

INDRANIL R. BARDHAN

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CAREER PROFILE

I am Associate Professor with tenure in the School of Management at the University of Texas at Dallas. I hold a joint appointment with the Management Information Systems (MIS) and Accounting and Information Management (AIM) programs. I am Associate Editor at *Information Systems Research* and *Electronic Commerce Research & Applications*, and serve on the editorial board at *Decision Sciences*. My research interests lie in the areas of information systems productivity in the context of manufacturing and new product development, and strategic planning of information technology investments. My research has been published or forthcoming in prestigious academic journals, including *Operations Research*, *MIS Quarterly*, *Information Systems Research*, *Manufacturing & Service Operations Management*, *Production and Operations Management*, *European Journal of Operational Research*, *Journal of Management Information Systems*, *Accounting, Organizations and Society*, *Annals of Operations Research*, *Information Technology and Management*, and the *Journal of Productivity Analysis*. My research has been motivated by working with real-world problems with leading companies, and involve application of mathematical models and econometric methods to study the impact of information systems in manufacturing operations and strategic IT investment planning. I teach graduate-level courses in the MBA and MS programs in the School of Management.

My research with industry partners have included a diverse set of projects, such as estimation of the business value of collaboration software, application of real options analyses for valuation and prioritization of IT projects, and development of models to understand and measure the characteristics and business value of information work. I have several years of management consulting experience, most recently as a Principal with *PricewaterhouseCoopers Consulting*. In that role, I advised and consulted with senior IT and business executives of Fortune 500 companies to provide a wide array of IT-focused consulting services, including development of strategic IT plans and architecture, valuation of a portfolio of IT services, and design of education and training seminars for senior IT executives.

EDUCATION

The University of Texas at Austin

Doctor of Philosophy (Ph.D.) in
Management Science & Information Systems.
McCombs School of Business, 1995.

The Pennsylvania State University

Master of Engineering in
Mining Engineering, 1992.

Indian School of Mines, India

Bachelor of Technology (B.Tech), 1988.

PROFESSIONAL RECOGNITION

- Conference Co-chair, Tenth Annual INFORMS Conference on Information Systems and Technology (CIST), San Francisco, November 2005.
- Associate Editor, *Information Systems Research* (January 2007 -)
- Area Editor, *Electronic Commerce Research and Applications* (August 2006 -).
- Co-editor, Special Issue of *Information Technology and Management*, forthcoming 2007.
- Editorial Board, *Decision Sciences* (2006 -)
- Track Chair, Operations – IT Interfaces track, *POMS Annual Meeting 2007*, Dallas, TX.
- Nominated for Best Paper Award, *International Conference on Information Systems (ICIS)*, Milwaukee, December 2006.
- Nominated for Best Paper Award, *INFORMS Conference on Information Systems and Technology*, Denver, October 2004.
- Program Committee Member, INFORMS CIST 2004 and 2006.
- Academic Advisory Board Member, Center for Information Technology and Management, The University of Texas at Dallas, 2002 - present
- Recipient of the Abell-Hanger Endowed Presidential Research Scholarship, The University of Texas at Austin, Austin, TX, 1993-94.
- Recipient of the DuPont Ph.D. Scholarship, The University of Texas at Austin, 1992, 1993.
- Invited Member of the Omega Rho Honor Society for Operations Research, INFORMS, 1992 –.

RESEARCH

The primary emphasis of my research has been on *applications-driven empirical research* in the areas of information systems economics and productivity analyses. My research has an interdisciplinary focus that spans multiple disciplines including management science, information systems, and supply chain management. Recent research topics have focused on the role of IT in management of accounting information and ensuring compliance with Sarbanes-Oxley regulations. My research publications have been motivated by working with real-world problems and involve application of mathematical models and econometric methods to study the impact of information systems in manufacturing operations and strategic IT investment planning.

REFEREED JOURNAL PUBLICATIONS

1. Project Performance and the Enabling Role of Information Technology: An Exploratory Study on the Role of Alignment.
Authors: Indranil R. Bardhan, Vish Krishnan, and Shu Lin.
Manufacturing & Service Operations Management, Special Issue on Empirical Science in Operations Management, Fall 2007, Vol. 9, No. 4, pp. 579-595.
2. Antecedents and Impact of Production and Support Outsourcing in Manufacturing Plants
Authors: Indranil R. Bardhan, Sunil Mithas, and Shu Lin.
Production and Operations Management, 2007, Vol. 16, No. 6.

