

## Chapter 1.7

# Service Science, Value Creation, and Sustainable Development: Understanding Service–Based Business Models for Sustainable Future

**Albena Antonova**  
*Sophia University, Bulgaria*

### ABSTRACT

*Following the irreversible economic and global changes in recent decades, the business landscape has transformed dramatically and thus many fundamental business concepts have to be reassessed. The role of services in the process of value formation evolved as services became the main source of employment, economic value formation, and innovations. Responding to severe global competition, companies extended the variety of business models and complexity of business networks. However, the current state of economic development is not sustainable, threatening the global balance.*

*The chapter proposes a complex model for companies to enhance their value offering, through optimization of services, value co-creation, and addressing sustainability issues. It investigates different approaches of service science and services to improve business models toward more sustainable practices. Different knowledge flows between various products, service providers, and final clients, aiming to improve client satisfaction, product use, and that result in better value for the customer will be identified. Increasing knowledge and services within material products means adding more value for customers and limiting resource use and disposal.*

### INTRODUCTION

Sustainable development is a four-decade long debate. The consequences of human activity influenced irreversibly the global ecosystem balance, leading to resource scarcity, climate changes

and social inequity. Globalization and the fast emergence of new technologies has resulted in accelerated production and consumption models that provoked number of economic, social, and environmental changes. New technology-based services formed the backbone of the recent economic growth. Companies increase product variety and experiment with sophisticated business models,

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outsource production processes, exploit new technologies and develop complex logistic chains. In result, products become cheaper and with shorter life-cycles. Inversely the general price-of-living is increasing. Customers have an increasing choice of products and services, but remain dissatisfied (Prahalad & Ramsey, 2004). While business complexity is increasing, globalization is making the world more interrelated, interdependent and flat. Everywhere around the globe production and consumption models gradually equalize. The culture of living and social expectations is changing. This could become an increasing challenge in actual demographic trends, leading to social unrest. Therefore companies become confronted to increasing risk factors including climate changes and natural disasters, social imparity, high turnover of technologies and innovations. All these factors augment complexity and interdependence of actors on the business ecosystem, increasing market volatility and making the long-term planning unrealistic, and return on investments projects become unpredictable. Sustainable development is not anymore a theoretical concept.

In parallel, service science emerged in last decade as a new interdisciplinary research field. The service sector became the leading wealth-generating business domain, attracting the majority of employment, investments and innovations. As estimated in (Duchene, Lykogianni, & Verbeek, 2009), the EU and US service sectors represent around three quarters of total value-added, while the weight of manufacturing is shrinking to less than one-fifth of total value-added. The growth of service sector came from new complex services such as information technologies, telecommunications, logistics, business and financial services, research and innovations, entertainment and many others. These services can be described as knowledge-intensive, flexible and scalable. Moreover, they not only create new niches on the market but they also fundamentally changed the business logic of all economic sectors and operations. Thus they enhanced organizations around the world to

become more knowledge-intensive, flexible and scalable, customer-oriented and mobile.

The chapter objectives are to propose new logic for business models development, based on services and user value-co-creation. There are highlighted the factors increasing value for customers, based on sustainable development and service science approaches. Moreover, sustainability is explored as a new source of value, demanded by clients, employees and society as a whole. Thus a comparative framework for services and products (self-services) is developed. Finally the role of knowledge and time for the end-users value formation is outlined.

## **BACKGROUND**

The present research will identify how service science and sustainable development can enhance service value creation and business models evolution. Therefore first part will propose an overview of key concepts that are interdisciplinary, new-emerging and problem-oriented. We will not debate about the foundations and roots of the discussed terms. Rather, we will provide reasonable understanding of the concepts and problem areas, provoking additional reflections.

### **Services and Service Science**

The global economy today is dominated by the industry of services. Services fueled the recent economic progress, provoking the emergence of service science as focal point of research. Service science is defined by Chesbrough and Spohrer in the *Research manifesto of service science* (Chesbrough & Spohrer, 2006). In general, service is an interactive process of doing something for someone (Vargo & Luch, 2004). Services are intangible, non-material, and do not result in ownership, in contrast to assets (Beltagui, Riedel, & Pawar, 2008). While traditional definitions of services describe it as "activities, deeds and performances",

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