

An Analysis of COSPA – A Consortium for Open Source in the Public Administration

Lorraine Morgan
University of Limerick, Limerick, Ireland
Lorraine.morgan@ul.ie

Abstract – This paper reflects on a two-year EU funded specific research targeted project that officially began in January 2004 entitled COSPA, a Consortium for studying, evaluating and supporting the introduction of Open Source Software and Open Data Standards in the Public Administration. COSPA focuses on office automation and desktop system software and aims at rigorously measuring the effort, costs and benefits of a transition to Open Source. The project involves 15 European Universities and Public Administrations from Italy, Hungary, Ireland, Denmark, UK, Belgium and about sixty observers, including the University of Alberto (Canada), Victoria University of Wellington (New Zealand) and the United Nations Educational Scientific and Cultural Organisation (UNESCO).

I. INTRODUCTION

Public Administrations (PAs) are the among the biggest computer and software consumers world-wide and every year spend a substantial amount of money on commercial off-the-shelf software licences [1]. By using appropriate technologies, such expenses might be either dramatically reduced or re-routed to further develop local business ecosystems. The Consortium for Open Source (OS) and Open Data Standards (ODS) in the Public Administration (COSPA) is a two-year EU funded specific research targeted project that officially began in January 2004. With funding of €2.6 million through the Information Society Technologies priority of the EU's Sixth Framework Programme (FP6), the project aims at studying and supporting the introduction of open source software (OSS) in the Public Administration.

To do this, COSPA will deploy open source and open data source desktop software (ODS) solutions in several European PAs and carry out a cost/benefit analysis on them. It will also build a European, multilingual knowledge base and it will run a series of workshops at regional and European level to communicate the results and experiences of the study. The project also attempts to address perceived barriers to the adoption of open source software specifically: cost of data migration, interoperability and integration problems with existing infrastructure, personnel training, concerns about support, maintenance and future proofing. Apart from potential savings on software licences, COSPA believes that using open source software may offer better versatility, adaptability and transparency. The project's goal is to carry out an empirical and objective evaluation of how much it will cost to use OSS and identify what the main problems are if PAs decide to use it.

The Consortium consists of 15 European universities and public administrations from Belgium, Denmark, Hungary, Ireland, Italy and the UK. The structure of the consortium is centred on university-PA couples in order to

constantly follow the evolution of the transition to OSS [2]. One of the Irish project partners, Beaumont Hospital, is already well advanced in their use of open source software and is estimated to make savings of €13m over the next five years [3].

The paper is structured as follows. In Section II an analysis of the COSPA project is given which includes the source of the idea, the key organisations in the project and their role, the business and technology strategy, the intellectual property rights and the market and commercial issues. In Section III the developmental issues and stages of the project will be observed. The value chain of the project will be examined to establish how well each section operates and whether there is room for improvement in those areas. Based on the author's familiarity with the project and informal interviews carried out with several of the project researchers in the University of Limerick, some recommendations are provided. Section IV concludes.

II. OVERVIEW AND ANALYSIS OF THE COSPA PROJECT

A. Source of the Idea

The idea was generated following a call for proposals under the EU's Information Society Technologies Programme (IST) for Research and Technological Development. This call aimed to support and accelerate the development of key open source software within Europe and represented clear recognition by the EU of the potential of open source software development. The main objective of the EU IST programme is to promote European-wide collaboration. According to Powell, "collaboration with outside parties provides access to news and resources that cannot be generated internally. A network serves as the locus of innovation.. because it provides timely access to knowledge and resources that are otherwise unavailable, while also testing internal expertise and learning capabilities" [4].

Prior to successful submission of proposal for funding, the Coordinator of the project identified partners with experience and commitment in the area of Open Source Software. A kick-off workshop was held at the beginning of the project where brainstorming activities enabled the project team to achieve a shared understanding of user and policy requirements. De Bono [5] suggests that "a brainstorming session has value as a group activity in which there is a cross stimulation of ideas". To reduce travel costs the Project Board have monthly online meetings using the e-workshop which is a form of internet chat-room where each partner can log into the server using a password. However technical and general meetings also take place to facilitate effective communication.

