnecessary separation of terms.¹⁹

The Creative Commons licenses are available in three different ways: (1) Commons Deed, a plain-language summary of the license, complete with the relevant icons, (2) Legal Code, the fine print that the licensor needs to comply, so that the license will stand up in court, and (3) Digital Code, a machine-readable translation of the license that helps search engines and other applications to identify the licensor's work by its terms of use.²⁰

Despite the different terms in the six kinds of licenses, they share several common areas that merit clarification. First of all, Creative Commons licenses work within the frameworks of copyright and contract laws. Copyright laws grant authors with a series of exclusive rights to reproduce, distribute, exhibit, perform, show and broadcast their works as well as disseminate the works through the information network and make derivative works based on the originals. Contract law permits the right holders to assign the entire or a part of their exclusive rights through contracting or licensing. Upon the breach of the contract or license, contract law provides remedies for the injured party. By licensing the copyrighted works under Creative Commons licenses, the authors assign the main part of their exclusive rights to public users. As long as users comply with the conditions of the licenses, they can freely reproduce, distribute, exhibit, perform, show and broadcast the copyrighted works as well as disseminate the works through the information network. Upon breaching the conditions of the licenses, the licenses and the rights granted hereunder will automatically terminate.²¹ However, the Creative Commons has not established any enforcement system which could help licensors prohibit the breach of licenses and search for compensation. Secondly, Creative Commons licenses do not intend to affect "limitations on the exclusive rights of the copyright owner under copyright law" such as fair use/fair dealing. Thirdly, Creative Commons licenses give users certain obligations under which users must include a copy or the uniform resource identifier (URI) of the license with every copy of the original copyrighted work and must keep all notices that refer to the license intact and to the disclaimer of warranties with every copy of

¹⁹ See http://wiki.creativecommons.org/images/e/ef/Comparison_Chart_d2_to_d3_.pdf (last visited Mar. 9, 2013).

²⁰ *Supra* note 18.

²¹ Creative Commons license, Art 7(a).

the original copyrighted work.²² In addition, users cannot set up any technological measures that control access or use of the copyrighted work in a manner inconsistent with the terms of the licenses,²³ because the Creative Commons was established with the purpose of promoting the wide distribution of copyrighted works while technological measures impede the exploitation of copyrighted works by users. Fourthly, if users wish to engage in activities that are prohibited by the licenses such as making derivative works under Attribution-NoDerivatives and Attribution-NoDerivatives-NonCommercial or exploiting the copyrighted work for commercial purposes under Attribution-NonCommercial and Attribution-NonCommercial-ShareAlike, they must acquire additional authorization from the author or the licensor. Finally, the legal effect of Creative Commons licenses will automatically expire at the end of the work's copyright term of protection.²⁴ Upon becoming effective, Creative Commons licenses cannot be revoked by any person, even the licensor.

Beyond the six fundamental licenses, the Creative Commons provides other types of licenses, including The Founder's Copyright, CC-GNU GPL, and CC-GNU LGPL. Some additional licenses, such as Sampling License, Public Domain Dedication, and Developing Nations license once existed in the Creative Commons licensing scheme, but were gradually withdrawn because they do not have enough demand or conflicted with values that the organization deemed important.²⁵ The terms of the deprecated licenses still govern the existing works that were attached to these licenses before their termination, but the Creative Commons no longer provides these licenses for any future work.²⁶ As to the remaining alternative licenses, the Founder's Copyright allows copyright owners to transfer their copyrighted works to the Creative Commons for the one-dollar royalty. The duration of protection for these transferred works is 14 years or 28 years if the copyright owner chooses to extend the protection for another 14 years. Upon termination of the protection duration, works will enter the public domain. The CC-GNU GPL and CC-GNU LGPL developed from the GNU General Public License and the Lesser General Public License of the Free Software Foundation for computer programs.

Creators can license their works under the Creative Commons licenses scheme by selecting a license from their official website and selecting an appropriate jurisdiction. Once the license terms are selected, there will be several lines of HTML codes that creators need to copy and paste onto their websites. Thereafter, the Creative Commons license logo will be found on the works of the creators on their website along with a clause that contains a hyperlink to the license's brief and complete related text. Users can search for works distributed under Creative Commons licenses by entering a search query into the Creative Commons search engine on their official website and choosing the appropriate work formats. The Creative Commons search engine works in connection with several popular websites, including Google for web texts and images, Flickr for images, blip.tv for videos, Jamendo for music, and SpinXpress for all kinds of media.²⁷

Up to the present, over 70 countries or regions have established collaborative relationships with the Creative Commons. As more and more individuals and institutions adopt the Creative Commons licenses, the licensing scheme has spread widely over various cultural fields, which range from education to entertainment. The MIT launched the OpenCourseWare to freely provide educational contents for students and researchers all over the world. The MIT adopted the Creative Commons licenses for almost all course wares and allowed MIT education resources to be widely available to those with access to the internet. Inspired by MIT, ten other universities in the United States, Japan and Vietnam also started to offer open courseware programs. Similarly, the Rice University launched the Connexions project, in an attempt to "create a commons of high-quality diverse content through grassroots collaboration facilitated

²² Creative Commons license, Art 4(a).

²³ *Id.*

²⁴ Creative Commons license, Art 7(b).

²⁵ See <http://creativecommons.org/retiredlicenses> (last visited Dec. 21, 2010). The Sampling License permitted the making of derivative works based on the original copyrighted work for commercial purposes. Under the Sampling License, the user could take a sample of a song to create new music or incorporate a sample of a photograph into a new collage. The Sampling License was withdrawn on June 4, 2007. Public Domain Dedication meant that the copyright owner relinquishes all exclusive rights under the copyright law by allowing users to freely exploit his/her work for non-commercial or commercial purposes. The Public Domain Dedication was withdrawn on October 11, 2010. The Developing Nations license allowed free use of copyrighted works in developing countries while reserving full copyright in developed countries. The Developing Nations license was withdrawn on June 4, 2007.

