

Large-scale simulation of demand management and fulfillment in attended home delivery

Given the continuing e-commerce boom, the design of efficient and effective home delivery services is increasingly relevant. From a logistics perspective, attended home delivery, which requires the customer to be present when the purchased goods are delivered, is particularly challenging. To facilitate delivery, the service provider and the customer typically agree on a specific time window for the service. Which time windows to offer to customers and how to fulfill given demand are crucial decisions that service providers must make. The impact of these decisions on the overall profitability can be analyzed by means of simulation.

The goal of this thesis is to understand the functionality of an existing simulation tool (programmed in Java, Lang and Cleophas 2020) and to create a comprehensive user manual that provides a structured description of all possible features and use cases. The student should also demonstrate the functionality of the tool in a suitable case study. This requires a deep understanding of available demand management and fulfillment methods as well as the willingness to dive into Java programming.

Publication bibliography

Lang, Magdalena A. K.; Cleophas, Catherine (2020): Establishing an Extendable Benchmarking Framework for E-Fulfillment. In *Proceedings of the 53rd Hawaii International Conference on System Sciences*. DOI: 10.24251/HICSS.2020.195.