

UPGRADE is the European Journal for the Informatics Professional, published bimonthly at <<http://www.upgrade-cepis.org/>>

Publisher

UPGRADE is published on behalf of CEPIS (Council of European Professional Informatics Societies, <<http://www.cepis.org/>>) by **Novática** <<http://www.ati.es/novatica/>>, journal of the Spanish CEPIS society ATI (*Asociación de Técnicos de Informática*, <<http://www.ati.es/>>)

UPGRADE monographs are also published in Spanish (full version printed; summary, abstracts and some articles online) by **Novática**

UPGRADE was created in October 2000 by CEPIS and was first published by **Novática** and **INFORMATIK/INFORMATIQUE**, bimonthly journal of SVI/FISI (Swiss Federation of Professional Informatics Societies, <<http://www.svifsi.ch/>>)

UPGRADE is the anchor point for UPENET (UPGRADE European NETWORK), the network of CEPIS member societies' publications, that currently includes the following ones:

- **Informatica**, journal from the Slovenian CEPIS society SDI
- **Informatik-Spektrum**, journal published by Springer Verlag on behalf of the CEPIS societies GI, Germany, and SI, Switzerland
- **ITNOW**, magazine published by Oxford University Press on behalf of the British CEPIS society BCS
- **Mondo Digitale**, digital journal from the Italian CEPIS society AICA
- **Novática**, journal from the Spanish CEPIS society ATI
- **OCG Journal**, journal from the Austrian CEPIS society OCG
- **Pliroforiki**, journal from the Cyprus CEPIS society CCS
- **Tölvumál**, journal from the Icelandic CEPIS society ISIP

Editorial Team

Chief Editor: Llorenç Pagés-Casas

Deputy Chief Editor: Francisco-Javier Cantais-Sánchez

Associate Editors: Fiona Fanning, Rafael Fernández Calvo

Editorial Board

Prof. Wolfried Stucky, CEPIS Former President

Prof. Nello Scarabottolo, CEPIS Vice President

Fernando Piera Gómez and Llorenç Pagés-Casas, ATI (Spain)

François Louis Nicolet, SI (Switzerland)

Roberto Carniel, ALSI – Tecnoteca (Italy)

UPENET Advisory Board

Majjaz Gams (Informatica, Slovenia)

Hermann Engesser (Informatik-Spektrum, Germany and Switzerland)

Brian Runciman (ITNOW, United Kingdom)

Franco Filippazzi (Mondo Digitale, Italy)

Llorenç Pagés-Casas (Novática, Spain)

Veith Risak (OCG Journal, Austria)

Panicos Masouras (Pliroforiki, Cyprus)

Thorvaldur Kári Ólafsson (Tölvumál, Iceland)

Rafael Fernández Calvo (Coordination)

English Language Editors: Mike Andersson, David Cash, Arthur Cook, Tracey Darch, Laura Davies, Nick Dunn, Rodney Fennemore, Hilary Green, Roger Harris, Jim Holder, Pat Moody.

Cover page designed by Concha Arias-Pérez

"Falling Upwards" / © CEPIS 2009

Layout Design: François Louis Nicolet

Composition: Jorge Llácer-Gil de Ramales

Editorial correspondence: Llorenç Pagés-Casas <pages@ati.es>

Advertising correspondence: <novatica@ati.es>

UPGRADE Newslist available at

<<http://www.upgrade-cepis.org/pages/editinfo.html#newslist>>

Copyright

© Novática 2009 (for the monograph)

© CEPIS 2009 (for the sections UPENET and CEPIS News)

All rights reserved under otherwise stated. Abstracting is permitted with credit to the source. For copying, reprint, or republication permission, contact the Editorial Team

The opinions expressed by the authors are their exclusive responsibility

ISSN 1684-5285

Monograph of next issue (August 2009)

"20 years of CEPIS: Informatics in Europe today and tomorrow"

(The full schedule of UPGRADE is available at our website)



The European Journal for the Informatics Professional
<http://www.upgrade-cepis.org>

Vol. X, issue No. 3, June 2009

Monograph: Libre Software for Enterprises (published jointly with Novática*)

Guest Editors: *Jesús-M. González-Barahona, Teófilo Romera-Otero, and Björn Lundell*

