Chapter 5.1
Open Source Software Communities

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INTRODUCTION

Open source software (OSS) development has continued to appear as a puzzling and enigmatic phenomenon and has drawn increasing attention as its importance has grown. Relying upon an alternative way to develop and to distribute software, open source communities have been able to challenge and often outperform proprietary software by enabling better reliability, lower costs, shorter development times, and a higher quality of code (Raymond, 2004). Behind the software is a mass of people working together in loose coordination, even portrayed as a rowdy marketplace (Raymond, 2001, p. 1):

No quiet, reverent cathedral-building here—rather, the Linux community seemed to resemble a great babbling bazaar of differing agendas and approaches … out of which a coherent and stable system seemingly emerges only by a succession of miracles.

More precisely, the people behind open source projects have been defined as: "Internet-based communities of software developers who voluntarily collaborate in order to develop software that they or their organizations need" (von Krogh, 2003, p. 14). In contrast to the sacred cathedral-like software development model that gave birth to most commercial and proprietary systems, such bazaar-like communities seem to have based their success on a pseudo-anarchic type of collaboration and developers' interaction (Raymond, 2001). However, in spite of the apparent disorganization of these bazaars, a closer look distinguishes common values and norms that rule them, specific roles that can be identified, similar motives shared by people, and practices that follow patterns. This article highlights key aspects of what forms the communities that support these projects.

Definition of Open Source Software

The basic definition of OSS as expressed by the Open Source Initiative (www.opensource.org) goes beyond the notion of free code. It encompasses broader issues such as distribution and licensing that stipulate free exchange and modification rights of source code (OSI, 1997):

- Free redistribution of source code
- Free redistribution of compiled (binary) programs
- Derived works must be permitted
- Integrity of the author's source code
- No discrimination against persons or groups
- No discrimination against fields of endeavor (e.g., commercial and military uses must be permissible)
- Mandatory distribution of open source license
- License must not be specific to a product
- License must not restrict other software's licenses
- License must not restrict redistribution to a particular delivery technology

A BRIEF HISTORY OF THE OPEN SOURCE PHENOMENON

During the 1960s and 1970s, scientists and engineers in academic and corporate laboratories freely shared, exchanged and modified the software they produced. However, by the early 1980s, software was increasingly shifting from its original shared nature to becoming increasingly commercialized, with licenses that forbade the free sharing of source code. In 1983, Richard Stallman left MIT to found the Free Software Foundation (FSF) with the principle aim of defining and diffusing legal mechanisms and conceptual principles of "free software" (Hars & Ou, 2001; West & Dedrick, 2001). "Free" here refers to freedom, the liberty to do whatever desired with the software. Hence, free software in the open source sense is distinct from "freeware", which is software sold at no price. In fact, one of the explicit rights given to users of "free software" is the right to sell it commercially. It is noteworthy that most OSS is freeware (provided at no charge), but most freeware is not open source (the source code is not provided, and users are forbidden from modifying the program code even if they could).

Stallman's publication of the GNU Manifesto (1985) allowed him to communicate his ideological insights about the nature of software (von Krogh, 2003), and he convinced developers to join him in the GNU Project, whose primary goal was—and still is—the creation of a Unix-like free operating system. ("GNU" is a recursive acronym meaning, "Gnu's Not Unix".) Accompanied by the continuous improvements of networking capabilities and of the Internet, this major step signaled the beginnings of open source practices organized through the formation of virtual communities. In 1989, the Free Software Foundation released the GNU General Public License (GPL) in order to ensure the preservation of certain freedoms in the copies and derivative works of a piece of software. The GPL assures these freedoms via the copyleft mechanism, which permits free copying, modification, and distribution of software, with the condition that any distributed derivative works explicitly accord others the same rights.

In 1991, Linus Torvalds, a 21-year-old Finnish programmer, created Linux, a kernel for a Unix-based operating system that uses the operating system tools created by the GNU Project. Since then, this multi-user/multitasking platform has met tremendous success and is known for being powerful, fast, efficient, stable, reliable, and scalable (Edwards, 1998). In 1999, a survey estimated that the GNU/Linux operating system (popular known simply as "Linux") was the operating system of more than 30% of Internet server sites. A recent release of the kernel (Linux 2.2.10) credits 190 key developers, though the total number of