

CALL FOR CHAPTERS



Theme:
"The Science of Service Systems"
And
"Service Systems Implementation"

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The service economy and the knowledge economy are two sides of the same coin, but what is the nature of this relationship? This book will present recent research advances in the science of service systems that shed light on this fundamental relationship. Service, which can be defined as the application of competence and knowledge to create benefit (or value) for another, derives from the interactions of entities known as *service systems*. Service systems at multiple scales of organizations, from individual people to businesses and nations, chain together into globally integrated *service networks* of multiple types: business-to-consumer (B2C), business-to-business (B2B), consumer-to-consumer (C2C), business-to-government (B2G), government-to-consumer/citizen (G2C), as well as other permutations.

We are planning to have two volumes of SSRI on Advancement of Services Systems:

- 1) The Science of Service Systems** intends to stimulate discussion and understanding by presenting theory based research with actionable results.
- 2) Service Systems Implementation** intends to stimulate discussion and understanding by presenting application-oriented, design science-oriented (artifacts building: constructs, models, methods and instantiations) and case study-oriented research with actionable results. This will illustrate how the techniques described can be employed in large scale, real world examples that are developed to match the theoretical and practical presentation. Furthermore, the case studies will help visualize service systems along the four key dimensions of people, information, technology and value propositions which can help enable better integration between them towards higher value propositions.

These volumes will deepen the understanding of service systems and provide the latest theory and practice aimed at improving the key performance indicators (KPIs) of service systems, especially those related to service quality, service productivity, regulatory compliance, and sustainable service innovation.¹

First, we need to understand what service systems are and their evolution (through *targeted scientific and practical explanations*). Second, we need to learn how to invest in improving service system (for *best management practices*). Third, we need to formulate how to invent new technologies that improve the scaling of service systems (for *effective engineering design*). Fourth, we wish to provide a basis for evaluating relevant interdisciplinary knowledge that adds to the growing body of knowledge in this emerging field. Our overall goal is to improve the basis for understanding and cataloguing service systems, and to apply that understanding for advancing our ability to design, develop, improve and scale service systems for practical business and societal purposes.

Will be written for: Researchers, professionals, graduate students, managers and workers in service firms

Service Science: Research and Innovations (SSRI) Series captures the latest thinking, experiences and results in the increasingly important area of service science, which integrates a variety of disciplines - including areas in engineering, social sciences and management - to focus education, research and practice on an expanding

¹ Spohrer, J., P. Maglio, J. Bailey and D. Gruhl, "Steps Toward a Science of Service Systems," *IEEE Computer*, Volume 40, January 2007, pp. 71-77. "Service systems are dynamic value co-creation configurations of people, technology, organizations, and shared information (such as language, laws, measures, models, etc.), connected internally and externally by value propositions, with governance mechanisms for dispute resolution."

service economy. Service science encompasses the application of scientific, engineering and management disciplines to tasks that one organization performs beneficially for others, generally as part of the service sector of the economy, and the integration of information systems and technology, computer science, operations research, industrial engineering, business strategy, management sciences, and social and legal sciences, in order to encourage innovation in how organizations create value for customers and shareholders that could not be achieved through such disciplines working in isolation.

In the last two decades, service systems and service networks have used digital connections based on Information and Communication Technologies (ICT) to scale up and accelerate the realization of value from knowledge. The emerging science of service systems studies: 1) the design and provisioning of new types of service offerings (e.g., Google, online banking, microfinance); 2) industrialization that improves existing service offerings often by separating traditional production (back stage) from customer contact (front stage) of a service, thus enhancing storability, transportability, and access to knowledge-based service offerings (e.g., tax software, online classes, patents); 3) facilitations of new types of coordination of service systems through new and improved value propositions and governance mechanisms (e.g., online broker systems, information markets, open innovation platforms, financial engineering, mechanism design, auction technology); 4) reduction of the costs of back stage and front stage service activities (e.g., semi-automated and fully-automated call centers and other types of service centers); 5) improvement in customer-perceived service quality (e.g., ability to standardize elements of service as well as mass-customization or personalization to the individual when appropriate, challenges in transitioning from mass production to configure-to-order supply chains that achieve productivity and customer responsiveness); 6) integration of customers into service creation and delivery (e.g., self-service education, healthcare information systems, business-to-business solutions, IT outsourcing, commoditization of business processes, applications and technology); and 7) delivery of knowledge-intensive professions (e.g. business consultant, physician, software engineer, legal council, financial advisor, university professor) to labor-intensive employment in hospitality, personal services, and transportation.

