Service Value Networks

Services are of utmost importance to economy. We find them in almost every economic exchange between two actors, i.e. a customer and a service supplier. A customer usually exchanges resources with a supplier to satisfy a need. Nonetheless, needs might be more complex that several suppliers are required to satisfy it. For instance, think of you needing online entertainment while at home; a way to satisfy such need would be to acquire an internet service, a music delivery service and an online TV service. All these services being provided by potentially different suppliers that may rely on other suppliers (i.e. service enablers); e.g. music providers rely on musicians or producers that offer their tracks.

Service Value Networks (SVNs) represent webs of end customers and service suppliers working together for delivering a value-added service. SVNs can be on-the-fly composed to match specific customer needs. Such composition requires establishing business to business (B2B) and business to customer (B2C) relationships. B2B relationships allow networking service suppliers and enablers (i.e. bundling services), whereas B2C relationships network the resulting service bundles with the end customer.

This thesis presents a framework to semi-automatically compose SVNs for services that can be potentially provided on line. The first part of the thesis describes the business and technical aspects involved in the composition of SVNs. It presents an overview of different approaches to design, analyze and compose SVNs, which can be grouped into process-oriented and business-oriented approaches. The second part of the thesis presents a computational framework to compose SVNs matching specific customer needs. This framework allows a customer to specify her customer needs in terms of specific functional requirements that can be offered by service suppliers, which are bundled and networked with service enablers to finally compose SVNs. The third part of the thesis tests and validates the composition framework using two case studies and numerical simulation. Whereas the case studies provide insights on how the composition of SVNs can improve issues for the music industry and the education sector, the simulation forecasts the performance of the composition framework under real-world conditions. The last part of the thesis presents the final conclusions and the future research lines.