**Title: Practice-driven Academic Research in Supply Chain Management, and Telecommunication Network Planning**

**Speaker: Prof. Ramesh Bollapragada, San Francisco State University**

**Area: Marketing**

**Date: 25.07.2025, Venue: K11 @ 11.00AM**

**Abstract:**

In this talk, I will present highlights of my practice oriented academic research over two major projects motivated by my work in Supply Chain management and Telecommunication Network Planning.

Project 1: Inventory Requirements Planning Methodology at Bell Laboratories
The inventory requirements planning (IRP) system is a decision-support tool that Bell Labs, has used to determine its buffering requirements for parts in a time-phased provisioning system. It measured the deviation of actual supply and demand from their planned values and, using the historical profile of these deviations, determined the safety-stock levels needed to meet the desired service levels. In doing so, it quantified the relationships among the inventory drivers: supply intervals, demand and supply variability, desired service levels. It used these drivers to identify and drive initiatives to improve processes to reduce uncertainty in the provisioning process. Several Lucent locations have used the IRP system to realign inventories and to improve service in various manufacturing and distribution facilities. The IRP system's value has been recognized through several awards. It also contributed to Lucent's receiving the Malcolm Baldrige Award (as a part of AT&T Corporation) and subsequently the INFORMS Prize.

*A total of four high quality academic research papers motivated by the above work are published in Management Science, Interfaces and IIE Transactions on Scheduling and Logistics.*

Project 2: Network Planning of Telecommunication Wireless Networks
In the paper, we present network planning methodology for Broadband Wireless Service Providers. Broadband networks generally consist of an access component (wireless access), a concentration component (a wireless aggregation point or hub), a service routing or distribution component (a central office or metro switch), and various combined or separate distribution components (a long-haul backbone data or voice network). Because access, aggregation, and routing or distribution vary greatly in requirements, we developed a method and platform for planning the components of fixed-wireless-broadband (FWB) systems for local loop access.

The network planning methodology is implemented in 4 phases: scenario planning through forecasted demand of buildings, cluster analysis to identify pockets of demand, hub configuration planning (hub engineering), end-to-end economic analysis of networks and network architecture design. The service providers who have implemented this methodology have achieved tens of millions of dollars increase in annual service revenues with the help of this network planning platform.

*A total of four high quality academic research papers motivated by the above work are published in Interfaces, Informs Journal of Computing, OR Letters, Decision journals. In addition, two United States Patents resulted based on my work on the above project.*

**Speaker Profile**:

**Ramesh Bollapragada** is a Professor in the Decision Sciences department of the College of Business, San Francisco State University (SFSU), San Francisco, USA from 2002-current. He also serves as the Director of Research at the College of Business from the academic year 2016-17 to current. Earlier, he was a Research Scientist at Bell Laboratories, Lucent Technologies in Holmdel, NJ for six years. He has a B.Tech. and M.S. in Electrical & Electronics Engineering from India and a M.S. and Ph.D. in Management of Manufacturing and Automation from the Graduate School of Business and School of Computer Science at Carnegie Mellon University, Pittsburgh, U.S.A.

Ramesh's research interests are in the areas of scheduling and economic lot-sizing, forecasting, inventory and supply chain optimization, telecommunication network planning, transportation, quality management and outsourcing. He has received several academic awards and several management awards during his industrial career. In academia, his most important award is the "Distinguished Research Professor of the university" in 2014 given across over 1000 full time faculty at San Francisco State University given by the Academic Senate of the University. This is considered equivalent to the "lifetime achievement award" at the university. In addition, he received the Lam Larsen Distinguished Research Professor in the College of Business for 2021-2023 in the first year of the inception of this award at the College of Business. Some of his important awards in industry include: finalist for "2003 Wagner Prize award" given by INFORMS Society for applied research, Semi-finalist for the Franz Edelman Award in 2009 and 2017, and several United States Patents for research at Bell Laboratories. In addition, he was part of the team at Bell Laboratories that helped win his company (Lucent Technologies) the INFORMS prize in 1998.

He was a visiting professor to top universities in U.S.A (Hass School of Business, UC Berkeley; School of Engineering, UC Berkeley; School of Business and School of Computer Science, Carnegie Mellon university, Pittsburgh), France (HEC School of Management, Paris & University of Nice at Sophia-Antipolis, Nice) India (ISB-Hyderabad, IIM-Ahmedabad), Italy (Politecnico Di Torino), Finland (Helsinki School of Economics), Ireland (Cork Constraint Computational Center). To date, he visited over 25 countries on research, teaching and leisure, presented at over 20 International conferences in USA, Europe and India, and published over 25 journal articles in Tier-A journals, such as: *Management Science, Interfaces, Naval Research Logistics, Informs Journal of Computing, IIE Transactions on Scheduling and Logistics, European Journal on Operational Research, International Journal of Production Research, International Journal of Production Economics, Decision Sciences, Transportation Journal, Decision, Vikalpa and OR Letters*.

Please refer to the below websites for more details:
https://www.calstate.edu/csu-system/faculty-staff/outstanding-faculty/Pages/Bollapragada,Ramesh.aspx

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