



Service Science

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Editorial Column

Launching Service Science

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According to *Dictionary.com*, service is defined as “an act of helpful activity; the supplying of utilities or commodities; the providing of accommodation and activities required by the public; or the supplying of public communication and transportation.”¹ Numerous academic definitions of service can be found in the literature. The consensus is that performing an action that results in a benefit for an entity essentially defines a service, and the value of the service largely depends on what, when, where, and how the process of relevant service activities gets executed.

According to the *Academic Press Dictionary of Science and Technology*, science is defined as “the systematic observation of natural events and conditions in order to discover facts about them and to formulate laws and principles based on these facts” and “the organized body of knowledge that is derived from such observations and that can be verified or tested by further investigation.”² As developed economies move further away from producing goods to providing services by fully leveraging the growth drivers of digitalization and globalization, a science of service is needed. This science should help service organizations continuously improve their competitiveness through smarter service marketing, design, engineering, operations, and management.

Service research in focused areas has been conducted worldwide for many decades. As early as in the 1970s, a rational approach that deviated from physical product-based rationalizations was explored (e.g., Chase 1978); its aim was to help enterprises understand and manage service operations. Larson (1989) has been a longtime proponent of applying operations research (e.g., queuing theory) and management science to improve service operations. Christopher Lovelock (1983) pioneered the education and exploration of modern service marketing and leadership with a focus on the synergistic effects made possible by fully leveraging people, technology, and strategy in service organizations. Christian Grönroos (1994) has led in the application of service logic to benefit market-oriented management in service and manufacturing firms. By comprehensively analyzing the profitability drivers throughout the service-profit chain, Heskett et al. (1994) argue that putting employees and customers first would radically shift the way service organizations manage and measure success. Furthermore, how service quality can be financially accountable has been investigated by Rust et al. (1995), giving rise to later exploration of marketing investments, customer equity, and relationships in services. Vargo and Lusch (2004) strongly propose a new service-dominant logic focusing on intangible resources, the cocreation of value, and service-for-service exchange relationships in service marketing. Karmarkar (2004) emphasizes the industrialization of services and argues that service organizations can survive the ever-changing business environment resulting from digitalization and globalization only if they can effectively reorganize strategies, processes, and people for the challenges that lie ahead. Hsu (2009) shows how a theory of service scaling and transformation through leveraging digital connections could contribute to the development of service science.

The service-led economy is now facing the grand challenges of addressing green consumerism, pervasive and ubiquitous digitalization, and accelerated globalization; this economy surely conceptualizes a quantitative increase in the percentage of gross domestic product. Moreover, it indicates a substantive shift in which the services sector must become a main driving engine for future growth and innovation. To stay competitive in the 21st century, service organizations have to rethink their business operations and organizational structures by focusing on *people* while leveraging technology (e.g., implementing a novel approach to overcoming geographic, social, and cultural barriers to cultivate and enhance the cultures and mechanisms of cocreation, collaboration,

¹ *Dictionary.com*, s.v. “service,” <http://dictionary.reference.com/browse/service> (accessed February 12, 2012).

² *Academic Press Dictionary of Science and Technology*, s.v. “science.”

and innovation). This will ensure the prompt and cost-effective production and delivery of quality products and competitive and satisfactory services to customers (Qiu 2012).

According to Spohrer et al. (2007, p. 74), “The role of people, technology, shared information, as well as the role of customer input in production processes and the application of competence to benefit others must be described and defined.” Larson (2011, p. v) commented, “With the importance so huge, the need for such [service science] programs is clear. And, as with any respected academic endeavor, the curriculum needs to be buttressed with active, productive research.” Indeed, numerous academic and practice endeavors worldwide have been initiated over the years. Jim Spohrer and his research team at IBM have pioneered many service research programs and helped launch numerous education initiatives around the world since 2004 (IBM 2004, 2006; IfM and IBM 2007).