- 2 Presentation. Libre Software for Enterprises: Create your Product, Feed your Community, Eat your Cake! — *Jesús-M. González-Barahona, Teófilo Romera-Otero, and Björn Lundell*
- 5 Libre Software and the Corporate World — *Jesús-M. González-Barahona, Teófilo Romera-Otero, and Björn Lundell*
- 11 Best Practices for FLOSS Adoption — *Carlo Daffara*
- 17 Build and Sustain a Community of Practice: Method Applied to FLOSS Projects — *Stéphane Ribas and Michel Cezon*
- 22 Community Management in Open Source Projects — *Martin Michlmayr*
- 27 The Morfeo Project: an Open Source Approach towards Open Innovation — *Cristina Breña and Andrés-Leonardo Martínez*
- 32 Applying Open Source Software Principles in Product Lines — *Frank van der Linden*
- 41 Addressing Industry Needs in OSS — *Jan-Henrik Ziesing*
- 44 SpagoWorld, the Open Source Initiative by Engineering — *Gabriele Ruffatti*
- 51 An Opportunity for Libre Software Companies: Emerging Market in Developing Countries — *Susana Muñoz-Hernández and Jesús Martínez-Mateo*

UPENET (UPGRADE European NETWORK)

- 54 From **Novática** (ATI, Spain)
Mobile Technologies
A Case Study of the Global System of Mobile Communication (GSM) in Nigeria — *Adeyinka Tella, 'Niran Adetoro, and Paul Adesola Adekunle*

CEPIS NEWS

- 60 Promoting Skills Development in Challenging Times — *ECDL Foundation*
- 62 Selected CEPIS News — *Fiona Fanning*

* This monograph will be also published in Spanish (full version printed; summary, abstracts, and some articles online) by **Novática**, journal of the Spanish CEPIS society ATI (*Asociación de Técnicos de Informática*) at <<http://www.ati.es/novatica/>>.

Presentation

Libre Software for Enterprises: Create your Product, Feed your Community, Eat your Cake!

Jesús-M. González-Barahona, Teófilo Romera-Otero and Björn Lundell

In recent years the importance of libre software in various environments and at different levels has not ceased to grow. It is present in the markets and public administrations, and it is the object of study and evaluation by academics, corporations, and governmental institutions software development processes are modelled on those used in libre software communities; business models are being designed for enterprises based on the typical activities found in libre software projects; political parties are beginning to prepare actions involving libre software in their electoral programmes; governments are designing laws regarding its use and are even studying alternative economic models based on the characteristics that have engendered a strong community capable of coordinating professionals, enterprises, volunteers, and public institutions around quality products available to anyone.

The influence of the libre culture is not limited to software; it is rapidly spreading to a number of aspects of information technologies, art, culture, and therefore our very way of life. Elements such as Wikipedia, open innovation, meritocracy, or alternative licences for art and culture based on the principles of libre software, such as Creative Commons licences, communities for creating and sharing on the Internet such as Flickr, and so many more new developments have been absorbed by our liquid society (as Zygmunt Bauman would say) with consummate ease and at a relentless pace.

Information and Communication Technologies (ICT) professionals and companies working in the ICT sector cannot ignore these new trends. It is now hard to find a single company of this kind that does not have a clear strategy regarding libre software, either to compete with it, incorporate it in its business model, or to dedicate itself exclusively to its creation and exploitation.

This special monographic issue has been put together by contacting various professional experts and researchers from the corporate world and from libre software communities, and from where those two worlds meet. It is not intended to be an exhaustive compilation but it is representative of the current panorama in Europe with regard to descriptive cases of how companies use and create libre software and in particular how they relate to other players (other enterprises, volunteers, and professionals) within that same scenario.

In the first introductory article, "*Libre Software and the*

The Guest Editors

Jesús-M. González-Barahona teaches and researches at the *Universidad Rey Juan Carlos*, Mostoles (Spain). He started to be involved in libre software in 1991. Since then, he has collaborated in several working groups, has developed some research lines, and has started training programmes on the matter. He also collaborates in several libre software projects and associations, writes in several media about topics related to libre software, and consults for companies and public administrations on issues related to their strategy on these topics, within the framework of the GSyC/LibreSoft research group, <<http://libresoft.es>>. <jgb@gsync.es>.

Teófilo Romera-Otero earned a degree in computer engineering at the *Universidad Rey Juan Carlos*. His academic interests are libre software and how corporations relate to it. He is also interested in global software development in libre software environments and enabling technology through libre software. He works at the GSyC/LibreSoft group as an Research and Development (R&D) Project Manager on national and European projects, such as Calibre, Edukalibre, FLOSSWorld, Morfeo, Vulcano, Qualipso, FLOSSInclude and Tree. As part of his duties in the group he also participates in technical consultancy on libre software and coordinates teaching in the Master on Libre Software organized and run by GSyC/LibreSoft. He is a member of the Qualipso Network Board that manages the Qualipso Network of competence centres and of the NESSI OSS Working Group. He was a guest researcher at the University of Leeds (UK) and at the Irish Software Engineering Research Centre (Lero) at Limerick University in Ireland. <teo@gsync.es>.

