BY *JIM SPOHRER* **AND** *DOUG RIECKEN,* **GUEST EDITORS**

This special section on services science is intended to broaden and challenge traditional thinking about services and service innovation. To the majority of computer scientists, whether in academia or industry, the term "services" is associated with Web services and service-oriented architectures. However, there is a broader story to be told of the remarkable growth of the service sector, which has come to dominate economic activity in most advanced economies over the last 50 years.

Globalization, increasing automation, the growth of the Internet, and the dynamic componentization of business are driving the reconfiguration of service value networks at a scale and pace never before seen in history. The opportunity to innovate in services, to realize business and societal value from knowledge about service, to research, develop, and deliver new information services and business services, has never been greater. The challenges are both the multidisciplinary nature of service innovation, which combines business, technology, social-organizational, and demand innovation as well as the lack of formal representations of service systems.

ILLUSTRATION BY LISA HANEY

Chesbrough and Spohrer define service and introduce the need for services science to address key questions and grow the body of knowledge around services to become far more systematic about service innovation. They point out that the coproduction of value between client and provider organizations starts with an understanding of the capabilities and needs of both. However, much of that understanding is locked up in tacit knowledge in people's heads and in highly custom organizational processes that are inherently difficult to formalize and codify.

Sheehan provides an analysis of firm-level data across multiple nations to better understand the distinctive characteristics of service innovation. These findings provide a macroeconomic view onto the phenomena of service innovation, and can be used to shape policy to promote service innovation at a regional and national level.

Rust and Miu summarize the body of knowledge that exists today with respect to service research in business. Rust, who founded the *Journal of Service Research,* offers a glimpse at the findings from well over a decade of empirical studies. Insights into the nature of the service relationship, service quality, and service profitability primarily from a business-to-consumer (B2C) perspective are presented, along with recent findings based on the shift toward online service delivery.

Shifting back to a computer science perspective, Sheth, Verma, and Gomadam take on the challenge of outlining a semantic representation for service systems that include people, technologies, and organizations, as well as their capabilities, goals, rights, and value they coproduce.

Dietrich brings an operations research perspective on service innovation to bear, highlighting challenging problems and progress in the areas of supply chain and enterprise resource planning. The supply chains of manufacturing firms and service firms have important similarities and differences. Labor-intensive services business presents an especially interesting array of new modeling challenges.

Rouse and Baba consider the challenge of enterprise transformation from two perspectives, that of an industrial and systems engineer and that of a business anthropologist. As the pace of business and technological change accelerates, the demand for B2B transformation services that are truly innovative and sustainable is on the rise. Their contribution speaks to the need for a deeper theoretical foundation of sociotechnical system change on which to base a theory of service system design and evolution, and systematic approaches to service innovation.

Research and education in service management has over a 20-year history in business schools, and the article by Bitner and Brown concisely summarizes that story from the perspective of two of the pioneers. In addition, directions for the future are outlined, highlighting the growing role of self-service technologies and the rise of B2B services.

And Maglio, Kreulen, Srinivasan, and Spohrer look at four example service systems (education, data centers, patent system, and call centers) from the perspective of a hypothetical service scientist, or a professional trained in the emerging area of Services Sciences, Management, and Engineering (SSME). SSME is a proposed academic discipline with a focus on service systems, combining social sciences, business management, and technology engineering perspectives to solve complex, real-world problems.

Throughout the special section we have taken care to include a sampling of additional regional and multidisciplinary perspectives on services science and service innovation. As computer scientists broaden their notion of services to include the formal representation of service systems, optimization and transformation of service systems, and the delivery of more complex business and information services, the opportunities for service innovation will be greatly enriched. **c**

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The following bibliography provides a comprehensive list of all the literature used in the creation of this special section. The articles within refer to this list.

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