

# Chapter 11

## Productivity and Innovation in Services: The Multidisciplinary Perspective Offered by Service Science

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### ABSTRACT

*A multidisciplinary approach to service science is necessary in order to study, design, improve, and manage service systems and processes in such a way that they add as much value as possible to their customers. It creates the need for service industry transformation, services innovations, and increasing services quality, productivity, efficiency, and effectiveness. Technology leveraging is identified as the key force enabling the advancement in all three main areas of services research. Its strategic priorities include encouraging service infusion and growth, improving well-being through transformative service, creating and maintaining true and sustained service culture. Service development requires stimulating service innovations, enhancing service design, and optimizing service networks and value chains. Finally, better service implementation encompasses effective branding and selling services, enhancing the service experience through value co-creation, as well as measuring and optimizing the value of services.*

### INTRODUCTION

Service Science has emerged as a multidisciplinary body of knowledge to help study, design, and manage service systems that add value to the customer. The aim of the Service Science is to create a basis (i.e. (multidisciplinary, cross-func-

tional tools) for systematic service innovations, improved competitiveness, and value creation. Service Science aims to categorize and explain those many types of service systems that exist, as well as how service systems interact to co-create value. Since not all interactions between service systems co-create value, the Service Science intends to explain and understand reasons for

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such departures from desired norms. Ultimately, our desire is to apply scientific understanding to advance our ability to design, improve, and manage (efficiently, effectively, and in a sustainable way) service systems for societal and business purposes. This is the underlying premise for the emergence of Service Science.

There has never been a more urgent need to fuel service innovations. In the US alone, services account for 80% of the labor force, 90% of job growth, and 77% of GDP. Globally, services account for over 60% of the economies of Brazil, Russia, Japan, and Germany. The emerging economies of China and India still lag behind the others in proportion of services, but show an increasingly fast growing service sector as well (more than 40% of China's GDP is now attributed to the services). Without exception, services constitute a larger percentage of GDP than manufacturing in every nation for which the World Bank maintains statistics. However, it is interesting that the academic research in services comprises less than 10% of all journal publications in the field of operations management and engineering, while the service marketing field has not produced much greater numbers either.

Services as an industry have undergone a remarkable transformation during the past several decades. Goods-producing companies have witnessed an evolution from service-for-free or break-fix concept to offering complete business process outsourcing for clients. In pure service industries (such as financial and healthcare), the bar has risen steadily around value-adding and customer experiences. The recent combination of a strained market and unfavorable economic conditions has created unique opportunities for companies to engage and adjust. They are leveraging their current capabilities and focus on the design and creation of customer-centered, complete service-solutions for the existing and new customers, while increasing customer satisfaction. Therefore, services are becoming a driver of growth and differentiation.

After decades of stagnation, productivity in services has increased dramatically. Information technology is the largest contributing factor in bridging the productivity gap between manufacturing and services (Demirkan, Spohrer, & Krishna, 2011). The future economic growth, domestically and globally, will largely depend on the improvements in service productivity and quality, as services are moving to the center stage in the global arena. This is particularly true for knowledge-intensive services that focus on business performance transformation. Achieving high levels of productivity and efficiency in knowledge-intensive services has been particularly difficult, because they often require high service product customization, significant customer involvement, and loosely structured delivery processes (Xue & Fields, 2008). It was Peter Drucker (Drucker, 1999), who identified knowledge-worker productivity as the biggest of the 21st century management challenge.

The knowledge-intensive and customized services involve a large component of customer participation and input, which could be customer provided labor, property, or information, via organizational or technological value chains. Therefore, Service Science as a discipline combines the understanding of an organization and human behavior with the understanding of business and technology to categorize and explain how many types of service systems operate, interact, and evolve in order to co-create value.

Service innovation is generally poorly understood. Service Science has emerged as a basis for systematic service innovations. Service Science incorporates multidisciplinary body of knowledge (ranging from human behavior and organizational understanding, to technological and business process understanding).

Service Science as a discipline attempts to:

1. Study and explain the origins and growth of service systems;

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