

NELSON M. FRAIMAN

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EDUCATION

Columbia University
New York, N.Y.

Graduate School of Arts and Sciences	Ph.D.	1977
Industrial & Management Engineering	M. Phil	1974
Thesis: Productivity in the Steel Industry		
Graduate School of Business	M.B.A.	1971
Business Economics & Finance		
School of Engineering & Applied Science	M.S.	1969
Industrial & Management Engineering	B.S.	1968

ACADEMIC EXPERIENCE

Columbia University
New York, N.Y.

Graduate School of Business **1995- present**

Decision, Risk and Operations Division

Professor of Professional Practice and Director of the W. Edwards
Deming Center for Quality, Productivity and Competitiveness

Courses taught:

- Operations Management & Strategy
- Retailing Strategy & Operations (project class)
- Technology Management

School of Engineering and Applied Science

1979 - 1995

Department of Industrial Engineering & Operations Research

Adjunct Professor. Courses taught:

- Evaluation of Industrial Operations
- Industrial Economics
- Production Management
- Industrial Budgeting & Financial Controls

Obtained National Science Foundation grant with Professor Michael L. Pinedo to conduct research on production planning and scheduling.

Best Teacher Award in 1994 in the School of Engineering & Applied Science.

Rutgers University**1973 - 1979**

Newark, N.J.

Graduate School of Business Administration

Department of Organization & Operations ManagementAssistant Professor. Designed three new courses in the area of Operations Management.

Courses taught:

- Production & Operations Management
- Control Models in Operations Management
- Planning Models in Operations Management
- Quality Management

Columbia University**1976 - 1979**

New York, N.Y.

Department of EconomicsVisiting Assistant Professor. Course taught:

- Introduction to Accounting & Finance.

New York Institute of Technology**1972 - 1973**

New York, N.Y.

Department of Industrial Engineering TechnologyInstructor.

Designed new courses in Managerial Economics and Operations Management.

Courses taught:

- Industrial Economics
- Quality Control
- Production Management

BUSINESS AND RELATED EXPERIENCE**International Paper****1978 - 1995**

New York, N.Y.

Manufacturing Technical Services - Technology Division**1993 - 1995**

Chief Technical Officer for eight manufacturing divisions. Sales were in excess of three billion dollars. 1994 technology initiatives produced more than \$45MM in profit opportunities.

1. Spearheaded effort to run plants continuously. Implemented optimal work force deployment that increased profits by \$1.2MM - \$ 1.6MM per plant
2. Established information strategy for manufacturing divisions.
3. Directed throughput improvement effort in 20 plants. Output increased by 18 - 30%.

Converting Process Technology - Process Technology Department 1992 - 1993

Responsible for providing engineering consulting for the manufacturing divisions.

1. Led operating division turnarounds through the creation and implementation of process improvement initiatives with estimated annual savings of \$25MM.
2. Built alliances with vendors, manufacturing partners, and consultants for the co-development of manufacturing systems which has reduced waste by 25%.
3. Implemented maintenance reviews at 17 plants. Uptime increased by 15 - 20%.

Operations Analysis & Engineering - Product Development Department 1986 - 1992

1. Developed and managed group from one person to 45 professionals responsible for productivity improvement, process innovation, and the development of engineering and management talent for an organization with \$3.2 billion in sales. Responsible for providing industrial engineering and operations research direction and support.
2. Re-engineered product development processes to achieve greater efficiency, flexibility, and cost control. Time from idea to commercialization was reduced from 4 to 2.5 years.
3. Led set-up reduction efforts in 12 plants. Cycle time was reduced by 35-50%.
4. Established an innovative program for the identification, recruitment, development, and retention of outstanding engineering talent from major universities. The program's success was reported in the New York Times.

Corporate Productivity Improvement Task Force 1984 - 1986

1. Full time member of a team which developed strategies and methods for improving company operations through more effective resource management.
2. Steered company effort in the development and implementation of Quality Management programs. Basic course made mandatory for 6,400 exempt employees who participated in a fifteen month period.
3. Received International Paper President's Award for excellent performance.

Corporate Education - Human Resources Division 1982 - 1984

1. Responsible for the direction of all educational activities for the company.
2. Directed the development, training and logistical support for 84 course offerings in all functional areas. Overall enrollment was over 2,600.
3. Cultivated training culture by involving senior management in instructional roles.

