Open versus Closed Systems

The participants of tonight's dialog:

CH: Chairman

O: Webmaster expert dedicated to an open-source solution for servers

C: Webmaster expert prefers a commercial, closed-source solution for servers

CH: Thank you for joining tonight's dialog, Mr. O and Mr. C. Today's topic is "who will dominate the world, open-source systems or closed-source systems." We will debate from different perspectives such as cost, service and security etc. Let's start with the most important part, cost. Mr. C, please.

C: Thank you CH. We often heard that open-source system is free. Free Linux, free Apache, free PHP and free mySQL. But are they really free? Probably not.

C: Although software in an open source environment is often free of upfront charge, almost always, as soon as you go to customize the platform to meet your individual business needs, the cost begins to accumulate (Saltis, 2019, "Do You Know The True Cost of Managing a Website."). Cost Open software providers are also increasingly charging for extras like add-ons, integration, and additional services, which can negate any cost-saving advantages in some cases. In the end, rather than being free, you are still paying for a service with open source software (Saltis, 2019, "Comparing Open Source Software vs Closed Source Software").

C: For a Closed Source system, depending on the complexity of the system, the cost can vary between a few thousand to a few hundred thousand dollars, which includes a base fee for software, integration and services and annual licensing/support fees. While the hard cost can be higher, what you get in return is a more customized product from a trusted brand, higher levels of security and functionality, continuous innovation, greater scalability, ongoing training and support and a lower requirement for technical skills. SaaS platforms can reduce the customization cost and update cost by amortizing the cost across the whole installed community ("Comparing Open Source Software vs Closed Source Software").

O: Well, well. One of the main advantages of open source solution is the cost; however, the term "free" has less to do with overall cost and more to do with freedom from restrictions. For example, the Apache web server is very popular due to the fact that is free. Its authors make its source code available to others who would like to view that code, copy it, learn from it, alter it, or share it ("What is open source?"). You can comb through the code yourself and even adapt the software to produce your own customized implementation. This is very advantageous to those who are just trying out web publishing and is still unsure about it. Because of that, Apache is commonly included in a totally free web server solution called LAMP

(Linux/Apache/MySQL/PHP) which is a collection of open source software that would totally handle all of your web publishing needs from the OS down to the scripting language (Joan).

O: If we look upon the “free” open source software from a higher altitude, we can find a geographically widespread community that is able to collaborate successfully and produce a superior piece of software without direct monetary incentives (Weber, 2000). This is a new “production structure” that is somehow unique or special to a “knowledge economy” and will transcend or replace production structures of the industrial era. Eventually it may lead to greater equity between producers and consumers, capital and labor, rich and poor, and everyone may have greater freedom from it.

CH: Good point and smart debate, Mr. O and Mr. C. Mr. C redefines “cost” and Mr. O redefines “free”. You do bring new concepts to our audience. Now let’s move to another important aspect: service. Which service is better, open-source systems or closed-source systems?

C: I think the answer would be more driven by the ecosystem you are in. If you are coding with .NET and ASPX then it does not make sense to stray away from IIS. The user interface is friendly, scriptability is well documented and the overall developer ecosystem is very mature. Likewise, Apache might be a better option for PHP or a Java stack.

C: Open source solution relies on a loyal and engaged online user community to deliver support via forums and blogs, but this support often fails to deliver the high level of response that many consumers expect.

C: Service and support are probably the greatest advantages of using proprietary closed-source solutions. Ongoing support is a key selling point for users with little technical skills and one of the main reasons people choose closed source over open source solution (Reddy, 2015).

O: I don’t want to reject the fact that service is somehow guaranteed by payment. However, open source solutions can also charge money and provide the equivalent or better service than closed-source solutions. In some cases, because an open source license requires programmers to release their source code when they sell software to others, some programmers find that charging users’ money for software services and support (rather than for the software itself) is more lucrative. This way, their software remains free of charge, and they make money from services like installation, training, and troubleshooting. In my opinion, open source solutions are really service oriented. No service, no gain. Therefore, open source solution providers normally have more incentive to offer good service (“What is open source?”).

