

Schahram Dustdar
José Luiz Fiadeiro
Amit Sheth (Eds.)

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Preface

The 4th International Conference on Business Process Management (BPM 2006) was held in Vienna, Austria, on September 5–7, 2006, organized by the VitaLab, Distributed Systems Group, Institute of Information Systems, Vienna University of Technology.

The present volume collects the papers accepted for presentation at the main conference. A series of co-located workshops were held together with BPM, the proceedings of which are published as volume 4103 of Springer's *Lecture Notes in Computer Science* series.

Paper submission was strong and geographically well distributed: 78 papers originated from Europe, 32 from Asia, 14 from the Americas, 11 from Oceania, and 3 from Africa, to a total of 40 different countries.

All papers were reviewed by at least three referees and competition for acceptance was very high: of the 138 submitted papers, only 20 were accepted as full research papers (14% acceptance rate), 5 as industrial papers and 15 as short papers. Further to these, invited lectures were delivered by Donald Ferguson – an IBM fellow, Dave Green – an architect for Microsoft's Windows Workflow Foundation, and Edwin Khodabakhchian – Vice President of Product Development at Oracle. We want to thank our keynote speakers and their organizations for their invited presentations.

We take this opportunity to thank the members of the Program Committee and the additional reviewers for their tremendous effort in guaranteeing the scientific quality of BPM. We would also like to thank the Steering Committee for their constant support.

We are also indebted to the local organization staff for their timely and precious support, in particular to Florian Rosenberg and Eva Nedoma for their invaluable help in making BPM 2006 a reality. We thank Marco Aiello for the help in assembling this volume. Last but not least, we would like to express our gratitude to Frank Leymann (Industrial Chair), Johann Eder (Workshop Chair), and Jan Mendling (Demo Chair).

We hope you will find the articles in the present volume a valuable and up-to-date picture of the state of the art in research on business process management and its industrial impact.

June 2006

Schahram Dustdar, Jose Fiadeiro, Amit Sheth
BPM PC Chairs 2006

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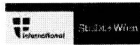
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Enterprise Business Process Management – Architecture, Technology and Standards

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Abstract. All enterprises' operations require integrating information, and processing information with applications. This has been true for decades, if not centuries. Information and application integration has evolved from completely person centered verbal communication (blacksmith to apprentice), through paper documents-mail-fax, email and Web page interactions. The information and applications control the flow of goods and operations on them. *These are the business processes of the economy.* Coming from vastly different starting points, the evolutionary paths of business designs and IT architectures are converging, in a striking example of convergent evolution. In some cases, enterprises are almost purely information processing businesses, e.g. insurance. The past few years have seen explosive growth in direct program-program interaction for application integration, removing manual steps to yield tremendous improvements in reliability and efficiency. Controlling the sequence of program interactions and information flow, and knowing the status of the flows, are fundamental to an enterprise's functions. Automating, monitoring and optimizing the flow is the field of business process management. The past two years have seen the emergence of several architectural and standards based innovations. This paper, with a focus on the end-to-end model, provides a technical overview of the standards, architecture, programming and runtime models that make modern BPM possible.

1 Model – Assemble – Deploy – Manage (MADM)

Business professionals collaborating with IT professionals define a model (architecture) of the business. Often the model is simply a set of “business processes,” e.g. steps to process a purchase order. Additionally, the model may include business artifacts (purchase order, bill of materials), policies (schedule premier customers ahead of others) and the business components (shipping department, finance and accounting). The business model could include key performance indicators (KPIs). Examples of KPIs include: percentage of purchase orders that complete without manual intervention, or average dollar value of submitted shopping carts. These KPIs directly measure business performance, e.g. profit, customer satisfaction. Figure 1 provides an overview of end-to-end *business process management (BPM)*.

The fundamental goal of BPM is to iteratively and coherently describe and implement the business model through the development stage, into running systems and monitoring KPIs. This is what distinguishes BPM from more classic approaches

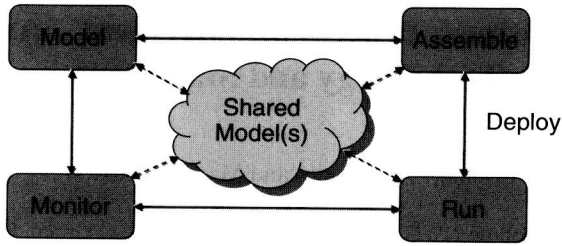


Fig. 1. BPM Loop

to application development and execution. Existing systems are often vertically integrated applications, with only fragmentary views of the business. The systems typically do not report on satisfaction of business goals, or if they have this capability to any extent, it was added after the fact.

Many recent innovations -- service oriented architectures, Web services and standard languages for describing business processes, business artifacts, business events and services -- make BPM goals more achievable.

This paper provides an overview of the recent innovations. The breadth of standards and concepts often make seeing the forest difficult, as there are many, changing trees. There are, however, an emerging set of architecture models that integrate the many concepts. The models also enable consumable, progressive discovery and application of the concepts. Moreover, the emerging architecture naturally represents the *business architectures and business models*. The business architecture and BPM/SOA architectures' evolution are converging.

1.1 Model

The most popular modeling tools are white boards, followed closely by Microsoft Office. However, there is an increasing trend to more formal and rigorous modeling. Some organizations use focused tools, e.g. WebSphere Business Modeler [1] or Intalio [2]. Others use tools that extend spreadsheets, documents or diagrams to incrementally support business process modeling. Formal modeling has two major benefits:

1. Precise notation: The well-defined semantics of formal models can capture information in an unequivocal manner, whereas if you use PowerPoint® or white boards, people who were not in the room do not know what dotted arrows or purple circles mean.
2. Reliable hand-offs: Modeling tools can generate implementation templates and the structure of the supporting applications (SOA services), business processes and artifacts. This is less error-prone than reading documents and guessing the desired application behavior. *Bad things happen when programmers guess.*

Surprisingly the connection between model and assemble (build) is bidirectional. Organizations often use modeling tools to reverse engineer systems to explain the existing applications to business professionals.