Financial Education - Auditing Division 1978 - 1982

1. Responsible for the direction, development and coordination of corporate-wide education and training activities for the financial function.
2. Supervised 80 instructors in over 25 locations.
3. Institutionalized communication program to provide feedback to senior financial managers on employees' concerns.
4. Created 8 course 2 year program in accounting and financial management. Program was mandatory for all professional hires. Grades formed 20% of participants' performance evaluation.

Institute of Management & Labor Relations

Dec. 1977

Management Education Department
New Brunswick, N.J.

Director of a seminar in Forecasting and Inventory Management for operations management personnel.

Essential Foods Inter-America

1971 - 1972

New York, N.Y.

Industrial engineer. Designed plant layout and prepared of standard operating procedures for processing cooked beef in Latin America.

EDITORIAL & OTHER PROFESSIONAL ACTIVITIES

Columbia University - Graduate School of Business

New York, N.Y.

Chazen Institute – Senior Scholar

2010 - present

Member of the Chazen Institute Faculty Advisory Committee

1998 - 2010

Advisor to LABA Club

2000 - 2010

Advisor to Operations Management Club

1996 - 2009

MBA Committee

2002 - 2008

Member of Board

Columbia University – Graduate School of Business

Member of Search Committee in Media, Communications & Entertainment

1997 - 2002

Participate in LEAD Program as Operations Management Faculty

1996 - 2000

Member of Faculty Services Committee

1996 - 1998

Columbia University

Associate Member of the University Seminar on Organization & Management

1977 - 2007

Selig Sealing Products, Inc.

2003 – 2005

Member of Board

THE CONFERENCE BOARD

1996 - 2002

Council Member of Total Quality Management Center

INFORMS

1997 - 2002

Member of Academic/Practitioner Interface Committee

New Jersey Institute of Technology

1990 - 1996

Newark, N.J.

Member of Advisory Board to Industrial Engineering Department

University of Massachusetts 1989 - 1992
Amherst, MA
Operations Management Department
Member of Advisory Board to Operations Management Department

The Journal of Productivity Analysis 1988 - 1992
Kluwer Academic Publishers
Boston, MA.
Associate Editor

National Science Foundation 1990
Directorate for Engineering
Washington, D.C.
Examiner

Institute of Management Sciences 1975 - 1978
Correspondent for Management Science Roundup, **Interfaces**

Columbia University 1969 - 1975
New York, N.Y.
University Seminar on the Development of Pre-Industrial Areas
Associate Member

Columbia University 1969 - 1971
New York, N.Y.
University Senate. Elected to the first University Senate from the graduate student body of the School of Engineering & Applied Science. Served on the Budget, Physical Development and Planning, and Library Committees.

PUBLICATIONS IN THE OPEN LITERATURE

“**Lolita S.A. Managing Company Growth**”, Columbia Business School, 2008. (Co-authored with Medini Singh and Natalia Yankovic).

“**Replacement Decisions with Maintenance Under Uncertainty: An Inbedded Optimal Control Model**”, Operations Research, vol. 52, no. 5, September – October 2004, pp. 785-794. (Co-author with Ali Dogramaci)

“**Operational Due Diligence**”, Due Diligence for Global Deal Making. Edited by Arthur H. Rosenbloom. Chapter 3. Bloomberg Press. October 2002. (Co-authored with Linda D. Arrington, Carolyn E.C. Paris and Michael L. Pinedo)

“**Zara**”, Columbia Business School, 2002. (Co-authored with Medini Singh, Linda D. Arrington and Carolyn E.C. Paris).

"Building Relationships Between Universities and Businesses: The Case at Columbia Business School", Interfaces, March-April 2002.

"A High End Apparel Industry for New York City" Five Borough Report, New York, March 2002. (Co-authored with Carolyn E. C. Paris)

"Ritz-Carlton Hotel Company: The Quest for Service Excellence", Columbia Business School, 1999. (Co-authored with Linda Green, Aliza Heching and Garrett van Ryzin)

"BPSS: A Scheduling Support System for the Packaging Industry," Operations Research, Vol. 41, No.4, July-August 1993. (Co-authored with L.B. Adler, E. Kobacker and M.L. Pinedo). pp.641-648.

