VITA - BRUCE C. HARTMAN Ph.D.

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EDUCATION

PhD, MIS, University of Arizona, Tucson, AZ, Management Information Systems Department (1st ranked nationally in its field), Dissertation Advisor: Moshe Dror, Dissertation Title: Cooperative Games and Inventory Cost Allocation, Minor: Economics.

MSEd, Mathematics and Secondary Education, University of Pennsylvania, Philadelphia, PA

AB, Mathematics, magna cum laude, Princeton University, Princeton, NJ, Thesis Topic: Differential Operators, Thesis advisor: William Feller, Examiners: Elias M. Stein, R.P. Langlands.

UNIVERSITY TEACHING EXPERIENCE

Professor, Information Systems and Operations Management, Kogod School of Business, American University, Washington, DC 20016 USA.

Past Interim Chair, Department of Business Administration, California State University Maritime, Vallejo, CA, 94590. Member of Maritime Policy and Management Department, ABS School of Maritime Policy and Management.

> Past Chair of Curriculum Committee (3 years), Member of Cost Allocation Committee (6 years); Past Member, Academic Master Plan Committee, Website Redesign Committee
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> Undergraduate courses in Logistics, Export/Import, Strategy, Supply Chain Management, Operations Management, Macroeconomics, Microeconomics, Managerial Economics, Purchasing, Quantitative Management, Coop Internship Supervision, Senior Portfolio, Maritime Economics, Organization Behavior and Labor Relations, and Leadership. Author of four online courses for master's degree program in Transportation and Engineering Management.

College of Business and Economics, California State University, East Bay.

> Undergraduate and Graduate Courses in Quantitative Management and Operations Management. Graduate Courses in Quantitative Management Science, Global Operations and Outsourcing, Logistics Management, and Business Research Methods. Undergraduate Courses in Mathematics for Business and Social Science.

Mathematics Department, Visiting Assistant Professor, and School of Economics and Business Administration, St. Mary's College of California.

> Courses in Executive MBA Program, Forecasting and Operations Management.
> Courses in Calculus, Probability and Statistics.

MIS Department, University of Arizona, Adjunct Assistant Professor.

> Committees: College of Business and Public Administration, Committee on Mathematics Preparation and Committee on Core Statistics Curriculum for Business College.
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> Courses: Mathematical Modeling and Analysis, 1996-1997; Complete responsibility for this required core course for first-year PhD. students in MIS, which is also open to MBA students. Service Management, Spring 1997; Graduate level class taught by case method. Logistics and Supply Chain Management, Spring 1996-1998; Graduate level elective using a simulation, case studies, and projects. Principles of Operations Management, Spring 1993- Spring 1998;

Complete responsibility for this upper-level required course for all majors in Operations Management, also taken by MBA students. Designed team projects, included outside speakers from industry, devised service project learning experience for class.

Project Management, Fall 1997-Spring 1998; Undergraduate-Graduate course in project management techniques, open also to MBA students. Included emphasis on software project management. Introductory Operations Management, Spring 1991- Fall 1997; Undergraduate course required for students in the School of Business and Public Administration. Developed own lectures and team projects.

Mathematics Department, University of Arizona

Business Calculus, 1997; Technical Advisor to classes using symbolic calculus computing and group projects in the business calculus curriculum. I designed this project and won grants from the university to cooperate with the Math Department to implement change to use of MathCad software in business calculus education. Business Calculus, 1994-1997; Required course for admission to College of Business and Public Administration. Emphasis is on business and economic applications of calculus. Adapted Harvard Calculus Consortium methods. Finite Mathematics, 1994-1996; Developed experimental curriculum using computers and spreadsheets for required course for admission to College of Business and Public Administration. Now expanded to 100% of the sections taught.

WORK EXPERIENCE

MIS Director, Intraware Inc., Orinda, CA; ran MIS operations for startup internet provider of software distribution management services.

IS Manager, Business and Manufacturing Applications, Lucent Technologies, San Jose, CA, 1998-1999; ran Oracle Applications for ERP, distribution and e-supplier for $1.6B manufacturer of voice mail systems.

Director, Engineering; Director, Marketing; Director, MIS, System Industries, Milpitas, CA, 1985-1988, 1989-1991; ran engineering, marketing, consulting operations for major storage systems vendor.

