# Guest Editorial Preface

# Special Issue of Service-Oriented Enterprise Architecture for Enterprise Engineering

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Service-oriented Enterprise Engineering as the methodological approach for designing service-oriented enterprise architectures is attracting an increasing attention in research as observed in the workshop series 'Service-Oriented Enterprise Engineering for Enterprise Architecture' initiated by Selmin Nurcan and Rainer Schmidt. Since its foundation in 2009, the SoEA4EE workshop complements well-established topics of the EDOC conferences such as service-oriented architectures and enterprise service architectures by addressing the coupling of business processes and services and the alignment of business and IT. The SoEA4EE workshop also shows relationships to topics such as Business Process Management, Enterprise Service Architectures, Analytics, Big Data and Networked Enterprise Solutions and, in some way, their inter-connections.

Several developments, such as the success of cloud-computing, show that not the ownership of IT resources but their management is the foundation for sustainable competitive advantage (Mata, Fuerst, and Barney, 1995). According to (Ross, Weill, and Robertson, 2006), smart companies define how they (will) do business (using an operating model) and design processes and infrastructure critical to their current and future operations, using an enterprise architecture (EA). Enterprise Engineering (EE) is the application of engineering principles to the design of enterprise architectures. It enables deriving the EA from the enterprise goals and strategy and aligning it with the enterprise resources. EA (Ross et al., 2006) is used to map the enterprise goal and strategy to the enterprise's resources (actors, assets, IT supports) and to take into account the evolution of this mapping. It also provides documentation on the assignment of enterprise resources to the enterprise goals and strategy.

There are different paradigms for building enterprise architectures. In the SoEA4EE series, the one which was considered as the most promising is to encapsulate the functionalities of IT resources as services. By this means, it is possible to clearly describe the contributions of IT both in terms of functionality and quality and to define a service-oriented enterprise architecture (SoEA). SoEA easily integrates widespread technological approaches such as SOA (service-oriented architecture) or emerging ones as cloud computing because they also use service as structuring and governing paradigm. The enterprise goals and strategies are thus mapped to a SoEA.

After a first special issue (Nurcan and Schmidt, 2015) including selected papers from the first editions of SoEA4EE, in 2016 we invited the authors of the selected papers from the three previous editions of SoEA4EE to submit an extended version of their workshop paper to a special issue of the International Journal of Information Systems in the Service Sector (IJISSS). Four papers covering a broad spectrum of themes in Service Oriented Enterprise Architecture Engineering from technical to conceptual and managerial themes were selected in a rigorous review process.

Enterprise Architecture Management provides the mechanism for governing enterprise transformations required by changes in the environment. In the first paper, "A Risk Integration Framework for the Service-Oriented Enterprise", the authors focus on changes that result from the analysis of information system risks and of their impacts on the services delivered by the enterprise. The paper reports about the contribution of the authors to the design of a security risk-oriented

Enterprise Architecture model and then generalizes the model to manage the risks on any goals, including security goals, of the information system supporting the delivery of business services.

Strategic Sourcing as a critical area of strategic management is centered on decision-making towards achieving value-driven targets. In the second paper, "Service-Oriented Enterprise Engineering - A Modeling Discipline Based on the Viable Systems Approach for Strategic Sourcing Decision-Making", the authors explore a new approach for Service-oriented Enterprise Engineering, by founding it on the application of the Viable Systems Approach towards strategic decision-making.

In "Dynamic Capabilities of Decision-oriented Service Systems", the authors identify the operational, analytical and dynamic capabilities provided by decision-oriented service systems targeting a long-term research objective: to prepare the ground for methods for the design of business processes based on decision-oriented service systems. The paper contributes to the literature by adding new conceptual foundations about the strategic alignment of Data-Centered Cloud Architectures.

Modern enterprises have to respond to the challenge of changing competitive situations by being able to adapt their business models and the supporting IT systems. Service-orientation and cloud computing offer established approaches for achieving flexibility in the use of computing resources and sourcing strategies. In the fourth paper, "Capability as a Service: Method and Tool Support for Context-Aware Business Services", the authors introduce a complementary abstraction layer, "Capability as a Service" (CaaS), to ease the adaptation of business services to changing business needs.

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We hope you enjoy the issue!

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Guest Editor
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