

Working for Free? – Motivations of Participating in Open Source Projects

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Abstract

The success of the Linux operating system has demonstrated the viability of an alternative form of software development – open source software – that challenges traditional assumptions about software markets. Understanding what drives open source developers to participate in open source projects is crucial for assessing the impact of open source software. This article identifies two broad types of motivations that account for their participation in open source projects. The first category includes internal factors such as intrinsic motivation and altruism, and the second category focuses on external rewards such as expected future returns and personal needs. This article also reports the results of a survey administered to open source programmers.

1. Introduction

The success of Linux, an open source operating system, is currently receiving much attention by software developers and software users alike. Linux is touted as highly stable and reliable [13]. It has steadily increased its market share and has led to a consolidation among UNIX operating systems. To counter the threat from open source software, some commercial vendors have already taken extreme measures. Sun, for example, has switched most of its Solaris operating system to an open-source license, eliminating a significant revenue stream. Furthermore, Linux is not an isolated phenomenon. Open source software has become a viable alternative in many other software markets.

The open source development model fundamentally changes the approaches and economics of traditional software development. Typically, open source software is developed by an internet-based community of programmers. Participation is voluntary and participants do not receive direct compensation for their work. In addition, the full source code is made available to the public. Developers also devolve most property rights to

the public, including the right to use, to redistribute and to modify the software free of charge. This is a direct challenge to the established assumptions about software markets that threatens the position of commercial software vendors.

The open source phenomenon raises many interesting questions. Its proponents regard it as a paradigmatic change where the economics of private goods built on the scarcity of resources are replaced by the economics of public goods where scarcity is not an issue. Critics argue that open source software will always be relegated to niche areas, that it cannot compete with their commercial opponents in terms of product stability and reliability [15], and that open source projects lack the capability to innovate. As commercial companies are looking for adequate responses and legislators discussing its implications on social welfare, they need to understand one fundamental question. That is, in the absence of direct compensations what is it that motivates the participants? Is the image correct that open source developers are highly altruistic people who want to advance the good cause or are there other explanations?

Answering this question requires input from the open source community. In the following, we will first discuss the history and importance of the open source phenomenon. A categorization of the motivations of the open source programmers will then be presented, and the results from a survey administered to the participants in various open source projects be reported. The underlying theories will be discussed together with the results from the survey.

History of open source software

The origin of open source software can be traced back to the 50s and 60s when software was sold together with hardware, and macros and utilities were freely exchanged in certain user forums. In the 80s, as software was increasingly commercialized, Richard Stallmann, then a researcher at MIT founded the Free Software Foundation (FSF) that provided a conceptual foundation for open source software. While his 'GNU manifesto' [23] was