Book Review: 'Thoughts on Open Innovation', edited by Shane Coughlan

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Abstract

Kari Kärkkäinen reviews Thoughts on Open Innovation (ed. Shane Coughlan, 2013) which is a collection of essays discussing various topics around the concept of Open Innovation.

Keywords

Law; information technology; Free and Open Source Software; Open Innovation; OpenForum Academy, book review

The book "Thoughts on Open Innovation"[1] was launched at the Digital Agenda Summit in Dublin in June 2013. The book aims to address the challenges surrounding Open Innovation; its precise scope, its impact on daily life and the policy measures needed to sustain it continue to be heavily discussed and debated. Its predecessor was "The First Openforum Academy[2] Conference Proceedings"[3] from September 2012 which also was a collection of essays mainly considering Open Innovation in the context of economics, society and global affairs, and this new book, on the other hand, covers openness more as it relates to software, data and access.

The introduction to the book is by Karel De Vriendt, a retired IT expert who worked for the European Commission for twenty years being actively involved in initiatives such as the Open Source Observatory and Repository (OSOR). He attempts to explain the basic concept of Open Innovation by first referring to the definition introduced by Professor Henry Chesbrough of University of California Berkeley but, however, today, the book claims, Open Innovation has a broader meaning and is part of the other "open" concepts, including Open Knowledge, Open Data and Open Source Software. The basic idea, the introduction continues, is that "by collaborating with others, by re-using (and by being allowed to re-use) the results of the efforts of others and by allowing others to use and improve the results of our efforts, we all get better."

The book is introduced as attempting to address the following questions: "[H]ow can we balance openness with the need of companies to stay competitive and to make a profit ... and to provide

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1   http://www.openforumacademy.org/library/ofa-research/Thoughts_on_Open_Innovation.pdf
2   According to its website, OpenForum Academy is an independent programme established by OpenForum Europe and its broad aim is to examine the paradigm shift towards openness in computing that is currently underway, and to explore how this trend is changing the role of computing in society. Link to OpenForum Academy's home page: http://www.openforumacademy.org/
3   http://www.openforumacademy.org/research/the-first-openforum-academy-conference-proceedings

enough incentives to bright spirits to continue to innovate? Is openness an absolute good: should all knowledge, all data, all software, all standards etc. be open or are there situations where openness should be avoided...? How do we organise the involvement of as many individuals or organisations as possible in efforts to solve societal issues using Open Innovation? How do we organise Open Innovation projects and ensure that such projects are, and remain, 'Open'?"

The author also explains the structure of the book, which is the following: It consists of an introduction and nine essays. The first two essays give the big picture. The two following essays describe examples on how Open Innovation works in practice. Then the next three essays deal with some of the most widely debated topics in the world of Openness: Openness and Intellectual Property Rights (IPR) in Information and Communication Technologies (ICT) standardisation, Open Source Software in public procurement, and Open Source Software in the commercial world. The book then concludes with two more essays which are of a more philosophical and visionary nature. The review of the essays below is organised based on these groupings.

"Context"

In this section of the book there are two essays that are there to give the bigger picture, as mentioned above.

In the first one, *"Openness" and the Pursuit of Knowledge* by Andrew Updegrove, a co-founder and partner of the Boston law firm Gesmer Updegrove LLP and a legal counsel to numerous standards development organizations and open source foundations, in the author's words, he "review[s] some of the many ways and domains in which this revolution [towards openness] is occurring, highlight[s] some of the legal tools that innovative individuals have created in order to facilitate this process and offer[s] thoughts on how these important developments in the acquisition and sharing of knowledge can best be encouraged to thrive in the future." Basically the author first covers historical developments going back to the time of Thomas Jefferson and claiming that then there was no need for a legal system to protect IPR because the benefits to the creator were often low. He explains that the acquisition of knowledge was a linear process and that the laws and legal tools evolved to reflect this "insular process of creation" and to mainly protect the rights of the creators. Now, especially in the wake of the Internet, it is argued, these limitations have disappeared and the creators are relaxing their ownership rights to mutually enjoy the benefits of collaboration. Over the years the laws that evolved to reflect this balancing of interests have become more uniform throughout the world through various treaties, e.g. the Berne Convention, but, according to the author, there is still debate over whether the existing IPR laws need to evolve further, and he continues by suggesting areas where legislative change could be used (e.g. fair use and software patents). The characteristic of this, what he calls a revolution in thinking, is the concept of "openness", including such "open" methodologies and rule sets as Free Software/FSF, open content (e.g. Creative Commons), and even open hardware. In his view, the Internet has changed the way for creating and sharing knowledge and that the trend towards openness is fundamental and sustaining, which also requires a fundamental change in legal tools and laws, of the benefits of whose liberalisation he provides some examples. He concludes by stating that "[w]hile this experimental process continues, restraint on the part of legislatures, and a willingness to be open-minded on the part of the courts, may provide the best route to eventually settling on a new balance between the IPR of creators and inventors, on the one hand, and re-users and end-users on the other."