"On the Architecture of a Prototype Scheduling System," Proceedings of the 1993 NSF Design and Manufacturing Systems Conference. Vol. I. January 6-8, 1993. (Co-authored with M. L. Pinedo and B. Yen). pp.835-839.

"Scheduling Algorithms for Flexible Flow Lines," Proceedings of the 1992 NSF Design and Manufacturing Systems Conference. Atlanta. January 1992. (Co-authored with M.L. Pinedo).

"The Productivity Improvement Process (PIP): International Paper's Initiatives to Transform a Manufacturing Organization," Manufacturing Strategy: The Research Agenda for the Next Decade. John Ettlie, editor, Kluwer, 1990. (Co-authored with D.J. Colley, J.T. Dillon & G. A. Enk).

"An Expert System for Scheduling in a Liquid Packaging Plant," Proceedings of the Third Annual Conference on Expert Systems and the Leading Edge in Production and Operations Management. South Carolina. May 21 - 24 1989. (Co-authored with L.B. Adler & M. L. Pinedo).

"Determining an Optimal Drug Inventory Policy: A Simulation Approach," Proceedings of the Tenth IMACS World Congress on Systems Simulation and Scientific Computation. Volume II. August 1982. (Co-authored with N. Finger, A. Mehrez & M. Mohl).

"Gantt Charts," Encyclopedia of Science & Technology. McGraw Hill. 5th edition. 1982.

"The Juvenile Court System: A Simulation Approach," in Dogramaci & Adam (ed), Current Issues in Computer Simulation. Academic Press. 1979. (Co-authored with N. Finger, T. Moranian & I. Gottlieb).

"Growth of Administrative Employment and Output in the U.S. Steel Industry," Journal of Economic Issues. June 1978.

"Simulation in Criminal Justice: A Case Study of a Juvenile Court System," Proceedings of the 1977 Winter Simulation Conference. National Bureau of Standards. U.S. Department of Commerce. December 1977. (Co-authored with N. Finger & T. Moranian).

TECHNICAL REPORTS INTERNAL TO INTERNATIONAL PAPER (partial list)

"Waste Reduction: Experience Based Guidelines for Packaging Facilities," May 1993. (Co-authored with W. Loewenstein & R. Saad). 150pp.

"Folding Carton's Estimating Process Evaluation," May 1993.(Co-authored with G. Herrera). 15pp.

"Guidelines for Developing, Delivering & Institutionalizing Technical Training," June 1992. 26pp.

"Capacity Planning for the Web-Fed Litho Press at Clinton Folding Carton," September 1991. (Co-authored with J.C. Plotnicoff). 39pp.

"Optimal Production Frequencies in Hopkinsville,"March 1991.(Co-authored with H.K. Shum). 19pp.

"A Simulation study of automation opportunities at the Wilmington plant," November 1990. (Co-authored with J. Corr). 49pp.

"Future Directions for Production Systems Development in Kraft Packaging," August 1990. (Co-authored with H. Srinivasan). 50pp.

"Production Decision Support System for the Folding Carton Division," March 1990. (Co-authored with L.B. Adler & G. Sy-Quia). 156pp.

"The Folding Carton Industry. Summary of Facts and Competitive Environment," September 1989. (Co-authored with A. Habip). 87pp.

"Maintenance at Cincinnati Folding Carton," July 1989. (Co-authored with A. Thomas). 69pp.

"Finished Goods Inventory at Cincinnati," April 1989. (Co-authored with A. Dogramaci). 65pp.

"Analysis of the Dunnage Business at the Camden Packaging Facility," September 1988. (Co-authored with J.C. Plotnicoff). 39pp.

"Economic Evaluation of the Liquid Packaging Scheduling System," February 1988. (Co-authored with L.B.Adler & A. Habip). 16pp.

"Makeready Improvement at Cincinnati: Costs, Benefits & Implementation," November 1987. (Co-authored with S. Tencer). 34pp.

"Design of a Waste Recording & Monitoring System at Raleigh," December 1987. (Co-authored with V. Pendyala). 67pp.

PRESENTATIONS AT CONFERENCES (partial list)

“Customer Loyalty - The case for the Ritz-Carlton”, Ruppin College.
Tel Aviv, Israel, December 2010.

“Use of Statistical Process Control in Health-Care”, Roosevelt Hospital.
New York, October 2010.

“Process Improvement Strategies for Entrepreneurs”, Universidad de Buenos Aires.
Buenos Aires, Argentina, March 2009.

