

# Garrett J. van Ryzin

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## Education

- *Ph.D., Operations Research*, Massachusetts Institute of Technology, Cambridge, Mass., 1991
- *S.M., Electrical Engineering and Computer Science*, Massachusetts Institute of Technology, Cambridge, Mass., 1987
- *B.S.E.E.*, Columbia University, New York, 1985. Academic Honors with Distinction, Tau Beta Pi, Eta Kappa Nu.

## Academic Appointments

- Columbia University Graduate School of Business. *Professor of Business* (2000 - present)
- Columbia University Graduate School of Business. *Class of 1967 Associate Professor of Business* (1996 - 2000)
- The Wharton School, Univ. of Pennsylvania. *Visiting Associate Professor* (1995 - 1996)
- Columbia University Graduate School of Business. *Associate Professor* (1994 - 1995)
- Columbia University Graduate School of Business. *Assistant Professor* (1991 - 1994)

## Teaching

- *Service Operations Management*  
Case-based, elective M.B.A. course in operations management in the service sector: service concept and competitive strategy, productivity measurement, service system architecture and design, capacity management, yield management and service quality.
- *Operations Management*  
Case-based M.B.A. core course in operations management: process flow analysis, capacity planning, supply chain management, JIT, quality management, technology management and operations strategy.
- *Operations Research*  
M.B.A. introduction to operations research: linear programming, integer programming, queueing theory, decision analysis and simulation.

- *Seminar in Revenue Management*  
Ph.D. level introduction to the research literature on dynamic pricing and revenue management.
- *Seminars in Operations Management*  
Various seminars on research topics in operations management: classic papers in operations planning, scheduling and inventory theory and a review of current research themes.
- *Foundations of Optimization*  
Ph.D. level introduction to the classical theory of optimization: optimality conditions, duality, the theory of Lagrange multipliers, convex programming, the calculus of variations and optimal control.

## Consulting Experience

- *Marketedeman*: Consultant on demand management practices and methods for e-commerce start-up.
- *Priceline.com*: Consultant on pricing and revenue management for e-commerce. Business analysis, modeling and algorithm design.
- *Booz-Allen & Hamilton*: Member of a joint Columbia Business School/Booz-Allen & Hamilton team to investigate service operations strategy issues and tools.
- *Transportation International Pool (TIP)*: Consulted on yield management opportunities for TIP's trailer leasing operations as outside expert in engagement with CSC Index Group
- *Northwest/American Airlines Yield Management Litigation*: Expert Witness. Served as lead academic expert for Northwest council in suit with American Airlines over yield management trade secrets.
- *Richard Schultz Design*: Consultant on manufacturing strategy and process improvement study for small, high-end outdoor furniture manufacturer.

## Professional Experience

- *PROS Strategic Solution*: Member of the PROS Technical Advisory Council. Advisor on various revenue management and pricing projects.
- *Pricing Research Corp.*: Co-founder and vice president. Software development and consulting firm in the area of pricing and revenue management. Codeveloper of RevMaxx™ bid price optimization engine
- *Cleveland Consulting Associates*. Summer associate (1990). Operations management and decision science consulting.
- *AT&T Bell Laboratories*: Member of the Technical Staff. (1985-88). Staff member for three years in communication systems performance analysis group.
- *IBM Glendale Laboratories*: Preprofessional engineering internship (1984).