Director, MIS, Santa Cruz Operation, Santa Cruz, CA, 1988-1989; responsible for all business systems and UNIX network of 260 computers.

Manager - Systems, Pennzoil Corporation, Tucson AZ, 1978-1985; managed development and deployment of all process control and computer systems for Duval mining division, a $600M international company.

Senior Systems Analyst, Bell Technical Operations Co., Tucson, AZ, 1977-1978; developed parts of large scale computer simulations of communications networks on supercomputers for US Army.

Mathematician, US Army Communications Command, Ft. Huachuca, AZ, 1977, designed large computer models of communications networks, antennas, and radio propagation.

COLLEGE PREP TEACHING EXPERIENCE

Echo Farms Inc., Chalfont, PA, 1963-1978, and Community Camp School: Owner - president, Founder - instructor. Owned and ran a corporation that operated a youth camp. Founded and managed a private K-12 college prep school with two campuses.

William Penn Charter School, Philadelphia, PA, 1964-1969, and Germantown Academy: Instructor, Football Coach. Taught mathematics, computer science, and chemistry to college prep students.

PUBLICATIONS

(1) Hartman, Bruce C. and Moshe Dror. (1993). "A Note on When Monotonicity Implies Differentiability a.e." International Journal of Mathematical Education in Science and Technology. 24 (6), 922-926.

(2) Hartman, Bruce C. and Moshe Dror. (1996). "Cost Allocation in Continuous Review Inventory Models." Naval Research Logistics Journal, 43, 549-561.

(3) Hartman, Bruce C. and Moshe Dror. (1996). "Inventory Centralization: Some Cost Allocation Issues." Proceedings of the MSOM Conference, Dartmouth College, Hanover, NH. 149-154.

(4) Hartman, Bruce C., Eugene A. Smith, and Thomas L. Rodgers. (1997). "Symbolic Math and Collaborative Learning: Teaching Business Calculus in a Group Decision Environment." In Managing Information Technology Resources and Applications in the World Economy, Proceedings of the Eighth IRMA International Conference, Vancouver, BC, Canada. Hershey, PA: Idea Group Publishing. 493-494.

(5) Knotts, Gary, Moshe Dror, and Bruce C. Hartman. "A Project Management Tool for Computer-supported Cooperative Work during Project Planning." Proceedings of the 31st Hawaii International Conference on System Sciences. January 1998, I 623-631.

(6) Bruce C. Hartman and Thomas L. Rodgers. "Developing Proficiency in Math: Cause and Effect in a Cognitive Process." Proceedings of the 31st Hawaii International Conference on System Sciences. January 1998, I 301-308.

(7) Knotts, Gary, Moshe Dror, and Bruce C. Hartman. "A Project Scheduling Methodology Derived as an Analogue of Digital Circuit Technology." Annals of Operations Research. 82 (1998) 9-27.

(8) Dror, Moshe, and Bruce C. Hartman. "Stopping Rules for Utility Functions and the St. Petersburg Gamble." Applied Mathematics and Computation. 98 (1999) 279-291.

(9) Dror, Moshe, and Bruce C. Hartman, co-editors, "Game Theory Applications in Industry," Special Issue, IIE Transactions on Operations Engineering. 1999.

(10) Hartman, Bruce C., Moshe Dror, and Moshe Shaked. "Cores of Inventory Centralization Games." Games and Economic Behavior. 31 (2000) 26-49.

(11) Knotts, Gary, Moshe Dror, and Bruce C. Hartman. "Digital Circuits as a Modeling Metaphor for Resource Constrained Project Management." IIE Transactions on Scheduling and Logistics. 32 (2000) 387-401.

(12) Hartman, Bruce C. and Moshe Dror. "Optimizing Centralized Inventory Operations in a Cooperative Game Theory Setting." IIE Transactions, 35-3 (2003) 243-257.

(13) Dror, M., B.C. Hartman, G. Knotts, and D.D. Zeng,. "Autonomous Random Resource Allocation to Coordinate Access to Mutually Exclusive Resources", J. of Applied Mathematics and Decision Sciences 9(1) (2005), 1-18.

(14) Hartman, Bruce C. and Moshe Dror. "Allocation of Gains from Inventory Centralization in Newsvendor Environments." IIE Transactions on Scheduling and Logistics, 37 (2005) 93-107.

