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Open Source License and Transition of Governance in Business Enterprises

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Abstract. Open Source licenses provide everyone with the legal right to use, study, share, and improve the technology they cover. There are occasions when Open Source software packages or projects primarily governed by copyright licenses come into potential conflict with patent issues. Such challenges have led to an evolution in the governance applied to Open Source. In this paper, we not only investigate the transition and evolution in the governance in business enterprises applied to Open Source, but also make the limitations of the governance manifest.

Keywords: Open Source, License, Governance, Supply Chain, Intellectual Property Rights

1. Introduction

Business enterprises have always exercised their Intellectual Property Rights (IPR), especially around patent properties, in compliance with their business strategies. Takahashi (2007) indicates that the monetary value of patent properties primarily depends not on the scientific value per se but rather on the business assessment regarding its worth and the processes that frame such understanding. This means that aggression is possible with patents of low worth, but also that the opposite holds true. For example, even if a patent with value in terms of monopolizing a technology implementation is possessed by a business enterprise, the exertion of it is determined based on a strategic understanding of the requirements of the enterprise.

Chesbrough (2003) describes traditional approaches to business strategy as Closed Innovation, in which enterprises develop ideas, marketing, support, and financing for the most part internally, and their dependence on collaborators beyond those categorized as suppliers or distributors is essentially minimal. In this environment IPR management and the strategic decisions taken around portfolio use are also tied to intra-enterprise assumptions of value. However, the very concepts underpinning "Closed Innovation" are being challenged by the modern business environment, with key examples of disruptions being the increased liquidity of labour, the improvement in the knowledge-related power associated with employees, the existence of increased venture capital, and stiffer global market competition. Essentially, modern business enterprises had to adapt to use the inflow and outflow of knowledge to fit their purposes, not only to accelerate their internal innovation, but also to encourage this innovation to be used externally. This process is termed Open Innovation, and it blurs boundaries between business enterprises by bringing the development and use of internal resources and external resources closer together. The basic underlying idea is that through such measures extra value - inherently unavailable in Closed Innovation - is formed.

Open Innovation has many parallels with the ideas behind Open Source. They share the idea that a community of collaborators - whatever form it takes, be it bazaar style or hierarchical - delivers more value than isolation in addressing challenges. Both are ultimately about strategic decisions about how to derive, maintain and grow value from the investment of resources, with the cooperative nature of the approaches in participation, licensing and patent use being based on a rational assessment of its utility. That said, Open Innovation and Open Source are not identical, with the latter generally being open to any participant, including those not associated with an organization, with the requisite knowledge of the software packages and the development style, while the former depends somewhat on the existence of business enterprises with IPR portfolios and investments.

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The intersection between IPR portfolio decisions and Open Source is an interesting vein of potential further study in this regard. There are occasions when Open Source software packages or projects primarily governed by copyright licenses come into potential conflict with patent issues. Some Open Source licenses address this matter by the inclusion of patent provisions providing non-aggression pledges between collaborators on the licensed software, but the larger issue of whether a business makes a strategic decision to leverage patents aggressively essentially remains open. This is especially true of parties not collaborating on the same Open Source packages, or of third parties who may have minimal investment - and therefore understanding or sympathy - for Open Source approaches as a whole.

Such challenges have led to an evolution in the governance applied to Open Source. Early legal concerns around Open Source focused on copyright issues. Stakeholders were trying to understand how the rules allowing people to use, study, share and improve this technology worked, and it took a while to get the details right. However, the legal discussion expanded considerably as the field matured, and today with global competition intensifying in areas like mobile communications, process management around broader IPR and the efficient collaboration of businesses is perhaps regarded as far more critical than understanding and applying copyright terms, a problem that is largely solved.

2. Open Source and Transition of Governance

2.1. Early cases of Open Source Governance

The governance of Open Source in the late 1990's to early 2000 was naturally focused on the licenses that govern Open Source transactions. The emphasis was on compliance as this was regarded as the critical issue for minimizing potential risk in adoption and deployment. The most common problems encountered in Open Source during this period can be summarized as having their roots in two key issues; people didn't read the licenses properly, or they did read them but didn't follow the terms.

New adopters frequently did encounter issues (and still do today), with some notable cases being GPL-violations.org versus Sitecom, GPL-violations.org versus D-Link and SFLC versus 14 companies. GPL-violations.org is a not-for-profit project that works to make sure software is used and distributed of adhering to the license terms under the GPL. The Sitecom case is the first case where a court has ruled on the enforceability and has enforced of the GPL. In April 2004, the District Court of Munich granted a preliminary injunction against Sitecom Germany, The Court acknowledges that the license terms of GPL are not fulfilled, and Sitecom had no right to distribute netfilter/iptables based products without fulfilling the conditions set forth in the GPL .So Sitecom was prohibited from distributing its wireless networking router based on GPL code until it complied with the terms of the GPL. On July 2004, the German court confirmed this injunction as a final ruling against Sitecom. In September 2006, the GPL-violations.org project prevailed in court litigation against D-Link Germany GmbH a subsidiary of D-Link Corporation, Taiwan R.O.C., regarding D-Link's copyright-infringing. The DSM-G600, a network attached storage device which uses parts of Linux-based Operating System they distributed. The judgment provided legal precedent that the GPL is valid, legally binding, and stands in German court. In September 2007 the lawsuit case in New York was filed on by the Software Freedom Law Center (SFLC) on behalf of Andersen and Landley against Monsoon Multimedia Inc. ,concerned use of BusyBox code in an embedded device over GPL violation which was claimed to be the first US lawsuit case in violation of the GPL. As a matter of fact, from 2007 to the March 2008 the SFLC has sued 14 consumer electronics companies, including Best Buy, Samsung, Westinghouse and JVC without adhering to the license terms under the GPL. The case was reconciliated with the release of the source code, appointing the duty officer that to abide by the GPL license terms and payment of an undisclosed amount of settlements.