Invitation to contribute chapters for the book. We especially invite pioneering service researchers and practitioners to contribute chapters to this unique and very timely reference source. We also invite researchers from related fields, who are new to service research but can help develop both the theoretical and applied understanding of service systems, to contribute. Related disciplines include economics, marketing, operations, law, design, social sciences, computer science, organization theory, systems engineering, operations research, industrial engineering, management, engineering, as well as others. We urge these researchers and practitioners to submit on any topic or issue related to the book's theme and scope.

Why you should write for the book? This book provides an opportunity for interested authors to publish on a state-of-the-art topic in a comprehensive, unique book series which will be widely read, recognized and cited. In addition, you will gain benefits such as: peer recognition and endorsement of your work globally, membership in an elite group of contributors with excellent networking opportunities, support from the editors, and feedback and suggestions for improvements of your chapter. Most important, you will be contributing to a book that will be read by many researchers and professionals who will see this as a first source to identify emerging research ideas and directions in the *science of service systems*.

Editors. The review process for submitted chapter proposals and chapters to the book will be handled in an expedited manner by:

- Haluk Demirkan, Ph.D., Arizona State University, haluk.demirkan@asu.edu (Co-Editor)
- James C. Spohrer, Ph.D., IBM Almaden Research Center spohrer@almaden.ibm.com (Co-Editor)
- Vikas Krishna, IBM Almaden Research Center, vikas@us.ibm.com (Co-Editor)

Topics. This call for chapters seeks foundation-building research on the science of service systems that explores: technical, managerial, strategic, social, and public policy challenges; organizational, economic and social issues; and innovative design science applications in the information systems and technology, computer science, operations research, industrial engineering, business strategy, management science, social science and legal studies to deliver innovative service. Interdisciplinary works as well as industry-academic joint research efforts are especially welcome. We seek high-quality, original contributions on the following topics:

- *Service Systems Philosophy*
 - Service science and services in ecosystem settings
 - Balance between people, technology, organizations and shared information
 - Entities as service systems, interactions and their value propositions
 - Service systems outcomes in terms of value co-creation and value-sharing
 - Governance mechanisms for service systems
- *Service Systems Theories*
 - Principles, dimensions and the socio-cultural model
 - Understanding the interplay of people, organizational practices, and business models
 - Perspectives from social, computer, management, design and cognitive sciences on service systems
 - Understanding what service systems are and their evolutionary processes
 - Service system architecture, infrastructure, processes, workflows
 - Services marketing and tests of theory in empirical studies of service systems
 - Systems theory, cybernetics and the science of service systems
 - Analytic vs. systemic approaches; complex adaptive systems and service systems
 - Complexity, complementarities, constructivity, reflexivity, and self-organization of service systems
- *Service Systems Frameworks*
 - Service innovation and issues in service system design
 - Granularity of services for scalable and manageable service systems
 - Service-oriented enterprise industry standards and solution stacks
 - Service-oriented architecture (SOA), industry standards and solution stacks
 - Quality and cost, and the economics of service system design and implementation
 - Architectures, infrastructures, standards and practices for federations of service systems
 - Automated service-level agreement negotiation and orchestration
 - Service level agreement (SLA) negotiation, automation and orchestration
 - Service-based grid, utility and autonomic computing; self-service systems technologies and management
 - Ontologies, semantics, and business rules for service systems and service computing
- *Service Systems Value Chain Framework*
 - Roles of people, technology, shared information, and customer input in value-creation networks
 - Co-production as a driving component of service orientation
 - Management of non-standardized customer requirements and expectations for services
 - Electronic integration of processes for service delivery; on-demand process and systems services
- *Service-Centric Business Models*
 - Business services strategy, analysis, design, development and deployment
 - Hardware, software and processes commoditization in services
 - Standardization of service delivery processes and the economies of scale
 - Planning, governing and adaptation of cross organization, enterprise and geography service systems
 - Business, organizational, and individual practices of the solution engagement service system
 - Discovery and design of a set of methodologies that enable end-to-end composite business services
 - Collaborative service offering with cross-domain service systems
 - B2B and B2C processes for service system negotiation, operations, and management
 - Service system security, privacy and trust; risk management practices in service-oriented settings
 - Service-oriented business consulting methodology and utilities; inter/intra-enterprise B2B service control
 - Service revenue models and utility computing (e.g., transaction fees vs. service fees)
 - Service strategic alliance and partners, service network economic structures and effects
 - Ontology and business service rules; business process-based business transformation and transition
 - Trust and loyalty, and cultural, language, social and legal obstacles in service-centric business models
 - Commercialization of service computing technologies; service solution patterns and service interaction patterns
 - Mathematical foundations of business process modeling, integration and management
- *The Service Systems Life-Cycle Model*
 - Systems engineering for planning, design, evaluation, construction of man-machine systems
 - Operations research for control of existing systems involving people, machines, materials, money, etc.
 - Human engineering for adaptation of systems and machines for efficiency and high performance
 - Service discovery, modeling, co-development, delivery, deployment/implementation, marketing and maintenance
 - Integration of service blueprints with system architecture