“Strategy & Operational Excellence for Global Competitiveness” Universidad ORT,
Montevideo, Uruguay. June 2008

“Fast Fashion Retailing: The case for Mango”. Presented at the Advanced Management
Program” FIT. New York. November 2006, April 2007 and April 2008.

“Gerencia de Operaciones”. Presented at Universidad Externado, Bogotá, October 2006

“Operations Strategy and Global Supply Chain Management” University of Maastricht,
Holland, March 2006, September 2007 and April 2008.

“Fast Fashion Retailing: The case for Zara”. Presented at the Advanced Management Program”
FIT. New York. April 2005 and April 2006.

“Zara – A Model of Fast Fashion Retailing”. Presented at the Advanced Management Program –
Retailing: The Big Picture” FIT. New York. November 2005.

“High Speed Fashion Retailing: The lessons from Zara and Mango” Presented at International
Conference on Industrial Logistics. Montevideo. Uruguay. February 2005

“How to Grow a Retail Chain: An Operations Lesson for CEO’s” Presented at the “Operations
Management in Services: Theory and Practice” conference at Columbia Business School.
December 2004

“Outsourcing”. Moderator in Net Impact Conference. November 2004.

“Growth Strategies: The Retailer’s Perspective” Moderator at a panel in a conference on
“Creating Value in Retailing” April 2004.

“High Speed Fashion Retailing: The lessons from Zara and Mango” Presented on session on
Retailing Operations. POMS. San Francisco. April 2002.

“Future Internet Business Models” Presentation given at the Internet Business Conference 2000
in Seoul, Korea. October 2000.

“The Age of Internet, Challenges and Opportunities” Presentation given under the auspices of the IEF Education Foundation at the 2000 Fall American Education Fair in Taipei, Taiwan, October 2000.

“Nuevos desafíos en la era del e-business”, Presentation given under the auspices of IBM. Asunción, Buenos Aires, Mexico City and Montevideo, August 2000.

Panel member at the “Information Technology: Implications on Firm Competitiveness and Japan’s Industrial Structure” session. The Center for Japanese Economy and Business. Columbia Business School. November 2000.

“Supply Chain Management”. Presentation at Universidad Virtual y del Sistema ITESM, Monterrey, México, April 2000.

“Direct to Consumer: Issues in the Apparel Industry” Presentation with Garrett van Ryzin at the Direct to Customer: New Distribution Models conference held at New York University, Stern School of Business. March 2000.

“Building Relationships between Universities & Business & Government”. Presentation at INFORMS meeting in Seattle, October 1998.

“Reducing Cycle Time”. Presentation to the Oil and Gas Industry Annual Meeting. Lamont Doherty Earth Laboratory. June 4, 1998.

“Distribution and inventory issues in the paper industry”. Presentation to the “Global Best Practices in Supply Chain Management: The Case for the Process Industries” conference held at Columbia University on November 15, 1996. (with M. L. Pinedo)

Structural Properties and Algorithms for Flow Line Scheduling, Technical Report to National Science Foundation. July 1994. (with M. L. Pinedo).

Conference on Current Issues in Productivity. Rutgers University. Graduate School of Management. Session Chairman. December 16 - 18, 1991.

"Panel on University-Industry Collaboration: Case Studies in Manufacturing," TIMS/ORSA Joint National Meeting. Las Vegas, May 7-9, 1990.

"Quality Techniques as Applied to Administrative Functions," 1989 APPAM Public-Management Conference. Arlington, Virginia. November 1989.

Symposium on Operations Research and Productivity in Manufacturing, Columbia University. October 13, 1989. Program Co-chairman.

Symposium on Production Planning and Scheduling, Columbia University. November 13, 1987. Program Co-chairman.

"Management Science in Forestry: An Overview," TIMS/ORSA. Joint National Meeting. San Francisco. May 1984. (with N. Finger & Z. Stern).

"Office Productivity Evaluation with SAS," Proceedings of the Eighth Annual SAS Users Group International Conference. New Orleans. February 1983. (with N. Finger, M. Mohl & S. Kutnick).

"Project Analysis for Commodity Hedging," SAS Users Group International. Proceedings of the Seventh Annual SAS Users Group International Conference. San Francisco. February 1982. (with R.E. Dennis & M. Mohl). Best paper award.

