

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/FSI (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:

- **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
- **Pro Dialog**, journal from the Polish CEPIS society PTI-PIPS

Editorial Team

Chief Editor: Llorenç Pagés-Casas, Spain, <pages@ati.es>

Associate Editors:

François Louis Nicolet, Switzerland, <nicolet@acm.org>

Roberto Carniel, Italy, <carniel@dtg.uniud.it>

Zakaria Maamar, Arab Emirates, <Zakaria.Maamar@zu.ac.ae>

Soraya Kouadri Mostéfaoui, Switzerland, <soraya.kouadrimostefaoui@gmail.com>

Rafael Fernández Calvo, Spain, <rfoalvo@ati.es>

Editorial Board

Prof. Wolfrid Stucky, CEPIS Former President

Prof. Nello Scarabottolo, CEPIS Vice President

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

François Louis Nicolet, SI (Switzerland)

Roberto Carniel, ALSI - Tecnoteca (Italy)

UPENET Advisory Board

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)

Andrzej Marciniak (Pro Dialog, Poland)

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, Brian Robson

Cover page designed by Concha Arias Pérez

"Non-Fragmented Minds" / © ATI 2007

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 Newsletter available at

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

Copyright

© Novática 2007 (for the monograph)

© CEPIS 2007 (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 (December 2007)

" Free Software: Scientific and Technological Innovation "

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



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

Vol. VIII, issue No. 5, October 2007

Monograph: Advanced Information Systems Project Management (published jointly with Novática*)

Guest Editor: Julián Marcelo-Cocho, Antonio Teti, and José-María Torralba-Martínez

- 2 Presentation: Advanced Information Systems Project Management — *Julián Marcelo-Cocho, Antonio Teti, and José-María Torralba-Martínez*
- 5 Training ICT for the Recovery of European Economies — *Antonio Teti*
- 9 EUCIP Training for ICT Project Managers and Similar Profiles — *Luciano D'Amico*
- 15 ICT Project Management Methodology — *Marta Fernández-Diego and José-Onofre Montesa-Andrés*
- 21 Benefits of a Structured Methodology in Project Management: How to Manage a Project in a Structured Way with PRINCE2™ — *Michelangelo Carbone*
- 25 Traditional Price Determinants in Software Projects, with Consideration to Non-Corrective Maintenance — *José María Torralba-Martínez, Marta Fernández-Diego, and José Cuenca-Iniesta*
- 31 Classification of Software Project Suppliers' Expenses Taking into Consideration that the Software is Reusable — *José-María Torralba-Martínez, Marta Fernández-Diego, and José Cuenca-Iniesta*
- 36 Risks and Project Management — *Julián Marcelo-Cocho and Marta Fernández-Diego*
- 42 Driving Projects by their Risks — *Julián Marcelo-Cocho*
- 47 Convergence of IT Project Management and Change Management: A Comparative Study — *Colin Ash*

UPENET (UPGRADE European NETWORK)

- 53 From **Mondo Digitale** (AICA, Italy)
Internet
The Future of the Internet Protocol — *Maurizio Dècina and Paolo Giacomazzi*

CEPIS NEWS

- 62 CEPIS Projects: CEPIS/Harmonise Newsletter — *François-Philippe Draguet*

* 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

Advanced Information Systems Project Management

Julián Marcelo-Cocho, Antonio Teti, and José-María Torralba-Martínez

Luciano D'Amico places his article "EUCIP Training for ICT Project Managers and Similar Profiles" within the framework of the rapid worldwide transformation described by **Antonio Teti** in "Training ICT for the Recovery of European Economies". The article deals with the knowledge, competencies, and skills required in various key areas. The importance of EUCIP training hinges on the fact that it impacts on a situation to which too little attention is paid and one in which goals are rarely met; it is the normal promotion path for IT professionals; it straddles the promising frontier between organizational and technical issues; and it also converges with the increasingly more common approach whereby production activities are organized as objective-oriented projects.

The widespread recognition of the function of ICT project manager is still such a recent phenomenon that at times it is hard to separate it from the functions of product development and provision of services that make up the bulk of IT training. **Marta Fernández-Diego** and **José Onofre Montesa-Andrés** describe an "ICT Project Management Methodology", supported by the chronological reorganization of the PMBoK Project Management Body of Knowledge which is a *de facto* standard for ICT projects

(after its adoption by the IEEE as Standard 1490).