## Published Papers

1. Mahajan, S. and van Ryzin, G.J. (2001), ``Inventory Competition Under Dynamic Consumer Substitution," *Operations Research*, **49**, 646-657.
2. Mahajan, S. and van Ryzin, G.J. (2001), ``Stocking Retail Assortments Under Dynamic Consumer Substitution," *Operations Research*, **49**, 334-351.
3. van Ryzin, G.J. and J. McGill (2000), ``Yield Management Without Forecasting or Optimization: An Adaptive Algorithm for Protection Level Optimization," *Management Science*, **46**, 568-73.
4. van Ryzin, G.J. and S. Mahajan (1999), ``On the Relationship Between Inventory Cost and Variety Benefits in Retail Assortments," *Management Science*, **45**, 1496-1509.
5. Gans, N. and G.J. van Ryzin (1999), ``Discrete Dynamic Dispatching: Optimal Heavy Traffic Performance and Practical Insights," *Operations Research*, **47**, 675-692.
6. McGill, J. and G.J. van Ryzin (1999), "Revenue Management: Research Overview and Prospects," *Transportation Science*, **33**, 233-256.
7. Talluri, K. and G.J. van Ryzin (1999), ``A Randomized Linear Programming Method for Computing Network Bid Prices," *Transportation Science*, **33**, 207-216.
8. Gans, N. and G.J. van Ryzin (1998), ``Optimal Control of a Parallel Processing Queueing System," *Adv. in Applied Prob.*, **30**, 1130-1156.
9. Kolesar, P.K., G.J. van Ryzin and W. Cutler (1998), ``The New Service Factory: Creating Customer Value Through Industrialized Intimacy," *Strategy & Business*, **12** (3Q 1998), 33-43.
10. Talluri, K. and G.J. van Ryzin (1998), ``An Analysis of Bid-Price Controls for Network Revenue Management," *Management Science*, **44**, 1577-1593.
11. Gans, N. and G.J. van Ryzin (1997), ``Optimal Control of Multi-Class, Flexible Service Systems," *Operations Research*, **45**, 677-693.
12. Federgruen, A. and G.J. van Ryzin (1997), ``Probabilistic Analysis of a Generalized Bin Packing Problem and Applications," *Operations Research*, **45**, 596-609.
13. Federgruen, A. and G.J. van Ryzin (1997), ``Probabilistic Analysis of a Combined Partitioning and Math Programming Heuristic for a General Class of Vehicle Routing and Scheduling Problems," *Management Science*, **43**, 1060-1078.
14. Gallego, G. and G.J. van Ryzin (1997), ``A Multiple Product Dynamic Pricing Problem with Applications to Network Yield Management," *Operations Research*, **45**, 24-41.
15. Gallego, G. and G.J. van Ryzin (1993), ``Optimal Dynamic Pricing of Inventories with Stochastic Demand Over Finite Horizons". *Management Science*, **40**, 999-1020.

16. Bertsimas, D.J. and G.J. van Ryzin (1993), "Stochastic and Dynamic Vehicle Routing with General Interarrival and Service Time Distributions". *Advances in Applied Probability*, **25**, 947-78
17. Bertsimas, D.J. and G.J. van Ryzin (1993), "Stochastic and Dynamic Vehicle Routing in the Euclidean Plane with Multiple Capacitated Vehicles". *Operations Research*, **41**, 60-76.
18. van Ryzin, G.J., S.X.C. Lou and S.B. Gershwin, S.B. (1993), "Production Control for a Tandem Two-Machine System," *IIE Transactions*, **25**, 5-20.
19. Bertsimas, D.J. and G.J. van Ryzin (1991), "A Stochastic and Dynamic Vehicle Routing Problem in the Euclidean Plane," *Operations Research*, **39**, 601-615..
20. van Ryzin, G.J., S.X.C. Lou and S.B. Gershwin (1991), "Scheduling Job Shops with Delays," *Intl. J. Prod. Res.*, **29**, 1404-22.
21. Bertsimas, D.J. and G.J. van Ryzin (1990), "An Asymptotic Determination of the Minimum Spanning Tree and Minimum Matching Constants in Geometrical Probability," *Operations Research Letters*, **9**, 223-231.
22. Lou, S.X.C. and G.J. van Ryzin (1989), "Optimal Control Rules for Scheduling Job Shops," *Annals of Operations Research*, **17**, 233-248.

## Books and Book Chapters

1. Talluri, K. and G.J. van Ryzin. *The Theory and Practice of Revenue Management*, in preparation for Kluwer Academic Publishers.
2. Mahajan, S. and van Ryzin, G.J. (1998), "Retail Inventories and Consumer Choice," Chapter 17 in Tayur, S. et al. (eds.), *Quantitative Methods in Supply Chain Management*, Kluwer, Amsterdam.

## Published Conference Proceedings

1. Abdelmonem, A.H. and van Ryzin, G.J. (1990), "A Method for Evaluating the Effect of Performance Degradations on Computer Communications Network Applications," *Proc. of Super-Com. Intl. Conf. on Communications*, Atlanta, GA, paper # 427.
2. van Ryzin, G.J., Lou, S.X.C. and Gershwin, S.B. (1987), "Scheduling Job Shops with Delays," *Proc. of IEEE Conf. on Robotics and Automation*, Raleigh, NC.

