Patent Risks of Open Source Software

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Introduction

Mass media in China and abroad are recently filled with news reports covering debates on the issue of the "Green Dam" software, and one of them, which requires our special attention, is that a foreign software developer alleged that its developed open source software ("OSS" for short) had been wrongly used in the "Green Dam" software[1].

Without making a judgment on the truthfulness of this allegation., supposing that the "Green Dam" software had indeed used OSS, and it complys with the most popular OSS license GPL2.0[2], thus it is possible for the Ministry of Industry and Information Industry to be refunded of the RMB 40 million yuan it paid to the "Green Dam" software developer because said software developer might have, without knowledge of such possibility, pursuant to the license GPL2.0, already granted all users worldwide a license for free use of the IP rights (including the copyright and the three patents) it claimed to own. Then, what force has left such huge interests so vulnerable?

All these have originated from the OSS that superficially seems to be a free lunch. It is known to us all that there is no such thing as free lunch anywhere. It is the "grass root" characteristic (free of charge and source code sharing) and the somewhat "copyleft" characteristic of OSS associated with their early vision that have brought a legal risk to the development, use and distribution of OSS that is different from the legal risk of the conventional commercial software.

Open Source Software

Open Source Software is a generic term for all software of which source codes are freely available. A license of such software, by its nature, allows everyone to extend or improve said software and distribute it free. The relatively well-known OSS includes the Linux operation system (the Red Flag Linux developed in China), and the Open Office software for office use.

A conventional commercial software developer has the proprietary right in the source codes of the software, which are not freely available to others. But authors of OSS give up some IP rights (including the copyright and patent right). To be specific, they make the source codes accessible to the public and encourage users to freely copy and distribute them, to and from each other, allow others to revise and improve the source codes, and redistribute them according to the operational rules underlying the OSS.

Patent risks confronting third party to OSS

One misunderstanding about OSS is that it only involves the copyright. Actually, this is not the case.

The "openness" of OSS requires that its users (including re-distributors) be obliged to make the source code of the relevant OSS available to everyone else, thus making it very easy for a third-party patent holder to collect evidence to prove the infringing nature of the software by analyzing the function module of the source code of the software. Besides, OSS's being "free of charge" always makes its authors to explicitly disclaim any patent infringement indemnification, and any OSS user has to rely on himself when patent infringement dispute arises.

In recent years, along with the ever in-depth research on OSS in China, risks in this respect have been gradually brought under discussion. For example, it is mentioned in the Report on the Research Concerning IPR in OSS and Commercial Software released by the China Software Industry Association that "when a third party that is not bound by the GPL owns a software patent and an original OSS developer or subsequent reviser uses the technology in the program or its derivative works, he or it will inevitably be faced with the risk

of patent infringement"[3].

For another example, searching the keywords of "OSS" and "patent infringement" on the Google website, one would find about 292,000 entries, which clearly shows that the matter is universal and real.

Another misunderstanding of OSS is a matter of concern to software developers, not hardware manufacturers. In fact, this is not the case, either. For example, in February 2009, Microsoft sued the TomTom in the United States, alleging that the Linux kernel used in its auto navigator manufactured by TomTom, who was an Auto navigator manufacturer, not a software developer, had infringed its three US patents.

The direct potential risk also residing in OSS for Chinese enterprises (especially for export-oriented businesses) is the following: foreign patentees are good at making use of the rules of the IP game. One of their commonly used strategies is "supplying water to raise fish", that is, when a Chinese business takes up to a ceratin market share, they would show up, accusing the products of the Chinese business of infringing their patent rights. The "Green Dam" case is only the visible part of the huge iceberg.

OSS threat to self-owned patents

Still another misunderstanding of OSS is that such software only requires its source code to be shared with others, and it has nothing to do with the patent owned by the author of the software. In fact, however, many OSS licenses require by far more than that. For example, Article 3 of the Apple Public Source License expressly requires that "you" grant any third party a free and irrevocable license of "any patent you own that covers all revisions of the OSS"[4].

Take the most popular GPL 2.0 for another example, Article 2 (b) of the license provides: "You must cause any work that you distribute or publish, that in whole or in part contains or is derived from the Program or any part thereof, to be licensed as a whole at no charge to all third parties under the terms of this License"[5]. For example, Company A downloads from the internet a software development tool complying with GPL 2.0, and makes some revisions, and puts the revised software on the market along with its products. Under Article 2 (b), any third party (including its competitor) may use, at no charge, the IP rights (including the copyright and patent rights) owned by Aompany A which is used in the revised software to use or distribute the revised software so long as such third party is willing to abide by the provisions of GPL 2.0. As a result, the business competitive edge Company A has acquired by virtue of its IP rights (especially the patent rights) will be much weakened.