The second essay is called *Open Innovation in the Real World* and it is written by Shane Coughlan,

who, besides also being the editor of this book, is the Global Director of Licensing at Open Invention Network and a former Editorial Coordinator of this very law review. The essay discusses what Open Innovation actually is and how it works in real life, and starts, in a way repeating what was discussed in the Introduction of the book, by describing Professor Henry Chesbrough's definition of Open Innovation: "Open innovation is a paradigm that assumes that firms can and should use external ideas as well as internal ideas, and internal and external paths to market, as firms look to advance their technology." The author suggests that this is then mainly about reducing research and development costs by acquiring third-party innovation and, thus, the opposite of Closed Innovation and strict control of IP, and that this positioning as opposite IP management techniques is fairly limited. The essay proposes that there is, in fact, value in considering the broader picture instead of simply focusing on IPR strategy and it, therefore, describes Open Innovation as an umbrella term for approaches to openness in many fields, the unifying concept being "to share ideas in a way that helps stakeholders obtain useful solutions today and a fertile ground for developing solutions tomorrow." Free Software, according to the author, has been one of these first fields of which simple rules that allowed developers to use, share and improve software have been gradually expanded to numerous other fields through e.g. Creative Commons, Wikipedia and OpenStreetMap (which is discussed in more detail in another essay of this book). The essay also talks about "network effect" and how "no company can employ all the minds that can potentially contribute to solving a problem," and, thus simple and fair broad collaboration is needed, regardless of potential challenges described in the text, especially since the pooling of knowledge and development of common platforms enable fast deployment of advanced solutions. At the end, for Open Innovation, in the author's view, the real questions are whether the existing measures, mainly devised for the Closed Innovation approach, are still suitable in today's broader marketplace, and "how do modern societies address the challenge of ensuring that Open and Closed approaches to innovation are allowed free, fair and complete competition in this context."

"Examples"

The next two essays of the book provide examples on how Open Innovation works in practice.

In *Bottom-Up Creation of Open Scientific Knowledge* Peter Murray, a contemporary chemist who has held various professional and academic positions and who campaigns for Open Data and is on the advisory board of the Open Knowledge Foundation (OKF), who had already published a chapter in the previous OpenForum Academy book, together with his colleagues from the OKF cover examples from diverse areas. According to the essay, Open Science is too big and multifaceted a term to be defined precisely, but it "covers at least the spectrum of materials, process, culture, formal specification and activities," and, therefore, instead of summarising it, it was decided to bring together stories, four in total, under the umbrella of "bottom-up Open Science." It is stated that all stories have the core belief that individuals and small groups working together can make a difference by exchanging ideas, setting up tools and content, and by growing communities.

The first story (Bottom-up Open Chemistry – the Blue Obelisk, by Peter Murray) is about a group of "chemical hacker activists" who agreed to loosely coordinate their efforts under the name "Blue Obelisk" for creating software components for most of the chemical infrastructure and algorithms for pharmaceuticals and materials since almost all chemical software and data is typically closed. According to the story, their main challenges included that chemistry prefers to buy its solutions (not engineer its own), that academics producing software often get little credit, that it is difficult to get funding, and that the commercial domain is very fragmented making semantic

interoperability difficult.

