Preface

Advances in information technology (IT), coupled with the increased competition brought about by globalization, are strongly affecting the business environment. To succeed in this new environment, businesses are transforming themselves and becoming more agile and more efficient. The IBM strategy for its on demand transformation is enabled by IT and involves creating new approaches to solving its business challenges, making better use of the talent and experience of its workforce through improved collaboration, and enhancing productivity by improving its business processes.

This issue of the *IBM Systems Journal* contains twelve papers on IT-enabled business transformation and they are grouped under three major topics: (1) transforming IBM, (2) methods and technologies, and (3) analytics and optimization. We thank the issue coordinators, Santhosh Kumaran, Steve Krantz, and John Walicki, who were instrumental in planning the issue, acquiring papers, and advising the editorial staff throughout the publication process.

The first five papers of this issue focus on how IBM is making use of IT to transform itself. In "A model for CIO-led innovation," Newbold and Azua recount the evolution of the collaborative innovation process at IBM, which started in 2001 with the first WorldJam, a brainstorming session involving 50,000 employees interacting online and discussing the critical issues facing the company. They also describe how the support system instituted to help innovators develop their ideas led to new solutions and successful products. In the related paper "Engaging a corporate community to manage technology and embrace innovation," Chow et al. describe the Technology Adoption Program (TAP), a program that creates and nurtures a community of early adopters for solutions under development. Early adopters are volunteers eager to help create value for the community by providing early feedback to developers, which accelerates the innovation process.

In his paper "IBM business transformation enabled by service-oriented architecture," Walker shows the ways in which service-oriented architecture (SOA) is playing a key role in IBM business transformation. He describes IBM internal SOA strategy, SOA governance, organizational impacts, and several IBM internal SOA case studies. In "The internal information transformation of IBM," Vayghan et al. describe the program for establishing an enterprise data architecture in IBM. They focus on the activities of the IBM Enterprise Business Information Center of Excellence, which is responsible for implementing and deploying the program. The last paper in this group is "Sense-and-respond supply chain using model-driven techniques," by Kapoor et al., in which the authors demonstrate the use of model-driven techniques for transforming supply chain operations. The authors describe the application of the model-driven business-transformation toolkit to the transformation of the IBM System x* supply chain.

The next four papers deal with methods and technologies beneficial to business-transformation projects. In "Artifact-centered operational modeling: Lessons from customer engagements," Bhattacharya et al. demonstrate the value of using the artifact-centered operational modeling approach in business-

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transformation projects. They describe the ways in which their direct participation in three customer engagements has enriched and strengthened the approach. Nayak et al., the authors of the paper "Core business architecture for a service-oriented enterprise," describe a conceptual framework for business architecture that can be applied to business reasoning in transformational projects. They illustrate the use of these concepts in a business scenario involving a fictional company in the apparel business. In "Changing the corporate IT development model: Tapping the power of grassroots computing," Cherbakov et al. describe how the recent ascendance of grassroots computing, exemplified by so-called "situational applications," provides an alternative approach to application development. Situational applications are created rapidly by knowledge workers who are close to the business and unencumbered by formal processes. In the last paper in this group, "Voice-enabled IT transformation: The new voice technologies," Christensen and Hughes show how new voice technologies can help people communicate better, and also enable new ways of integrating voice data into an enterprise data architecture.

The last three papers of this issue cover the use of analytics and optimization in transformational projects. In "On optimizing the selection of business transformation projects," Abe et al. propose a methodology that involves the use of correlation analytics for identifying key drivers of business performance and advanced portfolio optimization techniques. They illustrate the use of their methodology through a case study from the electronics industry. In "Analytics-driven solutions for customer targeting and sales-force allocation," Lawrence et al. describe two analytics-based solutions, one for identifying new sales prospects, and the other for the optimal allocation of the sales force. Both solutions have been deployed in several geographic regions and preliminary evidence points to measurable gains in sales-force productivity. In the last paper of this group, "Model analysis for business event processing," Zeng et al. focus on techniques for dealing with real-time constraints in application development. They advocate so-called "model-analysis techniques," in which analyses of the application logic are conducted at build time to determine the impact of factors such as runtime data access path, data flow, and control flow. They present experimental results that demonstrate the effectiveness of their approach.

The next issue of the *Journal* is devoted to service science, engineering, and management.

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