²⁶ *Id.*

²⁷ See <http://search.creativecommons.org/#> (last visited Dec. 30, 2010).

by use of a Creative Commons Attribution license”.²⁸ Connexions uses “modules” as the basic unit for network distribution and these modules can be organized and linked into courses. The Connexions design not only promotes material dissemination, but also enhances “collaboration and community building in the educational context”.²⁹ In addition to educational institutions, some entertainment intermediaries and websites also favor the Creative Commons licenses and the philosophy of the remix culture. The CC Mixer, a music intermediary, encourages creators to distribute their sample work or musical tracks under the Creative Commons licenses to benefit the recreation of users-as-creators. Individual web users, such as bloggers, video producers and photographers, also prefer to use works licensed under the Creative Commons licenses or distribute their creations by the Creative Commons licenses. The well-known website Flickr hosts a large number of digital photographs which are attached to the Creative Commons licenses. The photographs distributed on Flickr not only invite exploitation by and recreation of amateurs, but also attract collaboration from media conglomerates. One famous example is the National Broadcasting Company (NBC) television network of the United States, which used photos of ice crystals by Harvard scholar Doc Searls which was shared under the Creative Commons licenses on Flickr for the Vancouver Olympic Games.³⁰ The ice crystal pictures were shown in event information graphics, scoreboards and many other graphic elements of the NBC’s Olympic broadcasts that were viewed by audiences of millions. Searls indicated that this was a victory for the Creative Commons.

3.2 Creative Commons in Greater China

China is among the many countries that actively participate in the Creative Commons project. Each jurisdiction in the Greater China proposes its own schedule to incorporate the Creative Commons and localize the set of licenses.

Mainland China formally launched the Creative Commons program on March 26, 2006 in Beijing which was led and prepared by the Renmin University of China Law School.³¹ After its launch, the Creative Commons China Mainland hosted many events to popularize the usage and strengthen public awareness on the local version of the licenses. It has organized Creative Commons salons, birthday parties, seminars and annual photograph contests to help more people become familiar with the Creative Commons.³² It has also collaborated with various renowned media or institutions such as Sohu, Mozilla Online, CORE, nPhoto and the Migrant Youth Performing Art and Performance Troup (MYPAPT).³³ Nphoto.net, a Chinese Flickr-like website for online picture storage and sharing, formally integrated the licenses of the Creative Commons China Mainland into its services. The MYPAPT, a non-profit folk art troupe established by several rural migrant workers, recorded their original works under the licensing of the Creative Commons China Mainland.

Taiwan began to adopt and localize the Creative Commons licensing shortly after the launch of the Creative Commons International in 2003.³⁴ The Institute of Information Science, Academia Sinica, played the principal role in importing licenses and translating the English version into Chinese along with support from other partners. Similar to Mainland China, the Creative Commons Taiwan also held a series of events to promote the licensing by the Creative Commons. They organized “Free Culture Showcases”, to invite submission of music works or video clips under “Attribution-ShareAlike”. The One Laptop Per Child (OLPC) program was established in Taipei to provide course material for children under the Creative Commons licenses. Creative Commons Hong Kong was formally launched on October 25, 2008 hosted by the Journalism and Media Studies Center at the University of Hong Kong.³⁵ From its launch, Creative Commons Hong Kong carried out close collaborations with certain web media conglomerates,

²⁸ Carroll, *Creative Commons*, *supra* note 1, at 453.

²⁹ *Id.*

³⁰ Herkko Hietanen, *Creative Commons Olympics*, presentation at *The 10th Annual Intellectual Property Scholars Conference* organized by Berkeley Center for Law and Technology, Berkeley CA, U.S.A., 12-13 August 2010.

³¹ See <http://cn.creativecommons.org/en/abouten/development-of-ccchina/> (last visited Dec. 23, 2010). Creative Commons China Mainland was officially translated in Chinese as “知識共享”, meaning “Knowledge Sharing”.

³² *Id.*

³³ See *supra* note 31.

³⁴ See <http://creativecommons.org.tw/static/about/cctw> (last visited Dec. 23, 2010). Creative Commons Taiwan was officially translated in Chinese as “創用CC”. The Chinese “創用” means “Creation and Public Use” and it maintains the abbreviation of Creative Commons “CC”.

³⁵ Creative Commons Hong Kong was officially translated into Chinese as “共享創意”, meaning “Sharing Creation”.

such as Wikipedia and Flickr, to promote the philosophy of the Creative Commons and the usage of its licenses.³⁶ Macau has not yet officially launched localized Creative Commons licensing, but its local project team hosted by the Macau University of Science and Technology Faculty of Law is undertaking the importing of research work by consultation with the Macao Intellectual Property Department and the Creative Commons teams in other jurisdictions within Greater China.³⁷

Since Greater China has diversified jurisdictions of Creative Commons, my research chooses the Creative Commons China Mainland as an example for further discussion on its impact on the local society and copyright reform in the digital network age.

3.3 Positive and Negative Impacts of Promoting Creative Commons in Mainland China

In addition to increased sanctions and self-help measures against copyright infringement, public respect for copyright protection may be increased in circumstances where control and exploitation of a copyrighted work is deemed fair. Creative Commons licensing provides an alternative way to control and use licensed works that can be perceived as fair by the public. Public compliance with the terms of Creative Commons licensing and public use of the licensed works may better help achieve the goal of copyright as promoting cultural progress and learning. However the Creative Commons licensing scheme has advantages and disadvantages. Thus, the promotion and implementation of Creative Commons licensing in different jurisdictions will have both positive and negative impacts on local societies.