"Entrepreneurial Planning in a Large Organization," AIIE, November 1980. New York.

"Project Analysis & Business Modeling," AIIE, October 1979. 2nd annual Fall conference on Financial Information Systems. New York. (with P.N. Sussman).

"Crisis Management," ORSA/TIMS, November 13, 1978. Joint National Meeting. Los Angeles.

"Recidivism: A Multivariate Model. A Case Study of Juvenile Delinquency in Morris County, New Jersey," ORSA/TIMS, November 8, 1977. Joint National Meeting. Atlanta, Georgia. (with N. Finger & T. Moranian).

CONFERENCES ORGANIZED (partial list)

"Retailing 101" Co-organized with Richard Jaffe from Stiffel, Nicolaus and Company. Columbia Business School, August 2010.

"Retailing 101" Co-organized with Richard Jaffe from Stiffel, Nicolaus and Company. Columbia Business School, August 2009.

"Entrepreneurship, Growth and Inclusion" Co-organized with Jonah Rockoff and Nicolás Stier, Universidad de Buenos Aires. March 2009.

"Retailing 101" Co-organized with Richard Jaffe from Stiffel, Nicolaus and Company. Columbia Business School, August 2008.

"Applying Science to the Art of Business" INFORMS Practice Conference. Vancouver, April 2007.

"Revenue Management". INFORMS meeting. Co-sponsored Columbia University, MIT and the W. Edwards Deming Center. Co-organized with Costis Maglaras, Guillermo Gallego, Georgia Perakis and Garrett van Ryzin. Columbia Business School. June 2006.

"Made Elsewhere", Co-sponsored by the Chazen Institute and the W. Edwards Deming Center. Co-organized with Medini Singh and Burt Steinberg. May 2006.

"Applying Science to the Art of Business" INFORMS Practice Conference. Miami. April 2006.

“Revenue Management”. INFORMS meeting. Co-sponsored Columbia University, MIT and the W. Edwards Deming Center. Co-organized with Costis Maglaras, Guillermo Gallego, Jérémie Gallien, Georgia Perakis and Garrett van Ryzin. MIT. June 2005.

“Operations Management in Services: Theory and Practice”. First conference of the Production and Operations Management Society College of Service Operations. Co-organized with Michael Pinedo (NYU), Noah Gans (Wharton) and Arthur Swersey (Yale). December 2004.

“Creating Value in Retail”, Co-sponsored by the Heilbrunn Center for Graham & Dodd investing and the W. Edwards Deming Center. Co-organized with Bruce Greenwald. April 2004.

“Revenue Management”. INFORMS meeting. Co-sponsored Columbia University, MIT and the W. Edwards Deming Center. Co-organized with Costis Maglaras, Guillermo Gallego, Georgia Perakis and Garrett van Ryzin. June 2004.

“Revenue Management”. Co-sponsored by the Chazen Institute, INFORMS and the W. Edwards Deming Center. Co-organized with Costis Maglaras, Guillermo Gallego, Georgia Perakis and Garrett van Ryzin. June 2003.

“Shaping a Strategy for Re-industrialization: Prospects for the Fashion Industry” Co-sponsored by the W. Edwards Deming Center, the U.S. Department of Commerce and the College of Textiles at North Carolina. April 2002.

Symposium on 6 σ and Leadership. It featured Larry Bossidy from Allied Signal, Roger Hart from Sony Electronics and Henry Schact from Lucent Technologies. March 2000.

OUTSIDE ACTIVITIES

Enterprise Information Systems (EIS) 2006 –present
Member of Editorial Board

Reaching U 2004 - present
Member of Board

Operations Management Education Review (OMER) 2002 - present
Member of Editorial Board

**Rutgers University Center for Information Management
Integration & Connectivity(CIMIC)** 1997 - present
Newark, N.J.
Member of Advisory Board

Ben Gurion University of the Negev – Faculty of Business Administration 2006 – present
Beer-Sheva, Israel
Teach Workshop on Operations Management in the Honors MBA program

<u>Bilkent University – Faculty of Business Administration</u> Member of Advisory Board	2002 - 2010
<u>Service Operations College of POMS</u> Member of Board	2002 - 2008
<u>INFORMS Practice Conference</u> Member of Advisory Council	2005 –2007
<u>Vitex Packaging</u> Member of Board	2005 –2007