3. Understanding the Impact of Collaboration Software on Product Design and Development.
Authors: Rajiv D. Banker, Indranil R. Bardhan, and Ozer Asdemir.
Information Systems Research, December 2006, Vol. 17, No. 4, pp. 352-373.
4. The Impact of Activity-Based Costing on Manufacturing Plant Performance.
Authors: Rajiv D. Banker, Indranil R. Bardhan, and Tai-yuan Chen.
Lead article in *Accounting, Organizations and Society*, Vol. 33, No. 1, 2008, pp. 1-19.
5. Information Technology, Production Process Outsourcing and Manufacturing Plant Performance.
Authors: Indranil R. Bardhan, Jonathan Whitaker, and Sunil Mithas.
Lead article in *Journal of Management Information Systems*, Vol. 23, No. 2, Fall 2006, pp. 13-40,
6. Toward a Theory to Study the Use of Collaborative Product Commerce for Product Development.
Author: Indranil R. Bardhan
Information Technology and Management, Vol. 8, No. 2, April 2007, in press.
7. Plant Information Systems, Manufacturing Capabilities and Plant Performance.
Authors: Rajiv D. Banker, Indranil R. Bardhan, Hsihui Chang, and Shu Lin.
MIS Quarterly, Vol. 30, No. 2, pp. 315-337, June 2006.
8. Prioritization of a Portfolio of Information Technology Projects.
Authors: Indranil R. Bardhan, Ryan Sougstad, Sugato Bagchi
Journal of Management Information Systems, Vol. 21, No. 2, pp. 33-60, Fall 2004.
9. A Weighted Least Squares Approach to Computer Simulation Factor Screening.
Authors: Douglas J. Morrice and Indranil R. Bardhan
Operations Research, Vol. 43, No. 5, pp. 792-806, 1995.
10. A Simulation Study of Joint Uses of Data Envelopment Analysis and Statistical Regressions for Production Function Estimation and Efficiency Evaluation.
Authors: Indranil Bardhan, William W. Cooper, and Subal C. Kumbhakar.
Journal of Productivity Analysis, Vol. 9, No. 3, pp. 249-278, 1998
11. New Uses of Data Envelopment Analysis and Statistical Regressions for Production Function Estimation and Efficiency Evaluation - with Illustrative Applications to Public Schools in Texas.
Authors: Victor Arnold, Indranil R. Bardhan, William W. Cooper, and Subal C. Kumbhakar.
Annals of Operations Research, Vol. 66, pp. 255-277, 1996.
12. A Note on Returns-to-Scale in Data Envelopment Analysis.
Authors: Rajiv D. Banker, Indranil R. Bardhan, and William W. Cooper.
European Journal of Operational Research, Vol. 88, pp. 583-585, 1996.
13. Models and Measures for Efficiency Dominance in Data Envelopment Analysis: Additive Models and MED Measures.
Authors: Indranil R. Bardhan, William Bowlin, William W. Cooper, and T. Sueyoshi
Journal of the Operations Research Society of Japan, Vol. 39, No. 3, pp. 322-332, 1996.
14. Models and Measures for Efficiency Dominance in Data Envelopment Analysis: Free Disposal Hull and Russell Measure Approaches.
Authors: Indranil R. Bardhan, William Bowlin, William W. Cooper, and T. Sueyoshi
Journal of the Operations Research Society of Japan, Vol. 39, No. 3, pp. 333-344, 1996.

