<recto><pn> PART III

<pt> INTELLECTUAL PROPERTY, CREATIVITY AND REWARD: SHARING AND ENFORCEMENT

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<recto><cn 11. <ct> Open approaches to sharing: registered and unregistered rights

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<a>1. INTRODUCTION

In 1985, programmer and self-styled hacker Richard Stallman started a movement in software development that would have long-lasting consequences. In his GNU Manifesto,[1] Stallman proposed the revolutionary idea that computer programs should be free, and that everyone would be able to obtain a good software program 'just like air'. Stallman was not talking entirely about free as in no money, but more about being able to obtain source code to a program without proprietary restrictions, encouraging programmers and developers to advance the state of the art as they would not have to duplicate efforts as they would have access to code. Users would be able to acquire entire programs for free, and make changes to the code if necessary, or to hire a programmer to make those changes. At the heart of this idea is a concept that goes beyond the restrictions imposed by intellectual property (IP), with the understanding that by being able to access large amounts of common coding material, the overall benefit to the community would make up for the potential losses in commercial sales.

Stallman's ideas became the free and open source movement, one of the most successful software development mechanisms of our age.[2] The concept of open systems, where users gain access to common resources to enhance the common good, became more widespread with time,[3] and the concept of openness and the commons soon migrated to other fields of endeavour. In his ground-breaking book *Software, Shamans and Spleens*, James Boyle sets out one of the biggest

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[1] R Stallman, *The GNU Manifesto* (*GNU Operating System,* 1985) <https://www.gnu.org/gnu/manifesto.en.html> accessed 13 April 2017.

[2] For more on this, see J Bitzer and PJH Schröder, *The Economics of Open Source Software Development* (Elsevier 2006).

[3] Of particular interest are the works by Elinor Ostrom. See E Ostrom, *The Drama of the Commons* (National Academy Press 2002).

problems with the IP system as it existed at the time.[4] Boyle pointed out that, among other issues, the high transaction cost caused by the exclusive nature of IP rights gave rise to barriers to the free flow of information, leading to the inhibition of innovation and the inadequate circulation of information. The solutions proposed are varied, but one over-arching characteristic was to restrict the excessive application of restrictive IP, while at the same time fostering the public domain and similar common cultural spaces.[5]

In a similar light, other authors like Lawrence Lessig[6] advocate for an opening of the systems of control and creating a 'freedom to tinker' with copyright works. Yochai Benkler[7] expands on this by making the case for community-led systems of creation and development that are made possible by sharing, in what he calls peer-production.

The result of the above is a movement that encourages a modality of development of copyright works that moves beyond the mere pursuit of profit and the protection of exclusive economic rights that has for a long time permeated business models in the creative industries. The openness ethos and the commons-based approach to creation puts the emphasis on the formation of a common pool of resources, encouraging the sharing, use and re-use of said resources. The idea is that by having access to such resources, information will flow more freely, and society will ultimately benefit.

While this seems like an entirely intellectual exercise with little practical application, the reality is that commons-based open systems are proving rather successful,[8] and the reason for such success can be found in a more pragmatic application of the openness ideals. At the heart of the movement is the use of licensing of IP to support the stated objectives of sharing for the common good. In the following sections we will describe some of the legal developments in this area.

<a>2. OPEN UNREGISTERED RIGHTS

The most palpable and demonstrable success of the open approach has been with the licensing of unregistered rights, specifically the licensing of copyright works. These are generally called open licences,[9] this is an umbrella denomination used to refer to all sorts of 'some rights reserved' copyright agreements which provide users, publishers, distributors, programmers and creators with permission to perform acts that would otherwise not be available to them. The term encompasses licensing solutions that apply to fields as diverse as software development and blogging.

It may be superfluous to go through the history of the open licensing movement,[10] but it is enough to state that the system started in the software arena as an attempt to develop licences that would allow users to re-use computer programs, with a few restrictions.[11] These licences have the stated goal of allowing developers to freely distribute copies of their work, and to permit users to re-use and adapt those works to suit their needs.[12] These software licences were later

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[4] J Boyle, *Shamans, Software, and Spleens: Law and the Construction of the Information Society* (Harvard University Press 1996) 156.

