

Editorial

Enterprise modelling and system support

In research institutes and laboratories many algorithms, computer programs and technologies are developed, which are eventually intended for practical use and aimed to improve business performance. Software companies have adopted and further developed research results for commercial use. In particular, computer programs like enterprise resource planning (ERP), product data management or product lifecycle management (PDM/PLM), customer relationship management (CRM), supply chain management (SCM), knowledge management and collaboration tools, collectively called enterprise systems, are offered to support integration of various functions in an organisation as well as in value chains and business networks. Such integration is meant to improve the speed of working, improve quality of information, products and processes, reduce costs, enhance responsiveness to customer needs and, ultimately, strengthen the competitiveness of the organisation, value chain or network.

However, adopting and implementing new technology like enterprise systems, is not without problems. Many implementation efforts fail or do not achieve the results envisioned. Such failures may be very costly, not only because of wasted money, but also because of reduced commitment of employees, damaged customer relationships because of lost or delayed orders, or problems with suppliers because of wrong or insufficient shipments of inventory items.

Many reasons for failure can be found in the literature, a large part of which can be characterised as insufficient alignment between various aspects or parts of an organisation and the new technology. When an organisation wants or needs to adopt new technology, the consequences of the new technology for the business and the impact on the processes in the organisation and the people tasks and responsibilities should be considered thoroughly. Many implementation efforts, however, start without a thorough investigation of the suitability of the new technology for the organisation, the goals that should be achieved, the parts of the organisation that are affected, or the potential problems that may be encountered during implementation.

There is a wide variety of models, tools and techniques that may help organisations in deciding what is needed in

their specific situation and to estimate the amount of effort required to align technology and organisation. Such models, tools and techniques serve to enhance common understanding of business goals and business processes by offering a basis for communication. Moreover, they help to analyse business process structure and performance and identify those parts that need re-engineering and streamlining. The models, tools and techniques also support alignment between an enterprise system and the organisation and determination of the changes that are needed to improve alignment. The many models, tools and techniques at the same time may confuse organisations, because it is often not very obvious which one to choose or which purpose is served. Integrated models are needed, which put the various approaches into perspective.

This special issue presents efforts to develop integrated models for enterprise modelling and identify the various aspects and building blocks for such integrated models. The paper by Ducq et al. presents requirements for an integrated modelling approach. The authors propose a roadmap for developing an integrated enterprise modelling language. Weston et al. stress that modelling an enterprise for analysis and improvement requires a process focus. Lankhorst et al. present an enterprise modelling approach in which several abstraction layers are integrated. In the approach several existing languages can be combined.

Modelling alone is not sufficient, though. Implementation of new technology is a complex process with many pitfalls and uncertainties. Much knowledge and experience of implementation processes is available in the literature and in practice. This knowledge is scattered, however, or too general for practical use. Wognum et al. present an approach to gather knowledge on implementation projects and make this knowledge available for reuse in starting a new implementation project. The knowledge is not only used to assess a new implementation start-up situation, but can also be used to provide ideas for improving sub-optimal situations. Helms focuses on a specific enterprise system, PDM. His paper deals with the process of status and version management of documents containing preliminary design information, to be released in concurrent engineering approaches. Understanding this process is essential for improving and implementing future PDM systems.

This special issue is an attempt to bridge the gap between the information technology world with the world of

information and business management and between basic research and applied research. The papers in this special issue present research into understanding business structure and processes and improve the added value of information systems that are needed for organisations to survive in the current global economy.

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