In general, with the foundation of systems theory, operations research, management science, marketing science, advanced computing and communication technology, network theory, social computing, and analytics, service science is in need of *descriptive and prescriptive research* of a service spanning its life cycle (i.e., market analysis, design, engineering, delivery, and sustainability) in an *integral and quantitative* manner. Therefore, launching (or maybe relaunching) service science research and education to new heights is necessary. Service science as a metascience of services should build on predecessors’ excellent work from many of the above-mentioned disciplines. Like many constituent parts of the study of services, service science must follow the scientific method, and it must be rigorous and scholarly (Larson 2011).

Given the interdisciplinary nature of service science research, founding an international community with the support of the Institute for Operations Research and the Management Sciences (INFORMS) to stimulate and move service science education and research forward worldwide with collaborative and synergistic activities certainly made sense. The first discussion on such a need for an international society, as a matter of fact, was conducted between Richard Larson and me on the highway from Shanghai to Nanjing, China, in 2006, when we attended the 2006 National Science Foundation workshop on service research and education. The petition for establishing a service science section within INFORMS drew great enthusiasm and endorsement from Jim Spohrer, Grace Lin, Suvrajeet Sen, Stephen Nash, Roland Rust, Morris Cohen, Richard Chase, Kathryn Steckle, Mary Jo Bitner, Brenda Dietrich, David Simchi-Levi, Julie Hagle, James Tien, Matthew Realff, Jeff Tew, Emmanuel Fragnière, and many other academics and practitioners in the service research community worldwide. Many of them are INFORMS veterans. With the strong support from INFORMS, the petition was approved in 2007. The service science community is very grateful to the INFORMS board, officers, and staff who served the organization in 2007—in particular, to Mary Magrogon, Ritu Agarwal, and Les Servi, who strongly advocated the petition.

In 2009, the birth of the journal *Service Science* was essentially a swift response to the increasing need of service science research publication venues. The journal was published by the Services Science Global with a cosponsorship from the INFORMS Section on Service Science. From 2009 to 2011, *Service Science* published 3 volumes and 12 issues containing 67 research papers and 9 editorial columns. On October 9, 2011, the INFORMS board approved a proposal of including *Service Science* in the INFORMS publications suite. Therefore, beginning January 1, 2012, *Service Science* became an official INFORMS publication. The success of moving *Service Science* into the INFORMS publications suite was the outcome of the strong leadership taken by Richard Larson and great support from Susan Albin, Terry Harrison, Patricia Shaffer, Linda Argote, Miranda Walker, Grace Lin, the *Service Science* editorial board, and many other service science advocates. The journal aims at not only providing service scientists with an effective venue to publish papers for the state-of-the-art research, education, practice, and breakthroughs but also stimulating more scientific experiments, studies, and idea exchanges in the fast-growing field of service science, so that the scientific results and newly discovered service theories and principles can be quickly and effectively disseminated to academia and explained to policy makers, practicing professionals, and managers.

Service Science shall play a role in complementing the existing INFORMS publications. *Service Science* offers equal encouragement to the publication of both empirical study in practice and theoretical research in academia. Note that *people* encircled by the service production and consumption have physiological and psychological issues, cognitive capability, sociological constraints, etc. *Service Science* thus welcomes the contributions to the development of service theories and principles that can be applied in effectively managing and controlling *systemic behavior*, leveraging *sociotechnical effects*, and stimulating *innovations* in the process of a service life cycle (marketing, design and engineering, operations, delivery, benchmarking, and optimization for improvement).

Advanced *descriptive and prescriptive* service science research surely relies on the continual development of systems theory, operations research, management science, marketing science, advanced computing and communication technology, network theory, social computing, and analytics. Are the more traditional operations

research and management science methodologies welcomed in *Service Science*? By all means, yes, if queuing theory, mathematical optimization, statistical analysis, simulation, stochastic modeling, or other more traditional techniques are motivated by true service needs and are fully contextualized to serve those needs. History has shown that often the most important new models and methods are motivated by emerging, new real-world problems. We expect the same to be true in service science research.

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