

Narendra Agrawal
Department of Operations and Management Information Systems
Leavey School of Business
Santa Clara University
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Education

The Wharton School, University of Pennsylvania
Ph.D., Operations and Information Management, 1994
M. A., Decision Sciences, 1990
Thesis: *Sourcing Strategy and Material Control: An Integrated Model*
Supervisor: Prof. Morris A. Cohen

University of Texas at Dallas
M. S., Management Sciences, 1987

Institute of Technology, Banaras Hindu University, India
B. Tech., Mechanical Engineering, 1984

Experience

Associate Professor, Santa Clara University, (since 1998)
Assistant Professor, Santa Clara University, (1992-98)
Taught executive, graduate and undergraduate level courses in Supply Chain Management, Operations Management, Computer Based Decision Models, and Manufacturing Competitiveness.

Visiting Associate Professor, The Wharton School of Business, 1999-2000, 2000-2001

Visiting Associate Professor, Indian School of Business, Winter 2004

Instructor, Department of Decision Sciences, the Wharton School (Spring 1989, Spring 1990)
Taught Operations Management: Analysis and Control, an advanced elective for undergraduate students.

Instructor, The Executive Masters of Science and Engineering Program, Moore School of Engineering and Applied Sciences, University of Pennsylvania (Spring 1990)
Taught sessions on Optimization and Management Decision Analysis.

Systems Analyst, Tata Consultancy Services, Bombay (June 1984 - May 1985)
Responsible for all data processing and information reporting for India's largest public sector mutual fund corporation. Assisted in the development of an on-line management information system that included inventory management, order processing, invoicing, accounting and financial reporting for an international trading company.

Academic Honors

- Dean's Award for Teaching and Service Excellence, 1996-97, 1999-2000, 2004-2005, 2007
- Dean's Award for Extraordinary Performance, 1998, 2001, 2003, 2006
- Breetwor Fellowship, 2000, 2003, 2006
- IIE Transactions Award – best paper in the Scheduling and Logistics section, 2000
- Outstanding IIE Publication Award, 2000
- Dean's Teaching and Innovation Award, 1996.
- Leavey Research Grant, Santa Clara University, 1994, 1996, 1999, 2002-2005, 2007
- Retail Workbench Research Grant, Santa Clara University, 1994, 1996-2002
- Competitive Manufacturing Institute Research Grant, Santa Clara University, 1993-98
- University Fellowship, University of Pennsylvania, 1987-90
- First Prize, SYSCON student paper competition, WORMSC Symposium, Arlington, 1989
- Graduated first in class, Institute of Technology, B.H.U., 1984. Awarded the University Gold Medal and Prince of Wales Gold Medal
- University Merit Scholarship, Institute of Technology, B.H.U., 1981-84
- National Merit Scholarship, Central Board of Secondary Education, India, 1979

Scholarly Contributions

Publications

1. Agrawal, N., S. A. Smith. (Eds.) *Retail Supply Chain Management: Quantitative Models and Empirical Studies*. Springer Science + Business Media, LLC, New York, NY, 2008.
2. Agrawal, N., S.A. Smith. Supply Chain Planning Processes for Two Major Retailers. In *Retail Supply Chain Management: Quantitative Models and Empirical Studies*, (eds.) N. Agrawal and S.A. Smith, Springer Science + Business Media, LLC, New York, NY, 2008.
3. Agrawal, N. S.A. Smith. Multi-Location Inventory Models for Retail Supply Chain Management. In *Retail Supply Chain Management: Quantitative Models and Empirical Studies*, (eds.) N. Agrawal and S.A. Smith. Springer Science + Business Media, LLC, New York, NY, 2008..
4. Cohen, M.A., N. Agrawal, V. Agrawal. Achieving Breakthrough Service Delivery through Dynamic Asset Deployment Strategies. *Interfaces*. 36(3), 259-271, May-June 2006.
5. Cohen, M.A., N. Agrawal, V. Agrawal. Winning in the Aftermarket. *Harvard Business Review*. 129-138 May 2006.
6. Agrawal, N. Sold Standard. *Economic Times* (India) September 20, 2006.
7. Tsay, A.A., N. Agrawal. Channel Conflict and Coordination in the E-Commerce Age. *Production and Operations Management*, 13(1), 93-110, Spring 2004.