The next intriguing story (Sample Size of One, by Bastian Grashake) is about the Quantified Self (QS) movement which is a community of people most of whom collect different kinds of data about themselves, including, for example, dietary composition, physical exercises and sleep habits. QS participants use their data to perform experiments with the sample size of one, the story explains, but many of them, on the other hand, also openly share their data with others thus allowing for experiments that overcome the limitations of the sample size of one and "show how science can be performed in a bottom-up fashion."

The third story (A new role for libraries in open access information management, by Tom Olihjoek) argues that libraries are suffering from an identity crisis and are forced to re-assess their role as suppliers of information because, despite the introduction of the Internet and modern digital reproduction and distribution, publishers, who had built up a monopoly on the production and distribution of knowledge through printed scientific journals and books, have continued to increase their prices and shield most publications from free access online, and because many scientists are reading and publishing works in open access journals which do not require library subscriptions. But, the author sees a new role emerging for libraries as the organisers of open access content in a way that the public and scientists can use it best, e.g. by starting to organize information around topics, which is envisaged as being a first step in the collaboration between scientists, libraries and communities and the creation of an Open Science society.

In the last story (The rebirth of the citizen scientist, by Rayna Stamboliyska) it is claimed that, in recent years, the term "citizen science" has emerged to define public involvement in genuine research projects but is actually a new make-up for an old idea already suggested by Thomas Jefferson, examples being birdwatching and mapping roadkill accidents. According to the author, citizen science is becoming more popular, especially as the concept is modular enough to reach the humanities and social sciences, i.e. studies of human nature at large, but the critical questions are stated as being whether citizen science is ethical and whether the related review and approval by an Institutional Review Board (IRB) is too big of a hurdle for citizen scientists.

In the other essay of this section, *Bringing Geographic Data Into the Open with OpenStreetMap* by Coleman McCormick, who is a geographer and software developer at Spatial Networks Inc. and an active contributor to the open mapping ecosystem, the author discusses citizen participation in OpenStreetMap (OSM)[4], "the wiki of world maps," and claims that it is an exemplary model for how to build community and engagement around map data, and that lessons can be learned from its model. According to him, simply publishing map data through online portals still leaves a gap between the data provider and the community and closing this gap is key to bringing open geodata to the same level of growth as e.g. Wikipedia. Although open sources of map data are not new, in his view, OSM is an innovative approach to open geodata and basically an effort to build a free and open map of the entire world; "to do for maps what Wikipedia has done for the encyclopaedia." The difference to other open data initiatives, the author claims, is its ability to incorporate user contribution and to invite engagement and a sense of co-ownership on the part of the contributor. It is explained that his combination of contribution and engagement for OSM is enabled by an impressive stack of technology that powers the system, all driven by several open source software projects under the hood. And, in fact, he believes that the roadblocks to adoption of open models for creating and distributing geodata stem primarily from technology and implementation. It is emphasized that with geodata, openness and accessibility enable a level of direct interaction between publishers and contributors that has not been possible with traditional unilateral data sharing methods. The author concludes by saying that OSM "provides a mature and

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4   Link to the OpenStreetMap wiki: http://www.openstreetmap.org/#map=5/57.669/22.039

real-world example of why engagement is often that missing link in the success of open initiatives."

"Application"

The Application section includes three essays discussing some of the widely debated topics on Openness.

The first one is titled *Getting Requirements Right – Towards a nuanced approach on standardisation and IPRs*, and it is written by Jochen Friedrich, a member of IBM's Technical Relations Europe team and responsible for coordinating IBM's software standardisation activities in Europe and the chair of the standardisation task force of OpenForum Europe, and he talks about the heavily debated intersection of IPR and standardisation by formal standards bodies (e.g. ISO, IEC and ETSI) and others (e.g. IETF, W3C and IEEE). In the author's view, these standards bodies need to have an IPR policy with rules on how IPR that are critical for standards are handled. Apparently, in ICT, standards bodies have chosen two models for patent licensing: FRAND (fair, reasonable, non-discriminatory) and royalty-free, and it is argued that they both have their roles for getting base technologies into standardisation and for software interoperability, respectively. It is stated that diversity in standards bodies and in IPR regimes successfully serves the marketplace, and allows to apply policy approaches and rules in relation to specific markets and a market need, which is claimed to be the most important factor for a strong standard. All the innovation of the internet, according to the author, is based on so called Open Standards which are available royalty-free, and also allow implementation of FOSS, which is important for software interoperability standards creating a level playing field and wide acceptance for open source technologies. Standards also support public policy by ensuring interoperability and, thus, promoting openness, innovation and growth, but, it is emphasized, government rules need to be flexible and allow for standards which have been developed in open processes. Regardless of such a general framework, "it is up to specific policies … to set their specific requirements to Open Standards" to best support policy objectives. According to the author, such a "nuanced approach" is the most effective way for promoting openness and innovation. Although a relevant topic was nicely covered, apparent lack of proofreading of the essay hampered the reading experience.