[5] Boyle later makes a stronger case for the public domain, see J Boyle, *The Public Domain: Enclosing the Commons of the Mind* (Yale University Press 2008).

[6] L Lessig, *The Future of Ideas: The Fate of the Commons in a Connected World* (Random House 2001).

[7] Y Benkler, *The Wealth of Networks: How Social Production Transforms Markets and Freedom* (Yale University Press 2006).

[8] S Weber, *The Success of Open Source* (Harvard University Press 2004).

[9] L Liang, *Guide to Open Content Licenses* v1.2 (Piet Zwart Institute 2004).

[10] For more details on the development of the movement in software and content see G Moody, *Rebel Code: Linux and the Open Source Revolution* (Penguin 2002); and D Bollier, *Viral Spiral: How the Commoners Built a Digital Republic of their Own* (New Press 2008).

[11] AM St Laurent, *Understanding Open Source and Free Software Licensing* (O'Reilly 2004).

[12] LE Rosen, *Open Source Licensing: Software Freedom and Intellectual Property Law* (Prentice Hall PTR 2004).

adapted to other copyright works in the shape of open content licences tailored specifically for non-software creative works, and the most well-known proponent of this model being Creative Commons licences.[13] A few other licences have been drafted to cover databases specifically, licensing the European sui-generis database right.[14]

If we categorise open licences for unregistered rights in order of subject matter, they would fall in these main categories:

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<bt>*Software licences* – These are licences which are aimed specifically to be used to disseminate software works. The common element in all of these is that they make access to the source code a requirement for re-use.[15] Some of the most widely-used licences[16] are the MIT Software License (MIT),[17] the General Public License (GPL),[18] and the Apache Public License (APL).[19]

<bt>*Non-software licences* – These are licences that protect any other copyright work that is not covered under the various software licences.[20] The purpose of these licences is varied, some are designed to protect documentation in software projects, such as the GNU Free Documentation License (GFDL).[21] Others have the aim of protecting creative works commonly shared online, such as text, music, and pictures, offering a flexible range of protections and freedoms to users of their works.[22] The main example of these licences is Creative Commons, a set of licences in which authors keep only 'some rights reserved'. These licences range from dedicating the work straight to the public domain, to more narrow licences with several restrictions.

<bt>*Database licences* – These are licences designed to distribute works that are covered by the European *sui-generis* right.[23] These require a separate licence in some instances because most open licences deal only with copyright works, and tend to ignore databases. The best example of such licences is the Open Data Commons (ODC), a set of licences and dedications created by the Open Knowledge Foundation (OKF) that are specifically directed towards protecting databases. The ODC suite includes the Open Database Licence (ODbL),[24]

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[13] N Elkin-Koren, 'What contracts can't do: the limits of private ordering in facilitating a creative commons' (2005) 74 *Fordham Law Review* 375.

[14] Miller P, Styles R and Heath T, 'Open data commons, a license for open data' (2008*) Linked Data on the Web* 369.

[15] Guadamuz A, 'Free and open source software' in L Edwards and C Waelde (eds), *Law and the Internet* (3rd edn, Hart Publishing 2008).

[16] As listed in Github's open license usage statistics, see: B Balter, 'Open source license usage on GitHub.com' (*Github*, March 9, 2015) < https://github.com/blog/1964-open-source-license-usage-on-github-com> accessed 13 April 2017.

[17] Massachusetts Institute of Technology, 'The MIT License' <https://opensource.org/licenses/MIT> accessed 13 April 2017

[18] Free Software Foundation, 'GNU General Public License version 3.0' (2007) <www.gnu.org/licenses/gpl-3.0.en.html> accessed 13 April 2017.

[19] Apache Foundation, 'Apache License version 2.0' (2004) <www.apache.org/licenses/LICENSE-2.0> accessed 13 April 2017.

[20] Liang (n 9).

[21] Free Software Foundation, 'GNU Free Documentation License v 1.3' (2004) <www.gnu.org/licenses/fdl.html> accessed 13 April 2017.

[22] S Corbett, 'Creative commons licences, the copyright regime and the online community: is there a fatal disconnect?' (2011) 74 *Modern Law Review* 503.

[23] For more about this right, see E Derclaye, 'Database sui generis right: the need to take the public's right to information and freedom of expression into account' in F Macmillan (ed.), *New Directions in Copyright Law* (Vol 4, Edward Elgar 2007).

