

Lecture Notes in Business Information Processing

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Enterprise, Business-Process and Information Systems Modeling


19th International Conference, BPMDS 2018
23rd International Conference, EMMSAD 2018
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Proceedings

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Preface

This book contains the proceedings of two long-running events held along with the CAiSE conferences relating to the areas of enterprise, business process and information systems modeling: the 19th International Conference on Business Process Modeling, Development and Support (BPMDS 2018) and the 23rd International Conference on Evaluation and Modeling Methods for Systems Analysis and Development (EMMSAD 2018). The two working conferences are introduced below.

BPMDS 2018

The topics addressed by the BPMDS series, in conjunction with CAiSE (Conference on Advanced Information Systems Engineering), are focused on business processes and their IT support. This is one of the keystones of information systems theory beyond short-lived fashions. The continued interest in this topic on behalf of the information systems community is reflected by the success of the past BPMDS events, and their promotion from a workshop to a working conference.

The BPMDS series produced 18 events from 1998 to 2017. From 2011, BPMDS became a two-day working conference attached to CAiSE. The basic principles of the BPMDS series are:

1. BPMDS serves as a meeting place for researchers and practitioners in the areas of business development and business applications (software) development.
2. The aim of the event is mainly discussions, rather than presentations.
3. Each event has a theme that is mandatory for idea papers.
4. Each event's results are, usually, published in a special issue of an international journal.

The goals, format, and history of BPMDS can be found on the website: <http://www.bpmds.org/>.

BPMDS solicits papers related to business process modeling, development, and support (BPMDS) using quality, relevance, originality, and applicability as main selection criteria. As a working conference, BPMDS 2018 aimed to attract *full research papers* describing mature research, *experience reports* related to using BPMDS in practice, and visionary *idea papers*. To encourage new and emerging challenges and research directions in the area of business process modeling, development and support, BPMDS has a unique focus theme every year. Papers submitted as idea papers are required to be of relevance to the focus theme, thus providing a mass of new ideas around a relatively narrow but emerging research area. Full research papers and experience reports do not necessarily need to be directly connected to this theme.

The focus theme for BPMDS 2018 idea papers was “Ecosystem-Aware Business Process Modeling, Development, and Support.” For the 19th edition of the BPMDS conference, we invited the interested authors to engage during the two days of BPMDS 2018 in Tallinn, and to take part in a deep discussion with all participants about the challenges of business transformation in the digitally connected world and the ways *business process modeling, development, and support* may provide capabilities to deal with these challenges. The challenges result from, among others, the impacts of the ubiquity of the actors, social networks, and new business models as well as the co-existence of flexibility, exception handling, context awareness, and personalization requirements together with other compliance and quality requirements.

Practitioners are producing business process models, researchers are studying and producing business process models, and are also producing new modeling languages when they consider that existing ones are not sufficient. What is beyond? Which kind of analyses can we make using these process models? How can we complete and enhance these process models with annotations, with data coming from everywhere out of the immediate process environment? How can the understanding we gain by working on these models in a sandbox help or facilitate the undergoing business transformation?

BPMDS 2018 received 29 submissions from 23 countries (Austria, Denmark, Egypt, Estonia, France, Germany, Greece, Israel, Italy, Latvia, Libya, The Netherlands, New Zealand, Norway, Pakistan, Poland, Russia, Saudi Arabia, Slovenia, Spain, Sweden, Switzerland, and Tunisia). Each paper received at least three reviews from the members of the international Program Committee. Eventually, 13 high-quality papers were selected, among them 11 research papers, one experience report, and one idea paper. The accepted papers cover a wide spectrum of issues related to business process development, modeling, and support. They are organized under the following section headings:

- Context-Awareness in Business Processes
- Automatic Analysis of Business Processes
- Advanced Approaches for Business Process Modeling
- Evaluation of Business Process Modeling Techniques
- An Experience Report on Modeling Collaborative Processes

We wish to thank all the people who submitted papers to BPMDS 2018 for having shared their work with us, as well as the members of the BPMDS 2018 Program Committee, who made a remarkable effort in reviewing submissions. We also thank the organizers of CAiSE 2018 for their help with the organization of the event, and IFIP WG8.1 for the support.

April 2018

Jens Gulden
Rainer Schmidt

EMMSAD 2018

The field of information and software systems development has resulted in a rich heritage of modeling approaches (e.g., business process modeling, enterprise modeling, value modeling, capability modeling, ontology modeling, and so on). This canon of approaches continues to be enriched with extensions, refinements, and even new languages to deal with new challenges. Even with some attempts toward standardization (e.g., UML for object-oriented software design, ArchiMate for enterprise architecture modeling, and BPMN for business process modeling), new modeling methods are constantly being introduced, especially in order to deal with emerging trends such as compliance and regulations, cloud computing, big data, business analytics, the Internet of Things, cyber-physical systems, etc. These introduce challenges to modeling as well: scalability, privacy, security, and performance, to list a few, and may call for extending existing modeling methods or developing new ones. These ongoing changes significantly impact the way systems are being analyzed and designed in practice.

Evaluation of modeling methods contributes to the knowledge and understanding of their strengths and weaknesses. This knowledge may guide researchers toward the development of the next generation of modeling methods and help practitioners select the modeling methods most appropriate for their needs. A variety of empirical and non-empirical evaluation approaches can be found in the literature: feature comparison, meta-modeling, metrics, paradigmatic analyses, contingency identification, ontological evaluation, surveys, laboratory and field experiments, case studies, and action research. Yet, there is a paucity of such research in the literature.

The objective of the EMMSAD conference series is to provide a forum for researchers and practitioners interested in modeling methods for systems analysis and development (SA&D) to meet and exchange research ideas and results. To this end, the focus is on both insights in modeling for SA&D in general and the fostering of cross-pollination of insights between different specific modeling approaches (such as business process modeling, enterprise modeling, value modeling, capability modeling, etc.). More details can be found at <http://www.emmsad.org/>.

EMMSAD 2018 accepted six papers that underwent a rigorous review process with four reviewers for each submission. The accepted papers cover a wide spectrum of issues related to modeling:

- “The Power/Generality Trade-Off in Decision and Problem Modeling: Theoretical Background and Multi-Level Modeling as a Resolution”
- “Modeling Organizational Structures in the Realm of Enterprise Modeling: Limitations of the Current Paradigm and Prospects of Multilevel Language Architectures”
- “DevOps Competences and Maturity for Software Producing Organizations”
- “An Agile Modeling Oriented Process for Logical Architecture Design”

- “Exploring the Design Needs for the New Database Era”
- “Evaluation of a Design Method for Graph Database”

We wish to thank the EMMSAD 2018 authors for having shared their work with us, as well as the members of the EMMSAD 2018 Program Committee for their valuable reviews. We also thank the organizers of CAiSE 2018 for their help with the organization of the event, and IFIP WG8.1 for the support.

April 2018

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