Chapter 55

Success of Open Source in Developing Countries:
The Case of Iran

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ABSTRACT

Open Source approach has been recognized as one of the best methods for software development in developing countries. Previous research however underemphasized different aspects of Open Source Software (OSS) success in context of developing countries compared to western context. In this research the authors use exploratory mixed methodology to study measures of and factors affecting OSS success with emphasize on the social and cultural context of Iran. In the qualitative section of the research 13 interviews with experts of the field have been conducted and the result is reflected in the research model. In the quantitative section, five research hypotheses have been evaluated by using data of 109 Iranian projects from sourceforge.net repository. The results indicate that the license type and use of project management tools may affect the success of OSS. The authors finally conclude that OSS research especially in the field of OSS success may lead to different findings in different contexts.

INTRODUCTION

Development in ICT is an essential and fundamental aspect of development which has been increasingly emphasized in research and international guidelines for public and private sectors (UN, 2011). While the rate of ICT failure in developing countries is estimated to be about 50% (Ehikhamenor, 2003) and there is a need for huge amount of investment in software (as well as hardware and network) infrastructures usually hinder the progress of projects, researchers and practitioners are motivated in finding new ways of ICT development to remove these barriers.

Open Source Software (OSS) is defined by open source initiative as the software that allows users to have access to the source code of the software, the freedom to use the software as they see fit, modify the software to create derived works, and redistribute the derivative software for free or at a charge (Open Source Initiative, 2011).This kind of software may be very beneficial to growth of ICT in developing countries in different ways like lower development cost, better quality, and more security.

On the other hand the current structure of the software industry in some less developed and developing countries is dependent on illegal use of software. If such countries decide to accept any of the copyright conventions (as part of their plan to join global economic organizations), they need to make a huge investment in software. Use of OSS may also be beneficial for them in dealing with this problem (Patel, 2005).

In a quest for developing models which cover variant aspects of system development and use, many scholars have developed many models which consist of dependent factors which define individual and organizational measures of effectiveness and independent factors that influence them. The final aim of those models is to provide managers with a comprehensive tool for measuring the usefulness of Information Systems (IS) and better understand how they can improve it (DeLone et al., 1992).

The success measures of IS in general are usually controversial because of different social and technical aspects of IS development which are more highlighted in OSS context. Another reason for this complexity is the fact that attraction and satisfaction in "developer side" is also important in success of OSS (Crowston et al., 2003).

That's why since 2002 remarkable body of research has been dedicated to the success of OSS. Although these studies have led to many beneficial results and today many factors that contribute to success or effectiveness of OSS are known. However there may be still debate about generalizing the models in regard to different contexts especially the context of less developed and developing countries which is remarkably dissimilar to the accepted conditions of OSS development in western countries.

These challenge motivated the presented study into OSS success in the case of Iran a developing country. The history of open source movement in Iran goes back to 1992 (less than 10 years after the beginning of the movement in the USA) with the FarsiTex project in the Sharif University of Technology. The aim was to add the capabilities of Farsi language to the Tex software. Members then joined in 2001 to start a project for localization of the GNU/Linux operating system and related programs called Farsi Linux, a plan led by the Advanced Information and Communication Technology Research Center (AICTC) of the Sharif University of Technology, which were sponsored by High Council of Informatics (HCI) of Iran. The aim was to reduce the country's dependency on proprietary software and reduce the costs of software imports subsequent to Iran eventually joining to the World Trade Organization (WTO).

These activities led to the creation and support of some Persian specific capabilities like bidirectional typing and the Jalali calendar for GNU/Linux. At the same time independent open source projects and communities were developing in Iran. These attempts were mainly focused on localization of well-known OSS software and developing new software and OS distributions. However, despite mentioned breakthroughs, Iranian OSS projects rarely achieved success in developing a business based on open source models.

Based on the specific conditions of Iranian IT industry and by forecasting the costs that attending copyright conventions may cause for both public and private sector in Iran, Iranian government is working on a long term and strategic plan for immigration to Open Source (Khansari, 2009). Initiation of *National Center for OSS*[1], sponsorship of *Xamin Operating System*[2] and new acts by council of ministers are some of the recent attempts

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