8. Tsay, A.A., N. Agrawal. Modeling Conflict and Coordination in Multi-Channel Distribution Systems. In *Handbook of Supply Chain Analysis in Electronic Commerce*. (eds.) David Simchi-Levi, David Wu, and Max Shen. 557-606, 2004.
9. Agrawal, N., S.A. Smith. Optimal Retail Assortments for Substitutable Items Purchased in Sets. *Naval Research Logistics*, 50, 793-822, 2003.
10. Smith, S.A., N. Agrawal, A.A. Tsay. SAM: A Decision Support System for Retail Supply Chain Planning for Private Label Merchandise with Multiple Vendors. In *Supply Chain Management: Models, Applications and Research Directions*. (eds.) Pardalos, Romeijn and Geunes, 2001.
11. Agrawal, N., S.A. Smith, A.A. Tsay. Multi-Vendor Sourcing in a Retail Supply Chain. *Production and Operations Management*. 11(2), 157-182, 2002.
12. Agrawal, N., A.A. Tsay. Intra-Firm Incentives and Supply Chain Performance. In *Supply Chain Structures: Coordination, Information and Optimization*. (eds.) Jeannette Song and David Yao, 2001.
13. Agrawal, N., M.A. Cohen. Optimal Material Control in an Assembly System with Component Commonality. *Naval Research Logistics*. 48, 409-429, 2001.
14. Tsay, A.A., N. Agrawal. Channel Dynamics under Price and Service Competition. *Manufacturing and Service Operations Management*. 2(4), 372-391, Fall 2000.
15. Smith, S.A., N. Agrawal. Management of Multi-Item Retail Inventory Systems with Demand Substitution. *Operations Research*. 48(1), 50-64 January-February 2000.
16. Cohen, M.A., N. Agrawal. An Analytical Comparison of Long and Short Term Contracts. *IIE Transactions*. 31(8), August 1999, 783-796.
17. Tsay, A.A., S. Nahmias, N. Agrawal. Modeling Supply Chain Contracts: A Review. In *Quantitative Models for Supply Chain Management*. S. Tayur, M. Magazine and R. Ganeshan (Eds.), 299-336, 1998.
18. Smith, S.A., N. Agrawal, S. McIntyre. A Discrete Optimization Model for Seasonal Merchandise Planning. *Journal of Retailing*. 74(2), 193-221, 1998.
19. Agrawal, N., A.A. Tsay. Incentives, Decision Rights and Supply Chain Performance. *Proceedings of the 1998 MSOM Conference*. 119-124, 1998.
20. Agrawal, N., S. Nahmias. Rationalization of the Supplier Base in the Presence of Yield Uncertainty. *Journal of Production and Operations Management*. 6(3). 291:308, 1997, and in *Global Supply Chain and Technology Management*. H.L. Lee and S. Ng (Eds.), published by POMS Society. 159-176, 1998..
21. Agrawal, N., S.A. Smith. Estimating Negative Binomial Demand for Retail Inventory Management with Unobservable Lost Sales. *Naval Research Logistics*. 43, 839-861, 1996.

22. Starbird, S.A., N. Agrawal. Competitive Food Manufacturing: Evidence from the 1994 Competitive Manufacturing Survey. *Agribusiness: An International Journal*. 12(6), November-December, 525-539, 1996.
23. Cohen, M.A., N. Agrawal, V. Agrawal, A. Raman. Analysis of Distribution Strategies in Industrial Paper and Plastics Industry. *Operations Research*. 43(1), 6-18, 1995.

