I. INTRODUCTION

Enterprises face the challenge of rapidly adapting to dynamic business environments. The traditional approach to process management is only partially appropriate to this new context, and calls for the advent of new, evolutionary business processes. This new approach attempts to address specific issues related to flexibility and adaptation such as design of easily adaptable processes, dynamic handling of unexpected situations, optimality of adaptations, and change management. Central to the field of evolutionary business processes is the notion of requirement, which drives the change of business processes through their life-cycles.

A. Evolutionary Business Processes

The evolution of processes and their underlying software systems becomes more and more an important and interesting topic in business process management. Since the life time of software systems frequently spans many years, business processes modeled on top of systems cannot be assumed to remain fixed, and migration between different versions is essential. As a consequence, modeling and management techniques developed in the context of ad-hoc, short-term composition of services and their processes lack the necessary constructs to concisely express the gradual evolution of processes and software systems and new dynamic and/or declarative approaches in this context are required.

The evolutionary approach to business processes raises a number of challenges: extracting declarative specifications from domain experts, expressing these declarative specifications in an appropriate language or formalism, as well as designing, monitoring, checking compliance or dynamically adapting business processes according to a set of requirements, identification and handling of changes, management of process versions. Evolution in business processes takes place in a wide number of domains, and is expected to impact existing and future technology choices, business practices and standardization efforts.

B. EVL-BP 2012 Workshop

The EVL-BP workshop originated from a specialized series workshops on Declarative and Dynamic Business Processes (DDBP). This series was launched in 2008 aiming to establish an international research forum, which will bring together practitioners and researchers in the domain. It was collocated with the EDOC conferences 2008–2010 and lead to the publication of two special issues in the International Journal on Business Process Integration and Management and the Journal of Research and Practice in Information Technology. In 2010 we decided to give the workshop a clearer focus based on discussions we had with the community and aimed at a single theme, the evolution of business processes. This topic covers evolutionary aspects of business process such as the continuous change and improvement of business processes during their life cycle and gives an opportunity to the business process management community to discuss challenges and state of the art solutions that come with it. The first workshop on this topic was held last year at EDOC 2011.

This workshop will be an opportunity for participants to exchange opinions, advance ideas, and discuss preliminary results on current topics related to evolutionary business processes. A particular interest will be taken in bridging theoretical research and practical issues. To this end, contributions stating open problems, case studies, tool presentations, or any other work assessing the practical significance of evolving business processes by means of concrete examples and situations, will be particularly welcome. Work in progress, position papers stating broad avenues of research, and work on formal foundations of evolutionary business processes are also sought-after.
To provide a broad coverage of the important research topics of the EVL-BP area, we especially called for papers, which covered the following topics:

- Evolutionary business process modeling
- Configuration of business processes
- Dynamic, adaptive, or flexible business processes
- Implementation issues for evolutionary processes
- Tools for evolutionary processes
- Methodologies for evolutionary processes
- Real-world use cases of evolutionary business processes
- Business rules and policies for evolutionary business processes
- Rule driven business process engines
- Business and technical requirements for evolutionary processes
- Mathematical foundations of evolutionary business processes
- Formal models of evolutionary business processes
- Monitoring of evolutionary business processes
- Validation and model checking of evolutionary business processes
- Software engineering methods, languages, and standards for evolutionary business processes
- Service-oriented architectures and evolutionary business processes
- Interoperability for evolutionary business processes
- Semantic Web and ontologies and evolutionary business processes
- Collaboration and evolutionary business processes
- Data-driven process evolution
- Evolution of cross-organizational processes / process choreographies
- Complex event processing models/support for evolutionary business processes
- Process and data mining for evolutionary business processes
- Empirical studies and principles for evolutionary business processes
- Patterns and change operators for evolutionary business processes
- Quality attributes and measures for evolutionary business processes

II. WORKSHOP PROGRAM

EVL-BP 2012 featured four peer reviewed papers. Each submitted paper was reviewed by at least three members of the international program committee of EDOC or EVL-BP. Based on the peer-reviews, the papers with the highest review scores were selected for presentation and publication in this EDOC 2012 Workshops Proceedings volume.