3.3.1 Positive Impacts

First, the simple and feasible licensing pattern of the Creative Commons could facilitate information flow and alleviate the conflict of interest between copyright owners and public users. By offering license templates for copyright holders and the public, Creative Commons makes the authorization process transparent and clear. Both sides who have an interest will understand the kinds of rights that are reserved by the copyright owner and the categories of rights that have been authorized to the user through licensing. Due to the standard contract format of Creative Commons licensing and publishing on the Creative Commons official website, anyone in the public can become a licensee, obtaining access to and making exploitation of the copyrighted works released under Creative Commons licensing. Anyone can find works authorized under Creative Commons licensing through search engines, which promote wide dissemination of copyrighted works and free flow of information.

Creative Commons licenses are applicable to copyrighted works distributed in the traditional media, but more importantly, they serve digital works disseminated on the internet and other new types of media, such as websites, online music, online literature, movies and digital photographs. The creative licensing scheme resolves certain technical difficulties that networks bring to traditional copyright systems, such as feasibility of authorization of copyrighted works distributed online, compensation of royalty for copyrighted works provided by non-profit websites, and the verification of copyright for works disseminated through the information network. The authorization logos attached to the works released under Creative Commons licenses well inform the public the appropriate scope and methods of the permitted use. The Creative Commons licensing scheme greatly decreases the cost that users need to pay for authorization and ameliorates the copyright protection under the digital network environment, hence, alleviating the conflict of interest between copyright holders and public users.

Currently, more than ten million digital network works have adopted Creative Commons licenses, from movies, popular music and digital books to news archives of broadcasting companies and open coursewares of universities. After being imported and localized in Mainland China, Creative Commons can provide a significant amount of sources for creations for youths and creative groups in China, spurring the production of more excellent works and enriching cultural life. Furthermore, educational institutions in China could learn from the experience of open courseware programs offered by MIT and the Rice University and release their own courseware or self-compiled teaching material under Creative Commons licenses so as to offer educational sources to the public who can benefit from open education.

³⁶ See <http://hk.creativecommons.org/> (last visited Dec. 23, 2010).

³⁷ See <http://mo.creativecommons.org/> (last visited Dec. 27, 2010). Creative Commons Macau was officially translated into Chinese as “創意共用澳門”, meaning “Creation Sharing Macau”.

Secondly, the Creative Commons can promote the development of creative industries in China. Creative industries refer to “those industries which have their origin in individual creativity, skill and talent and which have a potential for wealth and job creation through the generation and exploitation of intellectual property”.³⁸ The Chinese government often pays attention to cultural and creative industries and supports them. With the continual growth and development of economic and national power, “China has ambition to shift its image from one of low-cost production for others to that of a world leader with its own global brands; a move from Made in China to Created in China”.³⁹ Chinese creative industries, including clusters in films, TV, animation, performing arts, design, publishing, music, and digital media, are growing rapidly, which makes China the third largest exporter of creative industries after the United States and the United Kingdom.⁴⁰ Governments and companies continuously invest and explore the potential for creative industries, especially the sectors that have extensive connection with high technology such as digital and mobile music, internet games and animation. Creative industry parks are established in many metropolitans, such as Beijing, Shanghai, Chengdu, and Shenzhen, to attract capital and talent. Many young people are also involved in the creative industries, establishing small enterprises, propagandizing their own creations and participating in competitions and activities sponsored by the governments. The importation of Creative Commons licensing into China could provide more opportunities for creative young people and industries to absorb new ideas and free their creative potential and capabilities. In addition to the creative industries, the Creative Commons could also implant creative elements into other businesses and economic activities, thus strengthening the value-added potentials of various industries.

3.3 2. Negative Impacts

The foremost disadvantages of the Creative Commons are the terms of non-revocability and non-enforceability, due to which, the copyright holder who anticipates to acquire commercial benefits will not prematurely adopt Creative Commons licensing to distribute his/her work. Once a copyright holder chooses to disseminate his/her work under a particular Creative Commons license, s/he cannot change or revoke the license applicable to his/her work. The effect of the license will not expire until the end of the copyright term of protection. The copyright holder cannot stop the continuous use and exploitation of his/her work, as long as the use and exploitation does not violate the terms of the license. The copyright holder also cannot remove the licensed work from circulation, regardless of the type which can be either a copy of the individual or in a collection, or a copy of the derivative work created based on the original work. The choice of the copyright holder to place the same work under other non-conflicting Creative Commons licenses will not influence the effect of the current license in use.

In addition, the terms of the Creative Commons licenses are voluntarily executed by the copyright holder and the licensee who makes use of the work. The Creative Commons does not establish a dispute resolution or enforcement scheme to bind the two parties under its licenses. If users infringe certain exclusive rights reserved by the copyright holder, such as the rights of attribution and making commercial use, the copyright holder cannot safeguard his/her rights through the Creative Commons and obtain compensation. In order to look into the liability of infringement, the copyright holder must file litigation in court.

Due to the features of non-revocability and non-enforceability in Creative Commons licensing, the copyright holder who wishes to commercially benefit from his/her creation cannot simply adopt a Creative Commons license to disseminate the copyrighted work. Even though the copyright holder does not anticipate acquiring commercial benefits but rather promote his/her work and gain a reputation through Creative Commons licensing, conditions in the licenses will impede the future use of the work by the copyright holder for any commercial purposes. Furthermore, the licensing scheme will not be accepted and approved by publishers who earn benefits for selling copyrighted works, major record labels, and well-known performers and artists in short time.

³⁸ Department of Culture, Media and Sport of the United Kingdom, Creative Industries Mapping Document 2001, available at http://webarchive.nationalarchives.gov.uk/+/http://www.culture.gov.uk/global/publications/archive_2001/ci_mapping_doc_2001.htm (last visited Nov. 17, 2011), at 4.