Working Papers

24. Agrawal, N., M.A. Cohen, N. Gans. Revenue Management at Harrah's Entertainment, Inc. Working paper. Under review *INFORMS Transactions on Education*, 2008.
25. Starbird, S.A., N. Agrawal. Upgrading: The Producer's Response in Quality-Differentiated Markets. Working paper, Santa Clara University, under review, *European Review of Agricultural Economics*, 2008.
26. Agrawal, N. Analytical Evaluation of the Benefits from Production Flexibility and Postponement in Retail Supply Chains. Working paper, Santa Clara University, 2008.
27. Agrawal, N. Modeling Category Effect of Items and Substitution in Assortment Planning, manuscript under preparation, 2008.
28. Agrawal, N., S.A. Smith. A Bayesian Framework for Inventory Management and Allocation for Retail Chains with Non-Identical Stores. Working paper, Santa Clara University, under review, *Operations Research*, 2007.
29. Agrawal, N. Risk Reallocation through Cost Sharing Contracts in SMI Systems. Manuscript under preparation, Santa Clara University, 2008.
30. "The Foundations of Competitive Manufacturing: The Electronics and Semi-Conductor Industry 1994", with S.A. Starbird, Technical Report, Santa Clara University, 1994.
31. "The Foundations of Competitive Manufacturing: The Food Industry 1994", with S.A. Starbird, Technical Report, Santa Clara University, 1994.
32. "Sourcing Strategy and Material Control: An Integrated Model", Ph. D. Dissertation, working Paper 94-03-06, Operations and Information Management Department, The Wharton School, 1994.

Presentations

1. "Modeling Category Effect for Items in Assortment Planning for Retail Chains". Invited, POMS, La Jolla, CA, POMS 2008.
2. "Modeling Category Effect for Items in Assortment Planning for Retail Chains". Invited, Operations Workshop, Kellogg Graduate School of Management, Evanston, IL, 2008.
3. "Up-Grading: The Producer's Response to Quality Differentiated Markets". Invited, Texas A&M University, College Station, Texas, Department of Agricultural Economics Seminar. April 2008.
4. "Why is Effectiveness in Supply Chain Management Critical to Competitive Advantage?" Invited presentation, Intel-India, Bangalore, September 2007.
5. "Competitive Advantage through Effective Supply Chain Management," Invited presentation, SIES College of Management and Research, Mumbai, India, August 2007.
6. "Profiting From Service: We Will Say It Again, It Really Works," LSB Breakfast Briefing, November 2006.
7. "Designing Optimal Supply Chain Strategies for Retail Chains," Research presentation at the Advisory Board Meeting, May 2007.
8. "Breakthrough After-Sales Service: The Next Competitive Frontier," Plenary presentation, INTERLOG, Phoenix, AZ, June 2006.
9. "Service in the Aftermarket," Plenary presentation, POMS Conference, Monterey, CA, June 2006.
10. "Producer's Response in Quality-Differentiated Competitive Markets," MSOM conference, Atlanta, GA, June 2006.
11. "Inventory Replenishment and Allocation in Retail Chains with Non-identical Stores," Invited presentation, IFORS International Conference, Honolulu, Summer 2005.
12. "Supplier Response in Quality-Differentiated Markets," Invited presentation, IFORS International Conference, Honolulu, Summer 2005.
13. "Risk Reallocation through Cost Sharing Contracts in VMI Systems," Invited presentation, INFORMS Conference, Denver, Fall 2004.
14. "Competing through Service Based Strategies," moderator for panel discussion, Wharton-Stanford Service Supply Chain: Thought Leaders Forum, hosted by Graduate School of Business, Stanford University, October 2004.
15. "Creating Customer Responsive Retail Supply Chains," Keynote Presentation, Annual Symposium titled "Driving Values for the Customer – Customer Driven Demand Networks," Stanford Global Supply Chain Forum, Palo Alto, CA, June 10, 2004.