[24] Full text here: Open Knowledge Foundation, 'Open Database License (ODbL) v1.0' <http://opendatacommons.org/licenses/odbl/1.0/> accessed 13 April 2017.

the Open Data Commons Attribution License,[25] and the Open Data Commons Public Domain Dedication and License (PDDL).[26] Just recently, one can count the latest version of Creative Commons licences, which contain a paragraph licensing database rights as well as copyright works.[27]

<bt>*Governmental and institutional licences* – A relatively recent development in the open licensing ecology is the creation of licences that are drafted specifically to distribute governmental works, and non-governmental international organisations. These types of licences have been generated to respond to legal requirements[28] that aim to foster the free distribution and access to public-paid works, be it by law, or by the enactment of open access policies.[29] An example of such open licences can be found in the UK Government Licensing Framework,[30] which was enacted as part of the framework arising from the Public Sector Information ('PSI') Directive and PSI Regulations, the UK government has been heavily involved in releasing datasets to the public by offering data through its own data portal called Data.gov.uk. Parts of these efforts have been to create specific licences for public sector data: the Open Government Licence[31] and the Non-Commercial Government Licence.[32] The licences cover both copyright and database right works, and allow the user to copy, publish, distribute, adapt and combine the information. In the international arena, the World Intellectual Property Organization (WIPO) and various other international institutions, including the World Bank and the Organization for Economic Development (OECD) have started releasing some of their works under a version of Creative Commons specifically designed for international institutions.[33] </blist>

All of the above are part of just a small sample of the astounding variety of open licences that are available for creators online. Just to give an idea of the diversity of the licensing ecology, there are over 50 national versions of Creative Commons licences, and with at least six licences in each version, that translates to easily over 300 CC licences released at the time of writing.[34] In

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[25] Full text here: Open Knowledge Foundation, 'Open Data Commons Attribution License' <http://opendatacommons.org/licenses/by/> accessed 13 April 2017.

[26] Full text here: Open Knowledge Foundation, 'Open Data Commons Public Domain Dedication and License (PDDL)' <http://opendatacommons.org/licenses/pddl/> accessed 13 April 2017.

[27] See: Creative Commons, 'What is New in Version 4.0' (2013) < https://creativecommons.org/share-your-work/licensing-considerations/version4/> accessed 13 April 2017.

[28] Particularly, the Directive 2003/98/EC of the European Parliament and of the Council of 17 November 2003 on the re-use of public sector information OJ L 345 31 December 2003 90-96. The Directive has recently been amended by the Directive 2013/37/EU of the European Parliament and of the Council of 26 June 2013 amending Directive 2003/98/EC on the re-use of public sector information OJ L 27 June 2013 175 1–8 (PSI Directive); and The Re-use of Public Sector Information Regulations 2005, SI No 1515 (PSI Regulations).

[29] These include: *Accessibility, sustainability, excellence: how to expand access to research publications*. Report of the Working Group on Expanding Access to Published Research Findings (Finch Report) (2013) <www.acu.ac.uk/research-information-network/finch-report> accessed 13 April 2017; and the Intellectual Property Office, Digital Opportunity: A Review of Intellectual Property and Growth (Hargreaves Review) (2011) <www.ipo.gov.uk/ipreview.htm> accessed 13 April 2017.

[30] 'Data.gov.uk' <http://data.gov.uk> accessed 13 April 2017.

[31] Full text here: 'Open Government Licence version 3' <www.nationalarchives.gov.uk/doc/open-government-licence/> accessed 13 April 2017.

[32] Full text here: 'Non-Commercial Government Licence' <www.nationalarchives.gov.uk/doc/non-commercial-government-licence/non-commercial-government-licence.htm> accessed 13 April 2017.

[33] See the Intergovernmental Organizations Creative Commons licences at: Creative Commons, 'Intergovernmental Organizations Creative Commons' <https://wiki.creativecommons.org/wiki/Intergovernmental_Organizations> accessed 13 April 2017.

[34] This list of public rights databases contains 420 documents: 'Public Rights Licences' (2009) <www.worldlii.org/int/other/PubRL/> accessed 13 April 2017.

software, the Open Source Institute lists 80 approved open source licenses.[35] It would seem impossible to find common ground in fields as diverse as licences designed for governmental data, and those created with software development in mind.