³⁹ *The Creative Industries in China: IVCA Report- March 2010*, available at http://www.ivca.org/ivca/live/news/2010/develop-your-business-in-china-join-the-ivca-trade-mission-to-shanghai/IVCA_Report_-_The_Creative_Industries_in_China.pdf (last visited Jan. 19, 2011).

⁴⁰ *Id.*

Secondly, the Creative Commons has conflict of benefits with copyright collecting societies. Creative Commons licenses are non-exclusive, thus permitting public users to freely exploit copyrighted work upon compliance with the licensing terms. If the author assigns his/her work through exclusive licenses to a third party, such as a publisher or copyright collecting society, s/he can no longer place the same work under Creative Commons licenses, and vice versa. Particularly, in some jurisdictions, the author must authorize copyright collecting societies to manage all of his/her works. Under such circumstances, the author cannot assign parts of his/her works to collecting societies and release the remainder for Creative Commons licensing to be freely exploited by the public. S/he must choose one or the other, that is, assign all the works to collecting societies, or choose to distribute the works under Creative Commons licensing.

Currently, there are several copyright collecting societies in Mainland China, including the Music Copyright Society of China, China Audio-Video Copyright Association, China Written Works Copyright Society and Images Copyright Society of China. The establishment of copyright collecting societies in the area of films is under preparation.⁴¹ Many writers, musicians, photographers and phonogram producers are members of these copyright collecting societies which assist to manage most of their copyrighted works. Hence, if these authors intend to license their works under proxy management through the Creative Commons, this will conflict with the interests of the collecting societies. Although the Creative Commons has earned recognition and support by certain copyright collecting societies, such as Recording Industry Association of America and Motion Picture Association of America, it takes time for copyright collecting societies in China to approbate and promote the Creative Commons licensing scheme.

Finally, the governing of the works by the authors themselves under Creative Commons licensing may not fully promote public access to the works and their exploitation. Statistical data show that over fifty percent of the licensors chose Attribution-ShareAlike for their works, among which around sixty percent chose non-commercial element.⁴² Attribution-NonCommercial-ShareAlike is thus the most popular license. By adopting this license, the authors are able to allow all subsequent users to commercially exploit their own derivative works created based on the original licensed work. Around thirty percent of the licensors prefer to license their works under Attribution-NoDerivative, which prohibits the making of derivative works by subsequent users based on their works, among which a majority chose Attribution-NonCommercial-NoDerivative.⁴³

3.3.3 Proposed Improvement for Creative Commons in Mainland China

Despite its negative impacts, non-revocability guarantees subsequent exploitation of the licensed works by subsequent users. If licenses are revocable by authors at any time, subsequent users may not be able to exploit the works in accordance with the terms of the license in the event that they will be held liable for copyright infringement because of the expired licenses. The potential detriment to subsequent users justifies the non-revocability feature which in turn increases public reliance on the Creative Commons.

Enforceability is more important when third parties are involved especially under the ShareAlike feature. It is not enough to merely guarantee enforceability against the direct licensees, since works under Creative Commons licensing are likely to be reused over and over again. Leaving subsequent indirect users out of the contract restrictions will cause the Creative Commons licenses to lose effectiveness. Authors will not be likely to license their works under the Creative Commons if third parties can use their works against their will. For example, if a licensor who adopts the NonCommercial clause cannot enforce the license against a third party who makes commercial use of the work, s/he can neither prohibit the third party's commercial use nor be compensated from the subsequent commercial use of his/her work. Consequently, the licensor will no longer be willing to place his/her works under a Creative Commons license. Moreover, without enforceability against third parties, authors have to establish licenses with every subsequent user of their works, which decreases efficiency and fails to meet the goal of the Creative Commons in promoting sharing and exploitation.

In order to resolve the problems of non-enforceability and potential conflict with copyright collecting societies, the administrative organ of the Creative Commons can assist authors in enforcing their rights

⁴¹ *Four Copyright Collecting Societies have been Approved to be Established in China*, available at http://news.xinhuanet.com/politics/2009-06/20/content_11571573.htm (last visited Jan. 21, 2011).

⁴² Niva Elkin-Koren, *What Contracts Can't Do: The Limits of Private Ordering in Facilitating A Creative Commons*, available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=760906 (last visited Mar. 25, 2013).

⁴³ *Id.*

against direct or indirect licensees who breach the contract and commit copyright infringement, and to negotiate with collecting societies. The administrative organ can establish monitoring and supervision mechanisms that monitor the compliance of licensees with the licensing terms. Upon finding that there is non-compliance or upon receiving complaints about breach of contract, the administrative organ can send cease-and-desist letters to the infringers or require them to compensate. If the infringers ignore the warnings and request for compensation, the administrative organ can represent the authors in filing litigation against the infringers in court. In addition, the administrative organ can help the authors to negotiate with copyright collecting societies and withdraw certain works from collective management if the authors wish to place those works under Creative Commons licensing. Although the proposed administration may increase the expenses of the Creative Commons, it is likely to reduce the cost by authors that is spent on enforcing their rights under the licensing, thus, attracting more authors to submit their creations to the Creative Commons.

4. Impact of Digital Commons on Public Domain

The digital commons developed under copyright regimes can positively influence the public domain which is extensively correlated with intellectual property. The term “public domain” refers to “a true commons comprising elements of intellectual property that are ineligible for private ownership”⁴⁴ in the context of intellectual property. Under copyright regimes, the public domain contains works that are not protectable by copyright, including those finished prior to the release of copyright laws and regulations, such as the Chinese literature masterpiece *Dream of Red Chamber*; works that were once copyrightable but their copyright terms of protection have expired; and works that are ineligible for copyright protection, such as works which do not meet the minimum requirement of originality or infringe upon the copyright of other authors.

