

MECHANICAL ENGINEERING DEPARTMENT  
ME/ISyE 8773-8774

**Demand Estimation and Pricing with Models that do not  
Explicitly Account for Competition**

by

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Wednesday, January 30, 2008

3:15 p.m. — Refreshments before the seminar

3:30 p.m. — Graduate Seminar

Room 1130 ME

**ABSTRACT** — Competition is an important factor in many revenue management and pricing problems. However, the majority of revenue management models used in practice do not explicitly take competitors' prices into account. Moreover, the historical demand records used to estimate model parameters typically do not include information on competitors' prices. What happens in such a setting? To (partially) answer this question we study a competitive setting in which each firm's price affects the other's demand, but where the firms' pricing models do not explicitly account for this dependence. (Such simplified models are often used in revenue management practice, even when revenue managers are aware of the competition.) We study the evolution of such systems over repeated problem instances and compare the long-run behavior with the equilibria that arise with well-informed competitors and with collaborators. (This is joint work with Tito Homem-de-Mello of Northwestern and Anton Kleywegt of Georgia Tech.)

**BIO** — William L. Cooper is an Associate Professor in the Graduate Program in Industrial and Systems Engineering in the Department of Mechanical Engineering at the University of Minnesota. He received a B.S. in Mathematics from the University of Pennsylvania in 1993 and a Ph.D. in Industrial Engineering from Georgia Tech in 1999. His research on revenue management, stochastic modeling, and inventory theory has been supported by several NSF grants and his publications have appeared in journals such as Operations Research, Management Science, Manufacturing & Service Operations Management, and Journal of Applied Probability. He currently serves as an Associate Editor for Operations Research and IIE Transactions and as a Senior Editor for Production and Operations Management.

Informal Faculty Luncheon: Wednesday, January 30, 2008, 12:00 noon. Meet in 1100 ME and walk to lunch with other faculty. Prof. Cooper will not be able to attend.