Editorial: Reuse in business process management

Marcelo Fantinato*

School of Arts, Sciences and Humanities,
University of São Paulo,
Rua Arlindo Béttio, 1000 – 03828-000,
São Paulo, SP, Brazil
E-mail: m.fantinato@usp.br
*Corresponding author

Maria Beatriz Felgar de Toledo

Institute of Computing,
State University of Campinas,
Av. Albert Einstein, 1251 – 13083-970,
Campinas, SP, Brazil
E-mail: beatriz@ic.unicamp.br

Itana Maria de Souza Gimenes

Informatics Department,
State University of Maringá,
Av. Colombo, 5.790 – 87020-900,
Maringá, PR, Brazil
E-mail: itana@din.uem.br

Lucinéia Heloisa Thom and Cirano Iochpe

Institute of Informatics,
Federal University of Rio Grande do Sul,
P.O. Box 15064, 91501-970,
Porto Alegre, RS, Brazil
E-mail: lucineia@inf.ufrgs.br
E-mail: ciochpe@inf.ufrgs.br

Biographical notes: Marcelo Fantinato is an Assistant Professor in the School of Arts, Sciences and Humanities, University of São Paulo (USP), Brazil. He received his PhD in Computer Science in 2007 and Master of Engineering in 2002 at the University of Campinas (Unicamp), Brazil. He has worked in the software industry as a Software Testing Specialist at the CPqD Foundation in Campinas, Brazil in 2001–2006, and as a Specialist in Research and Development at Motorola in Jaguarina, Brazil in 2006–2008. His main research interests are business process management, service-oriented computing, electronic contracts, software product line and software testing.

Maria Beatriz Felgar de Toledo is an Associate Professor in the Institute of Computing, State University of Campinas (Unicamp), Brazil. She received her MSc in Computer Science from Unicamp and PhD from Lancaster University, UK in 1992. She is a member of the SOCOLNET and has organised Brazilian workshops on BPM. Her main research interests are advanced transaction models, business process management systems, knowledge base systems for clinical research and cultural heritage.

Itana Maria de Souza Gimenes is a Professor of Software Engineering at State University of Maringá, Paraná, Brazil. He is a Postdoctoral Researcher at the School of Computer Science, University of Waterloo, Canada in 2005. He received his PhD in Computer Science at the University of York, Department of Computer Science, UK in 1992, and the President of the Brazilian Computer Society Committee of Software Engineering in 2007–2008 and 1998–1999 (CEES-SBC). He has lead several research projects, including international cooperation with the European community. His current research interests include software architecture, software PL, component-based development, workflow management systems and BPM.

Lucinéia Heloisa Thom is a Scientist at the Institute of Informatics at the Federal University of Rio Grande do Sul (UFRGS), Brazil. She was a Visiting Scientist at the University of Ulm in 2007–2009. She received her Bachelors in Computer Science from the University of Santa Cruz do Sul, Brazil in 1999, Masters in Computer Science from UFRGS in 2002, and PhD in Computer Science from UFRGS in 2006. She developed part of her thesis research at the University of Stuttgart in 2004–2005. Her research interests are in the area of workflow systems with a special focus on meta-models, business process modelling, workflow patterns and IT support for healthcare information systems.

Cirano Iochpe works since 1990 as an Associate Professor at the Informatics Institute of the Federal University of Rio Grande do Sul (UFRGS), Brazil. He received his PhD in Computer Science from the University of Karlsruhe, Germany in 1989, and MSc in Computer Science from UFRGS in 1984. He has coordinated several research projects in the area of information systems, especially in the context of business process management and geographical information systems. He has also lead the ProWAP project whose main goal is to increase reuse of business functions in process modelling.

1   Aims and scope

The current complexity inherent in the corporative world demands a great dynamism from the IT infrastructure in order to provide technical solutions for conducting business. Business process management (BPM), including its service-oriented foundation, has been providing important technological support to improve organisation competitiveness. In order to increase dynamism and competitiveness, BPM can benefit from reuse approaches and techniques at several stages of business process (BP) life cycle.

