

Foreword

Businesses today can rapidly adapt to changing operation conditions, to varying customer needs, and to the rapid scaling of service offerings, thanks to the tremendous improvements in the supporting information technology infrastructure. In fact, in the last decade, we have witnessed the emergence of a new paradigm for building business applications: a paradigm that enables highly dynamic and scalable solutions, and relies on the abstraction of subsystems as services. *Services* are autonomous, accessible, and provide the basic business functionalities that allow companies, including virtual ones, to add value by combining services into business processes. The business goal of shipping an on-line purchased book to a customer can be satisfied in two ways: one that is mostly inflexible and completely internalizes the supporting business process implementation, and one that relies on external services. For instance, the credit card payment service, the shipping service, and the packaging service could all be provided by third parties that are coordinated via software interactions orchestrated by the “owner” of the business process. In this way, a rapid change in demand can be easily supported by replacing and adding more external services and running more instances of the service-oriented business process. Service-oriented solutions can leverage the effectiveness and the rapidity with which e-business operates, and allow it to successfully stay competitive in any modern market.

The book *Research and Development in E-Business through Service-Oriented Solutions* provides an up to date overview of the state of the art in using service-orientation to address the needs of e-business, including considerations of modeling, of data mining, and security. It also covers scalability issues by looking into modern cloud service implementations. The technological view is nicely complemented with a selected set of case studies which help the reader to understand the applicability of the illustrated technologies. The case studies are mostly in the area of healthcare, but also include retail, banking, and e-government. The book is useful in the hands of both practitioners with a technical engineering background as well as those with an economic one. It will also benefit the student when used as a textbook and the interested ICT researcher.

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Marco Aiello is Full Professor of Distributed Systems at the Johann Bernoulli Institute for Mathematics and Computer Science of the University of Groningen, The Netherlands; Honorary Professor at Bournemouth University, UK; and member of Energy Academy Europe. His research interests include service-oriented computing, in the context of which, he has mostly contributed to solutions to the problem of run-time service composition. The application areas Aiello has considered for service composition are: e-business, business process management, and pervasive computing, in particular, smart homes and buildings applications. Prior to joining the University of Groningen, he was a Lise Meitner fellow at the Technical University of Vienna (Austria) and an assistant professor at the University of Trento (Italy). He holds a Ph.D. from the University of Amsterdam (2002) and a degree in Computer Engineering cum Laude from the University of Rome, La Sapienza (1997).