B. Key Organisations and their Roles

The consortium is composed of organisations with complementary skills and profiles that put together the critical mass needed to perform the analysis of the introduction of Open Source and Open Data Standards. It is based on three kinds of partners:

- Five Universities and research institutes. Their role is to provide the key expertise for the analysis and help execute the introduction of OS and ODS in the target organisations.
- Eight Public Administrations whose role is to help identify the key requirements for the introduction and act as a test-bed for the introduction. In addition they will support the search for new PAs where they will be able to experiment the introduction of OS/ODS.
- One large enterprise and one SME expert in dealing with the PAs and in exploiting results of applied research to ensure that the citizens of the European Union benefit from the proposed project and that the European software industry takes full advantage of the knowledge acquired.

The project also involves observer institutions from outside Europe which aims to achieve higher results and amplify the associated returns. A Project Officer, selected by the EU Commission, is responsible for overseeing and monitoring the activities of the Project and tracking project expenses against the budget target.

C. Business and Technology Strategy

The project is a research and development strategy concerned with maximising market penetration by introducing, analysing and supporting the use of Open Data Standards (ODS) and Open Source (OS) software for personal productivity and document management in European Public Administrations. The strategic development for COSPA is one of strategic alliance. Prahalad and Hamel [6] suggest that “learning within an alliance takes a positive commitment of resources – travel, a pool of dedicated people, test-bed facilities, time to internalize and test what has been learned”. As recommended by Harrigan [7], strategic alliances are more likely to succeed when partners possess complementary assets and thus a project will seek knowledge it considers lacking but vital for the fulfillment of its strategic objectives.

The partners come from a different range of backgrounds and possess a wide range of competencies. According to Prahalad and Hamel [6], “core competence is communication, involvement, and a deep commitment to working across organizational boundaries. It involves many levels of people and all functions”. Some of the core competencies partners possess include experience in business and requirements analysis, software engineering including open source development, project management, skills and knowledge transfer. Partners are also strongly motivated by the opportunity to think laterally and develop innovative solutions. The complementarities of competencies within the Project help in reducing the probability of conflict of interests, as the areas of the project activities are largely non-overlapping.

D. Intellectual Property Rights

A Consortium Agreement setting out the internal management guidelines was compulsory before the contract was signed. This agreement included the standard IPR provisions such as the exclusion of specific pre-existing know-how or the conditions for providing access in some cases. Know-how is secret or proprietary information on producing products and is not registered. Its protection is provided by the fact that it is kept secret. The notion of pre-existing know-how seems much broader. It covers all information that a participant brings to the project and to which the other participants have access if they need it for carrying out the project or for use purposes. It should be noted that pre-existing know-how includes information whether or not it has been protected and whether or not it is secret. When signing this agreement, each partner identified and listed the pre-existing know-how over which they granted access rights for the project and the pre-existing know-how explicitly excluded or affected by restrictions to the access [8]. Although identification of pre-existing know-how is not legally binding, it allows each partner to avoid some pitfalls and to negotiate with full knowledge of the facts. In the COSPA project, pre-existing know-how is needed to carry out the work and partners enjoy access rights on a royalty-free basis and under fair and non-discriminatory conditions for use.

Another IPR provision in the Consortium Agreement states that if, in the course of carrying out work on the project, an invention or design is made jointly by at least two or more partners, then the invention or design and title to all world-wide protection therefore will be jointly owned by such two or more partners. Partners that are joint owners also agreed that they may jointly apply to obtain a relevant patent protection or any other intellectual property right to such joint invention or design. The real value of open source licensing is the guarantee of freedom that the licensing term provides. Any knowledge arising from the project should be released free for use under a licensing schema similar to the General Public License which allows users to freely copy, modify and externally distribute the program source code.