As an example of an alternative method, **Michelangelo Carbone** contributes his article "Benefits of a Structured Methodology in Project Management: How to Manage a Project in a Structured Way with PRINCE2".

José-María Torralba-Martínez, **Marta Fernández-Diego**, and **José Cuenca-Iniesta**, tackle the subject of "Traditional Price Determinants in Software Projects, with Consideration to Non-Corrective Maintenance". These same authors go on to expand upon this topic in an article that looks into the ever more delicate economic aspects of ICT projects, entitled "Classification of Software Project Suppliers' Expenses Taking into Consideration that the Software Is Reusable".

Centring in on the growing uncertainty of the aims of such a dynamic sector, **Julián Marcelo-Cocho** and **Marta Fernández-Diego** introduce the topic of "Risks and Project Management" by providing a general overview, before addressing the more specific subject of "Driving Projects by their Risks".

Finally, **Colin Ash** looks into the "Convergence of IT Project Management and Change Management: A Comparative Study" which would sound like a truism if it were

The Guest Editors

Julián Marcelo-Cocho is a Doctor of Engineering in Computer Science and holds a Master in Industrial Enterprise Management. He currently heads research in the Department of Enterprise Organization of the Universidad Politécnica de Valencia and lectures in IT Project Management at a graduate and postgraduate level. In his more than 40 years' professional experience in the IT and related sectors he has held a great many different positions in national and multinational enterprises, and public, local, regional, and international organizations (such as the UN's Intergovernmental Bureau for Informatics). He was founder and Chief Editor of *Novática* and other publications in the IT sector. <jmarcelo@doe.upv.es>.

Antonio Teti is a professor of computer science at the universities of Chieti-Pescara and Teramo, and of the *Università Cattolica del Sacro Cuore* of Roma, Italy. He is a member of the I.C.T.S. (Information and Communication Technology Service) of the *Università degli Studi "G.d'Annunzio"* of Chieti and Pescara. He collaborates with the Polytechnic Universities of Valencia

and Madrid and performs training and consultancy work for public and private entities. He is Vice-President and Director of Higher Training of the AIP (*Associazione Informatici Professionisti*) and has published a great many technical books, articles in journals, and presentations in Italian and international IT conferences. <teti@unich.it>.

José-María Torralba-Martínez is a Doctor of Engineering and Economics, certified auditor, and certified Project Management Technician (TDP) by the International Project Management Association (IPMA). He lectures in Enterprise Information Systems, Administrative Management, and ICT Project Management in the Higher Technical School of Applied Computer Science and the Faculty of Business Administration and Management of the *Universidad Politécnica de Valencia*. He is the researcher responsible for Project Management in the Enterprise IT Integration Group (Business Organization Department of the *Universidad Politécnica de Valencia*). He has authored a great many publications and conference presentations on the subject of the Project Budgeting Process. <jtorral@doe.upv.es>.

not so often forgotten that an ICT project is not an end in itself. The ultimate goal of an ICT project is established by the implementing organization in which it is hoped to prompt a change in human behaviour, the success of which is by no means easy to ensure.

The above mentioned articles are basically a selection of the presentations delivered at the EMIS-PM, the first European Meeting on Information Systems Project Management, held in Valencia on June 23 and 24, 2007 as part of the 4th European and Mediterranean Conference on Information Systems EMCIS'2007, and sponsored, among

others, by CEPIS and ATI. Thanks are due to EMCIS for granting permission to publish these articles in **UPGRADE** and *Novática*; especially because these presentations, which are half-way between daily practice and research, are what allow us to entitle this monograph *Advanced Information Systems Project Management*, a concept which is vital if we are to continue to be successful in meeting objectives to a degree that hitherto seem to have been impossible judging by the scant statistics available to the sector.

Translation by *Steve Turpin*

Useful References on Advanced Information Systems Project Management

The following references, along with those included in the articles this monograph consists of, will help our readers to dig deeper into this field.