REFEREED BOOK CHAPTERS

1. Empirical Advances in Analyzing Information Technology Project Investment Portfolios: Leveraging the Log-transformed Binomial Model.
Authors: Ryan Sougstad and Indranil R. Bardhan
Book: *Economics, Information Systems, and Electronic Commerce Research: Advanced Empirical Methodologies*, Volume 1 in *Advances in Management Information Systems Series*, R. Kauffman and P. Tallon (editors), M.E. Sharpe Publishers, Armonk, NY, 2006, in press.
2. Primal and Dual Optimality in Computer Codes Using Two-Stage Solution Procedures in Data Envelopment Analysis.
Authors: V. Arnold, Indranil R. Bardhan, William W. Cooper, and A. Gallegos.
Book: *Operations Research: Methods, Models and Applications*, Jay Aronson and Stan Zionts (editors), Chapter 5, 57-96, Quorum Books, Westport, CT, 1997.
Citation Count: 7
3. A Two-Stage Data Envelopment Analysis Approach for Identifying and Rewarding Efficiency in Texas Public Schools.
Authors: V. Arnold, Indranil R. Bardhan, and William W. Cooper
Book: *IMPACT: How IC² Research Affects Public Policy and Business Markets*, W.W. Cooper, S. Thore, D. Gibson, and F. Phillips (editors), Chapter 8, pp. 131-166, Quorum Books, CT, 1997.
Citation Count: 4

BUSINESS PRESS

1. Clearly Productive: Research using the CLEAR index finds effectiveness just as important as efficiency in improving productivity.
Authors: Vish Krishnan and Indranil R. Bardhan
Optimize, Issue 39, January 2005 (a publication of *InformationWeek*).
Web Link: <http://www.optimize.com/article/showArticle.jhtml?articleId=56200370>
2. Excellence and efficiency in Texas public schools.
Authors: Victor L. Arnold and Indranil R. Bardhan
Texas Business Review, 1994, pp 5-7.

CITATIONS

My research has been cited by other researchers in prestigious journals such as *Management Science*, *Journal of MIS*, *INFORMS Journal on Computing*, *Research-Technology Management*, *Operations Research Letters*, *IIE Transactions*, *European Journal of Operational Research*, *Applied Mathematics and Computation*, *Journal of Productivity Analyses*, *Annals of Operations Research*, *Socio-Economic Planning Sciences*, *Journal of Accounting and Public Policy*, and *Journal of the Operations Research Society*.

My publications have received more than 100 citations to date based on the JCR extracts from the ISI database.

WORK IN PROGRESS

UNDER REVIEW

1. How does Information Technology Improve the Performance of Knowledge Work?
Authors: Indranil R. Bardhan, Vish Krishnan, and Shu Lin.
MIS Quarterly
Status: Under 2nd round review.
2. A Framework for Integrating Product Lifecycle Management with Supplier Relationship Management Processes.
Author: Indranil R. Bardhan
Status: Under 1st round review at *Intl. Journal of Manufacturing & Technology Management*.
3. Resolving the Profitability Paradox of Information Technology: Mechanisms and Empirical Evidence.
Authors: Sunil Mithas, Ali Tafti, Indranil Bardhan, and Jie Min Goh
Status: Under 1st round review at *Management Science*.
4. The Role of Internal Audit Quality on Material Weakness and Corporate Governance.
Authors: Indranil R. Bardhan, Shu Lin, Mina Pizzini, Mark Vargus.
Status: to be submitted to *The Accounting Review*.

IN PREPARATION

1. A Framework for Information Technology Integration in a Mergers & Acquisitions Environment.
Author: Indranil R. Bardhan
Status: to be submitted to *Sloan Management Review*.
2. Optimizing an Information Technology Portfolio with Time-wise Dependencies: A Real Options Approach.
Authors: Indranil R. Bardhan, Robert J. Kauffman, and Sanjeeva Naranpanawe
Status: to be submitted to *Management Science*.
3. R&D, Information Technology, and Firm Performance.
Authors: Gokcen Arkali, Indranil Bardhan and Vish Krishnan

INVITED TALKS

1. Understanding the Impact of Collaboration Software on Product Design and Development.
Venue: University of Minnesota, Carlson School of Management, Minneapolis, MN, November 2005.
2. Project Performance and the Enabling Role of Technology: An Empirical Study on the Role of Fit.
Venue: University of Calgary, Haskayne School of Business, Calgary, Canada, March 2006.
3. The Role of Information Technology in Project and Product Management.

Venue: Project Management Institute: New Product Development Special Interest Group, Dallas-Fort Worth Chapter, The University of Texas at Dallas, Dallas, TX, July 2005.