- Decision models and decision support systems for service systems management and operations
- Service contract specifications, models, and related legal and intellectual property issues
- Adaptive resource and capacity management of services and service systems
- Flexible integration and dynamic configuration of human and computational services
- Financial evaluation of investments in service systems and performance metrics
- Design and operation of high-performance service systems, and related performance trade-offs
- Metrics, computer analytics and dashboards for historical and current performance of service systems
- *Service Engineering Practices and Case Studies*
 - Applied research on people-intensive and information-intensive systems
 - Service-centric business models in healthcare, financial services, air travel, hospitality, government
 - Case studies of service-computing implementation and management
 - Service and service systems frameworks, models, methods and methodologies
 - Service-oriented information systems, technology and management
 - Managerial strategies for effective services
 - Technical, operational and environmental issues in service innovation and management
 - Service-oriented ecosystem: people, information, business processes, architecture and infrastructure
 - Information supply chain for service life cycle: service requirements/analysis, design/develop, deploy/execute, operations and evolution

Submission Guidelines. Interested authors are invited to submit a chapter proposal of no more than four pages for their planned submissions. The proposal must clearly articulate the title, scope and coverage of the proposed chapter in about 500-800 words, include a tentative chapter outline, and highlight how the proposed chapter will contribute to the scholarly value and usefulness of the series. The proposal must include all of the authors' names, affiliations, email addresses, and brief biographies. The latter should include information on your work in related areas, if any. You are welcome to send any number of proposals.

This will give the editors an opportunity to determine if a given submission is appropriate for expedited handling and review. Authors of accepted proposals will be notified about the status of their proposals and sent organizational guidelines and editorial suggestions.

Only original research papers will be considered. Authors should limit initial submissions to no more than 32 double-spaced pages in 12-point font with appropriate margins, inclusive of references, figures, tables and appendices. Author names and affiliations should not be included in the paper, including in the Document Properties of Microsoft Word .doc files. Reviewing will be double-blind.

Chapter proposals and full manuscripts in Microsoft Word format, or inquiries, if any, should be submitted by email to Professor Haluk Demirkan, Co-Editor, via haluk.demirkan@asu.edu.

Review Process. The editorial team will return reviews and AE reports no later than 90 days from the date of submission or resubmission. Submitting authors will receive an indication as early as possible of rejection, including on the basis of a first reading of a full paper. Inappropriately targeted or underdeveloped papers will be returned to the authors, with brief explanatory notes.

Timeline. Notification of the acceptance of chapter in SSRI will occur based on one or two rounds of review, as appropriate. The planned timeline for SSRI development is:

Tentative timeline.

November 15, 2008	Deadline for required chapter proposal submissions
February 29, 2009	Deadline for full chapter submissions
May 30, 2009	First round of reviews provided to the authors
August 15, 2009	Deadline for submitting revisions of chapters - authors of accepted chapters will then have a further opportunity to refine their work, based upon the comments of the reviewers and the editor
December, 2009	Camera-ready submissions submitted