The field of Business Process Management (BPM) is marred by a seemingly endless sequence of (proposed) industry standards. Contrary to other fields (e.g., civil or electronic engineering), these standards are not the result of a widely supported consolidation of well-understood and well-established concepts and practices. In the BPM domain, it is frequently the case that BPM vendors opportunistically become involved in the creation of proposed standards to exert or maintain their influence and interests in the field. Despite the initial fervor associated with such standardization activities, it is no less frequent that vendors either choose to drop their support for standards that they earlier championed on an opportunistic basis or elect only to partially support them in their commercial offerings.

Moreover, the results of the standardization processes themselves are a concern. BPM standards tend to deal with complex concepts, yet they are never properly defined and all-too-often not informed by established research. The result is a plethora of languages and tools, with no consensus on concepts and their implementation. They also fail to provide clear direction in the way in which BPM standards should evolve.

One can also observe a dichotomy between the “business” side of BPM and its “technical” side. While it is clear that the application of BPM will fail if not placed in a proper business context, it is equally clear that its application will go nowhere if it remains merely a motivational exercise with schemas of business processes hanging on the wall gathering dust.

An important observation that can be made about the state-of-the-art in BPM relates to tool support. Tool support has evolved considerably in the past decade, both in terms of the breadth of functionality that is provided and in terms of the range and capabilities of the vendors who are involved. However, because of the lack of effective standardization and direction in the field, BPM technology is not widely used. Commercial BPM tools are rarely used in small and medium-sized enterprises because of their prohibitive total cost of ownership. Acquisition costs tend to be high, and ongoing operational support and maintenance commitments can be even higher. One factor in this is that the closed nature of these products means that their customization to specific client requirements may be difficult or even impossible to achieve, and only the biggest users may be able to influence their future feature set. Another issue is the scarcity of knowledge about individual
BPM offerings and the fact that product knowledge does not generalize. This means that it remains difficult for end users to really leverage the capabilities of their BPM investment.

So where does this leave those interested in the field of BPM? First, it is unwise to become too aligned with or invest too heavily in particular standards, tools, or technologies. These all come and go. It is imperative that the conceptual, formal, and technological foundations of BPM are thoroughly understood. Only this way can one survive the onslaught of “the latest and greatest” in BPM and not have the wool pulled over one’s eyes by vendors, training organizations, and other interested parties. Second, it is important to not only develop an understanding of the business context of BPM and its main drivers but also of the fundamentals of business process automation. To automate processes, it is vital to have a correct understanding of the operation of the business processes. This can be obtained by process mining and advanced simulation techniques. Measurable benefits can be realized by business process automation if the right set of patterns is supported. Finally, the (increased) uptake of Linux and other open-source products in the past decade has provided real momentum for the open-source movement. This has also influenced the BPM landscape, and where once there was no alternative to commercial, closed-source, and expensive solutions, such alternatives have now become viable in many instances. The markedly lower acquisition costs and the ability to modify the software to suit one’s own needs cannot be ignored as factors in software selection processes and make the use of BPM technology an attractive proposition for a much wider range of potential users, including those in small and medium-sized enterprises for whom it was previously cost-prohibitive.

The book in front of you is the culmination of more than ten years of research and development conducted at universities in different parts of the world. It aims to provide the reader with a deep insight into fundamental concepts and techniques that are core to understanding BPM and its application. The focus is not on business/motivational aspects, though these aspects are not ignored.

The book is primarily intended as a textbook for undergraduate and postgraduate students in the field of workflow, or BPM more broadly. However, it is also eminently suitable as a reference for BPM researchers and professionals as it covers a wide range of BPM-related topics in a highly accessible yet thorough way. Exercises to deepen the reader’s knowledge are provided throughout and the chapter notes at the end of many chapters provide the reader with references to further work in the area. The book uses YAWL (Yet Another Workflow Language), a powerful language based on the well-known workflow patterns, and its open-source support environment, to explain advanced concepts and their realization.

This book is an edited work and would not have been possible without the contributions of a wide range of experts in the field. They take the reader through the fundamentals of business process modeling and automation, various aspects of flexibility, a number of current industry standards, and advanced topics such as integration, verification, mining, and configuration. In addition, implementation aspects relevant to modern BPM environments are addressed in depth and applications of BPM in the domains of health and screen business are discussed.
We feel privileged to have worked with many enthusiastic, committed, and knowledgeable people over the years. In addition to the authors of the various chapters in this book, we wish to thank the following people for their contributions to the YAWL initiative: Lindsay Bradford, Carmen Bratosin, Ross Brown, Francesco Cardi, Evan Chen, David Edmond, Tore Fjellheim, Matt Flaherty, Mike Fowler, Andrew Hastie, Saphira Heijens, Sean Kneipp, Jan-Christian Kuhr, Giancarlo La Medica, Massimiliano de Leoni, Alfredo Nantes, Ignatius Ong, Helen Paik, Jessica Prestedge, Guy Redding, Dan Simkins, Alex Streit, David Truffet, Sébastien Vicente, and Kenneth Wang.

We also gratefully acknowledge support from the Australian Research Council, the ARC Centre of Excellence for Creative Industries and Innovation, and the Nederlandse Organisatie voor Wetenschappelijk Onderzoek (NWO).

We sincerely hope that this book provides a valuable resource to the reader in the years to come.

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Modern Business Process Automation
YAWL and its Support Environment
Hofstede, A.H.M.; van der Aalst, W.; Adams, M.; Russell, N. (Eds.)
2010, XVIII, 676 p., Hardcover
ISBN: 978-3-642-03120-5