There is however a very basic common element in all of them, and it is the existence of a licence grant in which the licensor gives permission to the user to undertake exclusive rights of the owner, namely licensees are given the right to copy, distribute, display, publish, and perform the work. While the exact wording of the grant changes from one legal document to another, they all share the intention to licence available exclusive rights if the licensor complies with the licence's requirements, which vary immensely between different licensing schemes. Another common element is that of attribution, where the licensee is required to make specific mention of the owner, or to maintain intact copyright notices on the original. The grant and requirement of maintaining copyright notices contained in the version 2 of the GPL is typical of many licences:

> <quotation>You may copy and distribute verbatim copies of the Program's source code as you receive it, in any medium, provided that you conspicuously and appropriately publish on each copy an appropriate copyright notice and disclaimer of warranty; keep intact all the notices that refer to this License and to the absence of any warranty; and give any other recipients of the Program a copy of this License along with the Program.[36]</quotation>

Finally, almost all open licences share the requirement on licensees to include a link to the terms and conditions of the licence, or to include the full text of the terms and conditions in an attached file in the case of software projects. For example, Creative Commons licences contain this requirement:

> <quotation>If You Share the Licensed Material (including in modified form), You must […] indicate the Licensed Material is licensed under this Public License, and include the text of, or the URI or hyperlink to, this Public License.[37]</quotation>

As stated above, there are different types of terms and conditions that can be included in the licence, with various rights allocated to the user that vary from one licence to the other. While it would be difficult to list all the types of different elements, it is possible to find common licensing elements shared across legal documents. We can therefore categorise open licences per the terms and conditions given to all. These categories are:

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<bt>*Public domain dedications* – These are licences that facilitate copyright owners to dedicate their work to the public domain. Because not all legal systems allow such a practice,[38] these licences will grant all exclusive rights to the licensee in a manner that is indistinguishable to the work being in the public domain. The Creative Commons Zero (CC0)[39] licence is the best example of this category.

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[35] Open Source Initiative, 'Licenses by Name' <https://opensource.org/licenses/alphabetical> accessed 13 April 2017.

[36] Free Software Foundation, 'GNU General Public License version 2' (1991) <www.gnu.org/licenses/old-licenses/gpl-2.0.en.html> accessed 13 April 2017.

[37] Creative Commons, 'Attribution-NonCommercial-ShareAlike 4.0 International (BY-NC-SA)' <https://creativecommons.org/licenses/by-nc-sa/4.0/legalcode> accessed 13 April 2017.

[38] A Guadamuz, 'Comparative Analysis of National Approaches on Voluntary Copyright Relinquishment' (2013) Report CDIP/13/INF/6 for the World Intellectual Property Organization.

[39] Creative Commons, 'CC0 1.0 Universal Public Domain Dedication' <https://creativecommons.org/publicdomain/zero/1.0/ > accessed 13 April 2017.

<bt>*Academic licences* – This is a popular type of open source software licence that contains very basic conditions, namely the common grant and copyright notices mentioned above. In general, the work is made available to the public with a minimum of conditions, the main one being that the licensee must make the source code of derivatives available to the public.[40] The MIT License is the most used academic licence.
<bt>*Copyleft* – Despite of what the name hints, copyleft licences are not the opposite of copyright, they are simply licences that contain a clause that orders licensees to distribute all derivative works based on the original with the type of licence with which the work was initially shared.[41] These are also known as share-alike licences. It is important to point out that not all open licences are copyleft, examples of this sort of licence include the GPL, and all share-alike Creative Commons licences.
<bt>*Non-commercial licenses* – These are licences in which the work can be copied, displayed and distributed by the public, but only if these actions are for non-commercial purposes. Several Creative Commons licences include such clauses.[42]
<bt>*No derivative works* – These licences grant the baseline rights, but licensees are not allowed to make derivative works from the original; this means the work can be shared and re-used by others, but not remixed or adapted to generate another work.[43] </blist>

It is interesting to point out that some of the above elements can be present in the same licence; for example, the Creative Commons Attribution-NonCommercial-NoDerivatives licence (BY-NC-ND)[44] falls under both non-commercial and no derivative categories. However, copyleft and no derivative licences are mutually exclusive, as the share-alike element requires the existence of a derivative work.

