Implementation of free software systems

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Acknowledgements

Introduction

In recent years, the technology market has witnessed an increase in its production rates. This development has brought with it a technological revolution in information that can be observed in many areas of everyday life, particularly in society and the economy. A new market constructed on the popularisation of computers and public access to the Internet.

This technological democratisation was spied as a business opportunity by many software producers, which split the original trend towards releasing source code, creating a new branch of proprietary models based on payment for use. Nonetheless, the characteristics of free software philosophy have remained untouched over time: the collaboration of a community located in different parts of the world on the creation, improvement and redistribution of quality, robust, secure and reliable software.

In the last decade, many obstacles have been overcome to extend the democratisation of free software to the home and business environments. Moreover, its academic and teaching application is no longer restricted to a handful of university faculties. In fact, many schools now see free software as a philosophical, economic and operating model suited to their aims.

The success of free software has generated a large market of solutions with very diverse aims. There are now many areas with not one but several products based on free software. This trend is particularly evident in the operating systems market, which, besides offering the usual features for general use, specialises in providing a response to specific hardware features (for example, support to x86 or SPARC architectures) or in implementing specific functions in a given area (for example, support to scientific software or optimised security management). In all events, the primary aim is to maximise adaptation and performance in products that can be implemented directly, thus generating benefits for the end user.

The popularisation of technology and the success of free software have given rise to a new stage with new actors. Technology has become a strategic component in organisations, allowing them to reach their aims efficiently and effectively. The complexity of this stage increases in line with market demands, which perfects free, valid and viable solutions so that they can be implemented directly for any purpose.

In this context, the importance of implementing software with the characteristic rigour and methodology of scientific and technological circles becomes clear.

Nonetheless, this type of implementation should not be viewed from a strictly technological or business angle. We must also take into account the philosophy behind the free software movement, since these systems are normally implemented due to a combination of technological, philosophical, economic and practical reasons.

A methodical execution and management of the systems implementation project is essential if we are to meet the strategic aims of the organisation while also controlling the complexity and risk inherent both to the project and to the implementation environment or context.

The aim of this subject, "Implementation of free software systems", is to provide students with the knowledge required to successfully create, manage and execute projects implementing free software solutions in very diverse organisations.

The materials have been designed to provide a conceptual, methodological and practical response to the inherent complexity of systems implementation, training professionals to implement these systems in a range of contexts and situations with guaranteed success. Nonetheless, we need to remember that any project based on free software must be seen first and foremost as a software project and subsequently as an engineering project, so these materials cannot and should not act as a substitute for the necessary knowledge of these topics.

The subject is split into two teaching modules that gradually introduce the main concepts of systems implementation and free software from two markedly different points of view.

The first module deals with systems implementation from an entirely conceptual and methodological point of view. This module is divided into three units, the first of which introduces systems implementation projects as strategic actions within organisations, provides a rough classification of the different project typologies and details the main features of the functional and operational management of the projects.

The second takes a close look at free software projects from a methodological angle, detailing the main stages and phases of the life cycle of the project that should culminate in the successful implementation of a free software system in an organisation.

The third and final unit presents the free software business in three specific points: describing and detailing profitable, valid and viable business models; indicating the basic features of the plan for setting up and managing free software companies; and specifying the features of the planning and

organisation of free software production. This module has two appendices, the first covering the main licence models and the second indicating the most common open standards.

The second module is devoted entirely to the analysis of four successful case studies with free software implementation, two private and two in the public domain. Firstly, we present the case of Spain's autonomous region of Extremadura and its global project of technological actions to spread the use of the Internet, e-government, education and network integration and support to the new economy.

Secondly, we look at the Federal Government of Brazil and the diverse actions it has taken for the digital inclusion of the country's citizens and to increase both the skills and participation of citizens in new technologies.

The third case looks at the multinational Sun Microsystems and its embracing of free software and open standards, demonstrating the compatibility between collaboration with the free software community and business for profit.

Our fourth and final case is Cometa Technologies, an SME offering solutions based on the use of open source tools and open standards, formalising a business model that ranges from development and integration to consultancy and training.

We hope that the combination of the conceptual and methodological approaches of the implementation projects of the first module and the detailed practical description of the different case studies in the second module will enable you to understand the specific features of the implementation of free software systems.

Amadeu Albós Raya
Óscar David Sánchez Jiménez

Objectives

The aims for students of this subject are:

1. to know the basic concepts of the implementation of free software systems;

2. to be able to identify the different types of project to implement free software systems;

3. to be familiar with the project management areas and their specific features in application to free software;

4. to know the main concepts of free software projects and the phases of their life cycles;

5. to learn how to draft a free software project proposal;

6. to obtain a deep knowledge of the features of free software migration projects;

7. to learn how to plan and execute free software migration projects;

8. to know the business models used by free software companies;

9. to become familiar with the items of business plans and apply them to the creation of a free software company;

10. to know the main aspects of free software production;

11. to become familiar with the different bodies and free software projects carried out by the regional government of Extremadura;

12. to become familiar with the different bodies and free software projects carried out by the Government of Brazil;

13. to understand the social impact of free software and its potential for bridging the digital divide;

14. to become familiar with the development methodology of projects put into practice by Sun Microsystems;

15. to be aware of the advantages that participation in free software projects offers to companies; and

16. to confirm the viability of free software business models through the case study of Cometa Technologies.

Contents

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