The First International Workshop on Reuse in Business Process Management (rBPM 2010) was dedicated to explore any type of reuse in the BPM domain. Therefore, it was a forum to discuss systematic reuse applied to BPM at its various levels:

1   the basic service-oriented foundation level: including issues such as service development, description, publication, discovery and selection

2   the service composition level: encompassing service negotiation and service aggregation

3   the management and monitoring upper level: including BP modelling, execution, monitoring, and contract establishment and enactment

4   the quality of service and semantics orthogonal level.

Moreover, the impact of reuse on business- and service-oriented engineering as well as how it can help in the design of more high-quality process models were very important topics discussed in the workshop.

Different existing reuse approaches and techniques can be extended to be applied to this fairly new domain, including: software product line or software product families; variability descriptors; design patterns such as feature modelling; aspect-orientation; and component-based development. In addition, completely new approaches and techniques should be proposed. Their use must also be discussed, preferably under experimentation as well as results analysis.

The rBPM 2010 Workshop was held together with the Eighth International Conference on Business Process Management (BPM 2010), in Hoboken – NJ, USA. Still in its first edition, the workshop could be considered as having achieved great results: technical papers of very good quality have been submitted, of which nine full papers and two work in progress papers were accepted (with a 46% of acceptance rate), bringing together researchers of high quality during the workshop day. Moreover, a keynote given by Professor Dr. Manfred Reichert from University of Ulm in Germany was an important contribution for all the workshop attenders to improve their knowledge regarding 'Reuse in the business process lifecycle: challenges, methods, technologies'.

2   Selected papers

This special issue brings a selection of the best papers presented at the workshop. From the nine full papers presented at the workshop, five of them were selected to be revised and extended to be published here in the *IJBPIM* journal.

The paper by Vinay Kulkarni and Souvik Barat, entitled 'Business process families using model-driven techniques', applies concepts from software product line and model-driven techniques to present an extension of essential BPMN meta-model supporting BP families as well as a set of adaptation operators. They present how the product line concept can be used to specify BPs that can be adapted quickly for a changing operating environment by using feature modelling as the main tool to derive structurally well-formed configurations of parts.

The paper by Dennis Wegener and Stefan Rüping, entitled 'Integration and reuse of data mining in business processes – a pattern-based approach', addresses the 'process patterns' topic by describing a novel approach on facilitating the integration based on process patterns for data mining and demonstrating that these patterns allow for easy reuse and can significantly speed up the process of integration. Their approach aims at reducing the involved effort by reusing successful data mining solutions.

Moreover, they empirically evaluate their approach in a case study of fraud detection in the healthcare domain.

The paper by Huy Tran, Uwe Zdun and Schahram Dustdar, entitled 'Name-based view integration for enhancing the reusability in process-driven SOAs', proposes a named-based view integration approach aiming at solving the following challenge for companies that opt for reusing existing software development artefacts due to the benefits of the reuse: a lack of appropriate methods and techniques for integrating reusable artefacts. In particular, they introduce a name-based matching approach for view model integration and show that this approach can enhance the flexibility and automation of process artefacts (i.e., process views and view elements) reuse via industrial case studies.

The paper by Emilian Pascalau, Ahmed Awad, Sherif Sakr and Mathias Weske, entitled 'Partial process models to manage business process variants', addresses process models variants which have to be defined frequently but do not count currently on available BPM tools to their proper management. Taking into account that an automated maintenance of process variants able to tackle the mentioned issues is a well coveted goal, their paper presents an approach to address the issues of providing consistent mechanisms for managing processes variants consistency and reducing the redundancy between process variants in order to achieve a more efficient and effective BP modelling task.

The paper by Gabriela Vulcu, Sami Bhiri, Wassim Derguech and María José Ibáñez, entitled 'Semantically-enabled business process models discovery', covers BP model discovery, a pillar technique for BP model reuse. They present an RDF vocabulary which captures functional and non-functional aspects in addition to the control flow perspective. Having the functional and non-functional descriptions of basic activities, they use a set of algorithms to compute those of structured activities and therefore derive different representations of the same BP model at different granularity levels. Finally, using a set of extraction rules, they build an RDF knowledge base that can be interrogated using SPARQL.