Ultimately the solution to these problems was relatively straightforward, being to read the licenses in question and to follow their terms, a task that has become significantly easier as more shared knowledge has entered the market, and collaboration between business stakeholders has improved.

2.2. Growing up Stage in Open Source Governance – supply Chain Consideration

As Open Source stakeholders became more understanding of how Open Source derived value - namely through collaboration between an ever-changing pool of third parties - they also became more nuanced in their understanding of the governance necessary to provide maximum benefit. This encouraged an alteration in their approach to governance, and there was a shift in perspective towards using governance as a tool to assist in maximizing value throughout the supply chain while honouring obligations in procurement and deployment.

Partly this included a transition from policy in the form of positive and negative lists with a blanket approach to allowing or prohibiting Open Source towards processes that provided the flexibility to adopt new technology and adapt to changes in licensing. Partly it contributed to shifting stakeholders from simply using to also creating and improving shared platforms. Ultimately, if one understands the value of Open Source to be found in the collaborative energy centered around common frameworks, then for each stakeholder maturity will see an increasing shift from relative isolation as an entity to collaboration as a participant in a community.

The governance of Open Source is no longer about compliance but rather about lifecycle management. This is a natural consequence of stakeholders seeking to maximize potential through shared rules to improve collaboration, and includes considerations about buying or developing the processes to manage code, training people internally to obtain value while minimizing risk, and doing the same for the supply chain on which one depends. This evolution into maturity can be framed by some understanding the common questions facing business participations in the field:

- What type of code do you use and why?
- How do you manage change?
- How do you ensure your obligations are met?
- How is this applied through the supply chain?

Answering such a diverse set of questions is non-trivial, but a combination of knowledge developed over the last 20 years of Open Source deployment and business process development provides methods of engaging with the challenge with relative elegance.

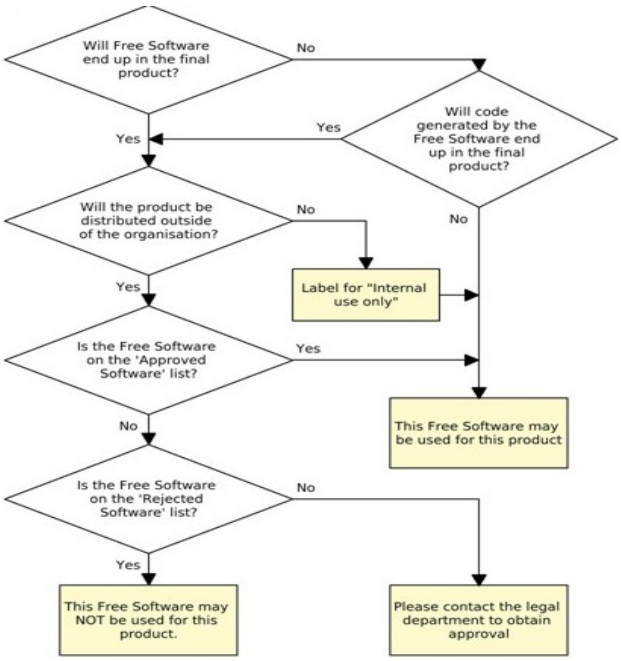
One example is a software governance fundamentals initiative to help companies address the legal, financial and security risks faced when adopting free and open source software (FOSS) was announced by an American multinational hardware and software corporation Hewlett-Packard in 2008.

As is well-known, the use of FOSS is pervasive and inevitable in most large organizations, but it also carries a unique set of complexities. So this fundamentals guide is intended as a primer on FOSS governance basics and covers the following topics:

- Understanding IT governance
- Understanding open source
- Identifying the benefits and potential risks of using FOSS
- Understanding open source policies and guidelines
- Developing FOSS governance strategies
- Managing the use and proliferation of FOSS
- Using compliance tools

More than this HP has also established a supply chain program governance structure with a Supply Chain Council that reports directly to HP's Executive Council and is responsible for implementation of the program. There is a Procurement Council that consists of supply chain leaders from each business unit, as well as Supplier Relationship Managers (SRMs) that directly interact with supplier companies. SRMs are empowered to communicate Supply Chain Social and Environmental Responsibility (SER) Policy requirements to suppliers and work with them towards conformance. HP also has several internal auditors that audit supplier manufacturing facilities against SER requirements.

