



Seminario

Managing with Incomplete Inventory Information

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Abstract

A critical assumption in the vast literature on inventory management has been that the current level of inventory is known to the decision maker. Some of the most celebrated results such as the optimality of base-stock policies have been obtained under this assumption. Yet it is often the case in practice that the decision makers have incomplete or partial information about their inventory levels. The reasons for this are many: Inventory records or cash register information differ from actual inventory because of a variety of factors including transaction errors, theft, spoilage, misplacement, unobserved lost demands, and information delays. As a result, what are usually observed are some events or surrogate measures, called signals, related to the inventory level. These relationships can provide the distribution of current inventory levels. Therefore, the system state in the inventory control problems is not the current inventory level, but rather its distribution given the observed signals. Thus, the analysis for finding optimal production or ordering policies takes place generally in the space of probability distributions. The purpose of this talk is to review recent developments in the analysis of inventory management problems with incomplete information.

SHORT CV:

Prof. Suresh P. Sethi is Eugene McDermott Professor of Operations Management and Director of the Center for Intelligent Supply Networks at The University of Texas at Dallas. He has written 7 books and published nearly 400 research papers in the fields of manufacturing and operations management, finance and economics, marketing, and optimization theory. He teaches a course on optimal control theory/applications and organizes a seminar series on operations management topics. He initiated and developed the doctoral programs in operations management at both University of Texas at Dallas and University of Toronto. He serves on the editorial boards of several journals including Production and Operations Management and SIAM Journal on Control and Optimization. He was named a Fellow of The Royal Society of Canada in 1994. Two conferences were organized and two books edited in his honor in 2005-6. Other honors include: IEEE Fellow (2001), INFORMS Fellow (2003), AAAS Fellow (2003), POMS Fellow (2005), IITB Distinguished Alum (2008), SIAM Fellow (2009), POMS President (2012).

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