There is also some “murky terrain near the boundaries of the public domain”, which contain intellectual creations that are protectable by intellectual property, but are treated as in the public domain for various purposes.⁴⁵ These intellectual creations include copyrightable works voluntarily distributed by the right holder publicly through the internet or other channels without charging fees or establishing restrictions on the use, portions of the creations that are exploited under copyright limitations, works that are licensed without remuneration of royalties, and creations available via digital commons such as the OSS and the Creative Commons.

Due to borrowing feature in the process of creation, a prolific public domain plays a significant role in supporting the copyright regimes and helping to achieve the goal of promoting the progress of culture and useful arts. Digital commons such as the Creative Commons to some degree contribute to the public domain, especially in the digital internet era when copyright protection has been significantly increased.

4.1 Necessity of Public Domain

A work is eligible for copyright protection once it is created. In order to ensure the newly created work is exempt from litigation, the author must own the original authorship of the work. Originality is the fundamental requirement of copyright protection. To be original, the substantial expression of the work must own its origin to the author and must not be copied from other sources. The dichotomy of idea and expression ensures that copyright law only forbids the creator from copying expressions of other authors, not prohibit the author’s independent creation based on similar ideas. Therefore, examination of copying determines whether the work owns its originality and whether the author commits infringement of the copyright of former authors. Nonetheless, to determine what constitutes copying and use of prior sources may appear theoretically simple, but in practice, it is difficult to execute, because authors often borrow ideas, facts or plots from pre-existing material rather than fully independently create works out of thin air. New cultural texts are often built upon existing cultural texts. Composers create music by borrowing existing tunes and sounds; writers create literature by borrowing existing cultural and social texts as well as combining their own experiences; audio-visual program producers create films, TV series or animations by borrowing existing plots, stories and scenes; software programmers create new programs

⁴⁴ Jessica Litman, *The Public Domain*, 39 EMORY L. J. 965 (1990), 975.

⁴⁵ Pamela Samuelson, *Mapping the Digital Public Domain: Threats and Opportunities*, 66 LAW & CONTEMP. PROBS. 147 (2003), 149.

based on the source code used in other software; and photographers, sculptors and architects are all involved in the process of borrowing, transformative imitating, and remixing already existing material and sources in various forms. This is the main feature of authorship and original creation.

Problems will emerge when part of the work at issue is generated from the creator's subconsciousness based on preexisting works that s/he had previously encountered. Consider the example that may often happen in the process of creation: two musicians heard a song when they attended a concert during their youth. Neither of them deliberately memorized the song. As time passed by, the first musician has entirely forgotten the tune, but the second musician had subconsciously absorbed the music into his mind. Both musicians compose works which embody a piece of the music that is similar to the tune in question. The similarity of the first musician's work is merely a coincidence so that the first musician owns a copyright of his creation. In contrast, the second musician is inspired by his subconsciousness to create his work, and thus cannot be entitled to copyright, because he has copied from this preexisting piece of tune and is liable for infringement. Similar situations may also take place in the process of writing a book, painting a picture, producing a film, designing a software program, etc. The paradox of such a situation lies in the difficulty of distinguishing the state of mind of different creators in reality. Furthermore, the state of mind does not influence the determination of originality or copyright infringement. Therefore, courts follow procedural rules and allocation of burden of proof to determine originality of a work in face of such paradoxes.

In litigations, the plaintiff must collect evidence to demonstrate that the defendant once obtained access to preexisting work and substantially assimilated the exact work in order to prove copyright infringement. The defendant could refute the plaintiff's argument by introducing evidence that s/he independently created the work in question; neither deliberately nor subconsciously copied from the plaintiff's work. It is possible for the defendant to disprove access to the plaintiff's work, but it is paradoxical to disprove his/her subconscious copying or assimilation. In light of such a dilemma, the defendant could bypass the problem about subconscious coping and instead, address the originality of the plaintiff's work and prove that the plaintiff had exposure to other sources and substantially copied from them. If the plaintiff does not own the origin of his/her work and is not entitled to copyright protection, s/he cannot pursue legal action against the defendant for copyright infringing liability. However, the borrowing of authorship and process of creation will complicate the verification of originality, hence making the concept of originality unascertainable.

Professor Jessica Litman named the borrowing of creation as a "romantic model of authorship".⁴⁶ This romantic model makes creative processes magical and likely to produce unique expression,⁴⁷ since authors will use "words, musical notes, shapes or colors to clothe impulse that come from within her singular inner being".⁴⁸ The magical inner being may store impressions, experiences and works of other authors and the author transforms all of the raw material into something distinct and unrecognizable.⁴⁹ An author's impression and expression are subconsciously affected by what s/he had experienced, by other works and information that s/he had read, and by the interaction of these two factors. The interaction combines all pieces of an author's experiences and knowledge as an entirety, even though the author him/herself cannot separate one memory from another. When an author engages in creation, his/her complicated memories will be transformed into his/her expressions. Therefore, it is not difficult to understand that parts of the author's work will mirror the works of others. If each author intends to enforce copyright protection on everything in his/her work, everyone could be accused as committing infringement.

Mapping an appropriate public domain could help to resolve this problem. The situating of ideas, theories, concepts, processes, plots and some of the once copyrightable works into the public domain removes the apprehension of authors in borrowing from their peers and be inspired by them, and provides access for the public to retrieve and exploit preexisting resources. Due to the public domain, it is assumed that each author acquired his/her concepts and raw material from the public domain rather than subconsciously copied from the prior works of others. The public domain relieves the burden of authors in searching for origins and independently verifying creations.

⁴⁶ Litman, *The Public Domain*, *supra* note 44, at 1008.