16. "A Bayesian Approach for Inventory Management and Allocation Policies in Retail Chains with Non-Identical Stores," Invited presentation, University of Michigan, School of Engineering, March 2004.
17. "A Bayesian Approach for Inventory Management and Allocation Policies in Retail Chains with Non-Identical Stores," Invited presentation, Stanford University, School of Business, March 2004.
18. "Inventory Management of Fashion Items in Retail Chains," Invited Presentation, Indian School of Business, Hyderabad, January 2004.
19. "Inventory Management of Fashion Items in Retail Chains," Invited Presentation, Indian Institute of Management, Ahmedabad, January 2004.
20. "Inventory Management and Allocation Policies for Retail Chains with Non-Identical Stores: A Bayesian Approach," Invited presentation, USC, School of Business, October 2003.
21. "Optimal "PrePack" Design in Retail Supply Chains," with Stephen Smith, INFORMS Conference, Atlanta, GA, Fall 2003.
22. "A Framework for Evaluating Capacity Flexibility & Postponement Strategies in Retailing," INFORMS Conference, Atlanta, GA, Fall 2003.
23. "Optimal After-Sales Service Supply Chain Planning: Strategy, Metrics and Models," with Morris Cohen, Vipul Agrawal & Vinayak Deshpande, INFORMS Conference, Atlanta, GA, Fall 2003.
24. "Delivering variety to stores: Pre-pack policies for retail supply chains," With Stephen A. Smith, MSOM Conference, USC, June 2003.
25. "A framework for inventory optimization and allocation of fashion goods in retail chains," invited presentation, The Gap, San Francisco, April 2003.
26. "The art & science of forecasting: How-to and what-next?" invited presentation, Leadership Team, Fujitsu PC Corporation, Santa Clara, May 2003.
27. "Academic Research on Demand Management: A Review," Invited presentation at HP Technology Sharing Day conference, Palo Alto, August 2002.
28. "An Analytical Approach to Multi-Vendor Sourcing," Invited presentation at HP Technology Sharing Day conference, Palo Alto, August 2002.
29. "Collaboration in the High-Technology Industry: Findings from a Recent Benchmark Study," invited presentation, IFORS International Conference, Edinburgh, Scotland, July 2002.
30. "Blending Art and Science in Supply Chain Management," Invited presentation, The Gap, San Francisco, July 2002.

31. "Optimizing Service Supply Chains: The Next Frontier," **Keynote Speech**, APICS-Santa Clara Valley Chapter, Annual Awards Banquet, July 2002.
32. "Gaining Competitive Advantage through Efficient Service Delivery," Invited presentation at the Conference on Global Supply Chain Collaboration, North American Chinese Semiconductor Association, Santa Clara, April 2002.
33. "A Bayesian Framework for Inventory Replenishment and Allocation for Retail Supply Chains with Non-Identical Stores," Invited presentation at the Conference on Optimization in Supply Chain Management, University of Florida, Gainesville, FL, March 2002.
34. "Service: The Next Frontier," E-Biz Asia Fall 2001 Conference on B2B eCommerce Trends in the Electronics Industry in Asia, November, 2001.
35. "After-Sales Service Supply Chains & E-Commerce," with Morris Cohen and Vipul Agrawal, Invited presentation, INFORMS International, Maui, Hawaii, June 2001.
36. "Inventory Allocation & Replenishment Strategies for Non-Identical Retail Stores," with Stephen A. Smith, Invited presentation, INFORMS International, Maui, Hawaii, June 2001.
37. "An analytical comparison of long and short term contracts," with Morris Cohen, Invited presentation in a special award session, IIE Transactions Conference, Dallas, TX, May 2001.
38. "Channel conflict and supply chain coordination," with Andy A. Tsay, invited presentation, INFORMS, San Antonio, TX, Nov 2000.
39. "E-Retailing: Trends and Challenges." Invited presentation, INFORMS-KORMS 2000, Seoul, South Korea, Summer 2000.
40. "Design and Coordination in Multiple Channel Distribution Systems." Invited presentation at Global Supply Chain Management: Into the 21st Century, Hong Kong, 1999.
41. "A Bayesian Framework for Retail Model Stock: Micro-Replenishment." Invited presentation, INFORMS, Fall 1999, Philadelphia.
42. "An Investigation of Supply Chain Performance & Behavior Under Price & Service Competition." IEOR Seminar Series, UC Berkeley, Fall 1999.
43. "Micro-Replenishment Using Early Sales Information." Retail Workbench Update Meeting, Fall 1999.
44. "Supply Chain Contracts: A Review", with Andy A. Tsay and Steven Nahmias. Invited presentation at INFORMS Conference, Cincinnati, 1999.
45. "Supply Chain Management", Invited presentation at the Santa Clara Retail Masters Class, organized by the Retail Management Institute, 1999.

