Chapter 9

Virtual Communities in a Services Innovation Context:
A Service Science and Mereotopology Based Method and Tool

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ABSTRACT

This chapter focuses on both the activities of the telecoms’ innovators (i.e. actors of the innovation) and the emergence of some “service communities” which are interesting facets of virtual communities. These innovators are part of a remote and inter-professional network which forms a “design community”. They are involved in the telecom operators’ design process (opportunities research, service design, development, deployment and market launch). During the first stage, this community has to describe customers’ services situations, discover lacks and opportunities and find some ideas of adapted solutions. Theoretical and professional difficulties have been noted during this key step. The main problem is related to the concept of service which is a multidimensional and still poorly understood object. Based on the service literature and the emergent field of Service Science, we propose a theoretical framework and a semi-formal semantic method to describe, co-model (through a mereotopological ontology of assembled and interconnected scenes) and simulate (through an animation of each scenario) the targeted Services Systems. These Services Systems are configurations of dynamic/processual entities that reveal not only the service field of experiences but also the actors’ performances within different spatiotemporal situations.

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1. INTRODUCTION

This chapter is based on a real life project of research in the domain of services innovation. Although it has been more specifically experienced within the organization of a French telecommunication operator, it is applicable for most services providers. Several socio-economic and technologic evolutions have brought some important challenges for services providers. They now have to prove their capacity of innovation in order to support their corporate customers’ value creation, to improve the final customers’ experiences and to ensure their own strategic position within the market.

The emergence of new technologies enables and continuously improves the constitution of distributed projects teams. It implies the emergence of virtual interpersonal relations and the distribution of knowledge and competencies among teams’ members. Virtual communities have a strategic role in the domain of services innovation. Services providers rely on such distributed teams of actors of the innovation (called “innovators”): designers, engineers, etc. These innovators form a virtual community of knowledge which is essential during all the steps of the design process. For example, Delalonde & Soulier (2007) were interested in the “knowledge management practices in a distributed research and development laboratory” of such a services provider (a telecom operator to be more precise). This laboratory deployed a knowledge database and some communities of practice sharing a virtual collaborative workplace. But the database was usually obsolete and employees were reluctant to ask and share knowledge with others. Delalonde & Soulier (2007) proposed a four steps model called RESONER: Information Retrieval, Caring, Negotiation, and Reification. This model specified a groupware dedicated to collaborative information retrieval and relying on “transparent profile construction based on user’s activity, community’s participation and shared documents” (Delalonde & Soulier, 2007). These model and tool encouraged the emergence of informal knowledge networks and competencies awareness in a distributed context. Another example concerns the creation of a repository of the customers’ business processes of a French telecom operator. The project team gathered several members of the R&D department (ergonomists, engineers, etc.). They made the hypothesis that knowledge and access to customers’ internal information would be easier thanks to the provision of a repository of these customers’ business processes. They thus created a web-based environment based on the Tibco platform (i.e. business integration and process management software) and invite all the actors of the R&D department (and most specifically the usages experts) to model every business process they know from a customer (or customers’ segment). This tool encouraged the information sharing in a distributed context. But it had some limits that will be presented in the next section.

In this chapter we will focus more specifically on the remote and inter-professional work and network of innovators who have to detect new ideas of services/solutions during the opportunities research stage upstream of the design process (Bugeaud & Soulier, 2009). Theoretical and professional difficulties have been noted within this community. The basic problems are linked to the remote and inter-professional nature of the innovators’ network. They form a “design community” that constrains the actors’ work and interactions because they come from several disciplines (i.e. different professions and thus different vocabularies and understandings of the studied services) and they are localized in many different places. There are important misunderstandings and difficulties to collaborate within the design community. Innovators are currently working together with difficulties. These problems have been the object of a specific publication within an international workshop on “Virtual Environments and Collaboration” (Bugeaud & Soulier, 2009). One objective of our works is to propose a method...
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