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USING SYSTEMS THINKING FOR THE MANAGEMENT OF COMPLEXITY IN SERVICE SYSTEMS

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Abstract. *The purpose of this paper is to highlight how systems thinking contributes to decision making in uncertain contexts that are characteristic of service systems. Based on the assumption that service systems face complex conditions, the paper posits that systems thinking may support the understanding of key issues in the management of service systems.*

Keywords: Service science, Service systems, Complexity, Service management, Systems thinking tools.

1. Introduction

Service and service systems concepts are fundamental constructs for the development of the emergent IT technologies like Service science, management, and engineering (SSME), IT service management (ITSM), and Service Oriented Software Engineering (SOS) knowledge streams.

SSME is a term introduced by IBM to describe service science, an interdisciplinary approach to the study, design, and implementation of services systems – complex systems in which specific arrangements of people and technologies take actions that provide value for others. More precisely, SSME has been defined as the application of science, management, and engineering disciplines to tasks that one organization beneficially performs for and with another.

ITSM refers to the entirety of activities – directed by policies, organized and structured in processes and supporting procedures – that are performed by an organization to plan, design, deliver, operate and control information technology services offered to customers. It is thus concerned with the implementation of IT services that meet customers' needs, and it is performed by the IT service provider through an appropriate mix of people, process and information technology.

SOSE is a software engineering methodology focused on the development of software systems by composition of reusable services (service-orientation) often provided by other service providers. Since it involves composition, it shares many characteristics of component-based software engineering, the composition of software systems from reusable components, but it adds the ability to dynamically locate necessary services at run-time.

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