⁴⁷ *Id.*

⁴⁸ Litman, *The Public Domain*, *supra* note 44, at 1008.

⁴⁹ Litman, *The Public Domain*, *supra* note 44, at 1008.

In litigations, the overprotection of plaintiff copyright restricts defendant in efficiently uncovering information and facts from the public domain. It is unfair to penalize the defendants who inadvertently exploit raw material found in the commons. The public domain benefits potential defendants who in good faith absorb parts of the authorship of others in the production of their own expressions. The public domain will also benefit potential plaintiff, in cases that s/he is required by the defendant to prove the originality of his/her work, because the material absorbed by the defendant may have also previously existed in other works of authorship. If it is assumed that all of the plaintiffs need to prove the originality of their works in order to win copyright infringement suits, they will not be likely to enforce their rights through judicial procedures. Due to the difficulties and challenges in proving originality, the lack of a public domain will impede copyright holders to pursue protection. As a neutral party, the court will also rely on the public domain to make a decision that places raw material, idea and plots into the commons. If the court grants that all prior authors own raw material, this will block the creation of future authors.

In other words, the public domain is associated with copyright protection, which helps the individuals involved in the creation to resolve dilemmas. The public domain reserves enough literature in the commons, thus guaranteeing access and exploitation of prior material to establish original authorship.

4.2 Shrinking Public Domain in Digital Age: Threats from Second Enclosure

The public domain is not an unchanging terrain because it varies according to time and jurisdictions. The public domain expands when copyright expires or some of the literature is excluded from copyright protection by legislation or judicial decisions, such as theories, processes or simple compilation of facts. The public domain shrinks when copyright laws extend the copyright term of protection, overspread protection to technological measures and grant *sui generis* protection to databases. In some sense, the relationship between copyright and the public domain is that when one goes down, the other goes up.

The emergence of intellectual property systems which incorporate intangible intellectual commons with property rights is regarded by Professor James Boyle as “the second enclosure movement”, compared with the first enclosure movement that privatized common lands as individual property in England.⁵⁰ In the second enclosure movement, intellectual property continues to expand: subject matters of copyright and patents were increased; copyright terms of protection were lengthened; and technological measures against circumvention of access and use of copyright works were protected and widely adopted by copyright owners. The expansion of intellectual property especially in the area of copyright is a response to the advancement of technology. The strength of intellectual property rights must inversely vary with the cost of copying.⁵¹ In the age without copying machines, there were no copyrights, since producing manuscripts used almost the same amount of labor as writing a book. The invention of copying machines spurred the enactment of the first copyright act, the Statute of Anne. Digital technology and the internet impelled the achievement of WIPO Internet Treaties and promulgation of a couple of regional or national legislations, such as the European Union Information Society Directive, the European Database Directive, the Copyright Term Extension Act (CTEA), the DMCA and the 2006 Regulation of China. Extending copyright to everything seriously reduces resources in the commons, thus shrinking the public domain.

At the beginning of promulgation of copyright law, the duration of protection was fourteen years which could be renewed by the copyright owner for additional fourteen-year term. The original term of protection was included in the United States Copyright Act of 1790. In 1831, the Congress extended the initial term to twenty-eight years. In 1909, the Copyright Act again added another twenty-eight-year term upon renewal, reaching the maximum fifty-six years. The Copyright Act of 1976 revised the renewal regulation and changed the duration of copyright protection to the author’s life plus fifty years. The duration of copyright protection complies with the requirement in international conventions and copyright laws of most countries. However, the United States does not stop its step toward extending the copyright protection term. Following the Information Society Directive of the European Union which extended the duration of copyright protection of literary and artistic works to author’s life plus seventy years, the United States enacted the CTEA in 1998, also extending the copyright protection term by another twenty years and applying the revision retrospectively to existing works.

⁵⁰ James Boyle, *The Second Enclosure Movement and the Construction of the Public Domain*, 66 LAW & CONTEMP. PROBS 33 (2003).

⁵¹ *Id.*, at 42.

The CTEA influences the copyright status of parodies of works. So does it impede a large number of authors' parody and recreation based on the works whose terms of copyright protection have been lengthened. In the famous case *Suntrust v. Houghton Mifflin*,⁵² the plaintiff as the trustee of the Mitchell Trust sued the defendant for copyright infringement because of its publication of *The Wind Done Gone*, a novel created based on *Gone With the Wind* by Margaret Mitchell. According to the laws prior to the CTEA, the literature masterpiece *Gone With the Wind* shall belong to the public domain after 1999 and be free for all to use. The CTEA maintained copyright protection of *Gone With the Wind* for decades and indirectly affected the determination of copyright infringement. Although the influence of the CTEA is primarily on works in traditional formats and non-digital aspects of the public domain, the influence on the digital terrain of copyright and the public domain will be reflected by librarians in establishing digital libraries that collect books and articles which have expired from copyright protection.

The WIPO Internet Treaties for the first time granted protection to technological measures and rights management information at a multinational level, encouraging that copyright owners adopt technological measures to give extra layer of protection to their digital works and information. The DMCA of the United States details such protection by prohibiting circumvention of technological measures and distribution of devices that can circumvent technological measures. Technological measures not only control copying of the protected work, but also control access to the work. Although the DMCA aims to protect technological measures that control access and use of copyright works only, it also impedes consumer access and exploitation of material in the public domain, because on the one hand, technological measures will continue to play a role after the expiration of the copyright of protected works; on the other hand, distribution of circumvention-facilitated devices is completely banned under the DMCA, regardless whether the device is used to circumvent technological measures of copyright works or bypass control of information in the public domain. More seriously, the DMCA does not enforce technological measures to enable fair use or other privileged uses that exist in the traditional copyright regime. Many American scholars agree that the DMCA would be unconstitutional without allowance of circumventing technological control for fair use purposes.⁵³