4. Information Technology and Firm Profitability: New evidence
Venue: Mendoza School of Business, University of Notre Dame, Indiana, February 2007.
5. A Model for Prioritizing a Portfolio of Information Technology Projects with Time Dependencies.
Venue: Indian School of Business, Hyderabad, India, July 2007.

I have also presented several papers at various INFORMS conferences during the past ten years, as well as invited papers at the 2001, 2002, 2005, and 2007 Workshop on Information Systems and Economics (WISE) meetings.

REFEREED CONFERENCE PROCEEDINGS

1. An Investigation of Internal Audit Characteristics and Material Weakness Disclosures.
Proceedings of the 2008 AAA Midyear Auditing Conference, January 17-19, 2008, Austin, TX.
2. An Investigation of Internal Audit Characteristics and Material Weakness Disclosures.
Proceedings of the 2008 AAA Management Accounting Section Meeting, January 10-12, 2008, Long Beach, CA.
3. Process Capabilities and Information Work Productivity: The Enabling Role of Information Technology.
Proceedings of the *Twenty-seventh Annual International Conference on Information Systems (ICIS)*, Milwaukee, WI, December 11-13, 2006, *Nominated for Best Paper Award (Social & Behavioral Information Systems track)*.
4. Antecedents of Business Process Outsourcing in Manufacturing Plants.
Proceedings of the Thirty Ninth Hawaii International Conference on Systems Sciences (HICSS-39), IEEE Computer Society, Los Alamitos, CA, January 4-7, 2006.
5. Optimizing and Information Technology Portfolio with Time-wise Dependencies: A Real Options Approach.
Proceedings of the Thirty Ninth Hawaii International Conference on Systems Sciences (HICSS-39), IEEE Computer Society, Los Alamitos, CA, January 4-7, 2006.
6. The Impact of Information Technology on Information Work Productivity: The Case of Project and Program Management.
Proceedings of the 2005 Gordon Davis Symposium on *The Future of the Information Systems Academic Discipline: Opportunities and Directions*, The University of Minnesota, Minneapolis, MN, May 13-14, 2005.
7. The Business Value of Integrating Product Development with Supplier Management Processes.
Proceedings of the 36th Annual Meetings of the Decision Sciences Institute, San Francisco, CA, November 19-22, 2005.
8. Project-Technology Co-Alignment and its Impact on Project Performance: An Empirical Study.
Proceedings of the Tenth INFORMS Conference on Information Systems and Technology, San Francisco, CA, November 12-13, 2005.

9. The Impact of Information Systems on Product Development: Evidence from Operational and Financial Performance Measures.
Proceedings of the Ninth INFORMS Conference on Information Systems and Technology, Denver, Colorado, October 23-23, 2004, *Nominated for Best Paper Award*.
10. The Impact of Outsourcing of Manufacturing Functions on Manufacturing Plant Performance.
Proceedings of the Third Annual International Outsourcing Conference, Fort Worth, TX, September 9-10, 2004.
11. A Real Options Approach for Prioritization of a Portfolio of Information Technology Projects: A Case Study of a Utility Company.
Proceedings of the Thirty Seventh Hawaii International Conference on Systems Sciences (HICSS-37), IEEE Computer Society, Los Alamitos, CA, January 4-7, 2004.
12. Impact of Manufacturing Practices on Adoption of Plant Information Systems.
Proceedings of the Twenty-fourth Annual International Conference on Information Systems (ICIS), Seattle, WA, December 14-17, 2003.
13. "A Model for Reallocating Budgeted Activities" *Proceedings of the First International Conference on Contemporary Accounting Issues*, National Chengchi University, Taipei, Taiwan, January 1994.

EMPLOYMENT HISTORY

THE UNIVERSITY OF TEXAS AT DALLAS: 2001 - present

- Associate Professor with tenure, School of Management, 2007 - present.
- Assistant Professor, School of Management, 2001 – 2007.

PRICEWATERHOUSECOOPERS CONSULTING (now a division of IBM Consulting): 1997 – 2001

- **Principal:** I was employed within the Information Technology Strategy practice of PwC Consulting. I managed information technology and business strategy engagements for several Fortune 500 clients, consulted with CIOs and senior executives, led project teams involved in strategy implementation in financial services and manufacturing industries, and delivered educational and executive seminars for client executives and PwC consultants.

