

Engineering the Transformation of the Enterprise

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Editors

Engineering the Transformation of the Enterprise

A Design Science Research Perspective

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Preface

Honoring Robert Winter

Robert Winter turned 60 in November 2020. To appreciate his work and to honor him as an esteemed personality, a broad range of professional colleagues and longtime companions both from the Institute of Information Management at the University of St. Gallen and from the international research community dedicated articles to this Festschrift.

The topics in this Festschrift reflect Robert's broad range of research interests: from business engineering and its application in corporate and business networking contexts to design science research as well as applied topics, where those research methods have been employed for modeling, data warehousing, IS management, enterprise architecture management, management of large and complex projects, and enterprise transformation.

At the University of St. Gallen's Institute of Information Management, the relevance of the research work for practice was in the foreground early on. Business engineering developed as a body of corresponding research methods. With the ongoing discussion about rigor and relevance of research, business engineering was also intensively scrutinized by Robert. At the same time, the discussion of design science research (DSR), which was about to be established in the international information systems (IS) research community, was taken up. In numerous projects with practitioners, the applied methods were refined, and contributions for and with practitioners were developed. The contributions of the Festschrift reflect Robert's ambition to uncompromisingly conduct high-class research that fuels the research community on the one hand and to pragmatically contribute to practice on the other hand. He has mentored a large number of young researchers, as evidenced by the many supervised habilitations and dissertations. At the same time, Robert has made his results available to established large organizations within the framework of project collaborations and competence centers, thus providing many valuable impulses for practice.

The Organization of the Festschrift

We organized the Festschrift into three parts. The first part is rooted in the perspective, where Robert's interest in research methodology took fire: business engineering, the methodology developed in St. Gallen with a strong focus on research being applied in corporate contexts. The second part dives deeper into design science research and spans from reflections on the practice of design science research, perspectives on design science research methodologies, up to considerations to teach design science research methodology. The third part finally comprises applications of design science research and related research methodologies to practical problems and future research topics.

Part 1: Business Engineering and Beyond

The opening chapters have been initiated by Robert's long-term colleagues at the Institute of Information Management: Walter Brenner and Hubert Österle.

Of course, the part on Business Engineering and Beyond begins with a contribution from Hubert Oesterle, who started the business engineering perspective in St. Gallen. And consequently, he develops a new perspective, live engineering, emanating from the business engineering perspective: *From business engineering to life engineering*. He focuses on the individual perspective of the quality of life in contrast to the established corporate value perspective established in business engineering.

In the second chapter, Walter Brenner discusses together with Benjamin van Giffen and Jana Koehler the *Management of artificial intelligence* and focuses on the feasibility, desirability, and viability of artificial intelligence.

Mateusz Dolata and Gerhard Schwabe extend the discussion on artificial intelligence in their chapter by asking *How fair is IS research?* They zoom into algorithmic fairness, corresponding discrimination risks in IS research, and resulting research opportunities for IS researchers.

Susanne Leist, Dimitris Karagiannis, Florian Johannsen, and Hans-Gert Penzel bring the business engineering perspective back and reflect on the role of metamodeling in their contribution *From business engineering to digital engineering – The role of metamodeling in digital transformation*.

Ulrike Baumöl and Reinhard Jung focus again by zooming into modeling with their contribution *Potentials and limits of modeling using the example of an artificial Real-World Model*.

Finally, Henderik A. Proper completes the first part with his contribution *On model-based coordination of change in organizations*, where he reflects on modeling and the resulting need to leave the "boxes-and-lines" metaphor being used in engineering and sets the stage for part two.

Part 2: Design Science Research

Shirley Gregor opens the sequence of contributions discussing design science research. In *Reflections on the practice of design science in information systems*, she shows existing issues in DSR and discusses them from both contributor and reviewer points of view.

Jan vom Brocke, Manuel Weber, and Thomas Grisold reflect the DSR contributions to the solution of real-world problems in *Design science research of high practical relevance – Dancing through Space and Time*. They discuss their experiences with applied research and develop quality criteria to demonstrate both practical relevance and societal value contributions of DSR.

Jan Marco Leimeister, Ernestine Dickhaut, and Andreas Janson reflect the pattern topic in their contribution *Design pattern as a bridge between problem-space and solution-space*. They delve into the codification of design knowledge and its application in both research and practical contexts.

Tuure Tuunanen and Jan Homström reflect another problem dimension between building and using design knowledge by limiting their contribution to and using the research results within a study and across research studies with their chapter *Incremental accumulation of information systems design theory*.

Jannis Beese adds to this perspective the time dimension and asks for *Assessing the temporal validity of design knowledge* in his contribution.

Finally, Alan R. Hevner contributes a scholarly perspective with *Pedagogy for doctoral seminars in design science research* and develops a curriculum for the doctoral level.

Part 3: Applied Fields

Stephan Aier, Barbara Dinter, and Joachim Schelp reflect in their contribution *Management of enterprise-wide information systems* the part of research work at Robert's chair that focuses on data warehousing, (enterprise) architecture, and transformation.

Lars Baake, René Fitterer, Anke Helmes, Tobias Mettler, and Peter Rohner discuss in their chapter *The competence center health network engineering—A retrospective* the research contributions at Robert's chair to the transformation of the Swiss health system.

Kazem Haki delves into platform ecosystems and develops *A research agenda for studying platform ecosystems*.

Hans-Ulrich Buhl, Björn Häckel, und Christian Ritter develop a management system for integrated risk and earnings management with a focus on increasing resilience in turbulent times in their contribution *A Concept for an IT-supported integrated earnings and risk management to strengthen the resilience of companies in times of crisis*.

Peter Gluchowski discusses using data vaults as a modeling approach for data warehouse systems in his contribution *Data Vault as a modeling concept for the data warehouse*.

Jörg H. Mayer, Christian Hebel, Markus Esswein, Moritz Göbel, and Reiner Quick stay in the business intelligence context but focus on the usage perspective and are *Evaluating a forward-looking maturity model for enterprise performance management*.

Gunnar Auth reflects *The evolution of IT management standards in digital transformation – Current state and research implications*.

Antonio Fernandes and José Tribolet develop another perspective on enterprise-wide information systems with their contribution *Towards conscious enterprises: the role of enterprise engineering in realizing living sciences paradigms into management sciences*.

Paolo Spagnoletti and Stefano Za add a special perspective to organizations by discussing *Digital resilience to normal accidents in high-reliability organizations*.

Ralf Abraham, Stefan Bischoff, Johannes Epple, Nils Labusch, and Simon Weiss return to the research perspective and contrast it with the practitioners' one. They conclude that there is a gap to be surmounted and deliver some fresh thoughts on it in their contribution *Mind the gap: Why there is a gap between information systems research and practice, and how to manage it*.

Reima Suomi finally reflects humorously *The connection between Winter and information systems*.

St. Gallen, Switzerland

Stephan Aier
Peter Rohner
Joachim Schelp

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