The anti-circumvention rule of the DMCA has been imported and localized by many overseas jurisdictions through bilateral free trade agreement or domestic legal transplant. The United States Free Trade Agreements reached after the DMCA compelled many of the developed and developing countries to enact anti-circumvention laws, including Jordan, Chile, Singapore, Australia, Morocco, Bahrain, Central America (CAFTA)⁵⁴ and the Free Trade Area of the Americas (FTAA).⁵⁵ In areas where no such free trade agreement is signed, legislatures or governments were active in borrowing the legal model of anti-circumvention rules from the United States. China implemented an anti-circumvention law in its 2006 Regulation with provisions similar to those in the DMCA. The widespread adoption of technological measures and importation of the anti-circumvention legislative model of the DMCA exacerbate problems which negatively influence public domains worldwide.

In addition to the CTEA and the DMCA, the European Union Database Directive represents another challenge to the digital public domain. The Database Directive grants those who make qualitatively and quantitatively substantial investment in compiling a database the *sui generis* right, under which a database compiler enjoys fifteen years of protection that prohibits the extraction and reutilization of the entire or substantial parts of the database contents.⁵⁶ Any substantial change which can be considered as a substantial new investment will result in renewing the term of database protection, which could in principle make the term of protection perpetual.⁵⁷

The United States later introduced the database protection law, the Collections of Information Anti-Piracy Act (CIAA), which was similar to the European Union Database Directive. Although the CIAA broadened the exceptions for extraction and utilization of data from the protected database for the purposes of scientific research, education, news reporting and verification, it largely expanded database

⁵² *Suntrust v. Houghton Mifflin Co.*, 252 F.3d 1165 (11th Cir. 2001).

⁵³ Boyle, *The Second Enclosure*, *supra* note 50.

⁵⁴ Central America Free Trade Agreements with agreement countries including Costa Rica, the Dominican Republic, El Salvador, Guatemala, Honduras and Nicaragua.

⁵⁵ Anupam Chander, *Symposium: Cyberpersons, Propertization, and Contract in the Information Culture- Exporting DMCA Lockouts*, 54 CLEV. ST. L. REV. 205 (2006).

⁵⁶ European Union Database Directive, Arts 7 and 10.

⁵⁷ *Id.*, Art 10.

protection to public domain works as long as they fall within the legislative definition of “data”.⁵⁸ As they realized the threats that the CIAA would bring to the public domain, scientists and internet industries lobbied against the release of such a law. Thus, the CIAA was not promulgated. The United States Congress later replaced the CIAA with bill H.R.1858 which prohibits copying a corporation’s database and participating in direct competition against that corporation.⁵⁹ The bill would still influence the public domain. However, by narrowing the criterion down to corporation databases, it alleviated the serious tension between the protection of database and the preservation of the public domain brought on by the CIAA.

Each of these legislations challenges the digital public domain, but it is difficult to tell which legislation provides the most serious challenge. The European Union Information Society Directive and the CTEA extended the term of copyright protection and hindered information from entering the public domain. The DMCA and the 2006 Regulation of China protect technological measures and ban trafficking of devices that control access to both copyright works and information in the public domain. The European Union Database Directive and the CIAA/H.R. 1858 grant the database compiler with exclusive rights to prohibit others to use his/her data as long as s/he has substantially invested in obtaining the contents regardless whether the contents are original or mere facts extracted from the public domain. Synergies and interaction among these legislations will more seriously diminish the public domain. Any invested compilation of digital information under the protection of the European Union Database Directive or the CIAA could be covered by an additional layer of protection of technological measures. Even though the database compiler has authorized the public to extract and utilize his/her digital compilation, users must have hacking skills to circumvent the technological measures. Otherwise, in reality, the users will barely be able to use the database without hacking devices, as distribution of circumvention-facilitated devices is illegal under the DMCA legislative model.

4.3 Constructing Public Domain in Digital Age: Influence of Digital Commons

In light of the threats posed by the expansion of copyright, many initiatives outside the legislative spectrum have been spontaneously launched by institutes or groups of scholars to mitigate the serious shrinking of the public domain in the digital environment. Academic and educational institutions have established legal information institute (LII) projects, making ordinances, regulations, court opinions, arbitration decisions and law reform material freely available on the open website.⁶⁰ The LII projects have spread among numerous jurisdictions and regions, including Hong Kong (HKLII), Australia and Asia (AustLII and AsianLII), the United Kingdom and Ireland (BAILII and IRLII), Canada (CanLII), New Zealand (NZLII), the Pacific Islands (PacLII), South Africa (SAFLII), the Commonwealth (CommonLII) and the world (WorldLII).⁶¹ Scientists have created databases that keep scientific data free of private control and help cultivate a research common.⁶² Libraries and cultural preservation organizations were prone to digitalize their collections and opened access to the public. These initiatives will help nurture and preserve the public domain under the digital network environment.

In addition to governmental or non-profit institutions, individuals are actively engaging in making material and information available through the internet, including material that is protectable by copyright and material that originally in the public domain. Scholars attach the hyperlinks of their academic articles in their biography webpage or write academic works on their online blogs; writers and reporters provide commentaries or news reporting for internet journals; professionals submit their discussions on professional bulletin board systems; and artists distribute their self-created music, videos, and short films through online broadcasting. Individuals who are willing to share thoughts and creations without asking for monetary compensation add great value to the public domain as well as help preserve the public domain under the digital network environment through the aid of technology.

Among the knowledge sharing programs or individual behaviors, the initiatives of the OSS and the Creative Commons represent the most popular and interesting contributions to the digital public domain. Although software or works distributed under the OSS and the Creative Commons still deserve copyright

⁵⁸ H.R. 354, §§ 1401, 1402, 1403.