E. Market and Commercial Issues

Microsoft today holds the market majority with their two biggest revenue streams: Operating Systems & Office Suites. It appears that customers are brand loyal as they become familiar and dependent on certain features of its software, resulting in high switching costs due to reluctance to switch brands and the complexity of the process of switching. Table 1 outlines Porter’s Five Forces of Open Source in Public Administrations.

Microsoft has developed products that have successfully and effectively been used by millions. The Consortium’s argument, however, is not that OSS replace proprietary solutions but rather that it can be considered on equal terms as a legitimate competitive product. Many Public Administrations may believe that continuing to buy software using a traditional licensing model is the most effective way of maintaining and growing their business. On another note, Linux is driving the open source

movement in the commercial world with it predominantly

TABLE 1

THE FIVE FORCES OF OPEN SOURCE IN EUROPEAN PUBLIC ADMINISTRATIONS

Force	Strong	Weak	Comment
The Competition	✓		Proprietary software has market share Barriers to entry difficult
Bargaining Power of Users	✓		Strong rivalry between open source and proprietary software. Users do not understand concept of OSS Cost of Migration
Threat of New Entrants		✓	Strong brand loyalty Users want more choice
Bargaining Power of Suppliers	✓		Suppliers are creators of code giving company control Proprietary software has monopoly thus ability to control vendors
Bargaining Power of Substitutes	✓		Source code is open allowing for others to build their own substitutes easily

deployed on servers, and particularly on web servers. Yet research has shown that OSS for desktop applications does not seem to share the same amount of popularity. For example, office automation and client operating systems is only employed by 5% of European public institutions and businesses [2]. One main problem holding back OSS growth might be that while the involvement of most of the users of OSS applications are technically sophisticated, the average desktop user using standard commercial proprietary software is not and is lacking in basic computer skills [9]. However the COSPA consortium feels that the apparent reduction of the expenses for software licenses will allow for investing more money in personnel training.

SECTION III. DEVELOPMENTAL STAGES AND ISSUES OF THE PROJECT

The Value Chain is the set of activities through which a project or service is created and delivered to its customers [10]. By examining the value chain of the COSPA project, one will be able to determine how well each section operates and whether there is room for improvement in those areas (see Fig 1).

The project was organised into eight workpackages. The

first stage of the value chain, Inbound Logistics, found within the framework of the project consisted of the collection of requirements using questionnaires for OS applications and ODS in the PA and creation of a catalogue of appropriate OSS/ODS Solutions. Other activities include adequate information flow as well as preparing progress reports and cost statements to the EU Commission. The progress of the overall project is checked against major project milestones which determine whether or not the project meets the anticipated schedule and budget along with rules of development, discussion and rational for its development plans. There was some delay in making appointments of personnel in the beginning of the project. COSPA also had several problems in the initial data-gathering phase which resulted in some deliverables being late. The questionnaires sent out were seen as pointless by some partners as no motivation for each question was given. Many of the questions were not clear and some of the information was not easy to gather. Some of the project researchers felt that interviews would have been a more effective way of gathering information. However, results showed that the goals of the project were realistic and that it was worthwhile going ahead with OSS and ODS.

The main operations that are taking place include the identification of target OS applications to use in the partner PAs, their customization to fit the ODS, with specific attention to the use of proprietary tools by other applications still in use in the PA. The identification of the target OS applications follows a two-step strategy: In the first step the consortium focuses on desktop applications only. This has already begun with Open Office being successfully deployed in several PAs. In the second step, which as yet to be completed, they will deal with desktop operating systems. Partners will also run pilot introductions of tools and data standards in the partner PAs and evaluate the costs and benefits of the transition. This is the crucial phase of the project. Financial, economic, reliability, effort, cost, and time aspects will be considered and integrated, using techniques like the balanced scorecard. The balanced scorecard approach provides a clear prescription as to what COSPA should measure in order to balance the financial perspective. Initially there were concerns with the work-monitoring tool known as PROM. Since this monitors people's activity on a computer, it was likely to provoke privacy concerns. However, the tool has since been modified in order to anonymise data that is collected.

