

Free and Open Source (FOSS) Guidelines

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Background

With the onset of Fourth Industrial Revolution (4 IR), it has become critical for countries to focus on the adoption of Free and Open Source Software (FOSS). In many countries globally this has fueled the rapid deployment of FOSS solutions in numerous industrial sectors including the various government sectors due to the innumerable benefits offered by FOSS including high potential for job creation , local software customization, growth of local SME's and IT skills, vendor lock-in prevention, improved security, and reduced licensing, installation and running costs. Many countries are supporting and encouraging the adoption of FOSS like France, Malaysia, USA, China, Germany, Iran, Brazil etc.

FOSS is adopted in various sectors such as Automobile, Oil & Gas, consumer associations, chamber of commerce, stock exchange, management associations, and non-governmental organizations; this trend of adoption is growing towards the peak.

Oman is in the stage of a technological acceleration and one of the key focus of Ministry of Technology and Communication (MTC) will be to lead the same. In this scenario, adopting FOSS culture is very critical for being producers of technological innovations rather than being only the consumers in the age of 4IR. There by positioning Oman to be one of the key and leading FOSS HUB in the Middle Eastern Region.

This evolving IT industry will contribute to attaining the major objectives of the government, which are centered on:

- Job creation,
- Diversification of Oman economy to reduce the current dependence on oil,
- Increase the GDP per capita.
- Contribute towards building knowledge-based economy and bridge digital divides in society.



MTC (previously known as ITA) - has done considerable efforts in conjunction with a number of public and academic institutions, such as SQU and few higher educational institutions over the last few years in the FOSS awareness, infrastructure, and capacity building fronts. Some of the key achievements include:

- Conducting **135+** awareness Workshops
- **3** FOSS applications adopted in schools curriculum (**Saving 2M++ OMR annually**).
- Launch Oman FOSS portal, (www.foss.om)
- Organize **4** International Conferences, (www.fossc.om)
- FOSS R&D infrastructure established through **5** computer labs in HEIs, & FOSS **Gateway** (mirror.squ.edu.om).
- **3,220+** Trained on different applications of FOSS (**200+** certified).
- Organize two flagship FOSS development programs:
 - **Oman Summer of code (174 candidates) (5 SMEs) (58% employed)**
 - **House of Open Source Technology (1 Open programming Library , 10 contributions to FOSS packages)**



Introduction

Many countries worldwide are strongly encouraging and supporting the adoption of Free and Open Source Software (FOSS) in the public and private sectors for its increasing advantages. This has boosted the rapid deployment of FOSS solutions in numerous industrial sectors due to the benefits offered by FOSS including high potential for job creation through local software customization, growth of local SME's and IT skills, vendor lock-in prevention, improved security, and reduced licensing along with the reduction in installation and running costs.

It was found that the trend of using FOSS is even extending to more partners from non-ICT areas such as consumer associations, chambers of commerce, stock exchanges, management associations, and non-governmental organizations that are showing an increasing interest in many countries for FOSS adoption.

Therefore, the concerned governmental sectors are prompted to support a planned deployment roadmap of FOSS and get benefits of the numerous advantages offered and, at the same time reduce the number of concerns from the use of Proprietary Software (PS), mainly the high licensing fees imposed during the purchase as well as the upgrade of the proprietary software.

These guidelines is based upon a research study conducted by SQU (Sultan Qaboos University) in collaboration with MTC (Ministry of Technology & Communications) which was requested and funded the study. Hence, it is the mandate of MTC to finalize, approve and release these guidelines. Furthermore, in order to enhance the practicability of this document MTC will closely work with Sultan Qaboos University along with the Higher Education Institutions, Government and Private sectors.

Henceforth, this is a government strategic direction to adopt FOSS.



Scope

The scope of this document covers the following areas:

- Procurement
- Public sector capability
- Reusability
- Maturity and sustainability
- Open standards

Target Audience

These guidelines are made for the Public sector of Oman i.e. government agencies or organizations that have 40% or more government stakes can refer to these guidelines.