⁵⁹ H.R. 1858.

⁶⁰ See <http://www.hklii.org/> (last visited Feb. 24, 2011).

⁶¹ *Id.*

⁶² Jerome Reichman and Paul Uhlir, *A Contractually Reconstructed Research Commons for Scientific Data in a Highly Protectionist Intellectual Property Environment*, 66 LAW & CONTEMP. PROBS. 315 (2003).

protection subject to terms of the licenses, assigning part of the important rights by copyright owners to the public provides more fundamentals for the creation of future creators, thus increasing resources in the public domain. The OSS helps future innovation by opening up the source code instructions of each software licensed under the program. By complying with the GPL, subsequent software programmers who develop new software based on the preexisting OSS must also open up the source code of the new software subject to the terms of licensing. Those who exclusively control the new software are considered to breach the terms of the GPL and infringe intellectual property rights of the original program. The GPL clearly states: "Here is this copyrighted body of work; you may use it, add to it, modify it, or copy it- all of these uses are legal, but only if you comply with the terms of the GPL".⁶³ In the licensing model of the OSS, one preexisting open source program could be followed by many derivative open source programs, and then each derivative attracts more follow-up software. Hence, the OSS takes advantage of the intellectual property system to preserve a commons that allows some of digital resources to fall within the public domain.

The Creative Commons is a project similar to the OSS but adapts its licensing to other kinds of works, such as literature, music, photography and video. Authors choose Creative Commons licenses to disseminate their works by giving up some of the most important exclusive rights, including right of reproduction, distribution, and making derivative works based on the original work. In contrast to the OSS, the Creative Commons provides six different categories of licenses with terms that range from flexible to strict. Thus, any author can select the most appropriate license without worrying that users will exploit the licensed works in a way that does not benefit him/her. Under the license with the most flexible terms, the authors permit the public to fully exploit their works even for commercial purposes, as long as the public respect the authorship and attribution. Although the copyright of these works does not end, the authors dedicate them to the commons and offer remix and recreation resources for future authors. Under the licenses that have the "ShareAlike" clause, potential licensees are required to distribute their derivative works based on the original work subject to the same terms of the original license. Derivatives of the licensees are expected to be exploited and adapted by future users. Similar to the chain effect of the OSS, the Creative Commons continues to keep follow-up works open and helps to extend the digital public domain.

Digital commons such as the OSS and the Creative Commons establish a model that avoids the potential damages of abolishing intellectual property systems with everything unprotected by copyright. Under the model, the price for admission to the copyrighted works is the commitment by authors to make their innovation part of the ecology of open sources.⁶⁴ This model is successful because it does not simply provide everything free which will harm creation and innovation incentive, but runs its norms based on the legal system. Authorized access to copyrightable works at a low price or even without payment could respect original authorship on the one hand, and allow for subsequent borrowing and recreation on the other hand. As Professor James Boyle indicated, the old dividing line between intellectual property and the public domain had been between the realm of property and the free, but the new dividing line is between the realm of individual control and distributed creation, management, and enterprise.⁶⁵ The new model is "constructed around the twin notions of preventing monopoly control over network protocols in order to preserve innovation, while still allowing for the type of collective management"⁶⁶ which avoids the tragedy of weakening creative passion and underinvestment. It is protected by a liability rule in which a user will be accused of infringement only after his/her use does not comply with the licensing terms, rather than the property rule in which a user's conduct will be deemed infringement as long as his/her use of a work has not been authorized by the author.

Digital commons are by no means perfect. They have shortcoming of non-enforceability as discussed above. The emergence of such a model to form an e-commons is spurred by the serious concern about the continuing worldwide expansion of intellectual property. Digital commons are mostly supported by individual creators or small enterprises that need resources for their innovation. Conglomerates in creative industries are still reluctant to entirely accept the operation mode of the OSS and the Creative Commons. In addition, one small problem of the digital commons that is a concern to scholars is that it is not very

⁶³ *GNU Library General Public License*, available at <http://www.gnu.org/copyleft/library.html> (last visited Nov. 17, 2011).

⁶⁴ Boyle, *The Second Enclosure*, *supra* note 50, at 65.

⁶⁵ Boyle, *The Second Enclosure*, *supra* note 50.

⁶⁶ Boyle, *The Second Enclosure*, *supra* note 50.

clear how they fit into “the binary opposition between intellectual property on the one hand and the public domain on the other”.⁶⁷ Despite the potential defects, the contribution to the public domain under the digital network environment made by the digital commons is confirmed. They open a window for the public to consider possible means which alleviate strict intellectual property protection outside the legislative regime and judicial procedures. Improvement can be made to the Creative Commons through its administrative organ’s assistance in enforcing authors’ rights against direct or indirect licensees who breach the contract and negotiating with collecting societies. The administrative organ can establish supervision mechanism to monitor licensees’ compliance with the license terms.

5. Conclusion

Apart from the amendment and reconstruction of copyright systems with regard to exceptions under anti-circumvention rules, safe harbors for technological intermediaries and copyright limitations, creation of digital commons based on copyright and contract laws, but outside the traditional intellectual property realm would also help to counter the continuous expansion of copyright protection and recover the public domain which contains existing information and data in support of knowledge storage and future creation. Although digital commons such as the Creative Commons still have drawbacks due to the lack of enforceability, they can expand user access and right to appreciate, disseminate and exploit copyrighted works. The borrowing by users and their recreation based on the preexisting material would in turn add to enriching cultural goods and promoting cultural progress. By properly administrating and utilizing digital commons, the developing countries such as China would well cultivate and stimulate their creative and innovative sectors that are beneficial to social and cultural progress.

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⁶⁷ Boyle, *The Second Enclosure*, *supra* note 50.