(15) Dror, Moshe, and Bruce C. Hartman. (2005). "Shipment consolidation—who pays for it and how much." Proceedings of the MSOM Conference, Northwestern University, Evanston, IL. July, 2005.

(16) Dror, Moshe, and Bruce C. Hartman. (2006). "Shipment consolidation—who pays for it and how much." Management Science, 53(1) (2006) 78-87.

(17) Bruce C. Hartman. (2007). "Cost Allocation in Inventory Consolidation." Proceedings of the BPS Conference, Mumbai, India. November, 2007.

(18) Dror, Moshe, and Bruce C. Hartman. (2010). "Survey of Cooperative Inventory Games and Extensions." Journal of Operational Research Society, doi: 10.1057/jors.2010.65.

(19) Dror, Moshe, Bruce C. Hartman, and Wei Chang. (2011). "The Cost Allocation Issue in Joint Replenishment." International Journal of Production Economics, doi: 10.1016/j.ijpe.2011.07.015.

(20) Clott, Christopher B. and Bruce C. Hartman. (2011). "Clean Trucks in California Ports: Modelling Emissions Policy." Proceedings of International Association of Maritime Economists IAME2011 Conference, Santiago, Chile, October 25-28, 2011.

PRESENTATIONS AND CONFERENCE PAPERS

(1) "Stopping Rules for St. Petersburg Gamble: Utility Functions and Stochastic Dynamic Programming Framework." Moshe Dror and Bruce C. Hartman. (1992) ORSA-TIMS San Francisco.

(2) "Cost Allocation in Continuous Review Inventory Models". Bruce C. Hartman and Moshe Dror. (1993). ORSA-TIMS Boston.

(3) "Allocation of Costs of Centralizing Inventory." Bruce C. Hartman and Moshe Dror. (1994). ORSA_TIMS Detroit.

(4) "Optimal Benefits from Inventory Centralization and their Fair Allocation." Bruce C. Hartman and Moshe Dror. (April, 1995). INFORMS, Los Angeles.

(5) Session Chairman, Inventory Systems II, INFORMS, Los Angeles, April, 1995.

(6) "Calculus and Consumers." Bruce C. Hartman. Entry Level Mathematics Colloquium, University of Arizona, March 1995.

(7) "Stable Cost Allocation for Projects." Bruce C. Hartman. INFORMS, New Orleans, October, 1995.

(8) "Resource Allocation for Mobile Computing Networks." Bruce C. Hartman and Anindya Datta. INFORMS, San Diego, May, 1997.

(9) Session Chairman, Telecommunications, INFORMS, Los Angeles, May, 1997.

(10) "Symbolic Calculus and Collaborative Learning: Some Experiments in the Making." Bruce C. Hartman, Eugene A. Smith, and Thomas L. Rodgers. IRMA Conference, Vancouver, BC, Canada, May 1997.

(11) Session Chairman, Inventory, Games and Bargaining, INFORMS, Dallas, October, 1997.

(12) "Cooperative Inventory Management when Cost Parameters Vary." Bruce C. Hartman and Moshe Dror. INFORMS, Dallas, October, 1997.

(13) "Cooperative Games and Bidding in Resource Constrained Software Projects." Bruce C. Hartman . INFORMS, Dallas, October, 1997.

(14) "Autonomous Agent Heuristics for Resource Constrained Project Scheduling." Gary Knotts, Moshe Dror, and Bruce C. Hartman. INFORMS, Dallas, October, 1997.

(15) "Inventory Centralization: Dynamic Response to Static Cost" Moshe Dror and Bruce C. Hartman. 8th International Symposium on Dynamic Games and Applications, July 5-8, 1998, Chateau Vaalsbroek, Maastricht, the Netherlands.

(16) "Supply Chains: Successes and Failures". MIS Department Conference of the University of Arizona, "Managing IT in Networked Organizations", October 24, 2003, Tucson, AZ.

(17) "Reducing Correlation: Some methods and applications", Ephibian Series Speaker, MIS Department, Eller School of Business and Economics, University of Arizona, December 4, 2009, Tucson, AZ.

(17) "Peer Assessment of Student Talks in Micro", Conference on Teaching with Technology, San Francisco State University, May 8, 2010, San Francisco, CA.

(18) Session Chair, Conference on Behavioral and Algorithmic Game Theory, May 14-17, Newport Beach, CA.

