

# Chapter 77

## New Trends in Service Science and Education for Service Innovation

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### ABSTRACT

*Service science is a new trans-disciplinary science and technology in the 21st century. In this chapter, firstly, new definitions of service and new directions for service are described for innovations in various industries. Service science should cover not only traditional service industries but also important basic industries such as information or manufacturing industries. Then, the importance of a system's approach to creating service values is emphasized. In particular, system science and knowledge science are important from the viewpoint of maximizing service value. Finally, education for service innovation considering such trends is proposed and evaluated by implementing it as a management course for professionals in business.*

### 1. INTRODUCTION

The importance of services has been focused on in various fields in the 21st century. Service science has become a common thread in information and knowledge industries or other industries for two main reasons. The first is the fact that the GDPs of advanced countries like the US, Japan, and Europe have exceeded more than 70%, and in developing countries, their GDPs are rising. The second is the global trend in emphasizing the service business in information/manufacturing industries

such as IBM, HP, or GE. Also, the importance of education and research on service science at universities has been discussed in the US, Europe, China, and Japan. A combination of strengths in Japanese industries such as high productivity in manufacturing and Japanese hospitality in traditional service industries is particularly important for them to gain a competitive advantage.

Various new proposals have recently been actively proposed in service research for such trends in service science, such as Service dominant logic (SDL) (Vargo & Lusch, 2004) (Lusch & Vargo,

2006), Service as a theater (Fisk, Grove & John, 2008) and Service innovation (Cambridge, 2007). These new concepts related to service are based on the idea of “value in use” and how a person who receives a service recognizes the value of the received service. That is, all discussions on service values provided to various services are important in service businesses. Human related technologies and IT technologies have a particularly great impact on effectively creating service values, which service innovators are intensely looking at.

New trends in service science, which include new definitions of service, systems’ approaches using various human related technologies and IT technologies, and the importance of knowledge science, are investigated in this chapter. In particular, knowledge science, which deals with human knowledge and covers knowledge creation, knowledge management and human related technologies, has an important role for service value creation. Also, service science is a trans-disciplinary science and technology for value creation, which integrates business science such as marketing theory, information science, knowledge science and so on. In addition, innovation needs new value creation for customers and service science should provide various methodologies for service value creation.

Based on such considerations, a new educational course on service management that takes into consideration human factors is crucial for service innovators from the viewpoint of creating service values. Therefore, a new curriculum for service innovators was developed by the Japan Advanced Institute of Science and Technology (JAIST) (Kosaka, 2010). Thus, the importance of education, management, and science to services and services innovation has been recognized, and subjects from these fields have been taught at the MBA level. Furthermore, IT service technologies are now subjects taught in many information science departments. Despite these encouraging developments, we should realize that successful innovation in the 21st century will also involve

technologies related to human behaviors. Here, knowledge science, including ethnography, design, or other human related technologies, is stressed as a characteristic of this educational course.

In this chapter, new trends in service science and a new educational program on service based on such trends is explained, which is the innovation management of service and technology (iMOST) course developed by JAIST.

## **2. NEW DEFINITIONS OF SERVICE**

Several definitions of service have been proposed in the area of service marketing (Lovelock & Wirtz, 2007) or service engineering (Arai & Shimomura, 2004). Of these, the following four definitions are important in considering service innovations, which regard service as supporting activities or value-co-creation with customers.

### **2.1. “Service is to Support People or Organizations to Achieve Objectives” by Kameoka**

Kameoka was one of the founders to start research and education on service science in Japan. He established a Management of Technology (MOT) education course at JAIST and stressed the importance of service science for MOT. His “service science” (Kameoka, 2007) (Kameoka, 2010) expressed new trends and new understandings of service and contributed greatly to service science research in Japan. He also considered a new concept about the Management of Service (MOS) education course related to MOT at JAIST.

He defined service as activities to support people or organizations for them to achieve their objectives. This definition was derived by taking three items into account.

1. The definition of service should cover services in various industries not only traditional

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