Title: Dual Sourcing Systems: Introduction, Developments and Questions

Speaker: Sridhar Seshadri, University of Illinois

Area: POM

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Abstract:

The COVID 19 pandemic forced supply chain managers to explore different ways to cope with rapid changes in supply, manufacturing, distribution and demand. The lesson learnt from that experience is that flexibility in responding to demand and modularity must be planned at every stage. Along with planning we argue that execution becomes challenging and is equally important to consider when making plans. We illustrate with a broad category of flexibility and modularity, dual sourcing and a technique, asymptotic analysis, that can be used to understand the cost of execution. Dual sourcing has been used to manage the trade-off between cost and responsiveness by firms and has received considerable attention in academic literature. It is known that except in special cases, the optimal sourcing policy does not have an easy structure that is practically appealing and can be used by managers. Over the last decade and half, researchers have developed and analyzed the performance of heuristic policies. This talk presents a discussion of the results in a few key papers related to the dual sourcing inventory management problem and recent distribution free results in asymptotic regions. I will describe dual sourcing systems and their growing importance in supply chain management. I will survey several results including proposed heuristics, with emphasis on Tailored Base Surge (TBS) policies. I will describe asymptotic results, including recent exact characterization of TBS cost in a specific operational regime. I will conclude the talk with open questions.

This talk draws upon the work with Ganesh Janakiraman, Sripad Devalkar and Anshul Sheopuri.

Speaker Profile:

Sridhar Seshadri obtained his PhD at the University of California, Berkeley after graduating from the Indian Institute of Technology, Madras, India with a Bachelor of Technology degree and the Indian Institute of Management, Ahmedabad, India with a Post-Graduate Diploma in Management. He is currently the Alan J and Joyce D Baltz Professor in the Geis College of Business and a Health Innovation Professor at the Carle Illinois College of Medicine. His current research projects focus on applications of analytics to different policy questions. These include Healthcare as part of the Heartgroup (https://heartanalytics.github.io/), the Development of Micro, Small and Medium Manufacturing Enterprises in India, and Sourcing and Risk Management in Global Supply Networks. His professional service includes serving as the Associate Editor, Naval Research Logistics; and Department Editor (Operations and Finance Interface), Production and Operations Management Journal. He is a founding board member of the Supply Chain Analytics Institute. His recent research includes, Impacts of COVID-19 on Supply Chains: Disruptions, Technologies, and Solutions, Springer, 2024. His work is reported at https://giesbusiness.illinois.edu/profile/sridhar-seshadri as well as https://github.com/heart-analytics/Home