46. "A Review of Modeling Research in Supply Chain Contracts", with Andy A. Tsay and Steven Nahmias. Invited presentation at the Agribusiness Research Forum, organized by FAI, Santa Clara University, 1998.
47. "Incentives, Decision Rights and Supply Chain Performance", with Andy A. Tsay. Invited presentation at MSOM Conference, University of Washington, Seattle, 1998, and at INFORMS, Cincinnati, 1999.
48. "Optimal Retail Inventory Policies for products with Substitutes and Complements", with Stephen A. Smith. Invited presentation at INFORMS, San Diego, May 1997.
49. "Optimal Retail Inventory Policies for products with Substitutes and Complements", with Stephen A. Smith. Invited presentation at INFORMS, Dallas, October 1997.
50. "Designing Contracts with Multiple Suppliers of Retail Fashion Merchandise", with Stephen A. Smith and Andy A. Tsay. Invited presentation at INFORMS, San Diego, May 1997.
51. "Multi-Vendor Sourcing in the Retail Supply Chain", with Stephen A. Smith and Andy A. Tsay. Executive briefing at L.L. Bean, Maine, August 1997.
52. "Multi-Vendor Sourcing in the Retail Supply Chain", with Stephen A. Smith and Andy A. Tsay. Retail Workbench update meeting, April 1997.
53. "Management of Multi-Item Retail Inventory Systems with Demand Substitution", with Stephen A. Smith. Invited presentation at the MSOM conference, Dartmouth University, July 1996.
54. "Optimal Retail Inventory Policies for Products with Substitutes", with Stephen A. Smith. Invited presentation at the 14th Triennial Conference, IFORS, Vancouver, Canada, July 1996.
55. "Rationalization of the Supplier Base", with Steven Nahmias. Invited presentation at the TIMS International Conference in Singapore, June 1995.
56. "Rationalization of the Supplier Base", with Steven Nahmias. Invited presentation at the INFORMS conference, Washington DC, May 1996.
57. "Foundations of Competitive Manufacturing in the Electronics and Semiconductor Industry", with S. A. Starbird. Invited presentation at the ORSA/TIMS conference in Los Angeles, April 1995.
58. "Foundations of Competitive Manufacturing in the Electronics and Semiconductor Industry", with S. A. Starbird. Invited presentation at the TIMS International Conference in Singapore, June 1995.
59. "Foundations of Competitive Manufacturing in the Electronics and Semiconductor Industry", with S. A. Starbird. Invited presentation at the Indian Institute of Management, Ahmedabad, July 1995.
60. "Competitive Food Manufacturing: Evidence from the 1993-94 Competitive Manufacturing Survey," with S. A. Starbird. Presented at the 1995 annual meeting of the Western Regional

Coordinating Committee-72, Agribusiness Research Emphasizing Competitiveness, Las Vegas, NV, June 1995.

61. "Competitive Food Manufacturing: Evidence from the 1993-94 Competitive Manufacturing Survey," with S. A. Starbird. Presented at the IX Annual Agribusiness Conference, Santa Clara, CA, May 1995.
62. "Estimation Methods for Retail Inventory Management with Unobservable Lost Sales", with Stephen A. Smith. Invited presentation at the TIMS Conference in Detroit, October 1994.
63. "Supply Management and Material Control: An Integrated Model", with Morris Cohen. Invited presentation at the TIMS XXXII Conference in Anchorage, Alaska, June 1994.
64. "Supply Management and Material Control: An Integrated Model", with Morris Cohen. Invited presentation at the National ORSA/TIMS Conference held in Chicago, May 1993.
65. "Impact of Sourcing Decisions in a Multi-Product Assembly System with Component Commonality", with Morris Cohen. Invited presentation at the Multi-Echelon Conference, Chicago, June 1992, and National ORSA/TIMS Conference, San Francisco, November 1992.
66. "Sourcing Planning and Control in a Manufacturing Environment", with Morris Cohen, Invited presentation at the National ORSA/TIMS Conference, Anaheim, November 1991.
67. "A Continuous Review Inventory Model with Defective Supply", with Yu-Sheng Zheng, National ORSA/TIMS Conference, Las Vegas, May 1990.
68. "A Heuristic and Simulation Based Approach to Solve a Class of Surveillance Search Problems", SYSCON student paper competition, WORMSC Symposium, Arlington, November 1989.