The direct existing risk that OSS poses to Chinese enterprises (especially to export-oriented businesses) is that some Chinese enterprises (especially export-oriented businesses) which have improperly used OSS have already licensed, or are licensing, their hard-won patents to others (including their foreign competitors) at no charge without their being aware of it at all. When conflicts between interests arise in the market in future and the businesses need to resort to the power of their patents, their competitors will claim that they have long been granted a free license on the patents by Chinese businesses according to the terms of the OSS license.

OSS risk management

With the abovementione d risks OSS posed to patents, does it mean that Chinese businesses should refuse to use OSS? The answer is obviously no.

The intrinsic advantages of OSS are low cost (free license), high quality (for errors are quickly corrected), rapid improvement, no need to start from scratch (launch from others' shoulder), and ready availability of source code. All the advantages well suit the practical situation in China, and ensure that OSS will play a large role in the process of China's modernisation drive. What needs to be done is the risk management of OSS, so that proper OSS is to be used in proper products.

In China, large and medium-sized enterprises (including non-software corporations, especially those have relative strong patent portfolio) should put in place a set of procedures to manage their use of OSS if needed. Small and medium-sized enterprises (especially those making products with unique features) should be fully aware of the fact that there is no free lunch anywhere under the sky, be proactive in seeking external professional help in their use of OSS lest they would give away their own IP rights (especially their patent rights) to their competitors "free" while enjoying the "free lunch".

A common procedure for managing the risks of OSS comprises the following steps:

Step 1: Whether the outcome or result of use of OSS would be released outside the company. If not, further examination is unnecessary, as is the case with use of OSS to develop a internal product demonstration or IT platform for in-

ternal corporate use.

Step 2: If the outcome or result of use of OSS would be released outside the company, it is necessary to examine the conditions or terms of the OSS license. If the license allows users to retain their own property rights (as in the case with the MIT license), then the software may usually be used. But if the OSS license is likely to force a users (re-distributors) to license, at no charge, their IP rights (including the patent rights) (as is the case with the GPL license), then staff managing OSS should be careful in reviewing the conditions or terms of the OSS license.

Step 3: If it is found from the examination of the conditions or terms of the OSS license that the license will possibly cause detriment to one's own patent, it should be further decided whether or how to use OSS according to the functional features of products and one's own patent portfolio.

If a business owns the patent for some functional feature of a product, use of OSS to implement said functional feature should be avoided as much as possible. In particular, OSS that is possibly detrimental to one's own patent for the product should not be used.

Here, it needs to be emphasised that differentiating functional features of a product are the significant point of distinction from one's competitor's product of the same class. This is where one's competitive edge lies, and, of course, and the functional features your competitors would seek to transplant to their own products. The differentiating functional features are usually generated gradually in the course of the products development, and applications are yet to be filed for patent therefor. Consequently, they are prone to be disregarded in the risk analysis in this step. For the differentiating functional features of products, OSS should be strictly prevented from being used to implement this function. Meanwhile, OSS managing staff should work closely with product developers and patent engineers to identify and determine, in a timely manner, the differentiating functional features of products, and seek patent protection for them in time whenever necessary.

Step 4: After making the preceding analysis, if one tends to use some OSS for developing a new product or some functional features of a product, he needs to further analyse the third party patent risk the OSS would bring about. Since the OSS is with "openness", it is often known online that use of a ceratin OSS would associate with certain risks from a third party patent, and may be further searched on the internet. Also, a comparison may be made between the function module of the OSS and a known third party patent (especially a competitor's relevant patent) to identify the potential IP infringement risk.

Step 5: Weighing upon the competitive edge that use of OSS may bring and the infringement risks, if it is decided to use OSS for some products, then, when the product is about to be put on the market, the use of the OSS in the product should be published strictly in the form as required by the corresponding OSS license. For example, attach copy of the term of license to the product, and make the source code of the OSS accessible to the public in one way or another.

Conclusion

In conclusion, while making use of OSS, Chinese enterprises should also pay attention to the risks that OSS would bring with it, especially the risks that are likely to be detrimental to their own IP rights (including the patent rights). Today when no efforts are spared to develop our own IP rights in China and to open up international market, further efforts should be made to study and internalise the rules of the "imported" OSS game, so that we can stand firm on, and start from on giants' shoulder, and will never hand over our competitive edge brought about with our own patent rights to our competitors at no charge.

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[1] See http://www.stnn.cc/fin/200906/t20090618_1049092.html.

[2] The full name is GNU General Public License, see http://wiki.lupaworld.com/index.php/GPL2.0.

[3] The China Software Industry Association, Research Report on Open Source Software and IP Rights in Commercial Software, 2005.

[4] See Apple Computer, Inc.: Apple Public Source License Version 2.0.

[5] Free Software Foundation, Inc.: GNU General License GPL 2.0 (simplified Chinese version).