Another example is included in Figure 1, a Free Software Approval Flowchart shared by Free Software Foundation Europe (FSFE), and based on part of the process deployed by Royal Philips Electronics in The Netherlands. It is observable that this company has developed simple yet effective methods to oversee the introduction of Open Source into their internal systems and external products.



(Source: Free Software Foundation Europe, with thanks to Royal Philips Electronics)

Fig.1. Free Software Approval Flowchart

2.3. Market Solutions

There are many services, products and collaborative platforms that contribute to governance in the Open Source marketplace. None is a panacea but many are useful for new entrants and relatively experienced participants alike, providing avenues for discovering and comparing approaches to minimizing risk, improving understand and dealing with suppliers or customers. One of the notable early collaborative approaches to sharing knowledge was FOSSBazaar, a community for sharing governance data that was initiated by HP via the Linux Foundation, and which continues to over a broad range of general material and commentary today. These are considered to be the governance-based distribution model of open source.

Comprehensive commercial solutions have appeared from companies like BlackDuck Software and OpenLogic. They both provide lifecycle management tools to manage the adoption, development and deployment/support of Open Source-based or derived products. These types of solutions are balanced by the non-profit Linux Foundation compliance program that is primarily focused on supporting Linux kernel development, and independent generally applicable Open Source projects like the Binary Analysis Tool.

3. Open Source and Remaining Governance Challenges

The trend in Open Source legal affairs is aware from copyright licensing matters - which are essentially solved though not yet fully refined - and towards broader questions of governance and business management. One key challenge from this perspective remains the aforementioned tension between Open Source concepts and Intellectual Property Rights, especially in the context of third parties who do participate in Open Innovation or direct invests in Open Source. Leveraging IPR against Open Source-derived technologies - whether as a business strategy to obtain new revenue streams or to hinder competition - is a significant potential challenge to the future growth and lasting viability of Open Source solutions.

When the business strategies applicable to different participants in the technology industry diverge, naturally some form of conflict is likely to ensue, and obtaining a new equilibrium will require the leveraging of rights and strengths by both sides. This applies in Closed Innovation versus Open Innovation or Open Source as with any other instance. On the other hand, proportion and careful thought is needed to ensure that real value is maintained, a concern that is somewhat exemplified by the tension between proprietary software companies and Open Source companies, a situation that is occasionally portrayed as a zero-sum game. The potential for damaging conflict in such a situation is significantly higher than it would be if the problem was conceptualized to allow for some form of coexistence,

Regardless of the context applied to the challenges presented by conflict around Open Source and IPR, there are various measures that Open Source-aligned companies can undertake to protect their investment in the larger collaborative platforms. Some examples are to:

1. Strengthen governance applied to in-house and shared platform software development to help evade the possible patents;
2. Pay a license fee on covered technology;
3. Source the necessary technology from the proprietary market.

The majority of these actions are rather passive and may introduce further complexity, perhaps by diminishing the perceived value of collaboration around Open Source or by creating complex tangles of Open Source licensing obligations and proprietary licensing conditions. An alternative strategy is to seek other ways to engage with tension between Open Source and IPR, in particular by seeking to find collaborative solutions to this challenge.

4. References

[1] M. Andrew. *Understanding Open Source & Free Software Licensing*, O'Reilly Publishing. 2004.

[2] M. Boldrin and D. Levine. "Against Intellectual Monopoly", Cambridge University Press. 2008.

[3] H. Chesbrough. *Open Innovation: The New Imperative for Creating And Profiting from Technology*, Harvard Business School Press. 2003.

[4] H. Chesbrough. Open Business Models: *How To Thrive In The New Innovation Landscape*, Harvard Business School Press. 2006.

[5] H. Chesbrough, V. Wim, and J. West. *Open Innovation: Researching a New Paradigm*, Oxford University Press. 2008.

[6] A. Guadamuz. Viral Contracts or Unenforceable Documents? Contractual Validity of Copyleft Licenses', E.I.P.R. Vol. 26, Issue 8. 2004, pp.331-339.

[7] M. Hatta. Software License and the Development Style, Manufacturing Management Research Center of Tokyo University. 2007.

[8] O. Johnny, M. Miller, and M. Webbink. Copyright in Open Source Software - Understanding the Boundaries, International Free and Open Source Software Law Review. Information, Volume 02 Issue 01. 2010.

[9] J. Sandred. *Managing Open Source Projects*: A Wiley Tech Brief (Wiley Tech Brief Series) . 2001.

[10] N. Takahashi. *General Theory of the Strategy of Licensing Business*, Software License and Development Style, Manufacturing Management Research Center of Tokyo University. 2007.

[11] C. Wong and J. Kreps. Collaborative Approach: Peer-to-Patient and the open source movement, International Free and Open Source Software Law Review. Information, Volume 01 Issue 01. 2009.

[12] Hewlett-Packard: FOSS Governance Fundamentals, Open Source Governance for the Enterprise https://fossbazaar.org/openSourceGovernanceFundamentals 2007.