NU Mechanical and Industrial Engineering Colloquium Series – FALL 06
FRIDAY Sept 29, SHILLMAN 415

SEMINAR TITLE
“The Impact of Consumer Returns on Supply Chain Coordination”

SEMINAR SPEAKER
Professor Ana Muriel
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PROGRAM
3:15 - 3:30 p.m. Tea, Coffee and Treats
3:30 - 4:15 p.m. Lecture (typical)
4:15 - 4:30 p.m. Q&A and Discussion

ABSTRACT
In an effort to attract buyers in a highly competitive marketplace, consumer return policies have been drastically relaxed in the last decade. Most mass merchandisers offer full refund within 30-90 days of purchase; no questions asked. As a result, return rates from consumers to manufacturers or retailers are often in the range of 6% to 15%. Furthermore, for mail order companies and e-tailers, they can be as high as 35%. Managing consumer returns effectively thus becomes essential to business profits.

In this talk, we investigate the effect that consumer returns have in the coordination of the supply chain. We consider a two-echelon supply chain with a single manufacturer and a single retailer that faces stochastic price-dependent demand in a single period. The retailer receives the items and commits to a selling price at the start of the season, having no additional replenishment opportunity. Logistics costs related to consumer returns are incurred at both the retailer and at the manufacturer sites. Typically, a small percentage of this cost is paid by the retailer, corresponding to the handling of such returns. Meanwhile, the manufacturer faces the larger share, including transportation, inspection and possibly the remanufacturing or disposal of the product.

Our theoretical analysis and computational experiments lead to unexpected results: (1) Higher profits and better coordination can be achieved when the players acting in a decentralized fashion do not consider any information about consumer returns as they make their pricing and ordering decisions (2) retailer, manufacturer and total supply chain profits increase as the retailer faces a larger share of the logistics costs associated with consumer returns, and (3) buy-back contracts may be detrimental to supply chain coordination if consumer returns are ignored in the decision-making process.

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BIOGRAPHIC PROFILE
Prof. Ana Muriel is an Associate Professor in the Department of Mechanical and Industrial Engineering at the University of Massachusetts at Amherst. Dr. Muriel’s research focuses on different aspects of logistics and supply chain management, including the effective coordination of production, inventory and transportation in production/distribution networks characterized by economies of scale, the evaluation of the costs and benefits of production flexibility in the supply chain, supply chain coordination, pricing, and reverse logistics.

Dr. Muriel received an NSF CAREER award in 2002 and is an Associate Editor for Naval Research Logistics, IIE Transactions in Scheduling and Logistics and the International Journal of Inventory Research. During the 2004-2005 Academic Year she was a Ramon y Cajal Scholar at the School of Management of the University of Salamanca, Spain, working on supply chain coordination and reverse logistics problems.

Dr. Muriel received her B.S. in Mathematics from the University of Seville, Spain and an M.S. and Ph.D. in Industrial Engineering and Management Sciences from Northwestern University. Her previous experience also includes a tenure-track faculty position at the University of Michigan Business School.