A final categorisation of the open licensing ecology is perhaps a bit more controversial. The Open Knowledge Foundation has drafted what they define as the Open Definition[45] (OD), which attempts to categorise public licences in data and content as either complying with the definition or not. The OD states: 'Open means anyone can freely access, use, modify, and share for any purpose (subject, at most, to requirements that preserve provenance and openness).'[46]

While this may seem circular as it defines openness as that which encourages openness, the idea of the OD is to disavow those licences which impose what are considered as excessive restrictions on the freedoms that can be enjoyed by licensors. Copyleft is not considered to be such a restriction, but non-commercial clauses and no derivative restrictions do apply.

<a>3. OPEN REGISTERED RIGHTS

While the success of open licensing in copyright is evident, the same cannot be said of the use of open licences for registered rights such as patents, trade marks and designs. The vibrant licensing ecology highlighted above acts as evidence of a healthy system that encourages creators and

[40] Rosen (n 12).
[41] A Guadamuz, 'Viral contracts or unenforceable documents? Contractual validity of copyleft licenses' (2004) 26 *European Intellectual Property Review* 331.
[42] M Dulong de Rosnay, 'Creative commons: open content licenses to govern creative works' (2006) 7 *European Journal for the Informatics Professional* 38.
[43] M Dulong de Rosnay, Creative Commons Licenses Legal Pitfalls: Incompatibilities and Solutions (2010) Report for the Institute for Information Law of the University of Amsterdam.
[44] Creative Commons, 'Attribution-NonCommercial-NoDerivatives 4.0 International' <https://creativecommons.org/licenses/by-nc-nd/4.0/> accessed 13 April 2017.
[45] Open Knowledge International, 'The Open Definition' <http://opendefinition.org/> accessed 13 April 2017.
[46] Ibid.

owners to share their works allowing reuse. As open licensing schemes has been successful in copyright, why has this accomplishment not translated into the protection of innovations?[47]

The lack of translation from copyright licensing into the registered rights field may prove surprising for those unfamiliar with the openness movement, but this lack of transition is a direct result of the difficulty of the subject matter. While we have open source software, open access, and open data, we do not have open biotechnology, open patents, and open trade marks, although there have been some proposals to that effect.[48]

Because copyright subsists as soon as a work is created,[49] its licensing for open works is cost effective, particularly when allowing sharing and reuse. On the other hand, applying for a patent or a design is an expensive and often time-consuming endeavour,[50] so it is to be expected that those who will be applying for such protection will be less willing to licence those rights for free, or even to allow free reuse.

However, several proponents of open licensing had advocated the creation of some sort of open licensing scheme for registered rights. Talking about biotechnology specifically, researcher Janet Hope suggested that it would be possible to have some sort of direct translation of the terms and conditions contained in some open source licences, and applying them to registered rights.[51] This would be done by accommodating 'the complexity and variety of biotechnology transfer agreements, yet remain faithful to the underlying logic of open source'. Unfortunately, the challenges were simply too great, and while Hope's proposal was well-argued, it never came to fruition. The reason for this failure can be found in the nature of patenting itself. Writing about this topic in 2006, I stated:

> <quotation>The problem then for some institution wanting to release their research is that they will have to obtain a patent in order to license it, and this can prove to be an expensive endeavour. Some studies estimate that an average biotechnology patent application could cost an average $7,500 USD in the United States alone. Because patents must be applied separately in each jurisdiction where they will be exploited, the costs for a small research institution could be prohibitive. Even when the patent has been obtained, the enforcement of patents is where the costs are steeper. The cost of defending a patent in the United States where the dispute is less than a million USD can range from $300,000 to $750,000 USD. This means that even if a research institution obtains a patent to protect their research, the right holders would find it extremely expensive to defend their intellectual property against misuse – particularly considering that those likely to use open source licenses may be small research institutions, or even to individual researchers. The problem would be more pronounced for researchers in developing countries, as they would possibly have to enforce patents abroad.[52]</quotation>

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[47] The earliest reference to the denomination 'open licences' to indicate licensing of works in fields other than software is: K Klotz-Ingram and K Day-Rubenstein, 'The changing agricultural research environment: what does it mean for public-private innovation?' (1999) 2(1) *AgBioForum* 24.