The next essay, *Public Procurement: Free Software's Wild Frontier*, which is by Karsten Gerloff who is the President of the Free Software Foundation Europe and has conducted extensive research on the economic and social effects of Free Software e.g. for the European Commission, which, although a bit list-like, offers an interesting insight into FOSS procurement issues, starts by stating that even with current procurement practices FOSS is already delivering significant savings and strategic benefits to the European economy. Still, most European public bodies continue to rely heavily on non-free software mainly because, the author claims, public procurement practices are a major hurdle. Related to this, the essay lays down a very interesting fact: According to Directive 2004/18/EC of the European Parliament and of the Council[5], it is obvious that procuring authorities must not refer to a trade mark unless it is impossible to describe the desired product or service otherwise, but still roughly one in seven tender notices for software violates this Directive. Then the author goes through some examples as a basis for assessing common problems and potential solutions in the public procurement of software, including a bad example from Helsinki and good examples from Munich and Sweden. It is also mentioned in the essay that some countries have published policies relating to procurement of FOSS in the public sector but that their

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5   Link to Directive 2004/18EC of the European Parliament and of the Council: http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:32004L0018:en:NOT

implementation is still in its early stages. Cases from the Netherlands and the UK are described as unsuccessful public policy examples related to the procurement of FOSS and the use of Open Standards. On the other hand, it is argued that, in Europe, Portugal has gone the farthest in terms of adopting Open Standards and Italy in terms of FOSS procurement public policies, and that France has demonstrated success as well. At the end, the author offers some suggestions on how to improve the situation, i.e. by public authorities ensuring effective supervision of procurement practices, by supervisory authorities providing clear guidelines and training on procurement related issues, by defining incentives for good procurement practices, by having strong political support, and, as a rather innovative way, by public sector organisations contributing a part of the savings achieved through FOSS back to the developers of the software. In the author's view, most of these measures are easy to implement but the main issue is that political will is missing.

In the third essay, *Understanding Commercial Agreements With Open Source Companies*, Amanda Brock, a Director at Origin Ltd and a member of the Editorial Committee of this journal, starts by providing a condensed overview of the history of FOSS, including both FSF and OSI and their ideological and practical differences, that takes up almost half of the entire essay. Why? She realised "that the only way to explain [FOSS commercialisation issues] is to work through this thought process. So, understanding where the players of FOSS have come from is important." The essay then proceeds to discuss how organisations make money through FOSS, e.g. by providing related or specialist services for development or support (Red Hat[6] mentioned as a successful example), or by providing cloud computing services based on FOSS without the need to distribute the code. However, she points out, the latter one is creating a market place where users may not be able to properly review the applicable terms and conditions. Further, search engines (e.g. Google) that generate revenue from advertising also contribute to the commercialisation of FOSS by sharing the revenue throughout the ecosystem. It is argued that commercialisation of FOSS on the device side, where the User Interface is visible, may face trade mark issues, or issues with other IPR such as design patents. FOSS is also causing market disruption, e.g. with Android mobile phone operating system, and the author sees this type of disruption increasing. App stores are mentioned having become a big part of software distribution but potentially infringe various FOSS licences if they don't comply with relevant licence requirements (e.g. no source code provided), but it is also contemplated whether they will be a transient model due to the emergence of web apps. On software patents the author's view is that the nature of them and the possibilities for patentability e.g. in a smart phone are such that it is easy for patent owners to sue and be counter-sued. (And she agrees that only the lawyers are the winners in all this!) In general, according to the essay, patent litigation creates a risk to FOSS in two ways: royalties owed to patent holders creating a premium on the cost of FOSS usage, and fear of litigation creating a barrier to entry. However, she believes that at the end this will not prevent commercialisation of FOSS. Overall, the essay is interesting and relevant but the title of it would appear to be slightly misleading.

