



Exploring the Hidden Costs: Understanding Licence Obligations of 'Free' Open-Source Software

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Abstract: Open-source software, considered generally 'Free' to use to the public, has many hidden costs attached to it when seen in a commercial environment in the disguise of licences. Almost all the software currently available in the market, either free or paid, has some licence attached to it which dictates the extent of its usability and modifiability by the program user. Open-source software does it in the way of setting the steps to be undertaken to maintain openness and ensure the availability of the source code of even the modified software under the same licence, whereas in the case of closed-source software, the company making the software gives out a licence in exchange of a royalty which dictates how software is to supposed to be used, the do's and don'ts of the software and the extent of users of the software. The licence requirements in the case of closed-source software are set by the company making the software. However, even the licences in the open-source community have to pass and accept some guidelines set by the community to maintain the true sense of open-source software. Furthermore, the companies who make the so-called proprietary software use open-source software in the mix to conserve their time and resources but, in turn, find themselves in the web of licence obligations of the open-source software and to fulfil those obligations, have to spend time and resource by also at the end risking the very nature of proprietary software by having to make it Open-source.

RESEARCH METHODOLOGY -

While writing this paper, the researcher investigated the fundamentals of open-source software's licences, gave a detailed account of how they are supposed to function and compared them to those of closed-source software. Also, to conclude, the research paper investigated where the paths of both types of software cross and how one depends on the other despite facing many difficulties doing so and ultimately having to drop the very nature of their type of software.

INTRODUCTION-

Every software ever produced has a backend code, which is the base of the software and is required to make any modifications/add new features/bug fixes in the software. Software in today's time is generally divided into two broad categories: Open-Source Software and Closed-source Software. Open-source software is whose source code is generally available to the user free of cost. Anyone can access that source code to make necessary changes according to the user in the software; the developers of the Closed-source software, on the other hand, do not release the source code to the public as these types of software are generally proprietary. They are paid and licenced to the users on specific terms. Some software programs are free of cost and available to the user, but the user does not have permission to change the software's source code due to its

proprietary nature, and these types of software are known as Freeware software. Open-source software and freeware are terms generally used interchangeably to address free software but have different meanings. Every Open-source Software uses different types of licences under which the software is distributed, which lists the terms and conditions on how the software is intended to be used and redistributed. It is common for various companies to incorporate open-source software in their proprietary software to save time and resources. However, if the practice of incorporating Open-source software in proprietary software is not per the licences of the Open-source software, then the companies could come into deep legal trouble. That is why most companies take the utmost care to comply with the open-source licences of the software they use in their code.

OPEN-SOURCE SOFTWARE LICENCES-

Open-source software is licenced under different types of licences, which provide the general framework on how the software is to be used, limits and lists the requirements for the modification of the software's source code. The licence needs to go through an approval process that makes sure that the licence complies with the Open-source definitions listed by the Open-source Initiative (OSI). The OSI lists ten definitions and additional requirements that a license must comply with to get approval as a valid Open-source Software license. These open-source definitions are as follows-

- i. **Free Redistribution-** The licence shall put no bar on selling or bundling the software with any other software of a different source, and it cannot require any fee for such transaction.
- ii. **Easily available source code-** The program so distributed under the licence shall include the software's source code. If not included, there shall be well-publicised ways for cost-effectively obtaining the software. The available source code should be in such a form that the programmer can modify it, and no deliberate effort against it is allowed.
- iii. **Derived Works-** The licence must allow modifications to the source code and such derived works should be allowed to be redistributed under the same licence.
- iv. **Integrity of The Author's Source Code-** The licence can, in a situation, restrict the distribution of source code in a modified form only if it allows the inclusion of 'patch files' with the modifications for later modifications to the source code at build time. The licence may require altering the name and version of the modified software from the original.
- v. **No Discrimination Against Persons or Groups-** In no way that the licence can discriminate against any person or community.
- vi. **No Discrimination Against Fields of Endeavor-** The licence cannot restrict the use of software in a specific field of endeavour.
- vii. **Distribution of License-** The software's rights to use must apply to all the program users under the licence, even without the need for execution by the said users.
- viii. **License Must Not Be Specific to a Product-** The rights of the program must not depend on the program being part of a specific redistribution. However, the rights shall be available to any user using the product under the licence, even if the program is distributed separately from the primary software bundle within the licence terms.
- ix. **License Must Not Restrict Other Software-** The licence must not have any restrictions upon any other software clubbed with the software under this licence.
- x. **License Must Be Technology-Neutral-** The licence shall not be limited to any one sort of technology or style of interface.

Many approved licences are on the issued list and available on OSI's website. Nevertheless, each licence, even though following the ten guidelines mentioned above, differs from one another. The list contains some popular licences used in many projects and some used in single projects to types of specialised licences created for particular purposes. Some major Open-source licences are Apache License, 2.0, New and Simplified BSD licenses, GNU General Public License (GPL), etc.

A significant difference between the different licences is whether the licence is considered 'copyleft' or not. A copyleft licence requires permission to copy, modify, and redistribute the software to be granted along with the software. Any modification made to any software under a copyleft licence needs to be redistributed/released under the same licence, and make sure that the modified software is equally accessible and open as the original software. GPL is the most popular and one of the most robust copyleft licences. Also, a firm copyleft licence cannot be combined with proprietary software.

COMMERCIAL USE OF OPEN-SOURCE SOFTWARE IN PROPRIETARY SOFTWARE-

It is a well-known and common practice adopted by various companies while developing their proprietary software to use open-sourced software in the mix, thinking why to do the work again if it is already done by someone and available as open-source software on the internet to save time and resources. However, in doing so, the companies bind themselves with the obligations they now need to fulfil as set by the licences under which those open-source software they used were licenced. As mentioned above, some licences require the source code to be available to the public if a variation of the original software is made. It is to be available under the same open-source licence as the original software. However, considering the proprietary nature of the software developed by the companies for their use, this becomes an opportunity for legal troubles if they do not do so, as several organisations in today's time have come forward and sued big companies for failing to comply with the licence requirements and the courts also favouring these organisations. Active steps must be taken to ensure that the modified software is in line with the licence requirements, which take time and resources, bringing out the hidden costs associated with Open-source software in commercial landscapes. Considering this, coupled with the fact that companies sometimes have to release the source code of applications they modified for use, makes it challenging to include Open-source software in their proprietary software.

CONCLUSION-

By looking at all the data mentioned above, even though Open-Source Software seems to be the kind of software with no baggage attached, if we take a closer look into the realities of the software, it would be fitting to conclude that open-source software, though suitable for end-user consumption, in commercial applications using these types of software can be a real pain. The hidden costs of these 'free' software in the commercial world are enormous. However, they still have to use these Open-source software due to their widespread reach in the lives of the common people, who are, in turn, the companies' target market. Also, due to the accessible nature of these types of software, companies still risk including them in their so-called 'proprietary software.' Also, the approach of Open-source software of providing the world with free, open-to-public software with widespread support from the community instead of some single company is remarkable. It is the way forward for the future, considering that these companies are shifting to making their own open-source software to provide people with more and more opportunities to innovate on existing technologies and develop new technologies.

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