Intersection of open source and Web3

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Over the last few decades open source software has become ubiquitous, and is the foundation of numerous products and services. However, Web3 is likely the first sector to be built almost entirely on open source technology; indeed the use of open source software is a critical component of establishing the transparency and security necessary for users to trust an effective decentralized, blockchain-based network. In this article, we examine some of the key attributes of open source software.

In contrast to the various forms of intellectual property, there is no legal definition of "open source software," nor are there attributes of the software itself that make it open source. Rather, "open source software" refers to software that is made available under open source or "free software" licenses. Also, there is no formal definition or requirements for these licenses, and today there are over 2,000 of such licenses available.

However, as a general matter, these licenses make the human-readable source code of the software available to licensees, and grant the licensee broad rights to use, distribute and make derivative works of the software. While there is no restriction on charging a fee for open source software, given that the source code is widely available, and that downstream licensees can themselves freely redistribute the code, most open source software is available at no charge.

It is important to note the fact that even though the source code is made available under a broad license, the original creators still own the copyright in the underlying work.

The fact that the source code is available makes open source software particularly well-suited for blockchain-based projects since it allows users to review the code before trusting these decentralized systems. In addition, the transparency of the source code allows the community to highlight and fix bugs and to build on the work of predecessor projects.

There are two main bodies that have acted as stewards of critical open source licenses adopted by the community: (i) the Free Software Foundation ("FSF") and (ii) the Open Source Initiative. These two groups approach open source from different perspectives, and their respective licenses reflect this dichotomy.

The FSF historically viewed open source (which it termed "free software") as maintaining the original ethos of software development; namely academics and hobbyists who shared source code and believed it should not be proprietary. The family of licenses offered by the FSF enshrines what it has labeled the four freedoms of free software (freedom to (i) run, (ii) study, (iii) distribute and (iv) modify the software available under the license).

These licenses, known under the rubric of the General Public License ("GPL"), and often called "copyleft" license (to suggest it is the opposite of copyright) grant a broad and unrestricted license to the source code. However, in order to ensure that the source code remains free, the license also requires that any modified version of the code that is distributed is done so under a GPL-license or a license it deems compatible with the GPL.

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This requirement has caused concern among companies embedding open source in their proprietary code since it may not be clear whether their proprietary code could now be deemed a modified version of the GPL code that needs to be released under a GPL license; sometimes referred to as the "infection" issue. As a result, in recent years, there has been a backlash by companies against GPL with many not allowing GPL code into their environments.

The open source licenses supported by the Open Source Initiative, such as the Apache license and MIT license, are generally simpler than the GPL, and many only require that the user include an attribution to the original creators and a disclaimer of liability protecting those creators.

Importantly, these licenses — often called "attribution licenses" — do not impose the same requirement as the GPL-family of licenses that modified versions of the applicable code be licensed under any specific open source license terms. This has resulted in these types of licenses becoming more commonly used over the last number of years.

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In the Web3 space, the "risk" of the infection issue is often seen quite differently than in other sectors. Since, as noted, there is so little proprietary code in blockchain based systems, the issue of infection is generally not present. Moreover, many projects want to lean into those licenses, such as the GPL, that maximize open source protection.

That said, some blockchain projects that are also seeking adoption of their technology by non-Web 3 entities (e.g., a traditional financial institution seeking to tokenize certain assets) have been concerned that offering their code under a GPL license will hamper such adoption. These projects will sometimes implement a dual licensing strategy in which the code is available under both a copyleft and an attribution open source license.

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Dual licensing has sparked debate within the open source community with some arguing that this approach suggests there is something "wrong" with the GPL license, and that this reflects prioritizing commercial interests over the principles of openness and community collaboration. Managing a dual licensing approach can also be complex since the project-licensor will not know under which license a licensee is operating.

While the transparency offered by open source software offers many benefits within the Web3 community, it can be a challenge for projects seeking to gain a "first to market" advantage over potential competitors. By releasing the code of their project, companies run the risk that another project can simply and quickly copy their code and launch a similar offering.

As a result, a new licensing model, the Business Source License ("BSL"), has emerged as a purported middle ground between open source and proprietary licenses. Under a BSL, the source code is made available, but its use is limited for a defined period of time to internal or testing purposes. A license is required for any commercial use.

After this defined period, the BSL automatically converts to an open source license, ensuring eventual public use while giving developers a commercial head-start. The BSL has sparked considerable debate with many arguing that its commercial use restrictions deviate from the foundational principles of open source, potentially hindering collaboration and innovation in the open marketplace.

In the decentralized landscape of Web3 and blockchain, open source software remains central to driving innovation and fostering collaboration. As these technologies continue to evolve, finding the right balance between transparency and sustainability will be crucial in shaping the future of digital ecosystems. Through thoughtful licensing strategies and community engagement, the Web3 communities can leverage the power of open source to build more dynamic and resilient systems for the future.

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