



Open-Source vs. Proprietary Software Pros and Cons

Analyze the strengths and weaknesses of proprietary vs. open source software to determine what is best for your business.

White Paper

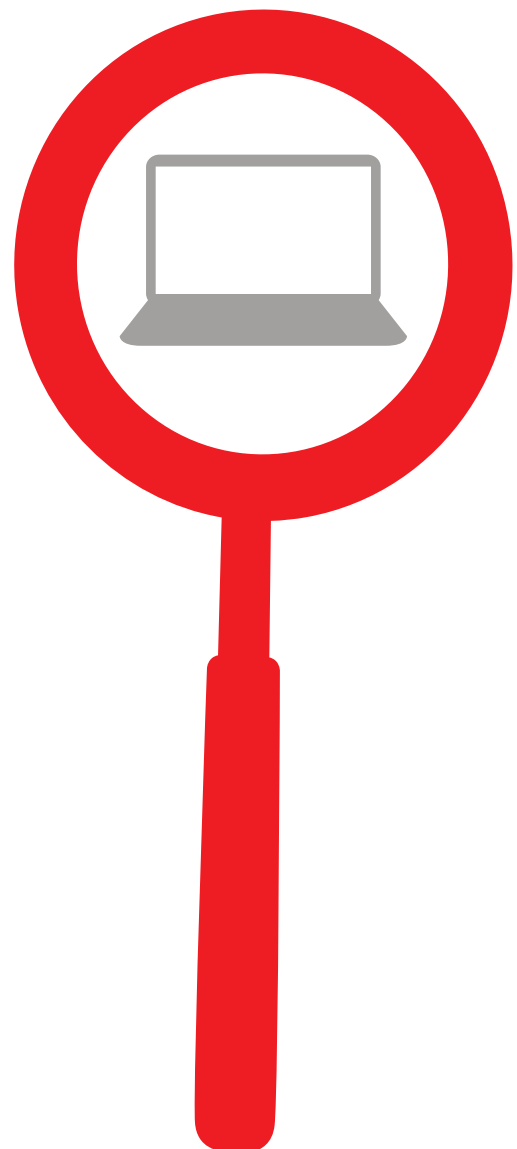
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Weighing the Options Between Open-Source and Proprietary

No single paper can tell you without qualifications which is the best software development model for your organization to adopt: open source or proprietary. As with any decision involving significant complexities, the only thing one can say for sure is “it depends.” What can and will be done here is to provide you with the arguments for and against each class of software and outline other factors you must consider to reach a sound conclusion for your particular situation.

Although many of the characteristics of open source versus proprietary software packages clearly set them far apart, they also share several features too. The idea that proprietary and open source solutions are polar opposites is certainly not true. Software vendors have built proprietary solutions that they have later released as open source. Similarly, there are distributors of license-free, open source packages who also offer a for-profit, licensed and proprietary version built upon the original open source platform.

It might be easier to think of open source and closed source as simply distinct software development methodologies that naturally create their own contexts of interaction based on their underlying philosophies. In any case, here is plenty of food for thought upon which to make your own decision.



Pros and Cons of Open-Source Software

There are two types of open software:

- Project/Community open source is developed and managed by a distributed community of developers who cooperatively improve and support the source code without remuneration. These projects may be copyrighted by the contributors directly but larger projects are typically run by non-profit foundations. Well-known examples of community open source projects are Linux and Apache Web Server.
- Commercial Open Source Software, or COSS, is distinguished by open source software of which the full copyright, patents and trademarks are controlled by a single entity. The owner only accepts code contributions if the contributor transfers copyright of the code to this entity. They may distribute their software for free or a fee. Their business model typically includes revenue from providing technical support and consulting services. In terms of revenue from licensing, Red Hat is still the largest COSS company, but Facebook is the largest COSS code contributor.

PROS

1 Free to Try Before You Buy

Community open source is completely free to anyone to download, including source code, for evaluation. Even COSS vendors usually have a free version of their software packages, which includes source code. In fact, much open source software, especially OSs, are available as “live” media, which means you need not actually install the software but instead run it directly from a DVD or USB flash drive.

2 Free Support

Whether an open source package is being evaluated or integrated commercially, it has the same global community of users and developers available for asking questions and advice. Support includes detailed documentation, forums, wikis, newsgroups, email lists and live chat. None of this costs anything except time.

3 Open Standards

Open source communities are leery of proprietary standards, preferring instead to adhere to open standards around communication protocols and data formats. This aspect meaningfully improves interoperability within and between open source and proprietary software including OSs, which in turn means a high level of interoperability for business and customer applications as well.

4 Fewer Bugs and Faster Fixes

Because large open source software projects can literally have millions of eyes examining the source code, there is a much higher probability that more bugs are exposed compared to the code from a proprietary vendor with a far smaller development staff. Furthermore, open source communities are typically quick to implement a fix or report a workaround. Additionally, since the source code comes with the software, customers are free to apply their own patches at will.

5 Better Security

A side effect of the above point is that open source software is more secure overall. Since the security of proprietary software vendors depends to some extent on their source code being opaque, it does not follow that security bugs are not present in their software. It is more probable that the security holes have simply not been found yet.

