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Actor-Network Theory for Service Innovation

Lorna Uden, Staffordshire University, UK

Janet Francis, Staffordshire University, UK

ABSTRACT

Services have become the key value driver for companies. Currently there is a lack of understanding of the science underlying the design and operation of service systems. New conceptual understanding and theoretical underpinnings are required to systematically describe the nature and behaviour of service systems. We believe that Actor Network Theory (ANT) can be used as a theoretical lens to study the development and adoption of service innovation. The development of and adoption of service innovation requires the integration of multiple elements including people, technologies and networks across organisations. Technologies and interests of actors need to be aligned and coordinated for successful service innovation. In this article we show how ANT is adopted as a theoretical framework for understanding the relationships among the actors and show how these actors have their needs shaped by the network formation during the development and adoption of service innovation for a university.

Keywords: *actor-network theory; open learning network; service innovation; service systems*

INTRODUCTION

Over 80% of jobs in the US are now in the service sectors. This is evident in the current list of Fortune 500 companies, in which a greater share of large companies' revenue comes from services than it did in previous decades. (Möller et al 2007). Many of these service jobs are highly skilled and technology-intensive, including outsourcing, consulting and process re-engineering. Service plays a key role in developed economies (Sheehan 2006). Market-based services are the main drivers of productivity and economic growth in OECD countries. IT services and R&D services provide more than half of all employment growth in many developed countries. The service sectors

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also help improve competitive performance of firms in our modern economies.

According to Maglio and others (2006), the formal representation and modelling of service systems is nascent, because of the complexity of modelling people, their knowledge, activities and intentions. Service system design cannot be achieved by traditional approaches such as product design. Firstly, customers are not typically present in R&D and product engineering processes. Secondly, the traditional product engineering approach based on a manufacturing model is not good at providing intangible, value-based services. It is therefore necessary to develop a new model for service innovation. The model should be an adaptive organisational model that enables dynamic evolution of the service system. It is important to integrate the customer perspective, learning and innovation into the development process of service systems.

A service system is defined as a dynamic configuration of resources (people, technology, organisations and shared information) that creates and delivers value between the provider and the customer through service (IfM & IBM 2008). According to the report (IfM & IBM 2008), a service system is a complex system having a front stage and a back stage. The front stage is about provider-customer interaction: how can customer satisfaction be ensured in the presence of multiple customer touch points and various channels of contact? The back stage is about operational efficiency: how can productivity be improved through skilled employees, streamlined processes and robust relationships with partners and suppliers (the service networks)? Performance of the service depends on both the front and the back stage.

According to Sims (2007), a simple service requires numerous interactions and coordination for it to work. The relation can be between two or more individuals or organisations and machines, or between two or more machines or machine processes. Each of these interrelations can be treated as its own service relationship. This complex web of interrelated service relationships is known as a service system (Sims 2007). According to Maglio and others (2006), service systems are value creation networks composed of people, technology and organizations. In other words, service systems are networks of relationships that afford transformations of value for those positioned as service recipients within the network. Service design exists not just between the organization and the end customer, but throughout and between organizations themselves. Each service relationship in a service system can be the object of design.

Some of the important issues that need to be addressed in service system design include:

1. How to create new service offerings based on social and cultural as well as organisational issues.
2. How can service systems be understood in terms of a small number of building blocks that get constrained to reflect the observed variety?
3. How do interactions within and between service systems lead to particular outcomes?

ANT provides us a network building vocabulary for describing the process of coordinating social and technical actors as a cascading stream of translation. We believe that ANT can be used as a theoretical framework to understand, develop and

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