UNIVERSITY
OF MANNHEIM
Business School

CHAIR OF SERVICE
OPERATIONS MANAGEMENT
Prof. Dr. Cornelia Schön

# Master Thesis Proposal

## How Analytics can help in Improving the Service Delivery Process?

In the information technology (IT) industry, service delivery modeling and optimization has the two-fold objective of improving quality of service and simultaneously reducing delivery costs. The fulfillment of these objectives requires an assessment of industry's organizational structure, skills of their resources and their internal processes using analytical modeling approaches, e.g., simulation-based optimization. Analytics based approaches like Simulation and optimization are not only relevant to IT industry but also useful in other service industries like mass services and the hospitality industry for the purpose of delivery process improvement. However, the service delivery improvement measures might vary across service industries. For example, in case of emergency medical services, minimizing average response time might be considered as a key measure of service delivery improvement.

Modeling and improving the service delivery process becomes more complex in face of heterogeneous customer requests, multiple product offerings, multiple processes, and multiple service levels. Such complex processes can be analyzed by developing a conceptual model for simulating the relationships b/n size of the calling population (demand) and the service performance measures. Simulation-based analysis also provides an insight into efficient capacity planning of the underlying service process.

The objectives of this thesis are to

- review analytics based approaches to improve the service delivery process along with their applications to the service sector,
- comment theoretically on the industry-specific performance measures for service delivery process improvements,
- Construct a case study mimicking the service delivery process of an organization and recommend analytics-based approach(es) to improve the service delivery process w.r.t. relevant performance measures.
- Based on the analysis, suggest capacity planning improvements with regard to suitable performance measures.

**Recommended Basic Literature:**

**Diao, Y., Heching, A., Northcutt, D., & Wallace, R. (2015)**: Service-Delivery Modeling and Optimization. *Interfaces*, 45(3), 243-259.

**Russo, D., F. Passacantando, L. Geppert, and L. Manca (2012):** Business Process Modeling and Efficiency Improvement through an Agent-Based Approach. *AnyLogic Conference*.