Books

- IPMA. IPMA Competence Baseline (ICB). IPMA. 2006. ISBN-10: 3000040579.
- D.J. Anderson. Agile Management for Software Engineering: Applying the Theory of Constraints for Business Results. Prentice Hall PTR, 2003. ISBN: 0131424602.
- S. Berkun. The Art of Project Management. O'Reilly, 2005. ISBN: 0596007868.
- J. Van Bon, T. Verheijen. Frameworks for IT Management: An Introduction. Van Haren. 2006. ISBN: 9077212906.
- Ch. Butler, G. L. Richardson. Readings in Information Technology Project Management. 2005.
- M.J. Christensen, R.H. Thayer. The Project Manager's Guide to Software Engineering's Best Practices. IEEE CS Press, 2002. ISBN: 0769511996.
- M. Cohn. Agile Estimating and Planning (Robert C. Martin). Prentice Hall. 2005. ISBN: 0131479415.
- M.Coterrell, B.Hughes. Software Projects Management. International Thomson Computer Press, 1995. ISBN: 1850321906.
- G. Cuevas. *Gestión del proceso software*. Centro de Estudios Ramón Areces, 2002. ISBN: 8480045469.
- J-L. Deixonne. *Piloter un projet ERP*. Édition DUNOD, 2003. ISBN: 210007028.
- J. Dolado, L. Fernández. *Medición para la Gestión del Software*. Ra-Ma, 2000. ISBN: 8478974032.
- Duran. *Maîtrise d'oeuvre des projets informatiques. De la gestion du périmètre au contrôle des risques et des coûts*. Editions DUNOD 2004. ISBN: 2100485113.
- H. Eisner. Essentials of Project and Systems Engineering Management. John Wiley & Sons. 1997. ISBN: 0471148466.
- J. Frame. The New Project Management. Jossey-Bass Inc, 1995. ISBN: 8475776132.
- J. Gido, J. Clements. Successful Project Management. International Thomson, 2005. ISBN: 032453311X.
- J.A. Gutiérrez, C. Pages. *Planificación y Gestión de Proyectos Informáticos*. Universidad de Alcalá de Henares, 2005. ISBN: 8481386316.
- J. Highsmith. Agile Project Management: Creating Innovative Products. Addison Wesley Professional, 2004. ISBN: 0321219775.
- G. M. Horine. Absolute beginner's Guide to Project Management. Pearson Educ. 2005. ISBN: 844151917X
- W. Humphrey. Managing Technical People. Addison Wesley Longman, 1997. ISBN: 0201545977.
- R. López-Cortijo, A. De Amescua. *Ingeniería del Software: Aspectos de Gestión*. IIIS, 1998. ISBN: 8460673915.
- J. Marasco. The Software Development Age: Essays on Managing Successful Projects. Addison-Wesley, 2005.
- S. McConnell. Rapid Development. Microsoft Press, 1996. ISBN: 1556159005.
- P. Metzger, J. Boddie. Managing a Programming Project. Prentice Hall, 2004. ISBN: 0135507723.
- Morley. *Management d'un projet système d'information. Principes, techniques, mise en oeuvre et outils*. Dunod, 4ème édition, 2004. ISBN: 2100483595.
- P. Morris, A. Jamieson. Translating Corporate Strategy into Project Strategy (realizing Corporate Strategy through Project Management). Project Management Institute PMI, 2004. ISBN: 1930699379.
- Murray, M. Ward. Improving project performance using the PRINCE2 maturity model (P2MM) (Managing Successful Projects). TSO. 2007. ISBN: 0113310315.
- S. Nokes, I. Major, A. Greenwood, D. Allen, M. Goodman. The definitive Guide in Project Management. Every executive fast-track to delivering on time and on budget. Pearson Educ. ISBN: 0273663976.

