

An Introduction to Open Source Software

Surprisingly, the open-source movement has been around for some time; therefore, some history may be instructive. Open-source applications experienced a humble beginning in 1960. The concept offered the customer a dynamic product that could be tailored to meet the needs of their corporation. However, after noticing the considerable profit margin from controlling the source code, the concept of “Open-source” lost its popularity. Currently, customers in the market for new software are considering, and in many instances, implementing OSS in their organizations. The research conducted in this field is limited because of the lack of interest in the previous years and the present comfort zone provided by proprietary software vendors. This page illustrates the history and current predicament in the open-source community.

OSS Overview

The first *open-source initiative* (OSI) began in 1960 when IBM and other competing companies offered mainframe computers with access to the source code; by doing so, it allowed programmers to improve or modify the software. Gonzalez-Barahona (2000-04) reported that in the 1970s, corporations noticed profitability in the sale of software, and began to scramble the source-code of all their applications. The commercialization of proprietary software was the result of this change; soon after, many companies began licensing and marketing their programs to businesses and individual PC owners (Simmons, Vercellone-Smith and Laplante, 2006).

Later in the 1970s and 1980s, Stallman (2007) directed the beginning of a formal OSS movement in the eastern U.S. While on the west coast, the Computer Science Research Group (CSRG) at the University of California, Berkeley was beginning their UNIX projects. Around the same time, in the eastern U.S., Stallman launched the Free Software

Foundation and started the GNU project after resigning as a MIT programmer (Gleason, 2003). The main objective of the GNU project was to create a free operating system with proper legal language to ensure that the software would remain free and thus inspire others to create free software as well.

CSRG improved the UNIX software and built applications using Defense Advanced Research Projects Agency (DARPA) funding. This organization was one of the pioneers of the current day Internet. In 1973, DARPA initiated a program to electronically interlink packet networks of various types to support military command and control. This process was called the Internetting Project and the system was eventually labeled “The Internet”. The protocols that were developed during this project are still used today and referred to as Transmission Control Protocol (TCP) and Internet Protocol (IP) TCP/IP Protocol Suite (DARPA, 2007).

There has been an increase of OSS attention in the media and throughout society as a whole. The new concept of software development has made open-source an almost catch-all phrase. OSS is programming syntax for which the corresponding source and all relevant documentation is accessible for inspection, use, modification, and redistribution by the user. The concept of OSS is not distinguished by any kind of development methodology that developers may use to create open software; neither is the pricing schemes taking into consideration in the comparison process of open vs. closed software. However, there is the assumption that users (in principle) are permitted and able to rebuild the system from the modified sources, and that they have access to the proper tools as well. In the open-source community, the user is authorized to redistribute the modified sources in full or through patches to existing OSS applications, for example, Free Software and the GNU Public License-2 accompanies the same technological system. This study

will also discuss the application types where the license does not allow redistribution of the modified source (Hoepman, and Jacobs, 2007).

As progress continued, DARPA used international hackers to debug, improve, and maintain the code. During the early phases of the project, only members of the CSRG community had access to the source code. However, in the 1980s the organization licensed one of the first OSS programs, called BSD UNIX (Gonzalez- Barahona, 2004). In Beard's (2007) investigation of OSS licensures, it was noted that the copyleft liberties that supported the free use of software modifications and distribution. Copyleft refers to the type of license that attempts to ensure that the public retains the freedom to use, modify, extend, and redistribute a creative work and all the derivative works thereof. An important reason for this research is to illuminate the fiscal burden of copyrights and licensures endured by the institutions using proprietary vs. OSS applications.