"Things to Come"

In this final section of the book there are two essays which are somewhat philosophical and visionary in nature.

No One Speaks For Me – The Legislative Disconnect Of The Meshed Society by Simon Phipps, currently running his own management consulting company Meshed Insights Ltd and serving as a Director on the boards of the Open Source Initiative, the Open Rights Group and the MariaDB

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6   Link to Red Hat Inc's home page: http://www.redhat.com/

Foundation and on the advisory board of Open Source of America, defines "Meshed society" as "people, joined together by the Internet, able to interact – to collaborate, to create, to transact and to relate directly with each other – without the need for another person to mediate." The author also talks about "creator-consumers" referring to individuals who at various times create new things and improve existing things (make) and collaborate with others to "make" or consume what others "make." He claims that these creator-consumers have ended up voiceless and proceeds to describe the industrial society and the roots of our existing processes to help in understanding his stance. At the end the ubiquity of the Internet has changed the rules and roles, and he has "been struck by the absence of any voice within the legislative process itself that speaks for my needs as an individual citizen in the meshed society of the 21st century." One example the essay brings up is the pressure from content industries to further extend copyright which starts to sound reasonable if it is viewed as property in the industrial society frame of mind. The author's main message appears to be that all this evolutionary change and the emergence of the meshed Internet society have caused hardly any changes in the legislative process or the law in any country; tweaking of the rules is not enough, they have to be fully refactored.

And the very last essay of the book is written by Peter Langley who is the founder and Managing Director of Origin Ltd, a Solicitor of the Supreme Court of England & Wales, and a Patent Attorney and a Trade Mark Attorney. The essay, *Forking the Patent System: Pollyanna in Patent-Land?,* examines "how patent law might be in the process of forking in ways not only favourable to FOSS but that excise the tensions between patent law and FOSS as systems for driving innovation." The proposed forks of the patent system reflect two modes of innovation: Laborious and costly single innovation, and cheap and rapid incremental innovation (e.g. FOSS). The author then suggests that these two modes are treated differently in legal terms, i.e. that for the latter injunctions are harder to obtain and damages are much lower. As it is important in US patent litigation to prove the causal nexus between the alleged harm and infringement, he then claims that one fork is starting to emerge for the first mode where it is possible to establish the causal nexus and enable injunctions, and for the second mode, which is especially relevant for software, the causal nexus will be much more difficult to prove and injunctions are not available. It is also noted that the developing jurisprudence to protect the public interest will support this fork. Besides injunctions, the other key issue in patent litigation, as stated in the essay, is the definition of the royalty base for damages: For example, should the percentage be applied only to the relevant component, or to the entire market value of a mobile phone? The text demonstrates that the US position is for the former. In addition, in favour of FOSS, the mentioned case law suggests that any compensation should be calculated based on the design-around costs, which for FOSS could be close to zero.

In Conclusion

"Thoughts on Open Innovation" is an interesting collection of essays on, you guessed it, Open Innovation. At least for a reader such as myself, who is mostly involved with openness in the context of open source software, the book is an eye-opener to the other "open things" and offers many perspectives. On the other hand, some of the essays at the beginning of the book appear to discuss quite similar issues. Also, it might have been interesting to read about open education (e.g. Coursera[7], edX[8]) as well, which seems to be a growing phenomenon at the moment, but maybe that can be a topic in the next OpenForum Academy book. Overall, the impression is that the quality of writing and contents in the essays has been good. And in the spirit of openness, the book is available as a free download (or as a printed copy for a fee), and at 164 pages is "comfortable"

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7   Link to the homepage of Coursera: https://www.coursera.org/
8   Link to the homepage of edX: https://www.edx.org/

in size.

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