Chapter 9
Towards Sustainable Development Through Open Source Software in the Arab World

Manar Abu Talib
University of Sharjah, UAE

ABSTRACT

A literature survey study was conducted to explore the state-of-the-art of open source software and the opportunities and challenges faced by this segment of the software industry in seven Arab countries: Tunisia, Egypt, Jordan, Saudi Arabia, Qatar, Oman, and UAE. A framework and road map for OSS is derived and presented from interviews conducted in the UAE with at least four experts from each of the following categories: governments and ministries, IT companies, universities, and IT enthusiasts. This is the first study of its kind in this part of the world and is expected to make a significant contribution to the direction for open source software in the region and beyond.

INTRODUCTION

According to Fitzgerald (2009), "Open source software (OSS) has elicited a great deal of research interest across a range of disciplines since the term was introduced in 1998. Much of this research, however, has focused inward on the phenomenon itself, studying the motivations of individual developers to contribute to OSS projects, or investigating the characteristics of specific OSS products and projects" (Fitzgerald, 2009). He also reports that the need for rigorous research into this process is important for several reasons: 1) recent estimates suggest widespread adoption of OSS: A survey of public administrations in 13 European countries reported that 78% were using open source. 2) A large-scale survey in the US estimated that 87% of organizations were using open source software (Fitzgerald, 2009).

Many Arab countries now possess the most technologically advanced telecommunications infrastructure including access to the multitude of communication technologies available in Western countries. The Global Information Technology Report 2014 a recent survey by the World Economic Forum, reports that in terms of IT spending many Arab countries rank among the highest in the world (The Global Information Technology Report, 2014)

A 2009 survey conducted by International Data Corporation (IDC) found that the Open Source Software (OSS) market experienced a strong boost from the prevailing economic downturn, with worldwide revenues expected to grow at a compound annual growth rate of 22.4%, reaching $8.1 billion by 2013 (Jaspersoft, 2010). The increased quality, reliability, and support services supplied by OSS providers has no doubt contributed to this growth. In a downturn economy, and IT departments under increased scrutiny and pressure to reduce costs many have turned to these providers.

Abu Talib et al. report (2014), as elsewhere in the world, many information systems in the Arab World are proprietary, requiring extensive customization that only a specific vendor can perform due to copyright, licensing, and patent constraints. This demands that organizations allocate a substantial amount of time and money to software debugging, and maintenance. Faced with shrinking financial resources, some academic and research organizations have turned to OSS for fulfilling their information and technological needs. In addition, in order to meet the intrinsically stringent security and privacy requirements, OSS has also proved beneficial for research and development in law enforcement agencies, and in defense, legal and justice departments according to Webopedia (2015).

According to Radtke et al., "there have been attempts to identify factors that influence FLOSS. These have ranged from pure speculation to surveys of developers to case studies using data mined from SourceForge" (Radtke, 2009). Open source developed in the technological community is a response to proprietary software owned by corporations. Our literature survey revealed that, in developing countries, there was no substantial OSS development or deployment strategy in place comparable to that found in developed countries. According to Abu Talib et al. (2014), the developing countries deploy OSS because of the following reasons:

- Valuable way to gain independence from single suppliers.
- Introducing diversity into the software code reduces the possibility of catastrophic failures due to viruses that attack a monoculture of code.
- Edgar Villanueva, a Congressman from Peru sent a letter to Microsoft Peru, he stressed that, in order to ensure the free access for citizens to public information, it is essential that data coding and treatment should not be tied to a particular supplier.
- Essentially, countries must be capable of relying on systems without elements controlled by foreign providers in order to ensure their national security.
- Intellectual property: OSS is "cracked to start with".
- Opens the door for developing country users to customize applications according to the local market specifications.
- Can support developing countries' sustainability.
- An insight into the proprietary software development process and a chance to improve community skills.

On the other hand, to apply the balanced view, there are many advantages on proprietary software (Closed Source Software, CSS) such as

Related Content

Modding as an Open Source Approach to Extending Computer Game Systems
Walt Scacchi (2013). *Open Source Software Dynamics, Processes, and Applications (pp. 177-188).*
www.irma-international.org/chapter/modding-open-source-approach-extending/74668

Performance Evaluation of Xen, KVM, and Proxmox Hypervisors
Sultan Abdullah Algarni, Mohammad Rafi Ikbal, Roobaea Alroobaea, Ahmed S. Ghidukand Farrukh Nadeem (2018). *International Journal of Open Source Software and Processes (pp. 39-54).*
www.irma-international.org/article/performance-evaluation-of-xen-kvm-and-proxmox-hypervisors/213933

Key Aspects of Free and Open Source Enterprise Resource Planning Systems
Rogerio Atem de Carvalhoand Björn Johansson (2012). *Free and Open Source Enterprise Resource Planning: Systems and Strategies (pp. 1-17).*
www.irma-international.org/chapter/key-aspects-free-open-source/60815

Analyzing the Competitive Dynamics in Open-Source Publishing Using Game Theory
Shalin Hai-Jew (2013). *Open-Source Technologies for Maximizing the Creation, Deployment, and Use of Digital Resources and Information (pp. 53-83).*
www.irma-international.org/chapter/analyzing-competitive-dynamics-open-source/70119

Using Open Source Software Components to Implement a Modular Web 2.0 Design for Map-Based Discussions
Michael G. Leahyand G. Brent Hall (2010). *International Journal of Open Source Software and Processes (pp. 30-47).*
www.irma-international.org/article/using-open-source-software-components/51585