

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

Seminar Announcement

*The Role of Component Commonality in Product Assortment
Decisions*

by

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Date: Thursday, 19 Feb 2009

Time: 4:00 – 5:30 pm

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

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

**Abstract**

We consider a manufacturing setting in which a firm decides the number of variants to offer in the market. Each variant is produced according to a bill of materials that dictates the components used in its fabrication. There are product-specific (or dedicated) components and components that are common to a subset (or all) of the variants. Each product variant may represent, for example, a color/size/design combination of a garment or a specific configuration of a personal computer. Customers choose a product variant according to a choice model. We characterize the structure of the optimal assortment and derive the optimal replenishment policy for the common and dedicated components. We investigate the effect of component commonality on product assortment decisions and compare its benefits under different demand characteristics. We show that, depending on the structure of the production system, commonality may not lead to increased assortment offerings (relative to a system without commonality).

**Biography**

Prof. Bernstein graduated from the Graduate School of Business, Columbia University, with a Ph.D. in Operations Management. He joined the Operations Management group at the Fuqua School of Business, Duke University, in July 2000.

Prof. Bernstein's research interests include supply chain management, production planning and inventory control, applications of game theory for production and distribution systems, and revenue management. He has published papers in *Operations Research*, *Management Science*, *Manufacturing and Service Operations Management*, *Naval Research Logistics*, *Journal of Mathematical Economics*, and the *European Journal of Operational Research*. Prof. Bernstein serves as Associate Editor for *Management Science*, *Operations Research* and *Manufacturing and Service Operations Management*.

Prof. Bernstein teaches the core Operations Management course and the Supply Chain Management elective course for the Full-Time and Executive MBA programs.