

# Collaborative Engineering of Processes and Systems

## Introduction to the minitrack

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The minitrack on Collaborative Engineering of Processes and Systems deals with the development and use of participative methods and tools for quantitative and qualitative analysis of current business processes, and for design and implementation of new ways of working. The minitrack usually does not focus on the production and assembly of goods, but more on administrative processes that occur in all public and private organizations. Part of the attention is aimed at the service industry, because high quality processing of information is usually the added value the industry provides for its customers. The administrative processes *are* their primary process. In that way, the topic of the minitrack is closely linked to business process redesign, but it has a broader focus. In this minitrack we look especially at recent developments in the field, focusing on concepts for collaboratively modeling the dynamic behavior of business processes and of those involved in supporting their design and change. This year, we selected a number of interesting papers for the minitrack, which give a good insight into the current state of the field.

Kwok, Lee, and Turban open this year's minitrack with a discussion of intercultural communication apprehension. This is an important issue to take into account when designing electronic commerce applications that span organizational and national borders. The authors identify three important factors that could influence intercultural communication apprehension: cultural climate, technology environment and communication leadership. They elaborate how these factors can be further explored in a laboratory environment by proposing a research framework and accompanying hypotheses.

The next paper by Kivijärvi and Tuominen presents an interesting project in which various collaborative business engineering techniques were combined. The authors used continuous simulation modeling, analytical hierarchy decision making procedures, and Group Support Systems to support strategic management in the forest industry. Their

account of this project clearly illustrates that these techniques are complimentary and as a combination offer promising support to address complex organizational engineering problems.

As is also witnessed in the previous paper, simulation traditionally is an important design instrument in collaborative engineering projects. In their paper, Maghnoouji, Vreede, Verbraeck, and Sol illustrate how simulation models can be built and used collaboratively. Based on the experiences in four case studies, the authors present an alternative way of working for engineering projects that are not triggered by problems that have to be addressed, but organizational opportunities that have to be explored.

The fourth paper by Lainema presents another interesting perspective on simulation. The author discusses business gaming as a form of simulation that can be used to support organizational learning. In particular, business process gaming may facilitate shared understanding of and focus on the processes that stakeholders are part of. This shared understanding and focus are arguably essential if organizational change projects are to succeed.

Wang and Xu close this year's minitrack with a discussion of collaborative multi-agents that can be employed to support workflow management. Their paper describes a business workflow management system with intelligent multi-agents technology. It is argued and illustrated with an example that through multi-agent collaboration, the workflow management system may organize an organization's work processes and manages the organizational workflow.

The papers in this minitrack provide new insight into the field of collaborative engineering of processes and systems. Both the theoretical background and case evidence that the methods work in real life cases are presented. We commend the papers to your attention and trust that they will stimulate discussions and future research.