Courses Taught

Undergraduate

- *Core: Operations Management*
- *Elective: Manufacturing Competitiveness*

MBA

- *Core: Operations Management*
- *Core: Computer Based Decision Models*
- *Elective: Supply Chain Management*
- *Elective: Management of Service Operations*
- *Elective: Global Business Perspectives (Immersion trip in India)*

Executive MBA

- *Theme Coordinator & Instructor: Supply Chain Management*

Teaching Highlights

- *Consistently ranked as one of the top rated professors in the business school*
- *Received the Dean's award for teaching excellence every year since 1996*
- *Highest rated professor in the Executive MBA program*

Consulting & Executive Education (selected)

Management development seminars for senior executives on retail supply chain management:

- AAFES, The Gap, Overstock.com, IBM, and numerous retailers in Asia, Europe and Australia

Management development seminars for senior executives on operations strategy and supply chain management

- Hamamatsu, KLA Tencor, Applied Materials, Trimble Navigation, Silicon Image, HP, ONGC (India), Pemex (Mexico), Adaptec, Conceptus

Supply Chain Management Projects

- KLA Tencor, Silicon Image, HP, The Gap, Schlumberger

Advisory Board

- MCA Solutions

Service

Service to the School of Business

- Chairperson, OMIS Department, Since 2008
- Chair, MSIS Program Review Committee, 2007-2008
- Member, MBA Leadership Team, since 2007
- Member, EMBA Redesign Committee, 2005, 2007
 - Led the team that proposed the modified design which is currently being implemented
- Elected to the Rank & Tenure Committee, 2002-2005
 - Chair, Rank & Tenure Committee, 2003, 2004
- President, Beta Gamma Sigma chapter, 2002-2008
- Elected to the Rank & Tenure Policy Evaluation Committee, 2004
- Member, Advisory Board, Executive Development Center, 1999-2002
- Member, Design Committee, Weekend/Online MBA Program, 1998-99
- Member, Design Committee, Executive MBA Program, 1997-98
- Recruiting Committee, OMIS Department, 1996-2003
- Advisor, O.M.I.S. Club, 1994-98

- Undergraduate Curriculum Committee, 1996-97
- Member, Strategic Initiatives Task Force, 1994-95
- Thesis Supervision: Implementing Just-in-Time and Kanban Manufacturing Concepts in a High Production Electronics Manufacturing Cell", Erik Troelsen, 1995

Service to the University

- Nominated to the University Budget Council, 2005-2008
- Elected to the University Grievance Committee, 2007-2009
- Member, University Faculty Judicial Board, 2000-2002
- Member, University sub-committee for the Irvine Grants, 1999-2001
- Attended the EMBA Conference in Montreal, 1998
- Member, Steering Committee, Asian Pacific American/Faculty and Staff Association, 1996-97
- Attended a two-day forum sponsored by Leaders for a Just World, 1995
- Representative to the Faculty Senate, 1992-93
- Faculty Development Workshop in Ethics, 1992-93

Service to the Profession

- Associate Editor: *Management Science*
- Associate Editor: *MSOM*.
- Editorial Review Board: *Production and Operations Management*.
- Ad Hoc Referee: Management Science, Operations Research, Marketing Science, IIE Transactions, European Journal of Operations Research, Naval Research Logistics Quarterly
- Frequently invited to organize conference sessions on retail supply chain management.
- Nominated as Program Co-Chair, INFORMS International Meeting, Seoul, Korea, 2000.
- Organizing Committee Co-Chair, TIMS International Meeting, Singapore, 1995.
- Professional Membership: INFORMS.

Service to the Community

Trustee, Give2Asia
 Coach, AYSO Saratoga (youth soccer league), 2003-05