## Papers Accepted for Publication

1. Talluri, K.T and van Ryzin, G.J. (2000), "Revenue Management Under a General Discrete Choice Model of Demand," conditionally accepted for *Management Science*.
2. Heching, A., G. Gallego and G.J. van Ryzin (1996), "Markdown Pricing: An Empirical Analysis of Policies and Revenue Potential at One Apparel Retailer," to appear *J. of Pricing and Revenue Mgmt.*

## Working Papers/Papers Under Review

1. Karaesman, I. And G.J. van Ryzin (2001), "Combining Overbooking and Seat Allocation on a Network," in preparation.
2. G.J. van Ryzin and Volcano, G., (2001), "Optimal Dynamic Auctions for Production and Inventory Systems," submitted to *Operations Research*.
3. G. J. van Ryzin and G. Volcano (2001), "Pooling and Competition in Aggregated Markets," in preparation.
4. Volcano, G., G.J. van Ryzin and C. Maglaris (2001), "Optimal Dynamic Auctions for Revenue Management," submitted to *Management Science*.
5. van Ryzin, G.J. and Mahajan, S. (2000), "Supply Chain Coordination Under Horizontal Competition," submitted to *Management Science*.
6. Karaesman, I. and van Ryzin, G.J. (1998), "Overbooking with Substitutable Inventory Classes," under third review for *Operations Research*.

## Popular Press Articles

1. van Ryzin, G.J. (2000) "The Brave New World of Pricing," in *The Financial Times*, "Special Survey: Mastering Management," October 16, 2000

## Cases

1. van Ryzin, G.J., *Transportation National Group*, November 1998. (Case study in applying revenue management to a new industry and evaluating potential revenue gains. Context: equipment leasing.)
2. Mahajan, S. and G.J. van Ryzin, *Modell's DEA*, October 1998. (Case study in interpreting and using output from data envelopment analysis (DEA) for identifying operational improvement opportunities. Context: sporting goods retailing.)

## Research Grants and Funding

- van Ryzin, G.J. Development of Case Studies on B2B Exchanges for Direct Procurement, IBM Academic Partnership Award, 5/01. Funding level: \$40,000.
- van Ryzin, G.J., Supply Chain Management for Telecom Services, AT&T industry grant, 1/99. Funding Level: \$40,000.
- Gallego, G. and G.J. van Ryzin, "Joint Pricing, Allocation and Estimation Models for Revenue Management in the Airline and Retail Industries," jointly funded by Federated Department Stores and the National Science Foundation, 7/94. Funding Level: \$300,000.

- Gallego, G. and G.J. van Ryzin, “Dynamic Pricing and Allocation Models for Revenue Management in the Airline and Retail Industries”, funded by the National Science Foundation, 8/93. Funding Level: \$95,000.

## Honors and Awards

- Supervised-student research prizes
  - Gustavo Vulcan, second prize winner 2001 George E. Nicholson Prize and second prize winner MSOM Student Paper Competition
  - Itir Karaesman, second-prize winner 1999 MSOM Student Paper Competition.
  - Siddharth Mahajan, second-prize winner in the 1996 MSOM Student Paper Competition
  - Noah Gans, first prize winner 1995 George E. Nicholson Prize
- Best Technical Presentation, AGIFORS Symposium, Atlanta, Georgia, 1996
- Honorable Mention, 1990 ORSA Transportation Science Section Dissertation Prize
- 1990-91 MIT Center for Transportation Studies UPS Doctoral Fellowship
- Honorable Mention, 1990 George E. Nicholson Prize

## Editorial Positions

- *Operations Research*, Area Editor: Manufacturing, Service and Supply Chain Operations
- *Management Science*, Associate Editor
- *Transportation Science*, Associate Editor
- *Journal of Service Research*, Member of the Editorial Board
- *Journal of Pricing and Revenue Management*, Member of the Editorial Board.
- Chairman, 1999 Transportation Science Dissertation Prize Committee.
- Chairman, 1998 George E. Nicholson Prize Committee.
- Co-editor (with Jeff McGill), Focused Issue on Yield Management, *Transportation Science*, **33**, 1999.

## Professional Society Affiliations

- The Institute for Operations Research and Management Science: *Member*
- The Institute of Electrical and Electronics Engineers: *Member*
- INFORMS MSOM Section: *Member*

- INFORMS Revenue Management Section: *Founding Member of the Board*

## Miscellaneous

Co-organizer, *First INFORMS Revenue Management Section Conference*, Columbia University, June 2001.

## Personal

Born March 25, 1961. U.S. citizen, married with three children.