

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

Seminar Announcement

*Inter-temporal Pricing and Consumer Stockpiling*

by

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**Date: 26 March 2009 (Thursday)**

**Time: 4:00 – 5:30 pm**

**Venue: Room 4379, ISOM Conference Room (L17/18)**

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

**Abstract**

We study a dynamic pricing problem for a class of products with stable consumption patterns (e.g., household items, staple foods). During price promotions, consumers may stock up the product for future consumption, but they incur inventory holding costs. We model this situation as a dynamic game over an infinite time horizon: in each period, the seller sets a price, and each consumer chooses how many units to buy. We develop a solution methodology based on rational expectations. By endowing each player with beliefs, we decouple the dynamic game into individual dynamic programs for each player. We solve for the rational expectations equilibrium, where all players make optimal dynamic decisions given correct beliefs about others' behavior. In equilibrium, the seller may either charge a constant fixed price or offer periodic price promotions at predictable time intervals. We show that promotions are useful when frequent shoppers are willing to pay more than occasional shoppers for the product. We also develop several model extensions to study the impact of consumer stockpiling on the seller's inventory, production, and rationing strategies.

**Biography**

Xuanming Su is an Assistant Professor from the Haas School of Business at University of California, Berkeley. He obtained his PhD in 2004 from the Graduate School of Business at Stanford University. His areas of research include operations management, revenue management, and behavioral decision-making. His recent work studies the impact of consumer behavior on dynamic pricing strategies.