6 Avoids Vendor Lock-In

Except in the case of COSS, there is minimal reliance on a single vendor or group for continued improvements, maintenance and support for open source software. Additionally, since the open source community is distributed and diverse, there is little risk that you will end up holding orphaned software, which would be the case if the proprietary vendor were to fold or abandon their project.

|| CONS

1 Reduced Competitive Advantage

If an enterprise is also a software vendor, then building products on open source code affects the revenue model for the enterprise's software depending on the open source licensing agreement. Also, an organization's core competency could be partially diluted if the value of the proprietary code built on top of the open source platform is not enough to offset the lowered barrier to entry of competitors that could build a similar product on top of the same open source code.

Pros and Cons of Proprietary Software

PROS

1 Usability

Commercial, proprietary products are typically designed with a smaller scope of features and abilities. They are focused on a narrower market of end users than those products developed within open source communities. Commercial vendors' users may include developers utilizing a firm's APIs and libraries, but they are just as often to be composed of application users more concerned with ease-of-use and functionality than how those aspects are accomplished behind the screen.

2 Product Stability

Proprietary software vendors must, if they are to survive, maintain tight control of their product roadmap. Their products are designed from the start to nurture a long and prosperous future with many paid upgrades along the way. Putting aside the arguments that proprietary software can become stale if not re-architected at regular intervals, in general it exhibits a stability that often exceeds that of open source software.

3 Ownership

A company building upon proprietary software may pay a bigger fee for acquisition, but typically that acquisition includes full rights to the ownership of their own software product and the expectation that the vendor will promptly supply them with updates, bug fixes and revised documentation as new product versions are released.

4 Tailored Support

Customer support packages from larger closed source vendors are specifically designed and fine-tuned for their own products over many years. Since the scope of their software is typically narrower than that from open source projects, training and after-sale support is more complete, accessible and succinct. There is a huge difference between posing questions in an online open source forum compared to receiving support directly from technical reps or consultants from a proprietary software firm, especially at integration time.

|| CONS

1 Dependency

Customers of closed source software companies are more or less at the whim of where their software supplier wants to take them. They have minimal influence, unless they are their number one customer, of influencing the vendor's priorities, timelines and pricing structure. To change vendors once their software has become embedded within your enterprise is likely to be prohibitively expensive.

2 Software Opacity

By definition, the internals of closed source software are closed to viewing. Users of this software are unable to modify the code let alone debug it effectively. They are only able to supply error codes, messages and dump stacks to the vendor and wait for a fix if there is no existing workaround or patch. Such fixes may not be anywhere near the top of their priority list. This opacity also means that it is usually more difficult for customers to make customizations or optimizations in their final product.

Situations When Closed Source Wins over Open Source

- When end users are not software developers – Open source software, such as Linux, has a well-deserved reputation for being designed for and by geeks. Its UI/UX is typically not plug-n-play and often requires the use of command line tools.
- When SaaS is what you really want – Many cloud services can offer the same functionality and support as closed source on-site software on a pay-as-you-go basis that is far less expensive than buying proprietary packages for in-house use.
- When you need full driver support – Proprietary hardware drivers are typically developed with close cooperation of the hardware vendor and thus, they perform better. Open source packages often have missing drivers or use generic ones by default.
- When the choice is between a small open source vendor and an established closed source vendor – In this case, the risk that the smaller open source project is abandoned or takes a sharp detour is greater.
- When the closed source vendor has better support – All other things being equal, quality and longevity of support should be a critical criterion. Cost for support should be secondary.
- When open standards are less important than de facto standards – Microsoft has never been known to be the first in line demanding open standards. Yet, because of their market share they set many de facto standards. Depending on the market your enterprise targets, a closed source de facto standard may be more important.
- When indemnity matters – For business-critical applications, you will probably want the assurance of performance that a commercial organization brings to the table.

| Summary

At this point, you understand that the distinction between open source and proprietary software is not that one is free and the other is not. They are each based on differing philosophies, methodologies and business models. These fundamental factors are what lead to their separate sets of pros and cons. These must be weighed within the context of each individual software development process.

By the way, overall cost is a secondary consideration of companies that choose to adopt open source platforms. That factor typically comes up as no. 2 in surveys. The number one reason is the belief that the open source software chosen is technically superior to software from proprietary vendors. The answers on that point very likely differ depending on the business and market of the respondent however.

From a big picture point of view, the basis of a decision to adopt one over the other is an example of the classic tradeoff between flexibility and usability. Open source software is, almost by definition, more flexible but requires more effort to use, whereas the opposite is true for proprietary software in general.

You can build a house by having all the raw materials dumped on the lot and then build whatever you like as you go along. Or, let a third-party design, architect and build the house and hope that it suits you. In the latter case, you enlist the architect and builder to correct problems, but in the first case, you must fix deficiencies yourself, which may be your preference.

Many enterprises are successful with either approach and many utilize both approaches simultaneously. Neither choice can ever be said to be the absolutely best, but currently open source is gaining ground over proprietary solutions in some areas. Whereas most companies are quite familiar with closed source software, new adopters of open source solutions should monitor progress and fairly compare the advantages and disadvantages for themselves.

About Optimus Information

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