VALUE OF INFORMATION EXCHANGE FOR ACCESS MANAGEMENT SERVICES IN A SEAPORT TERMINAL

Background:
This master thesis will be connected to the project “DREAMIT 2.0 – Effective access management” funded by Vinnova and Logistik- och transportstiftelsen (LTS). The project is led by Consenso Engineering (www.consenso.se) and coordinated by SSPA Sweden AB (www.sspa.se). Other project partners are APM Terminals Gothenburg, Volvo Technology, TietoEvry, GDL Transport, Tjöms Bilservice, School of Business, Economics and Law at the University of Gothenburg and Vänérexpressen. The purpose of the project is to investigate how effective access management can reduce turnaround times for trucks and trains in seaport terminals through an automated exchange of relevant information. Poor information exchange results in high costs, long queues and waiting times, and a negative environmental impact when unloading and loading containers in port terminals. Trucks and trains arriving at port terminals often suffer from poor information exchange and in turn poor access to the right containers at the right times.

There are different access management services to improve the information exchange among port actors. Previous studies report that it is difficult to implement technologies for information exchanging due to unwillingness to test new technologies and few incentives to consider new type of information. Therefore, this thesis will focus on highlighting value of information for port terminal and access efficiency via simulation. The purpose of the master thesis is to use simulation or optimization models to compare how various information flows around access management influence the port terminal yard management and access processes. The work will mainly involve building an overview of port and access operations that involve different actors, collecting needed data from port environment, building of simulation/optimization model in suitable program, analyze and present results. The students will have the possibilities to visit and observe real-life truck and train flows in the container terminal in the port of Gothenburg.

Master thesis potential objectives (these are a broad list of potential objectives and the specific scope will be decided together with the supervisors):

- Outline yard and access processes
- Increase the understanding regarding the current state of available relevant information
- Compare different information types regarding yard and access efficiency
- Simulate how the exchange of relevant information can influence the access yard processes for trucks and trains.
- Propose effective yard management due to the exchange of relevant information
- Propose value of the different information types for various parts of the transport system (yard or access)

Requirements:

- Knowledge in Logistics
- Knowledge in simulation or optimization modelling
- Knowledge in seaport areas is preferable

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