Björn Lundell is a researcher at the University of Skövde's Informatics Research Centre (Sweden). His research interests include open source software, evaluation, and method support. He was the technical manager of the COSI (Codevelopment Using Inner & Open Source in Software Intensive Products) research project. He is a founding member of the IFIP Working Group 2.13 on Open Source Software and the founding chair of Open Source Sweden, an industry association. Lundell has a PhD in computer science from the University of Exeter (UK). <bjorn.lundell@his.se>.

Corporate World", the guest editors of this issue, **Jesús-M. González-Barahona**, **Teófilo Romera-Otero** and **Björn Lundell**, provides us with their vision of how important it is for the corporate world to have strategies regarding libre software. The article also serves as an introduction to the

new terms and concepts used in the rest of the issue, and aims to provide us with an overview of the reasons why enterprises are turning towards libre software and of the resources they can apply.

In his article "*Best Practices for FLOSS Adoption*", **Carlo Daffara**, a recognized expert in sustainable business models using libre software, sets out a compendium of recommendations and guidelines to ensure a successful migration to libre software in corporate environments. This article opens the monograph because it is highly representative of the problems that companies tend to encounter when incorporating libre software into their business processes or models, and at the same time may act as an extension of the introduction for uninitiated readers since it deals with technical aspects that professionals in the sector may already be familiar with.

Next the article "*Build and Sustain a Community of Practice: Method Applied to FLOSS Projects*" sets out a method for creating and managing communities that may be applied to the creation and management of libre software communities, particularly those like OW2 or Morfeo which involve relationships between volunteers, professionals, and enterprises. Its authors, **Stéphane Ribas** and **Michel Cezon**, have in-depth knowledge of both libre software communities and the corporate world, and after having worked in a variety of ICT companies have recently entered the academic world where they continue to help build relationships between development communities and companies from their positions at the *Institut National de Recherche en Informatique et Automatique* (National Institute of Research in Computer and Control Science, INRIA, France).

Along similar lines to the previous article, **Martin Michlmayr** presents his article "*Community Management in Open Source Projects*". This article is an excellent complement to both the previous article on the building of communities and the article which follows. It is undoubtedly a very interesting and innovative subject. The article provides us with a formal description of the role of the community manager in large companies; a recent, relatively little known, phenomenon which is becoming increasingly important. Not for nothing does Martin focus part of his study and observations on himself; his role as leader of various large scale libre software projects (including Debian) led to his being hired by Hewlett-Packard to drive and manage relationships between the company and libre software communities.

In an article closely linked to the previous two, **Andrés-Leonardo Martínez-Ortiz** and **Cristina Breña**, respectively co-founder and head of communications of the Morfeo community led by Telefónica I+D (Telefónica R&D), present "*The Morfeo Project: an Open Source Approach Towards Open Innovation*". Morfeo is a software community which is highly successful in spite of the fact that it brings together a great variety of types of players with differing interests and capabilities. The article takes the form of a descriptive case study of the history and peculiarities of the Morfeo community.

Having covered the very interesting topic of the rela-

tionships between libre software development communities and companies, our issue moves on to some other articles less oriented towards the creation and sustaining of communities and more focused on the description of case studies of successful initiatives, opportunities, and strategies either followed by or available to companies in order to properly exploit the new libre software based business models.

Based on his extensive experience at Philips, **Frank van der Linden**, a recognized expert in libre software and product lines, gives us an article entitled "*Applying Open Source Software Principles in Product Lines*". In this article he looks into the various ways libre software and its related development methodologies may be used to minimize the problems of global software development (GSD or distributed development) while enhancing the quality of the software being developed.

Jan-Henrik Ziesing, a scientific researcher at the Fraunhofer Institute in Berlin (Germany) specializing in open communications, provides us with an article about industry's requirements in the field of libre software and Fraunhofer FOKUS Institute's participation in the Qualipso project, the most ambitious European Commission framework programme project focused exclusively on libre software. The article is entitled "*Addressing Industry Needs in Open Source Software*" and it sets out the strategy that the Fraunhofer FOKUS Institute has prepared to migrate its traditional operability models and services to a libre software environment by creating a new libre software competency centre to provide service to business enterprises in the Berlin area.

In the next article, "*SpagoWorld, the Open Source Initiative by Engineering*", **Gabriele Ruffati**, director of the Architecture and Consulting Unit of Engineering's R&D Division, presents a case study based on his company's experience. It describes the rationale behind and the strategy adopted by Engineering with regard to its libre software products, and its relationships with libre software communities

Finally, and to close the issue, **Susana Muñoz-Hernández** and **Jesús Martínez-Mateo**, lecturer and doctoral student respectively at the Polytechnic University of Madrid (Spain), both researchers with the Technology for Development and Cooperation group (TEDECO), present their article entitled "*An Opportunity for Free Software Companies: Emerging Market in Developing Countries*". Here they describe opportunities and mechanisms whereby libre software can help create business fabric in emerging countries.

