Chapter 11
Review of Open Source Software (OSS):
Advantages and Issues Related with its Adoption in E-Government

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ABSTRACT

The popularity of Open Source Software (OSS) in developing countries is quiet evident from its widespread adoption across government departments and public sector organizations. The use of OSS saves economic resources of cash starved countries, provides an opportunity to promote e-government, and to utilize their resources in other sectors. Many developing countries have a large pool of skilled developers who can modify the source code of the OSS at a very low cost. Many governments in developing and developed countries have switched to OSS which probably encourages others to follow the trend. It was not possible to follow the adoption trend in all the developing countries but the usage of OSS in countries like India, Brazil, and Venezuela provides us an insight. The successful adoption of OSS requires thorough analysis of its advantages as well as the issues associated with it. This chapter will provide an overview of OSS, characteristics of OSS developers, and their motivation to volunteer by contributing in OSS projects, followed by the advantages and issues associated with OSS.

OVERVIEW OF OSS

The term open source software (OSS) was coined in early 1998 and since then it has become a topic of great interest among practitioners and academics because of its potential to revolutionize the traditional software development process. It is very closely associated with the free software movement (FSM) which started in early eighties. When "free software" was becoming popular there was a lot of confusion about the word "free" and it was not getting any serious attention from the business community. Therefore, some supporters of FSM, who advocated the involvement of business community in the movement decided to look for another terminology which could replace it without losing its essence. Thus, open source initiative (OSI), a non - profit organization was formed which took the responsibility of promoting this unique software development methodology. The purpose was to sort out the confusion created by the word "free" and replace it with something that would be acceptable to the companies. Open Source Initiative, a non-profit organization was formed which provided the "Open Source Definition" to clearly define the concept of OSS and remove the misconceptions. The open source definition suggests that other than providing the access code of the software, the distribution terms should also meet the following criteria (www.opensource.org):

1. **Free Redistribution:** The license shall not restrict any party from selling or giving away the software as a component of an aggregate software distribution containing programs from several different sources. The license shall not require a royalty or other fee for such sale.
2. **Source Code:** The program must include source code, and must allow distribution of both source code as well as compiled form. When some form of a product is not distributed with source code, there must be a well-publicized means of obtaining the source code for no more than a reasonable reproduction cost preferably, downloading via the Internet without charge. The source code must be the preferred form in which a programmer would modify the program. Deliberately obfuscated source code is not allowed. Intermediate forms such as the output of a preprocessor or translator are not allowed.
3. **Derived Works:** The license must allow modifications and derived works, and must allow them to be distributed under the same terms as the license of the original software.
4. **Integrity of the Author's Source Code:** The license may restrict source-code from being distributed in modified form only if the license allows the distribution of "patch files" with the source code for the purpose of modifying the program at build time. The license must explicitly permit distribution of software built from modified source code. The license may require derived works to carry a different name or version number from the original software.
5. **No Discriminationagainst Persons or Groups:** The license must not discriminate against any person or group of persons for downloading and using the software.
6. **No Discrimination against Fields of Endeavor:** The license must not restrict anyone from making use of the program in a specific field of endeavor. For example, it may not restrict the program from being used in a business, or from being used for generic research.
7. **Distribution of License:** The rights attached to the program must apply to all to whom the program is redistributed without the need for execution of an additional license by those parties.
8. **License Must Not Be Specific to a Product:** The rights attached to the program must not depend on a specific particular software dis-

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