A. Accepted Papers

We organized the accepted papers into two tracks following the order of the typical software development lifecycle. The first track covers the design of business processes and the second covers the transformation from design to implementation and the execution of business processes:

1. Design of business processes: Levina investigated the loss of information during the mapping of business process specifications from one process language to another. In the paper titled “Assessing Information Loss in EPC to BPMN Business Process Model Transformation” she proposed an approach on how to measure information loss and showed this on the example of the EPC and BPMN language. Her work is relevant in cases where different process languages need to be supported to stay compatible with state-of-the-art technology [2].

Remaining papers addressed the transformation of business process designs to implementation and their execution.

2. From design to implementation and execution: Ratkowski et al. analysed the implementation of business processes in service oriented architectures in the paper “Optimization of Business Processes in Service Oriented Architecture”. They propose the mapping of business processes from BPMN to BPEL and then to the Language of Temporal Ordering Specification (LOTOS). This transformation chain will map a process design closer to the implementation level and allows to optimize the implementation for a particular BPEL engine. One advantage of the presented approach is that the behaviour can be checked for consistency after structural changes have been applied to the process design [3].

Bernardi et al. presented a model driven framework to support an engineering round trip for Web application development in the paper “Using Declarative Workflow Languages to Develop Process-Centric Web Applications”. The framework comprises different domain specific languages to support the different aspects of Web applications. One particular contribution is the integration of the declarative process language Declare in the framework [1].

The paper by Wang et al. focuses on the execution of business processes. The paper titled “An Illustrative Recovery Approach for Stateful Interaction Failure of Orchestrated Processes” demonstrated how a business process that interacts with other processes can be recovered once it failed in a particular state [4].

III. WORKSHOP ORGANIZATION

We are very thankful to many people who played an important role in various stages of the workshop organization. We also appreciate very much the help of the program committee members who contributed their expertise and provided valuable comments in the peer-review process and final compilation of the workshop program.


A. Program Committee

- Colin Atkinson, Universität Mannheim, Germany
- Ebrahim Bagheri, Athabasca University, Canada
- Claudio Bartolini, HP Labs Palo Alto, USA
- Andrew Berry, Deontik, Australia
- Domenico Bianculli, University of Lugano, Switzerland
- Marko Boskovic, Research Studios Austria, Austria
- Antonio Bucchiarone, Fondazione Bruno Kessler, Italy
- Christoph Bussler, Xtime, Inc, USA
- Marlon Dumas, University of Tartu, Estonia
- Luciano García-Bañuelos, Universidad Autónoma de Tlaxcala, Mexico
- Guido Governori, University of Queensland, Australia
- Reiko Heckel, University of Leicester, UK
- Gerti Kappel, Vienna University of Technology, Austria
- Rania Khalaf, IBM Watson Research Center, USA
- Marcello La Rosa, Queensland University of Technology, Australia
- Florian Lautenbacher, Senacor Technologies, Germany
- Philipp Leitner, Vienna University of Technology, Austria
- Niels Lohmann, Universität Rostock, Germany
- Wolfgang Mayer, University of South Australia, Australia
- Anton Michlmayr, Vienna University of Technology, Austria
- Zoran Milosevic, Deontik, Australia
- Hamid Reza Motahari Nezhad, HP Labs, USA
- Shin Nakajima, National Institute of Informatics, Japan
- Leo Obrst, The MITRE Corporation, USA
- Cesare Pautasso, University of Lugano, Switzerland
- Maja Pesic, Technical University of Eindhoven, The Netherlands
- Manfred Reichert, University of Ulm, The Netherlands
- Stefanie Rinderle-Ma, University of Vienna, Austria
- Hamid Reza Motahari Nezhad, Hewlett Packard
- Shazia Sadiq, The University of Queensland, Australia
- Vladimir Tosic, NICTA, Australia
- Simon Tragatschnig, University of Vienna, Austria
- Franck Van Breugel, York University, Canada
- Manuel Wimmer, Vienna University of Technology, Austria

ACKNOWLEDGMENT

Georg Grossmann is supported by the Australian Research Council under grant number DP0988961.

REFERENCES