[48] See for example S Boettiger and DL Burk, 'Open source patenting' (2004) 1(6) *Journal of International Biotechnology Law* 11; and D Burk, 'Open source genomics' (2002) 8 *Boston University Journal of Science and Technology* Law 254.

[49] Berne Convention for the Protection of Literary and Artistic Works (1886) art. 5(2).

[50] Applying for a patent in the UK can cost between £3,000 to £5,000 GBP, with higher costs for international applications.

[51] J Hope, *Biobazaar: The Open Source Revolution and Biotechnology* (Harvard University Press 2007).

[52] A Guadamuz, 'Open science: open source licences for scientific research' (2006) 7 *North Carolina Journal of Law and Technology* 321.

At the time of writing those lines, there were a few projects that were attempting to create some sort of open licensing scheme for patents, particularly in biotechnology. Of particular interest was also the creation of an open science division at Creative Commons called Science Commons.[53] This was supposed to generate some open science licences for patents,[54] but this project never actually produced such a solution, and it eventually was discontinued.

Another promising project at the time was the Center for the Application of Molecular Biology to International Agriculture (CAMBIA),[55] an organisation that was attempting to provide wider access to inventions protected by patents in the biological industries by using a set of licences designed specifically for registered rights. The idea was to use intellectual property 'work-arounds' in the areas of agriculture, food security, biotechnology and the environment.[56] Their proposal included a common pool of patents, and a licence design to biotechnology efforts; for example, they drafted the CAMBIA Plant Molecular Enabling Technology BiOS License, a document designed to allow the sharing of CAMBIA's own patented technologies.[57]

While many of these projects still exist in one form or another, there has been little action in the licensing of registered rights.[58] The reason has been hinted at above, the use of open licensing ideas does not translate easily to patenting because of high costs and time-consuming nature of registration.

There are however a few examples of successful open patent models, but these tend not to be about the licensing of registered rights at all. The main area where registered rights make an appearance is in some open source licences. Because there is serious concern in the software industry regarding the patenting of computer implemented inventions,[59] some open source licences in recent years have started to include a patent grant as well as one for copyright. The prime example is the second version of the Apache Public License, which after the copyright licence grant, it includes a patent grant that reads:

> <quotation>3. *Grant of Patent License.* Subject to the terms and conditions of this License, each Contributor hereby grants to You a perpetual, worldwide, non-exclusive, no-charge, royalty-free, irrevocable (except as stated in this section) patent license to make, have made, use, offer to sell, sell, import, and otherwise transfer the Work, where such license applies only to those patent claims licensable by such Contributor that are necessarily infringed by their Contribution(s) alone or by combination of their Contribution(s) with the Work to which such Contribution(s) was submitted. If You institute patent litigation against any entity (including a cross-claim or counterclaim in a lawsuit) alleging that the Work or a Contribution incorporated within the Work constitutes direct or contributory patent infringement, then any patent licenses granted to You under this License for that Work shall terminate as of the date such litigation is filed.[60]</quotation>

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[53] The website is no longer active and re-directs to the open science page at the main CC portal, see: Creative Commons, 'Open Science' <https://creativecommons.org/about/program-areas/open-science/> accessed 13 April 2017.

[54] J Boyle and J Wilbanks, 'Introduction to Science Commons' (2017) <http://sciencecommons.org/wp-content/uploads/ScienceCommons_Concept_Paper.pdf> accessed 13 April 2017.

[55] The CAMBIA Centre can be found here <www.cambia.org> accessed 13 April 2017.

[56] C Dennis, 'Biologists launch 'open-source movement'' (2004) 431 *Nature* 494.

[57] CAMBIA, 'The CAMBIA 'Biological Open Source' (BiOS) License for Plant Enabling Technologies version 1.5' <http://bit.ly/2gC3aHv> accessed 13 April 2017.

[58] As evidence of this, CAMBIA's last press release dates back to 2009.

[59] CV Chien, 'Reforming software patents' (2012) 50(2) *Houston Law Review* 8.

[60] Apache Foundation (n 19).

Interestingly, the Apache License does not licence other registered rights such as trade marks, as these are specifically kept intact under all rights reserved by the licensor.

