Open Source Adoption Index: 
Quantifying FOSS Adoption by an Organisation

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ABSTRACT

This paper reports the preliminary results of a study conducted to assess and quantify the adoption of Free/Open Source Software (FOSS) by organisations and enterprises. While almost all organisations use FOSS in some form today, there is a wide variation in the manner and extent to which they do so, and presently no quantitative measure exists that can capture the true picture. The present work has built a model with two sets of parameters that, when fed with relevant data about an organisation, generates a single number, the FOSS Adoption Index (FAI), for that organisation. The index is so defined that the higher its value for an organisation, the greater is the extent of FOSS adoption in that organisation. Beyond the single measure FAI that gives a coarse assessment, the model also allows drilling down to finer levels of granularity that provides deeper insights into the status and role of FOSS within a given organisation. Primary data collected for two classes of organisations through questionnaire based surveys and interviews have been used to demonstrate the working of the model as well as its potential usefulness for real world situations.

Keywords: Adoption Index, FOSS, FOSS Policy and Management, Maturity-Model, Open Source Adoption

INTRODUCTION

FOSS (Free/Open Source Software) has grown in leaps and bounds during the last two decades, and has been seeing widespread adoption in domains like E-governance, SMEs, Education and Research, etc. A survey of public administrations of thirteen European countries done even five years ago reported that 78% were using FOSS (Ghosh & Glot, 2005). Another survey in US conducted around the same time estimated that 87% of organizations were using FOSS (Walli et al., 2005). One of our own surveys of Indian IT Companies completed early this year (NRCFOSS/AU, 2010) showed that all of them (100%) were using FOSS in one form or other, and that about half of them considered FOSS as an option while procuring new software.

While most organisations that use I.T. today are certain to be using FOSS in some way or the other, the manner and extent to which FOSS gets used would vary greatly across organisations. “Squirrel Mail” may be the only FOSS product used by one organisation, while as another

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organisation might have migrated its entire IT infrastructure as well as applications to FOSS. Both the organisations can rightly claim to be using FOSS, though the difference between them in this regard is enormous. Today there is no way of objectively assessing and stating this difference in the ‘FOSS Maturity’ or ‘FOSS Friendliness’ of organisations in a quantified manner, and the aim of the present work is to fill this gap by defining a single number, the FOSS Adoption Index (FAI), to convey the standing of an organisation in this regard. Such measures do exist today for many FOSS products and technologies that convey in a quantified manner their performance, reliability and robustness, extent of documentation and support available etc. to enable a prospective user to assess their suitability for his/her use. Business Readiness Rating (Wasserman et al., 2005), Navica/Golden Open Source Maturity Model (Golden, 2004), CapGemini Open Source Maturity Model (Duijnhouwer et al., 2003), Qualipso (Wittmann et al., 2008) are some of the popular examples of how the maturity of open source products are assessed in a quantitative manner in order to help organisations choose a product for their adoption. There also exists the Open Source Potential Index (Noonan et al., 2008) which has been used to rank countries on two indices (Activity and Potential) based on their usage, adoption and support of FOSS.

The topic of FOSS usage and adoption in different classes of organisations has also been studied earlier by different researchers. We find a case-study presenting the experiences of migrating public administrations to FOSS (Zuliani & Succi, 2004), while another study (Rossi et al., 2006) compared the usage of proprietary and its equivalent FOSS application suite in public administration. Another study (Fitzgerald, 2008) presents successful and unsuccessful deployment of two FOSS applications in an organisation (hospital). A publication by CENATEC (2009) has brought out the results of a detailed study done on the use of FOSS in Spanish Universities. While these studies do reveal significant extent of information on the subject matter, they have not addressed themselves to the task of coming up with a single measure of the ‘FOSS Maturity level’ of the institutions they have studied. The present study attempts to address this gap.

Though the existing models and measures for products etc help in understanding the approaches and methodologies needed to address the issue at hand, they by themselves do not serve the purpose of being able to characterise institutions and enterprises as to their FOSS-friendliness. The data and information relevant to each case that would be collected through surveys etc are different for products, countries and enterprises, and hence appropriate models have to be designed separately for each of them, and relevant indices computed out of them after supplying them with the appropriate data. In other words, a new ‘Maturity Model’ has to be built for institutions and enterprises which would however absorb and utilise many of the ideas that have gone into the existing models and studies cited above.

The remainder of this paper is structured as follows. The next section brings out the motivation for undertaking such an exercise as well as the possible situations where it may be useful. This is followed by a presentation of our approach to the problem and details of the model we have developed. The process of data collection from two classes of organisations and their use in the model to compute the FAI and other parameters are described next. Finally, we present the results, discussion and conclusions in the last section.

MOTIVATION

The present work defines the FOSS Adoption Index (FAI) for organisations and enterprises to measure the extent to which they have adopted FOSS in their functioning and operations, and elaborates on the manner of its computation as well as collection of primary data for doing so. The FAI measure incorporates both the primary adoption (the initial decision to adopt at the organisational level) and secondary adoption (the actual implementation which involves
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