(19) "The Clean Truck Program: Implementation of an Environmental Sustainability Initiative", Christopher B. Clott and Bruce C. Hartman, Conference on Port Management and Policy, November 5, 2010, CSU San Bernardino, San Bernardino, CA.

UNPUBLISHED MANUSCRIPTS

(1) Hartman, Bruce C. (1992). "Coordination Games and Equilibrium Selection."

(2) Moshe Dror and Bruce C. Hartman. "A Note on Power of Two Inventory Games"

(3) Clott, Christopher, and Bruce C. Hartman. "Clean Trucks in California Ports: Modelling emissions Policy". Accepted for International Association of Maritime Economics, 2011 Conference, Chile.

RESEARCH INTERESTS

Cost allocation in supply chains and centralized resource management situations: inventory, project management, and logistics. Management of services and supply chains. Information systems for operations management. Mathematics and economics of operations, especially game theory applications.

PROFESSIONAL SOCIETIES

INFORMS, Institute for Operations Research and Management Science
ASTL, American Society for Transportation and Logistics
IAME, International Association of Maritime Economists

AWARDS

2008 Academic Senate Recognition for service as Chair of Curriculum Committee

1997 Provost's Learning Technologies Grant

1996 Provost's Learning Technologies Grant

1993 Graduate and Professional Students Council Grant

NON-REFEREED PUBLICATIONS

Hartman, Bruce C. (1987). "Disk Cache Processing Improves System Performance through User-Definable Parameters." Hardcopy, 7 49-56.

Hartman, Bruce C. and Dan Post. (1987). "Disk Cache Processor", video, Communication Strategies, San Francisco.

ACHIEVEMENTS

As Interim Chair, led business administration department at Cal Maritime to a complete curriculum revision, and a subsequent departmental assessment plan. Chaired Curriculum committee for 3 years, guided creation of new policy, new institution-wide objectives, and procedures program reviews school-wide. Participated in design of WASC approved master's degree in supply chain management and security. Designed four online courses for WASC interim approved master's degree program in transportation and engineering management. Developed a course in Maritime Economics, and one in Advanced Information Systems and Database. Obtained funding for and ran HR Block Business Strategy competition, now running for four years.

Managed Siebel CRM and Peoplesoft Accounting systems at Intraware; also implemented Java web software for service and sales, and a data warehouse and data mining system for corporate sales and web traffic data.

Led to completion 4 high profile ERP projects within one year for Lucent Technologies' Communications Applications Group, all under budget and on time. Areas were Y2K readiness, a Transportation Management system, Ariba Operating Resource management system, and integration into a complex SAP environment.

Made five year business plan for $150M company emerging from severe financial difficulty. Marketed major new products from conception to shipment. Planned acquisition of several manufacturers and disengagement from two marketplaces.

Changed an information systems activity (MRP II and Accounting) for a $150M company from a major external audit liability to an efficient, productive, auditable organization. Installed measurement systems, information plan, steering committee, nationwide office automation network, and information center.

Created distributed business processing network (MRP) using Unix and microcomputers to run a $70M company. Installed MRP II, Order and Distribution systems, and financial databases.

Supervised writing and sale of geostatistical software (kriging) for modeling mines and mining exploration. Designed, deployed, and supported critical process control and instrumentation systems for sulfur wells, gold plant, large grinding mill, and portable crusher; and a realtime access control system with database for a complex of 7 buildings.

Installed relational data base system for mining process data and mine planning information. Designed and implemented special CAD system for mine design and CASE system for interactive data base program design.

Started a private college prep school grades K-12 with a diverse interracial clientele. Owned and operated an educational youth camp for 11 years.

Began one of the first programs to teach BASIC computer programming to eighth graders. Gave two presentations to NAIS on this subject.

BRUCE C. HARTMAN

SUMMARY OF QUALIFICATIONS

Extensive experience in information systems, manufacturing, distribution, and marketing in e-commerce, manufacturing and process businesses--- software services, telecommunications, mining, computer disk drives, and software. Led a major strategic information planning project with Pennzoil and AA; created other information plans at smaller concerns. Ran a pre-sales consulting group and marketed a $60M product line. Thorough knowledge of Supply Chains, logistics, and ERP processes from practical experience. Led projects on major ERP systems in manufacturing companies. Extensive background in business processes and systems; author of a variety of business plans development strategies as a product development director. A wealth of experience leading and training professionals in the manufacturing and information systems fields.

