



Centre of Excellence in Supply Chain Management

## 7<sup>th</sup> Workshop on Logistics and Supply Chain Management

Louvain School of Management  
Université Catholique de Louvain

April 10<sup>th</sup>, 2008

Facultés Universitaires de Saint Louis, Brussel<sup>1</sup>

### PROGRAM

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|---------------|---|---|
| 1245-1300 hrs | - | Sandwiches in the meeting room  |
| 1300-1350 hrs | - | <b>Jose Antonio Larco</b> ,<br><i>“Achieving social goals for free in storage assignment decisions? An empirical inquiry”</i><br>Rotterdam School of Management, Netherlands<br>Discussant: Philippe Chevalier                                    |
| 1350-1440 hrs | - | <b>Anne Paul</b><br><i>“Transportation network design - towards a hybrid hub &amp; spoke structure ”</i><br>University of Cologne, Germany<br>Discussant: René de Koster  |
| 1440-1500 hrs | - | Break   |
| 1500-1550 hrs | - | <b>Jordan Srouf</b> , Tamas Mahr, Mathijs de Weerd, Rob Zuidwijk<br><i>“Agent Performance in vehicle routing when the only certain thing is uncertainty”</i><br>RSM Erasmus University, Rotterdam, The Netherlands<br>Discussant : Xavier Brusset |
| 1550-1640 hrs | - | <b>Xavier Brusset</b> , Per Agrell, Peter Bogetoft<br><i>“Comparing carriers using multi-criteria efficiency evaluations”</i><br>Discussant: Tom van Woensel  |
| 1645- hrs     | - | <i>Closing words, date for next seminar</i>   |

<sup>1</sup> **Directions to arrive** : Entrance either through the “Official entrance” 43 Bld Jardin Botanique and follow the green path or through the parking entrance 117 rue du Marais-Broekstraat 117, and follow the green path. Both paths lead to a lift. Take it to floor 6. Exit the lift on your right. The room is P61, Brussels

## **Summary of Abstracts**

### *Achieving social goals for free in storage assignment decisions? An empirical inquiry*

José Antonio Larco

#### **Abstract**

The current efforts of warehouses to optimize their processes focus on enhancing the productivity in order picking processes, in particular by reducing the walking distances required to retrieve an order. Nonetheless, an increasingly important activity for enhancing the performance and worker well being in order picking operations is that of retrieving items from a shelf. In this paper we analyze the impact of location and product characteristics on order picking times and worker discomfort levels. In addition, we propose a multi-objective model for allocating products to storage spaces considering economic and social objectives. The economic objective is to minimize expected picking time while the social objective is to minimize the expected average discomfort in retrieving products from shelves. We find that considerable improvements in expected average discomfort can be accomplished without increasing the average expected picking time.

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### *Transportation network design - towards a hybrid hub & spoke structure.*

A. Paul

#### **Abstract**

The project to be discussed aims at identifying a suitable LTL transportation network for a logistics service provider (LSP). The network is currently characterized by a large number of direct connections between terminals. In order to increase the service level, the LSP is looking for a possibility to raise the frequency of departures from a terminal. This can be achieved by setting up a hybrid hub & spoke network. This option could first of all increase number of departures at the terminals and at the same time benefit from the direct connections at low costs whenever possible.

The empirical situation is subject to circumstance that, in sum, become rather complex. The challenge is to cope with this limitation and still find a configuration of parameters to set up a suitable and robust transportation system. To do so, we decided to simulate theoretically deducted networks and compare them based on transportation costs.

The goal of the presentation is to give an overview of the above mentioned circumstances and how they will be implemented in the simulation..

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### *Agent performance in vehicle routing when the only thing certain is uncertainty.*

Tamas Mahr, Jordan Srour, Mathijs de Weerd, Rob Zuidwijk

#### **Abstract**

While intermodal transport has the potential to introduce efficiency to the transport network, this transport environment also suffers from a lot of uncertainty at the interface of modes. For example, trucks moving containers to and from a port terminal are often uncertain as to when exactly their container will be released from the ship, from the stack, or from customs. This leads to much difficulty and inefficiency in planning a profitable routing for multiple containers in one day.

In this paper, we examine agent-based solutions as a mechanism to handle job arrival uncertainty in the context of a drayage case at the Port of Rotterdam. We compare our agent-based solution approach to a well known on-line optimization approach and study the comparative performance of both systems across four scenarios of varying job arrival uncertainty. We conclude that when less than 50% of all jobs are known at the start of the day then an agent-based approach performs competitively with an on-line optimization approach.

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### *Comparing carriers using multi-criteria efficiency evaluations.*

Xavier Brusset, Per Agrell, Peter Bogetoft

#### **Abstract**

This paper presents a method for a shipper to screen and choose carriers in a Request For Proposals (RFP) and set up enduring relationships with them. The screening is done using a frontier analysis model (inscribed within Data Envelopment Analysis or DEA). The method is compared to a traditional method of selecting carriers through a Mixed Integer Linear Program (MILP).

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