Other software licences now include similar patent grants, such as the version 3 of the GPL, or the Mozilla Software License.[61] The objective of these grants is to protect licensees from actions performed by unscrupulous licensors, who may licence a computer software code openly through copyright, but then could sue the licensee of those rights for patent infringement. This is because of the unique nature of software protection in intellectual property, which can be classed as a literary work under copyright, but it can also be subject to a patent application.[62] Because of this duality in protection, open licensing projects must reassure licensees that by using code from an open project they are not opening themselves to liability down the line.

While dual open source licensing is not precisely what the open science and open patenting movements had in mind, here we have an example where some registered rights have been successfully licensed, albeit in a bundle with copyright subject matter.

Perhaps the open science movement had been looking in the wrong place when thinking that licensing could be used to encourage sharing of registered rights. Recent developments tend to point us towards an interesting new direction, and licensing has nothing to do with it. A few firms have been toying with the concept of opening a number of patents and designs with the use of unilateral promises not to enforce patents in specific fields of research.

The most celebrated example of this has been Tesla Motors, the company founded by the famous entrepreneur Elon Musk. On June 2014, Elon Musk announced[63] that Tesla was going to unilaterally forego enforcement of the various patents they hold in electric car technology 'in the spirit of the open source movement, for the advancement of electric vehicle technology'.[64] He stated that 'Tesla will not initiate patent lawsuits against anyone who, in good faith, wants to use our technology.' The idea behind such a seemingly counterintuitive move is to encourage the development of battery technology for the betterment of the industry, and the benefit of mankind. The company benefits by the more rapid move towards implementation of electric cars, which means more units sold.

This is not completely unprecedented, back in 2005 IBM announced that it would not enforce up to 500 of its software-related patents against open source software projects, to encourage the use and adoption of that development model, but also to reassure licensees with regards to its own formidable patent portfolio.[65]

This seems like a more likely avenue for those interested in the opening of registered rights. Patent licensing is a complex area, and attempting to navigate it would repel potential benefactors from engaging in such a practice, as licensing of complex subject could open a firm to legal challenges down the line that are completely unforeseen. Adding to that the cost of getting a patent, it becomes evident that open licences are not the solution. But if a company wants to encourage innovation in an area where it holds several patents, the easiest way to share those patents is not to licence, but to open the inventions by not enforcing them. This is a low-cost solution that foregoes the need to involve complicated licensing scenarios.

Why would a firm undertake such sharing? The cost involved in getting a patent and the lost licensing revenues would be offset by other benefits. In the case of Tesla, the benefit is to

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[61] Mozilla Foundation, 'Mozilla Public License version 2.0' <www.mozilla.org/en-US/MPL/2.0/> accessed 13 April 2017.

[62] A Guadamuz, 'The software patent debate' (2006) 1 *Journal of Intellectual Property Law & Practice* 196.

[63] E Musk, 'All Our Patent Are Belong To You' (*Tesla*, 2014) <www.tesla.com/en_GB/blog/all-our-patent-are-belong-you> accessed 13 April 2017. See also contribution to this collection by Brown, Gervassis and Mukonoweshuro.

[64] Musk (ibid.).

[65] BBC News, 'IBM frees 500 software patents' (*BBC*, 11 January 2005) <http://news.bbc.co.uk/1/hi/technology/4163975.stm> accessed 13 April 2017.

encourage the growth of a market. The more affordable and widespread the technology is, the more likely it is to be purchased by the public.

<a>4. CONCLUSION

During its relatively short life, the openness movement has managed some impressive feats. Wikipedia, one of the most successful open content projects in the world, is now one of the most visited websites in the world. Open source Apache servers power the Internet. Some of the most successful software programs in the world are open source software, or they rely on some sort of publicly shared code. There are over one billion works shared under Creative Commons.

By any metric, these are impressive results, yet the enforcement of such rights tends to be almost non-existent. Perhaps the open movement has been successful despite the licences that prop it up, and not because of it. Complex legal documents could encourage litigation in some areas, but when it comes to the sharing of works under some rights reserved schemes, the evidence is that the licence is just a way to express an idea, that of sharing to allow reuse of a work. Moving forward, we can probably expect less reliance on the legal aspect of openness, and to see more of an effort to convey sharing through business models and the encouragement of innovation.

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