Outbound Logistics in the Value Chain within the project consists of exploitation and dissemination of results. Internal dissemination has been elicited through periodical meetings and e-workshops. A web board restricted to the Consortium partners provides a framework in which documents of the project are exchanged and stored. The exploitation part is done by means of documentation and software tools; concrete case studies and dissemination material are also available that can foster a network of companies that specialize in offering migration services and support to PAs interested. Major means of dissemination used have been the public web site and a dedicated mailing list for the observers. At large, dissemination will be performed by exploiting the knowledge base. The knowledge base will also contribute in the long-term exploitation of the results by remaining

available after the completion of the project.

The value chain functions of Marketing and Sales includes the development of a European knowledge and experience repository for productivity for European PAs

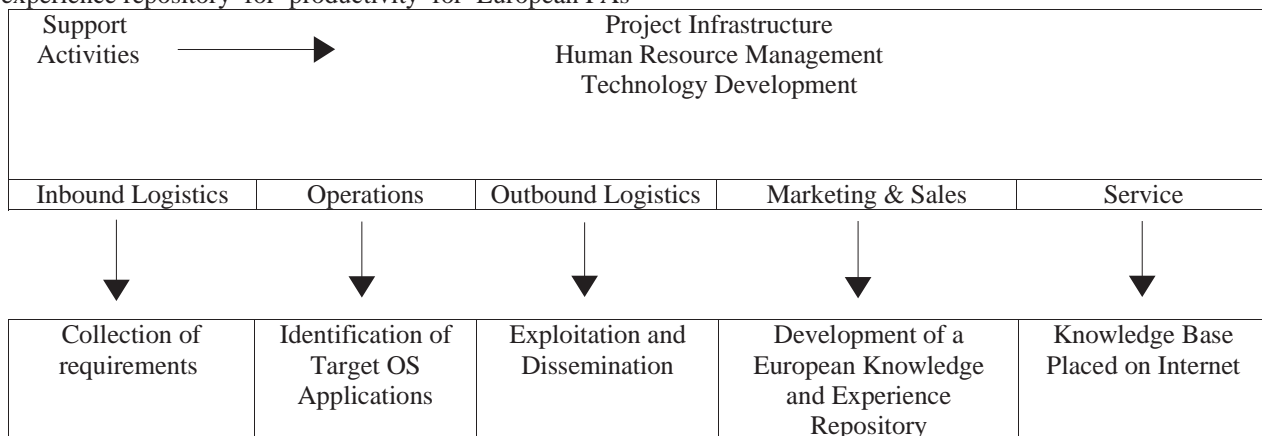


Fig 1. Value Chain Analysis of COSPA

and companies. Knowledge will be entered in this on-line repository throughout the whole project. This stage of the project has been progressing very well. However, several of the project researchers recommended that extra man months be allotted to this particular work package as not enough time was given in the original description of work. A series of workshops at regional and European level will be held which will stimulate public and business' awareness of the project and OSS in general. The COSPA consortium also coordinates with another existing EU project around open source, CALIBRE, a Coordination Action for Libre Software Engineering for Open Development Platforms for Software and Services. The lead coordinator of the COSPA project is also a partner in this project; thus ensuring a close synergy between CALIBRE and COSPA.

Service in the value chain within the framework of the project will consist of the knowledge base being placed on the Internet and made freely accessible. COSPA have the following support structures in place to improve the effectiveness of the primary activities:

Project Infrastructure

The Project maintains a proper infrastructure that enables their products to be of superior quality and to be completed in a timely manner. The structure that exists includes:

- A Project Coordinator
- A Project Board
- Work package leaders
- Small PA shepherds who assist the small PAs with all the bureaucracy issues related to the management of the consortium.
- A website to manage deadlines, information flow, and documents.

