Adequate design of business processes and support systems: reusability, best practices, theory, … – are they the right answers?

Pnina Soffer

Management Information Systems Department,
University of Haifa,
Carmel Mountain, Haifa 31905, Israel
E-mail: spnina@is.haifa.ac.il

Rainer Schmidt

Department of Computer Science,
Business Information Systems,
University of Applied Sciences,
Anton Huber Straße 25, 73430 Aalen, Germany
E-mail: Rainer.Schmidt@htw-aalen.de

Selmin Nurcan*

Université Paris 1 Panthéon Sorbonne,
Centre de Recherche en Informatique,
90, rue de Tolbiac 75634, Paris cedex 13, France
and
IAE de Paris – Sorbonne Graduate Business School,
21, rue Broca 75005, Paris, France
E-mail: nurcan@univ-paris1.fr
*Corresponding author

Ilia Bider

IbisSoft, Box 19567, SE-10432 Stockholm, Sweden
E-mail: ilia@ibissoft.se

Biographical notes: Pnina Soffer is a Faculty Member at the MIS Department, University of Haifa. Her PhD and MSc were in the Faculty of Industrial Engineering and Management at the Technion – Israel Institute of Technology. Her research areas are in business processes and conceptual modelling, including ontological foundations of both.

Rainer Schmidt is a Professor for Business Information Systems at Aalen University. He has a PhD and an Engineering degree in Computer Science. He is coorganiser of the BPMDS workshop series at CAISE, the BPMS02 workshops at BPM and the SoEA@EE workshop at EDOC 09. He is a Program Committee Member of a number of international conferences and workshops. His current research areas are service science, business/IT alignment, social software and business process management and modelling. He has experience as a Consultant in international management projects and industrial research. He has successfully completed many industrial research projects.

Selmin Nurcan is an Associate Professor at the University Paris 1 Panthéon Sorbonne and a Researcher at the 'Centre de Recherche en Informatique' (CRI). She has a PhD and an Engineering degree in Computer Science. Her research activities include enterprise modelling, business process management, enterprise architecture and business/IS alignment, change modelling, business process (re)engineering and IS engineering and IS governance. She currently works on intention driven modelling formalisms in order to measure their ability to represent adaptive and flexible business processes; and on the enhancement of IS engineering methods aiming to deal with business/IS alignment and IS governance requirements.

Ilia Bider is the Director R&D and Co-founder of IbisSoft. He is an active proponent of Douglas Engelbart's vision that the aim of a computer system is to enhance human intellect, rather than substitute it, or turn humans into slaves. He has combined experience of over 30 years of research and practical work in five countries. He is the Inventor of the state-oriented business process modelling technique, and the author of many research papers, as well as articles for practitioners. He frequently holds tutorials at international conferences, and he sits on the editorial board of several academic journals.

The topic of adequate process design was the main focus of the *8th Workshop of Business Process Modeling, Development, and Support (BPMDS'07)*, which was held in Trondheim, Norway, June 2007. The special issue of this journal published as *IJBPIM*, 2009, Vol. 4, No. 2, included extended versions of selected papers that were presented in the workshop. The papers in that special issue reflect this focus and some of the variety of issues related to it.

Business processes are designed as means for standardising and supporting the ways by which organisations achieve their objectives. When a process is designed, it is the task of the designer to see that this design is adequate for fulfilling the organisational needs. Adequate process design means that a process will have the ability to fulfil its stakeholders' expectations. The objectives of the workshop were to clarify these expectations, to develop metrics to decide whether a design is adequate or not and to investigate means to achieve an adequate design.

The criteria for establishing what an adequate process design is and the means to achieve such adequacy are the focus of the special issue. Adequacy can be measured with respect to the goals of the stakeholders of the business process.

Typical goals that are named in connection with business process (and supporting systems) design are productivity, quality, efficiency, flexibility and conformance with formal and legal rules such as ISO 20000 or SOX. Are they the only ones? Typical means that are named in this context are 'best practices', reuse and theoretical approaches. Are they the right means for achieving these goals?

The main questions that can be addressed include:

a   What does adequate design mean?

b   How can we determine whether a design is adequate or not?

c   What means can be employed to achieve adequate design?

In particular, one may examine typical concepts used in relation to process design, such as reuse, theoretical approaches and even buzz-words, for instance 'best practices'. Reusability is often considered as a highly desirable property of the designed processes and their support systems. 'Best practices' are often used by practitioners to promote design techniques that are supposed to have been proven in practice, but it is not clear why they are 'the best' as their name may suggest, and whether they

can be transferred from one organisation to another. The need to have the 'right' theoretical approach represents the other extreme promoted by researchers who advance theoretical frameworks for design. These often suffer from being impractical and unscalable.

The different aspects of adequate process design that are addressed by the papers in the special issue include quality, collaboration, and reuse.

The paper by Adam et al. (*IJBPIM*, 2009, Vol. 4, No. 2, pp.124–133) addresses the quality aspects, assumed to be reflected in quality goals and requirements. The authors argue that only if all goals (related to a certain sub-domain) are reflected in corresponding processes and the requirements for their involved resources, can the resulting solution be adequate. The paper proposes a meta-model and a method for process design that incorporates quality goals and requirements. The continuous consideration of quality issues has been experienced as an important means to assure adequacy early on.

The assumption that collaborative work contributes to the success of business processes motivates the paper by Magdaleno et al. (*IJBPIM*, 2009, Vol. 4, No. 2, pp.111–123). The paper develops a maturity level model addressing the collaboration practised in business processes. It proposes to adequately integrate the design of collaboration into the design of business processes, and reports an initial empirical evaluation of the proposed approach. The maturity model was defined based on well-known group-supporting aspects: communication, coordination, awareness and memory. The authors claim that organisations can take advantage of the effort of thinking about modelling their processes and explicitly embed collaboration aspects into these processes.

Three papers in the special issue address different forms of reuse in business process design.

The paper by Reinhartz-Berger et al. (*IJBPIM*, 2009, Vol. 4, No. 2, pp.134–149) proposes a notion of organisational reference models that should provide organisational standards for specific business processes that can be designed in different organisational units. When designing business processes in such environments, an adequate process design should balance two conflicting goals. The first goal is that the specific processes would meet the diverse needs of each unit. These needs may vary due to, e.g., localisation requirements or differences in the practises and constraints of each particular unit. The second goal is to keep organisational standards, so that some common business logic is applied, and similarity among the processes is maintained as much as possible. The paper

develops a method for supporting both commonality (organisational standards) and variability in the local processes, and a method for verifying that the local processes comply with the organisational reference model.

The paper by Thom et al. (IJBPIM, 2009, Vol. 4, No. 2, pp.93–110) reports on activity patterns for designing process models. Each of these patterns is based on a recurrent business function and process fragment, respectively (e.g., task execution request, notification activity, approval) as they can be frequently found in business processes. The paper specifies a collection of such patterns and reports an empirical study, which analysed industrial processes using these patterns. The findings support the assumption that a relatively small number of activity patterns are sufficient for expressing a large portion of industrial business processes.

Finally, the paper by Green et al. (*IJBPIM*, 2009, Vol. 4, No. 2, pp.75–92) discusses reusable process architectures and reports experience using such architectures in the higher education sector. The authors applied a particular process architecture development method, Riva, to a study and comparison of specimen processes in two UK higher education institutions. They found considerable variation at the concrete level even in these similar organisations, but saw more commonality in the abstract models using only core elements. Though even the abstract models were not identical, there was enough similarity to suggest some potential for reuse of process designs between organisations.