- F. O'Connell. *How to Run Successful High-Tech Project-Based Organization*. Ed. Artech House Books, 1999. ISBN: 1580530109.
- M. Piattini, F. Hervada. *Gobierno de las Tecnologías y los Sistemas de Información*. Ra-Ma, 2007. ISBN : 9788478977673.
- Project Management Institute. *A Guide to the Project Management Body of Knowledge (PMBok Guide, 3rd Edition)*. PMI, 2004. ISBN: 1-930699-50-6.
- Project Management Institute. *The Standard for Portfolio Management*. PMI Global Standards, 2006. ISBN: 1-930699-90-5.
- Project Management Institute. *The Standard for Program Management*. PMI Global Standards, 2006. ISBN: 1-930699-54-9.
- Project Management Institute PMI. *Government Extension to A Guide to the Project Management Body of Knowledge (PMBOK® Guide)–2000 Edition*. PMI. 2002. ISBN: 193069900X.
- Project Management Institute PMI. *Practice Standard For Earned Value Management*. PMI. ISBN: 1930699425.
- J.H. Rainwater. *A Primer for Programmers Who Lead Programmers*. APRESS. 2002. ISBN: 1590590171.
- J.R. Rodríguez, J. García, I. Lamarca. *Gestión de proyectos informáticos: métodos, herramientas y casos*. UOC, 2007.
- W. Royce. *Software Project Management: A Unified Framework*. Addison-Wesley Professional. 1998. ISBN: 0201309580.
- K. Schwaber. *Agile Project Management with Scrum (Microsoft Professional)*. Microsoft Press, 2004. ISBN: 073561993X.
- Stelman, J. Greene. *Applied Software Project Management*. O' Reilly, 2005.
- G. Stepanek. *Software Project Secrets: Why Software Projects Fail*. Apress. 2005. ISBN: 1590595505.
- J. Taylor. *Managing Information Technology Projects: Applying Project Management Strategies to Software, Hardware, and Integration Initiatives*. AMACOM. 2003. ISBN: 0814408117.
- R. Thomsett. *Third Wave Project Management*. Ed. Yourdon Press Comp. Series-Prentice Hall, 1993. ISBN: 0-13-915299-7.
- J.E. Tomayko, O. Orit Hazzan. *Human Aspects of Software Engineering*. Charles River Media, 2004. ISBN: 1584503130.
- J. Tuya, I. Ramos, J. Dolado. *Técnicas Cuantitativas para la Gestión de Proyectos de Ingeniería del Software*. Netbiblo, 2007. ISBN: 978-84-9745-2045.
- G. Webster. *Managing Projects at Work*. Gower Publishing, Ltd. 1999. ISBN: 0566079828.
- R.K. Wysocki, R. Rudd McGary. *Effective Project Man-*

agement: Traditional, Adaptive, Extreme, 4rd Edition. Wiley, 2007.

Articles

- B. Boehm, R. Turner. *Management Challenges to Implementing Agile Processes in Traditional Development Organizations*. IEEE Software, Sept./Oct. 2005, pp. 30-39. ISSN 0740-7459.
- P.C. Clements, L.G. Jones, L.M. Northrop, J.D. McGregor. *Project Management in a software product lines organization*. IEEE Software, Sept./Oct. 2005, pp. 54-62. ISSN 0740-7459.
- L. Cheikhi, A. Abran, and L. Buglione (*École de Technologie Supérieure – Université du Québec, Montréal, Canada*). *ISBSG Software Project Repository & ISO 9126: An Opportunity for Quality Benchmarking*. UPGRADE. 2006.
- P. Donzelli. *A Decision Support System for Software Project Management*. IEEE Software, Jul/Aug, 2006, vol. 23, no. 4, pp. 67-75. ISSN 0740-7459.
- T. Gilb. *Software Project Management. Adding Stakeholder Metrics to Agile Projects*. UPGRADE, Aug. 2003.
- K.E. Nidiffer, D. Dolan. *Evolving Distributed Project Management*. IEEE Software, Sept./Oct. 2005, pp. 63-72.
- H. Z. Ounaies, Y. Jamoussi, M. B. Ahmed. *Project Management Improvement in Extreme Programming*. RPM-AEMES, Vol 3, n°. 1. 2006. ISSN: 1886-4554.
- A.B. Pyster, R.H. Thayer. *Software Engineering Project Management 20 Years Later*. IEEE Software, Sept./Oct. 2005, pp. 18-21. ISSN 0740-7459.
- W. Royce. *Successful Software Management Style: Steering and Balance*. IEEE Software, Sept./Oct. 2005, pp. 40-47. ISSN 0740-7459.
- R. Thayer. *Software Engineering Project Management*. Ed. IEEE Computer Press, 1999. ISSN 0740-7459.
- C. Venugopal. *Single goal set: a new paradigm for IT megaproject success*. IEEE Software, Sept./Oct. 2005, pp. 48-53. ISSN 0740-7459.
- S. Woodward. *Evolutionary Project Management*. Computer, Oct., 1999, vol. 32, no. 10, pp. 49-57. ISBN: ISSN: 0018-9162.

Related Monographs

- UPGRADE, August 2003. *Software Engineering - State of an Art*. L. Fernández-Sanz (ed.).
- UPGRADE. October 2004. *STP, Software Process Technology*. F. Ruiz, and G. Canfora (eds.)
- UPGRADE. February 2006. *Key Success Factors in Software Engineering*. Luis Fernández-Sanz, Juan-José Cuadrado-Gallego, and Maya Daneva (eds.).