The Hong Kong University of Science and Technology

Department of Information Systems,
Business Statistics and Operations Management

Department of Industrial Engineering & Logistics Management

Joint Seminar Announcement

Stock Market Pressure on Inventory Investment and Sales Reporting for Publicly Traded Firms

by

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Date: 16 December 2008 (Tuesday)
Time: 4:00 – 5:00 pm
Venue: LT-H (Lift 27/28)

All interested are welcome

Abstract: Operations of publicly traded firms differ from privately owned firms because public firms' managers make decisions based on their own interests. In this paper, we study how stock market pressure may influence a manager's inventory and operational management. Our model is a straightforward extension of a two-period inventory management problem with correlated demand. The manager's compensation is partially based on the firm's stock price which is influenced by the reported sales revenues. With better information about the "real" demand, the manager may manipulate the stock price by shipping more than the real demand to downstream customers and claim higher than real sales revenues using a well known form of real earnings management called "channel stuffing" or "sales padding". As it does not correspond to real demand, the padded demand will return later to the firm after additional costs are incurred. Hence, channel stuffing destroys the firm's value. Based on a game between the manager and the stock market, we identify three factors that determine the manager's incentive to use channel stuffing: the marginal incentive, the boundary effect and the carryover effect. The marginal incentive is independent of the inventory problem. The boundary and carryover effects arise from the nature of the inventory management problem. When examining the initial inventory investment decision, we find that, compared to the optimal initial inventory level of an otherwise identical private firm, the manager who is aware of the costly consequence of padding may under-invest inventory due to the loss of margin as well as to limit the carryover effect, while he may also over-invest to limit the boundary effect on padding. Our theoretical analysis provides insights about how a public firm's inventory decision may be different from a private firm's inventory decision, which is the classical reference framework in operations management.

Biography: Guoming Lai is currently a PhD candidate in Management of Manufacturing and Automation at the Tepper School of Business, Carnegie Mellon University. His research mainly focuses on the topics in the interfaces of operations management with strategic consumer behavior and finance. He has two research papers forthcoming in the journals of MSOM and Omega and two research papers currently under revision for further review by the journals of Management Science and Operations Research. He received the second place in the 2008 MSOM student paper competition at the INFORMS annual conference for his paper "Stock Market Pressure on Inventory Investment and Sales Reporting for Publicly Traded Firms", and received the Best Theoretical/Empirical Research Award at the DSI 2008 Annual Meeting for his paper "Buy Now and Match Later: The Impact of Posterior Price Matching on Profit with Strategic Consumers". He has also done research in the field of Multi-agent and Artificial Intelligence and published six research papers in referred journals and conference proceedings. Before entering Carnegie Mellon University, he received a Master-level degree in Control Theory and Control Engineering and a Bachelor-level degree in Automation from Tsinghua University in China.