EXPERIENCE HIGHLIGHTS

Lecturer with rank of Professor, ABS School of Maritime Policy and Management, California State University, Maritime, Vallejo, CA 2005-present. Acting Department Head, business Administration, 2007-2008; Program Director, 2008-2009.

- Taught various business courses to undergraduates, including quantitative methods in business, operations management, global logistics, supply chain management, purchasing, and economics- macro, micro, and managerial.
- Led development of two new curricula for department, and departmental assessment program.
- Developed new courses in Operations, Quantitative Methods, Logistics, and Portfolio analysis.
- Developed four online courses, including the capstone, for a Master's Degree in Transportation and Engineering Management, launching November 2011.
- Chair of Curriculum Committee, which developed its policy and conducted two program reviews as well as managing curriculum changes for school.
- Served on Chargeback Committee, which determines campus resource allocations, and on Website Committee, which makes policy for the school's website.
- Ran and served on several search committees for tenure track faculty.

Lecturer, Management and Finance Department, college of Business and Economics, California State University, East Bay, Hayward, CA 2003-2006.

- Taught various business courses to undergraduates and masters students, including quantitative methods in business, operations management, global operations management, and business research methods.

Visiting Professor, Mathematics, St Mary's College of California, Moraga, CA 2002-2004.

- Taught Finite Mathematics, Probability and Statistics, and Calculus I and II.
- Taught Operations and Statistics in Executive MBA program.

MIS Director, Intraware, Orinda CA, October 1999-December 2001.

- Lead MIS team at a well-known B2B ecommerce firm. Implemented Peoplesoft financials, Siebel Sales automation, Interwoven content management for web site. Managed contracts with these vendors and specified additional procurements and professional services contracts with them. Some were implemented using ASP contracts. Ran staff of Java programmers and web developers who created web based business applications such as order entry, item and price maintenance, and customer support. Also implemented data warehouse for business reporting and E.piphany data mining for targeted database marketing efforts. Wrote RFP and

procurement specs for Business Objects to be embedded in custom software. Procured and ran consulting contracts with these firms and with third parties as part of installations. Joined enterprise systems together using Active Works middleware (now called Webmethods).

IS Manufacturing Manager, Lucent Technologies, San Jose CA, 1998-1999.

- Coached a team of IS analysts using Oracle ERP system and other Oracle based manufacturing and distribution systems. Procured and installed Ariba B2B software and Optum shipping and distribution software, Informatica datamart. Ran data warehouse operation.

Adjunct Professor, MIS, University of Arizona, Tucson, AZ, 1991-1998.

- Taught supply chain management, software project management, operations management, logistics, and mathematical methods to MBAs and PhD candidates.

Director, Marketing and Consulting, System Industries, Milpitas, CA, 1989-1991.

- Directed a consulting group who provided pre- and post sales support for advanced computer disk systems and software. Made frequent direct contact with customers in pre and post sales technical consulting. Helped enterprises write RFPs for computer products. Led project to develop and market a client-server Oracle-based database system. Led largest single sale in company history ($160 million contract) to Boeing.

Director, MIS, System Industries, Milpitas, CA, 1985-1988.

- Implemented ERP, telephone sales system, customer service database. Changed information systems activity from an audit liability to efficient, professional organization. Made site a customer showcase and drove customer demos. Negotiated company-wide contracts for various enterprise software systems as well as for implementation and ongoing support.

Director, MIS, Santa Cruz Operation, Santa Cruz, CA, 1988-1989.

- Installed QAD ERP, Order and Distribution systems, personnel and financial databases in large distributed UNIX client-server network.

IS Director, Duval mining division, Pennzoil Corporation, Tucson AZ, 1978-1985.

- Project Leader on a Pennzoil-wide $20 million Information Plan with 60 employees and 60 Arthur Andersen consultants. Trained with Andersen Consulting staff. Ran projects to install process control, technical, research, and business computer systems for sulfur wells, gold plant, large grinding mill, and portable crusher, with staff of 28 including engineers, software pros, techs, and Chem Engg Ph.D.'s.

EDUCATION: AB, Princeton, *magna cum laude*, Math. MSEd, Penn, Math. Ph.D., Arizona, MIS/Manufacturing and Supply Chain Management. Several published papers in supply chain management and applications of game theory in manufacturing.