White Paper

Open Source vs. Closed Source (Proprietary) Software

- "There has been considerable discussion and debate with regards to the pros and cons of open source and closed source software. Understanding the benefits and pitfalls of both types of applications can help you make a more informed decision when it comes to the development of your next website."
  – **Sam Saltis**

Introduction

The aim of this report is to provide a greater understanding of the differences between open source and closed source (proprietary) software, and the advantages and disadvantages of each to enable a more informed decision making process when it comes to choosing between the two.

The main issues that have been raised surrounding the debate include cost, service and support, innovation, usability, and security. As such, this report will analyse open source and closed source software with reference to these issues.

1. Open Source Software

Open source software can be defined as software distributed under a licensing agreement which allows the source code (computer code) to be shared, viewed and modified by other users and organisations.

1.1. Cost

Open source software is free. This is a huge draw card, and if your in-house capabilities are such that you are able to implement, train and support at little cost to your organization it may be an attractive option.

Having said that, open source software requires a certain level of technical expertise in order to manage content. It is therefore important to take into consideration the costs incurred once the software is obtained may be substantial unless the resources are already in place to manage it.

Long term costs include the cost of implementation, innovation, the opportunity cost incurred battling with service/support issues, and the costs associated with investment in infrastructure due to a general inability to scale (assuming the organisation will grow and develop and will therefore have evolving requirements).

Notably, open source software providers are increasingly charging for add-ons, additional services and integration.

The total cost of ownership for open source software may roughly equal some closed source options as a result.

1.2. Service and Support

Service is one of the key issues regarding open source software. Open source software relies on its online community network to deliver support via forums and blogs. While there are massive, loyal and engaged online communities that users can turn to, time-poor consumers of today are familiar with the immediate service and support that enables issues to be resolved in a timely

manner, and these communities cannot guarantee the high level of responsive service and support proprietary software can offer.

1.3. Innovation

Open source software enables innovation by providing users with the freedom and flexibility to adapt the software to suit, without restriction.

However, innovation may or may not be passed on to all users of the software. It is a user's prerogative whether they wish to share their innovation with any online communities, and users must be actively participating in these communities to become aware of such innovations.

It has been debated whether customized changes to the original source code limit the future support and growth of the software, as these can potentially result in a limited ability to apply future updates, fixes or modules aimed at improving the software, leaving the user with a version that may have irresolvable issues.

It is relevant to note that open source software providers generally struggle to attract large scale R&D.

1.4. Usability

Open source software has been highly criticized for its lack of usability, as generally, the technology is not reviewed by usability experts and does not cater to the vast majority of computer users.

Open source software is generally developer-centric, and without system administration experience or the knowledge required to manipulate programming language, use of the software and ability to fix errors as they arise is often limited to those with technical expertise.

Furthermore, open source software does not legally require documentation such as user manuals or guides, hindering the creation of such tools. When documentation is provided, it is often general, containing implicit jargon, inhibiting learning. Without adequate documentation users must rely on alternative means such as online communities, assuming they are capable of finding them and the problem is one others have encountered or are willing to help resolve.

These obstacles are deterrents, but are not insurmountable.

1.5. Security

Open source software is often viewed as having security issues. New data from Forrester Research has shown that 58% of IT Executives and technology decision makers in large companies are concerned about the security of open source software.

Open source software is not necessarily developed in a controlled environment. While big players often have a concentrated development team, oftentimes the software is being developed by individuals all over the world who may not work on the software for the duration of its developing lifetime. This lack of continuity and common direction can lead to barriers to effective communication surrounding the software.

Furthermore, open source software is not always peer reviewed or validated for use. While users are free to examine and verify source code, the level of expertise required means that it is entirely possible for a programmer to embed back door Trojans to capture private and confidential information without the user ever knowing.

Adopting a reputable brand with a concentrated development team supported by a strong online community will reduce the potential risk.

2. Closed Source Software

Closed source software can be defined as proprietary software distributed under a licensing agreement to authorized users with private modification, copying and republishing restrictions.