The objectives of the project management is to ensure that the project is carried out on time and on budget, to ensure quality, to continuously improve the process and to implement project communication between the different partners as well as to maintain the oversight over the work packages. It also ensures that the consortium comply to the legislation of the European Union and in the case of disagreeing opinions and conflict, help find a resolution.

Human Resource Management

The project requires the expertise, knowledge and wisdom of all partners. It also warrants leadership that provides vision, attracts other programmers and keeps the project together to prevent it from forking or being abandoned [11]. Talented programmers and project researchers who are considered to be the best in their area of expertise have been recruited by the individual partners to carry out the research and development necessary for the project.

Technology Development

Partners will focus on replacing Microsoft desktops with OpenOffice and Windows with Linux. PA personnel have been provided with training on the new software, either through on-site courses or via distance learning.

IV. CONCLUSION

Despite some minor problems with recruitment of personnel and gathering of data in the start-up phase of the project, COSPA has the potential to do very well. The Consortium gathers a well-balanced mix of partners in terms of background and expertise. The project scope is very well defined and partners have a clear understanding of the users needs. However, the COSPA project is not without challenges. Partners need to continuously ensure that deliverables are on time and within budget. There is still a lot of work to be done and monitoring of the project's performance is still ongoing.

The biggest benefit of open source software over most proprietary software is that it is free. It seems that the public sectors have nothing to lose by broadening their view on this technology - and much to gain.

V. ACKNOWLEDGEMENTS

This work has been supported by:

- the Science Foundation Ireland Investigator Programme, B4-STEP (Building a Bi-Directional Bridge between Software Theory and Software Practice).

- the European Commission through the FP6 project COSPA (A Consortium for studying, evaluating, and supporting the introduction of Open Source Software and Open Data Standards in the Public Administration), project no. 002164.
- the European Commission through the FP6 project CALIBRE (Co-ordination Action for Libre Software Engineering for Open Development Platforms for Software and Services), project no. 004337

VI. REFERENCES

- [1] G.L. Kovacs, S. Drozdik, P. Zuliani and G. Succi, "Open Source Software and Open Data Standards in Public Administrations", *Proceedings of the 6th CSIT (Computer Science and Information Technologies) International Workshop*, Ed. N. Yussupova et al., ISBN: 5 87691-023-6, Budapest, October 2004.
- [2] P. Zuliani and G. Succi, "An Experience of Transition to Open Source Software in Local Authorities", *Proceedings of e-Challenges on Software Engineering*, Vienna, Austria, October 2004.
- [3] B. Fitzgerald and T. Kenny, "Developing an Information Systems Infrastructure with Open Source Software", *IEEE Software*, February 2004, pp.50-55.
- [4] W.W. Powell, "Learning from Collaboration: Knowledge and Networks in the Biotechnology and Pharmaceutical Industries", *California Business Review*, 40(3), 1998, p. 231.
- [5] E. de Bono, *Lateral Thinking*, England: Penguin Books, 1990.
- [6] C.K. Prahalad and G. Hamel, "The Core Competence of the Corporation", *Harvard Business Review*, May-June 2004, pp. 82-84.
- [7] K.R. Harrigan, *Strategies for Joint Ventures*, Lexington, MA: Lexington Books, 1985.
- [8] Identification of 'Pre-Existing know-how': a strategic issue under FP6.
http://www.ipr-helpdesk.org/docs/docs.EN/Identification_of_pre-existing_know-how.html, accessed 6 April 2006.
- [9] D.M. Nichols and M.B. Twidale, "Usability and Open Source Software", 2003,
http://firstmonday.org/issues/issue8_1/nichols/1, accessed 5 April 2005.
- [10] M. Porter, *Competitive Advantage*, Free Press: New York, 1985.
- [11] J. Lerner and J. Tirole, "Some Simple Economics of Open Source", *Journal of Industrial Economics*, 50 (2), 2002.