To sum up, this special issue "*Libre Software for Enterprises*" aims to provide an overview of the current situation regarding the initiatives, strategies, and activities pursued by European companies in the field of libre software. We have tried to put together a balanced set of articles from a variety of sources and countries, including Italy, France, The Netherlands, Germany and Spain. To do this we have called on prestigious authors who work in the ever-grow-

ing area where libre software communities meet and overlap with the corporate world, giving space to points of view from universities, major companies, individuals, and public bodies. We hope that the result is to your liking and that you will continue to support our publication with your readership.

Useful References about Libre Software and Enterprises

These links and references, together with the ones available in each of the papers of this issue, may help the reader to go further into the knowledge of how corporations relate to libre software communities, business models around libre software, and various related initiatives.

Books

■ Dan Woods, Gautam Guliani. "Open Source for the enterprise". O'Reilly Media, Inc., 2005. ISBN-10: 0596101198. This is a great book explaining open source from an enterprise point of view. It includes great ideas for open source productization and open source project management in companies.

■ Jan Sandred. "Managing Open Source Projects". John Wiley & Sons, 2001. A guide on putting the principles and advantages of open source programming to work.

■ Jesús-M. González-Barahona, Joaquín Seoane-Pascual, Gregorio Robles. "*Introducción al Software Libre* (Introduction to Libre Software)". This is the text book used in the libre software subject in the Ph.D programme at the *Universidad Rey Juan Carlos* and in some other programmes at the *Universitat Oberta de Catalunya* (Spain). It covers almost any libre software topic you may wonder about. A really essential book. <<http://ocw.uoc.edu/computer-science-technology-and-multimedia/introduction-to-free-software/materials/>>.

■ Karl Fogel. "Producing Open Source Software: How to Run a Successful Free Software Project". O'Reilly Media, Inc., 2005. ISBN-10: 0596007590. This is a book about the human side of open source development. It describes how successful projects operate, the expectations of users and developers, and the culture of free software. <<http://producingoss.com/>>.

■ Chris DiBona, Sam Ockman, Mark Stone et al. "Open Sources: Voices from the open source revolution". O'Reilly Media, Inc., 1999. ISBN-10: 1565925823. A classic, very good compilation of articles, essays and writings from important actors in the libre software scene. Including Linus Torvalds, Eric S. Raimond, Richard Stallman, Bruce Perens, and many others. <<http://oreilly.com/catalog/opensources/book/toc.html>>.

■ Donald K. Rosenberg. "Open Source: The Unauthorized White Papers". Hungry Minds, 2000. ISBN-10: 0764546600. Covering a general view of libre software.

<<http://www.stromian.com/Book/FrontMatter.html>>.

■ Lawrence Rosen. "Open Source Licensing: Software Freedom and Intellectual Property Law". Prentice Hall PTR, 2004. ISBN-10: 0131487876. This book covers almost everything you need to know about libre software licenses. <<http://www.rosenlaw.com/oslbook.htm>>.

■ Lawrence Lessig. "Free Culture". Penguin Press HC, 2004. ISBN-10: 1594200068. This books talks about how big media uses technology and the law to lock down culture and control creativity. <<http://free-culture.org/>>.

■ Karl Fogel and Moshe Bar. "Open Source Development with CVS". Paraglyph Inc., 2003. ISBN-10: 1932111816. Explains many aspects of libre software through the description of development techniques and tools. <<http://cvsbook.red-bean.com/>>.

Other Publications and Manuals

■ Qualipso Project. "Qualipso deliverable on OSS business models". 2008. Explains many aspects of libre software business models together with a state of the art. <<http://qualipso.org/sites/default/files/media/A2/A2.D1.2.3%20The%20business%20models%20for%20using%20OS.pdf>>.

■ A. Abella, M. A. Segovia. "*Libro Blanco del Software Libre en España* (White Book on Free Software in Spain)" (in Spanish). 2007. <http://libroblanco.com/document/III_libro_blanco_del_software_libre.pdf>.

■ "2020 FLOSS Roadmap". This roadmap was presented at the OpenWorldForum in Paris (2008). It is a very useful document created collaboratively by a huge collection of experts from different companies and entities. <<http://www.2020flossroadmap.org/>>.

■ "Study on the: Economic impact of open source software on innovation and the competitiveness of the Information and Communication Technologies (ICT) sector in the EU (FLOSSImpact report 2006)". This report was produced within the framework of the FLOSSImpact Project <<http://www.flossimpact.eu/>> and many research entities participated in it. <<http://ec.europa.eu/enterprise/ict/policy/doc/2006-11-20-flossimpact.pdf>>.

■ The Qualipso Project. "Analysis of most important aspects of Open Source Competence Centres". <<http://qualipso.org/node/48>>.