

Selected Topics in Management and Modeling of Complex Systems: Editorial Introduction to Issue 15 of CSIMQ

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The 15th issue of CSIMQ presents extended versions of papers from the 21st European Conference on Advances in Databases and Information Systems (ADBIS 2017) and other scientific events discussing management and modeling aspects of informatics research. The provided models and their application help to understand the domains under discussion. The models range from socio-technical models over business process models to models of usable graphical interfaces. Readers might find a lot of interesting aspects in this broad spectrum of management and modeling research.

The first article by Ilia Bider, Henning Otto, and Saga Willysson from Stockholm University in Sweden discusses management aspects of software development that is distributed worldwide. The article has the title: “Using a Socio-Technical Model of a Global Software Development Project for Facilitating Risk Management and Improving the Project Structure”. It provides a model that allows to manage the risks of global projects. The model helps to explicate and represent various kinds of distances between the functional components. This helps to determine and manage the risk factors.

Amin Jalali from Stockholm University in Sweden discusses the idea of aspect-oriented business process modeling. This enables the encapsulation of specific regulations like security, auditing, or archiving. However, the different specifications have to be combined (weaved) during runtime. Sometimes it is possible to perform a static weaving during design time. Amin Jalali discusses the business process change management problems in his article that is entitled: “Weaving of Aspects in Business Process Management”.

In the third article, ideas of supporting the communication between data modelers and decision makers are discussed by the authors Fiona Tulinayo, Theo van der Weide, and Patrick Van Bommel from Makerere University in Uganda and Radboud University in the Netherlands. A natural language based domain modeling method ORM (Object-Role Modeling) is used for this purpose. It supports the creation of complex SD (Systems Dynamics) models. The authors

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provide a theoretical foundation of combining ORM with SD. Additionally, a case study for a hospital is provided.

Decision making is also discussed and supported in the fourth article. It has the title: “Automated Creation and Provisioning of Decision Information Packages for the Smart Factory”. It is provided by the authors Eva Hoos, Pascal Hirmer, and Bernhard Mitschang from the University of Stuttgart in Germany.

The fifth article focuses on development of the user interfaces of web applications. It is provided by the authors Jevgeni Marenkov, Tarmo Robal, and Ahto Kalja from Tallinn University of Technology in Estonia. A tool working with guidelines that are coded as rules is presented. It checks the usability of websites and can be integrated in application development environments. The tool is applied in different case studies to several governmental websites of Estonia. The results of the analysis of these case studies are discussed in detail. The title of the article is: “Design-Time Web Usability Evaluation with Guideliner”.

The published articles support management and modeling of complex systems in different ways on different levels of abstraction. The research results reflected in the articles can help to fill knowledge gaps and facilitate decision making in project management, business process management, very complex domain analysis, and data-intensive cyber-physical systems engineering.