# Simulation Modelling for Evaluation & Optimisation of the Outbound Amazon Logistics Supply Chain

by

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## Abstract

To keep up with the ever-changing customer demand, Amazon Logistics needs to be able to quickly make informed decisions on operational plans. Current solutions to provide visibility over the expected flow of shipments in the outbound transportation network are often isolated, resource-intensive or have limited areas of focus. This thesis presents a discrete event simulation model embedded in a scalable web framework to provide holistic insights into the feasibility and risk associated with any planning scenario.

A vast number of verification and validation experiments were performed demonstrating the model's capabilities to accurately capture movements of trucks and shipments. Although several opportunities to improve the model are identified, resulting precision metrics suggest that the model is able to evaluate scenarios with a sufficient level of accuracy. Consequently, the range of output elements the decision support system offers, should give the user an indication of feasibility and risk for any simulated scenario.

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