CH: Ah…, now I know why you redefines “free” in the first round, Mr. O. You are gonna charge us for service here.

O: Yes, the difference between open-source or closed source is not which one is “free”, but whether the source code is open. If you go to a supermarket and choose what to eat tonight, would you prefer a cake that you can see its shape, smell its fragrance or a cake sealed in a box?

CH: Definitely I’ll choose the tantalizing one, I know what you mean.

O: Exactly, this is also service to win customer’s trust, which can’t be provided by closed-source solutions.

C: Hold on, I think sometimes the cake is sealed to preserve its quality. An exposed cake is easy to be contaminated or be rotten.

CH: Yes, I also have this security concern. Will open-source solution be more prone to malicious attack?

C: Yes, with individual users all around the world developing the software, there is a lack of continuity and common direction that prevents effective communication. Once more, the open-source software is not always peer-reviewed or validated, meaning that a programmer can embed a backdoor Trojan into the software while the user is none the wiser. In contrast, closed-source solutions are more secure because it is developed in a controlled environment by a concentrated team with a common direction. This team is the only group that can view or edit the source code, it is heavily audited, and the risk of backdoor Trojans or bugs are reduced (“Comparing Open Source Software vs Closed Source Software”).

O: First, people who break software don’t actually need to look at the source code. For an experienced developer there’s no need to dig into thousands of lines of code to find a vulnerable piece. Secondly, the fact that anyone can read code actually increases your chances of finding and fixing bugs. Open source projects, as a rule, have vibrant communities that continuously support them and check them for flaws. Also, developers care about their reputations, and want to show off code that’s written in accordance with best practices and want to find and fix potential security vulnerabilities. Third, a commercial licence doesn’t guarantee security. For closed-source software the only way is to trust the vendor. But for open-source solutions, you can also take part in code review and then either stick with the previous version, release your own patch, or even disable certain functionality under suspicion until further notice. This guarantees more security (Maryna).

CH: Excellent debates. (To audience) In 2013, Apache had 60% of the market share while IIS and NginX had to compete for the second position (Reddy, 2015). However, as of 2019, nginx share rises to 41.1%, very close to the share of leading Apache. The usage of nginx in the top 10,000 websites is even as high as 67.5% (“Comparison of the usage of Apache vs. Nginx vs.

Microsoft-IIS for websites"). Given both apache and Nginx are open source systems, I think the users have made their votes. (To C and O) Thank you for your attendance today.

C & O: Thank you.

Reference Material

"Comparison of the usage of Apache vs. Nginx vs. Microsoft-IIS for websites." W3Techs. https://w3techs.com/technologies/comparison/ws-apache,ws-microsoftiis,ws-nginx. Accessed on Oct 18, 2019.

Joan, B. "Difference between IIS and Apache." *Differencebetween.net.* http://www.differencebetween.net/technology/difference-between-iis-and-apache/. Accessed on Oct 18, 2019.

Maryna, Z. Vlad, V. "Three Myths Debunked About Open Source Software Security." *RubyGarage*. https://rubygarage.org/blog/open-source-software-security. Accessed on Oct 18, 2019.

Reddy, Pramod. "How does IIS compare to Apache and Nginx?" Quora. Jul. 5, 2015. https://www.quora.com/How-does-IIS-compare-to-Apache-and-Nginx. Accessed on Oct 18, 2019.

Saltis, S. "Comparing Open Source Software vs Closed Source Software." *Core DNA*. Jul. 15, 2019. https://www.corednа.com/blogs/comparing-open-closed-source-software. Accessed on Oct 18, 2019.

Saltis, S. "Do You Know The True Cost of Managing a Website." *Core DNA*. Jul. 15, 2019. https://www.corednа.com/blogs/cost-of-managing-website. Accessed on Oct 18, 2019.

Weber, S. "The Political Economy of Open Source Software." *UCAIS Berkeley Roundtable on the International Economy, UC Berkeley.* Jun. 1, 2000. https://econpapers.repec.org/paper/cdlucbrie/qt3hq916dc.htm. Accessed on Oct 18, 2019.

"What is open source?" *Opensource.com*. https://opensource.com/resources/what-open-source. Accessed on Oct 18, 2019.