

Preface

The International Symposium on Business Modeling and Software Design – BMSD – is an annual event bringing together researchers and practitioners who are interested in business/enterprise modeling and software generation.

Most software systems being developed need to be integrated adequately in their “enterprise context.” Moreover, an enterprise context often includes, among other things, already-running software applications. For this reason, it is essential to have *alignment* and *traceability* between the *enterprise level* and the *software level*, and therefore it seems logical to try identify enterprise systems and software systems and bridge the two on that basis. As is well-known, when speaking of a system, we are interested in what the system components are, how they are related to each other, how they are related to the environment, and what the principles are that guide the system evolution. An architecture is supposed to provide an integrated view of the system under consideration. According to one of the BMSD keynote lecturers (Roel Wieringa): “An enterprise architecture is a coherent whole of principles, methods and models that are used in the design and realization of the enterprise’s structure, processes, (possibly) information systems, and infrastructure.” Although structure, processes, and data are essential for “software architectures” as well, more complexities occur when developing software (in the analysis, design, and implementation), and according to Leszek Maciaszek, another BMSD keynote lecturer, what lags behind is managing system complexity, expressed in terms of dependencies between system elements. Finally, current enterprises and software applications both need to be adaptable because of the constantly changing real-life environment to which they should conform. This all raises a number of BMSD-relevant challenges, the most important of which are:

- a. Identifying the enterprise and/or software system(s) to be considered
- b. Building aspect models, accordingly, including models that reflect structure, processes, data, and so on
- c. Establishing inter-model consistency
- d. Capturing the (possibly different) levels of granularity between enterprise models and corresponding software models
- e. Establishing alignment and traceability between enterprise models and corresponding software models
- f. Addressing possible dependencies between system elements
- g. Allowing for ways to model adaptability

Those challenges bring us together at our annual BMSD editions.

Since 2011, we have enjoyed five successful BMSD editions. The first BMSD edition (2011) took place in Sofia, Bulgaria, and its theme was Business Models and Advanced Software Systems. The second BMSD edition (2012) took place in Geneva, Switzerland, with the theme: From Business Modeling to

Service-Oriented Solutions. The third BMSD edition (2013) was held in Noordwijkerhout, The Netherlands, and the theme was Enterprise Engineering and Software Generation. The fourth BMSD edition (2014) took place in Luxembourg, Grand Duchy of Luxembourg, under the theme of Generic Business Modeling Patterns and Software Re-Use. The fifth BMSD edition (2015) was held in Milan, Italy, with the theme: Towards Adaptable Information Systems.

The Milan edition of BMSD featured for a fifth consecutive year high-quality papers and presentations as well as a stimulating discussion environment.

In 2015, the scientific areas of interest to the symposium were: (a) Business Models and Requirements; (b) Business Models and Services; (c) Business Models and Software; and (d) Information Systems Architectures. Further, there were two application-oriented special sessions, namely, a special session on IT Solutions for Healthcare and a special session on Intelligent Applications of InterCriteria Decision Making Analysis.

BMSD 2015 received 57 paper submissions from which 36 were selected for publication in the symposium proceedings. From these, 14 papers were selected for a 30-minute oral presentation (full papers), leading to a full-paper acceptance ratio of 24 % (compared with 23 % in 2014) and hence indicating the intention of preserving a high BMSD quality for the next editions of the symposium. The BMSD 2015 authors are from Austria, Belgium, Bulgaria, Greece, Egypt, Finland, Germany, India, Italy, Japan, Kazakhstan, The Netherlands, Poland, Portugal, Slovakia, Spain, Sweden, Switzerland, Tunisia, UK, and USA, indicating the strong international presence at the event.

The high quality of the BMSD 2015 program was enhanced by two keynote lectures, delivered by distinguished guests who are renowned experts in their fields: Barbara Pernici (Politecnico di Milano, Italy) and Marijn Janssen (Delft University of Technology, The Netherlands). Their inspiring lectures were greatly appreciated by the participants, helping them get a deeper insight into architectural and data aspects of enterprise modeling. Further, Barbara's and Marijn's participation (together with other professors) in the BMSD 2015 panel was of additional value.

BMSD 2015 was organized and sponsored by the Interdisciplinary Institute for Collaboration and Research on Enterprise Systems and Technology (IICREST), being coorganized by Politecnico di Milano and technically co-sponsored by BPM-D. Cooperating organizations were the Aristotle University of Thessaloniki (AUTH), the UTwente Center for Telematics and Information Technology (CTIT), the BAS Institute of Mathematics and Informatics (IMI), the Dutch Research School for Information and Knowledge Systems (SIKS), and AMAKOTA Ltd.

This book contains revised and extended versions of ten selected BMSD 2015 papers considering a large number of BMSD-relevant research topics: from business processes-related topics, such as process mining and discovery, (dynamic) business process management (and process-aware information systems), and business process models and ontologies (including reflections into the Business Model Canvas), through software engineering-related topics, such as domain-specific languages and software quality (and technical debt), and

semantics-related topics, such as semantic technologies and knowledge management (and knowledge identification), to topics touching upon cloud computing and IT-enabled capabilities for enterprises. Those papers are not only relevant to particular BMSD topics but they also concern the issue of bridging the two BMSD sub-areas (enterprise modeling and software specification), something that is a distinctive feature of BMSD.

We hope that you will find the current LNBIP volume interesting. We believe that the ten selected papers will be a helpful reference in the aforementioned topics.

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