

The Hong Kong University of Science and Technology  
Department of Information Systems,  
Business Statistics and Operations Management

Seminar Announcement

***Stable Group Purchasing Organizations***

by

***Professor Greys Sošić***  
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**Date: Thursday, 26 May 2011**

**Time: 11:00 am – 12:00 noon**

**Venue: ISOM Conference Room 4379 (Lift 17/18)**

~~~~~ All interested are welcome ~~~~~

**Abstract:** In this paper, we study the stability of Group Purchasing Organizations (GPOs). GPOs exist in several sectors and benefit its members through quantity discounts and negotiation power when dealing with suppliers. However, despite several obvious benefits, GPOs suffer from member dissatisfaction due to unfair allocations of the accrued savings among its members. We first explore the benefits of allocation rules that are commonly reported as being used in practice. We characterize stable coalitional outcomes when these rules are used and provide conditions under which the grand coalition emerges as a tenable outcome. These conditions are somewhat restrictive. We then propose an allocation mechanism based on the marginal value of a member's contribution and find that this leads to stable GPOs in many scenarios of interest. In this analysis, we look at discount schedules that encompass a large class of practical schedules and analyze cases when purchasing requirements of the members are both exogenous as well as endogenous. We use a concept of stability that allows for players to be farsighted, i.e., players will consider the possibility that once they act (say by causing a defection), another coalition may react, and a third coalition might in turn react, and so on, nullifying their original advantage in making the initial move.

This paper is a joint work with Mahesh Nagarajan (UBC) and Hao Zhang (USC).

**Bio:** Greys is an associate professor of operations management in the Information and Operations Management Department at the Marshall School of Business. She holds a PhD in management science from the University of British Columbia, and a master's and a bachelor's degree in mathematics from the University of Zagreb, Croatia.

Her research interests include supply chain management, competition and cooperation in supply chains, and applied game theory, with particular emphasis on coalition formation and stability.

Greys has published papers in journals that include Management Science, Operations Research, M&SOM, and Production and Operations Management. Her recent publications include papers "Dynamic Supplier Contracts under Asymmetric Inventory Information" (with H. Zhang, M. Nagarajan), published in Operations Research (2010, vol. 58/5), "Transshipment of Inventories: Dual Allocations vs. Transshipment Prices" (with X. Huang), published in M&SOM (2010, vol. 12/2), "Coalition Stability in Assembly Models" (with M. Nagarajan), published in Operations Research (2009, vol. 57/1), and "Stable Farsighted Coalitions in Competitive Markets" (with M. Nagarajan), published in Management Science (2007, vol. 53/1). In 2007, she has received Dean's Awards for Research Excellence.

Greys is an Associate Editor for MSOM, IIE Transactions, POMS, and the Decision Sciences Journal, and ad-hoc referee for Management Science, Operations Research, etc. She is the recipient of the 2006 and 2007 MSOM Meritorious Service Award, 2009 Management Science Distinguished Service Award, and 2010 Management Science Meritorious Service Award. In the May of 2010, she co-organized Behavioral and Quantitative Game Theory Conference with Moshe Dror, for which they received NSF and US Air Force grants. She also chaired POMS College of Supply Chain Management 2011 Best Student Paper Competition.