Objectives

The main objective of FOSS adoption guidelines is to guide, facilitate and support Government agencies for the smooth and seamless procurement of new IT solution, so that government agencies can get good value for the money. In order to achieve goal for FOSS, four (4) principle areas are to be considered during the procurement process:

1) Interoperability

Government agencies in Oman are recommended to use (procure) solutions and application that use open standards and specifications, so that interoperability is achieved and addressed. It is vital for a product/ software to have interoperability feature, thus this product/ software/ application can communicate or co-exist in a live environment.

2) Transparency

To achieve transparency in procurement, it is recommended to adhere/consider these guidelines developed for Government sector. Also, in procurement, the tender specification should not



contain any indistinctness or inconsistency. Furthermore, the availability of source code should be catered whenever possible.

3) Security

Security is an important concern in adoption of any solution. So whenever a solution is procured has to be assessed with security concerns. Even an agency can go to the extent to get it assessed by a third party, by making sure that Privacy, IP, Confidentiality, Integrity and Availability are not compromised and when it will be used, then the overall security will not be compromised.

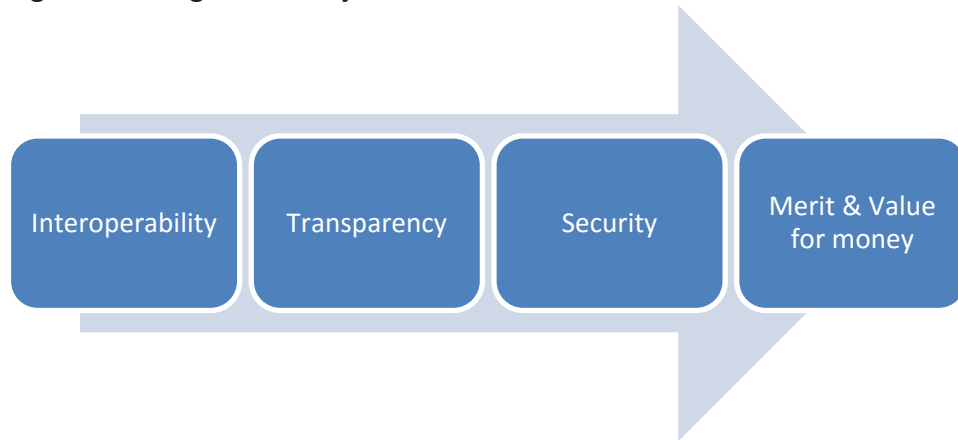
4) Merit and value for money

Total cost of ownership (TCO) including any initial development cost, training cost, operation cost, support, maintenance and licensing cost throughout the whole lifecycle of the solution is the factor for procurement of any solution.

Solution should be vendor neutral and any hidden cost should be clear and evaluated as part of Total cost of ownership i.e. scaling cost, maintenance and software assurance cost, updates, backup cost etc.

Government procurement should give equal opportunities for FOSS and proprietary product to compete and therefore procurement decision is based on merit, functionality and value for money.

Figure showing: - FOSS objectives





Principles

In order for government entities to adopt FOSS, following are the guiding principles for the procurement or renewal of any IT solutions:

- (1) Government tenders for procuring any IT solutions or services should be technology neutral. Avoid mentioning directly or indirectly any vendors technology/solution and let it be a market force exercise and activities.
- (2) Actively and fairly consider FOSS solutions alongside with proprietary ones in making procurement decisions.
- (3) Procurement decisions will be made on the basis of the best value for money to the business requirement. Decision makers should take into account the total cost of ownership of the solution, including exit and transition costs, after ensuring that solutions fulfill the minimum and essential capability, security, scalability, transferability, support and manageability requirements.
- (4) Where there is no significant overall cost difference between FOSS and proprietary products, FOSS will be considered on the basis of its additional inherent flexibility and non-exclusivity.
- (5) In case proprietary software is procured then Government organization needs to estimate and evaluate the exit criteria and any cost (if any)
- (6) The public organizations will use open standards in their procurement specifications and opt for solutions that comply with open standards.