Challenges of Processes Simulation with Batch Processing Activities in Contemporary Business Process Management Tools

Igor Pihir
Faculty of Organization and Informatics, Varaždin, University of Zagreb, Croatia

Neven Vrček
Faculty of Organization and Informatics, Varaždin, University of Zagreb, Croatia

Katarina Tomičić Pupek
Faculty of Organization and Informatics, Varaždin, University of Zagreb, Croatia

Abstract

Simulation of business processes, as part of the process modelling and improvement activities in Business process management (BPM) and Business process improvement/reengineering (BPI/BPR), plays a significant role in the assessment of the effects of contemporary information and communication technologies (ICT) and the optimization of resources. Contemporary business process management/modelling tools (BPM tools) embed simulation features as a part of process analysis and process optimization. Although these tools support simulation, there are challenges in their simulation capabilities that can limit or obstruct their use. The limiting capabilities that we are addressing in this paper deal with batch processing activities and dynamic aspects of the capacity changes over time in such activities. The paper explores thereby the dynamic aspects of the simulation, in activities with batch processing within the process model, as the possibilities of some popular business process modelling or management tools. As a supplementary solution, to overcome such limitations of contemporary BPM tools, their batch activity simulation capabilities were compared by running simulations based on Time driven activity based method model (TD ABC model). Also, significant limitations of contemporary BPM tools with process simulation features are assessed and discussed, as well as advantages and disadvantages in comparison to TD ABC model simulation.