2.1. Cost

The cost of proprietary software will vary from a few thousand to a few hundred thousand dollars, depending on the complexity of the system required. This cost is made up of a base fee for software, integration and services and annual licensing/support fees.

This cost may be prohibitive for some; however what the user is paying for is a more customized product from a trusted brand that includes higher levels of security and functionality, continuous innovation, a greater ability to scale, ongoing training and support and a lower requirement for technical skills. In order to support these elements and maintain high availability websites, a mechanism must be in place to recoup the costs.

As mentioned previously, increasingly open source software providers are also charging for add-ons, additional services, and integration, reducing the gap in cost between the two options.

2.2. Service and Support

If the internet is an important channel for an organisation, software is often a secondary concern, with service level and support structure requirements taking precedent in favour of maximising uptime and minimising downtime. Service is probably the greatest advantage of using proprietary software. Proprietary software providers offer ongoing support to users, a key selling point for users without technical expertise.

If the user manual or guide is not enough, or if a user experiences a problem with the software, there is an immediate point of call to turn to for assistance. There is a certain reduction in the risk undertaken with proprietary software because users are working with companies that are viable, and people with intimate knowledge of the products and services being used should any questions arise.

Because service is one of the main reasons users choose proprietary over open source software, many proprietary software providers compete on service, increasing the bargaining power of buyers and thereby increasing customer service levels among providers.

2.3. Innovation

Proprietary software providers do not allow users to view or alter the source code. While this may be viewed as a disadvantage to some, it ensures the security and reliability of the software. Furthermore, many proprietary software providers customize software for specific users to provide more flexibility while investing in R&D in order to regularly offer new products and upgrades.

Moreover, proprietary software providers have online user communities that create value by sharing ideas, strategies and best practices through feedback mechanisms such as forums and surveys, which also foster innovation and allow the product to adapt with changing needs.

This innovation comes fully tested, and is available to all users of the software. It does not require investment in R&D or the technical understanding of source code, and assistance with implementation is generally part of the package.

Because vendors must ensure their software does not become redundant, users also benefit from the type of targeted innovation undertaken- continuous investment in R&D rather than "innovation for innovation's sake", business focused rather than technology focused.

2.4. Usability

Proprietary software generally employs expert usability testing, and as the software is normally aimed at a more targeted audience, and therefore more tailored, usability is generally ranked quite high.

In addition, detailed user manuals and guides are provided. This enables faster training and provides an immediate reference, allowing users to move along the learning curve more quickly.

Supporting services include seminars, targeted training courses and extensive support to help maximise use of the software.

It is also important to note that while many people see proprietary software as "closed", today's proprietary software offers a vast array of mechanisms for enhancement by third party systems and developers.

2.5. Security

Proprietary software is viewed as more secure because it is developed in a controlled environment by a concentrated team with a common direction. Moreover, the source code may be viewed and edited by this team alone, and is heavily audited, eliminating the risk of back door Trojans and reducing the risk of any bugs or issues with the software.

3. Where does coreDNA fit in?

coreDNA is one of the leading proprietary enterprise level website management platforms. Built from the ground up with a focus on business outcomes, coreDNA helps organisations build their brands online.

Our software, infrastructure and support are what set us apart from the rest.

coreDNA's flexible, modular architecture allows enhancements to be made and new features to be launched quickly, as needed. The same technology is deployed across websites, intranets, extranets and micro-sites, allowing for use across multiple channels. With a strong focus on R&D, continuous innovation is passed on to all of our customers as part of the package.

Using the latest in virtualized cloud-based infrastructure, coreDNA can scale for even the most demanding websites, delivering enterprise level performance without the need for capital investment.

Moreover, coreDNA comes as a complete package with ongoing comprehensive training and support from our highly qualified staff, available 24/7 globally.

4. Conclusion

When deciding between open source or closed source (proprietary) software, it is critical to first consider the organization's business internal (resources and capabilities) and external (stable or evolving) environment, and the level of risk the organization is willing to take. The aforementioned issues can then be used as a guide to make an informed decision between the two.

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