Open Seminar on Recent Conference Presentations
by PhD Candidates

<table>
<thead>
<tr>
<th>Date:</th>
<th>31 August, 2012 (Fri)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time:</td>
<td>2:30 pm (Tea/coffee service at 2:15 pm)</td>
</tr>
<tr>
<td>Venue:</td>
<td>B6619 (SEEM/MBE Conference Room)</td>
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</tbody>
</table>

Speaker 1: Ms. Yang Wen

Title: Available-to-promise model for a multi-site supply chain
Supervisor: Dr. Richard Y. K. Fung
Dept of Systems Engineering and Engineering Management, CityU
Conference name: 2012 IEEE International Conference on Automation and Logistics (ICAL 2012)
Conference period: August 15-17, 2012, Zhengzhou, China

Abstract

Available-to-promise (ATP) as a means for management of customer demands, production scheduling and the available resource has to make three main decisions: order acceptance/selection, due date assignment, and order scheduling. This research integrates the three decision-making mechanisms. A mixed integer nonlinear programming model of ATP problem is proposed to maximize the profit while satisfying customer orders at required time horizon and effective cost over a multi-site supply chain scope. A case example is used to demonstrate the use of this model. In order to improve efficiency, the branch-and-price approach is adopted to solve this model.
**Biography**

Yang Wen received her M.S. degree in Management Science and Engineering from Beihang University in 2006. She is currently a Ph.D. student in the Department of SEEM, City University of Hong Kong, supervised by Dr. Richard Y. K. Fung. Her research interests are primarily in supply chain optimization.

**Speaker 2: Ms. Zhu Qin**

**Title:** Design and Analysis of Optimal Incentive Contracts between Fourth-party and Third-party Logistics Providers  
Supervisor: Dr. Richard Y. K. Fung  
Dept of Systems Engineering and Engineering Management, CityU  
Conference name: INFORMS Annual Meeting 2012  
Conference period: Oct 14-17, 2012, Phoenix, AZ

**Abstract**

Recent development in logistics has led to wide use of fourth-party logistics (4PL) and third-party logistics (3PL) service providers. Given the increase of the supply chain complexity and growth of intense competition, these logistics service providers (LSPs) face increasing challenges. Alliance or coordination is then extremely important. This paper aims to apply the principal-agent theory to the logistics industry by studying the horizontal cooperation between 4PL and 3PL providers through the use of incentive contracts. In contrast with traditional economic literature, compensation in this case is a combination of a fixed fee and a bonus based on the performances of the 3PLs, in terms of service delivery rate and customer satisfaction level, which are industry specific. The problem is modeled as a risk-neutral 4PL provider involved in a project hire multiple risk-averse 3PL providers to conduct the tasks. The goal is to study how to design optimal contracts that balance the incentives and risks of the 3PL from the perspectives of 4PL provider, so that both the 4PL and 3PL providers can achieve maximized profits.

Keywords - horizontal cooperation; incentive contracts; agent theory; risk aversion.
Biography

Zhu Qin received her BEng(Hons) in e-Logistics and Technology Management from City University of Hong Kong in 2009. She is currently a Ph.D. student in the Department of SEEM, City University of Hong Kong, supervised by Dr. Richard, Y. K. Fung. Her research interests are primarily in the horizontal cooperation in logistics industry.

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All are welcome!

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