MANAGEMENT SCIENCE ASSOCIATES: 1995-1997

- **Project Manager:** I managed several Fortune 500 clients and supported the development of a subsidiary, Medical Science Associates, to commercialize analysis of medical databases for research and secure research grants from the National Institutes of Health (NIH).

UNIVERSITY OF PITTSBURGH: 1996-1997

- **Adjunct Assistant Professor** (concurrent appointment with MSA): I managed research projects dealing with development of new software for analyses of clinical data, between Management Science Associates and the University of Pittsburgh Medical Center.

DOCTORAL ADVISING

I have served as a member of doctoral dissertation committees for several Ph.D. students in the School of Management. These include doctoral students in the Management Information Systems (MIS) and Accounting and Information Management (AIM) programs, as described below:

- Management Information Systems
 - Jorge Romero, Ph.D. August 2005, Assistant Professor at Towson University, MD.
Dissertation: An Empirical Examination of ERP Adoption by Oil and Gas Firms.
 - Ulku Yaylacicegi, Ph.D. August 2005, Assistant Professor at University of North Carolina, Wilmington, NC.
Dissertation: The Performance Consequences of Mergers and Acquisitions in the US Telecommunications Industry
- Operations Management
 - Gokcen Arkali, Expected graduation in Summer 2009.
- Accounting & Information Management
 - Iny Hwang, December 2005, Assistant Professor at Minnesota State University, MN.
Dissertation: Relative Importance of Measures of Past Performance: Theory and Evidence.
 - Arindam Tripathy, August 2006, Visiting Assistant Professor at Temple University, PA.
Dissertation: Strategic Positioning and Firm Performance.
- I worked with several Ph.D students and advised them on inter-disciplinary research projects. These doctoral students, who are now employed as faculty in other business schools, include:
 - Shu Lin, Assistant Professor, California State University, Fresno, August 2006.
 - Ozer Asdemir, Visiting Assistant Professor, Purdue University, August 2005.
 - Tai-yuan Chen, Assistant Professor, Hong Kong University of Science and Technology, August 2006.

CLASSROOM TEACHING

My teaching responsibilities have included courses that span both management Information Systems (MIS) and Accounting & Information Management (AIM) domains. In the past six years, I have developed a core course on Accounting Information Systems for our M.S. in AIM program, and two new electives for the MIS graduate program.

- **MIS 6302: Strategic Impact of Information Technology.**
This graduate course examines the strategic management and control issues associated with information technology. It provides a framework to understand how IT strategy aligns with business strategy, and develop an enterprise-level IT strategy based on scenario planning. Students learn the key information requirements for developing an IT strategy, IT architecture, conduct IT sourcing analysis, and value and manage IT investments. Hands-on exercises are provided using SAP's Strategic Enterprise Management (SEM) software module. This course serves as an elective in the M.S. in MIS and AIM degree programs, and as an MBA elective course.
Average course evaluation from 2002-2007: 4.0 / 5.0
- **HMG T 6323 (cross-listed with MIS 6317): Health Care Informatics (Spring 2008):** Analyses and design of health care information systems, healthcare data quality and standards, economic

value of IT investments in healthcare, and applications of IT governance concepts for healthcare management.

- **AIM 6340: Information Technology Project Management.** This graduate course explores the managerial issues associated with IT and software project management. Topics span a range of software engineering and project management issues including software cost estimation, cost drivers and metrics for productivity measurement, software development and outsourcing, risk management, and enterprise software selection. This is an elective course within the AIM and MIS M.S. degree programs.
Average course evaluation from 2001-2004: 4.2 / 5.0
- **AIM 6343: Accounting Information Systems.** This graduate-level course provides students with an introduction to the role of information systems and systems-level controls in enterprise accounting processes. Topics covered include contemporary issues involved in providing assurance services for enterprise systems risk management, systems analyses and design, and the IT implications of the Sarbanes-Oxley Act. It serves as a core graduate course in the AIM M.S. degree program and as an elective for the MBA and MIS graduate students.
Average course evaluation from 2004-07: 3.6 / 5.0

Other Teaching Interests

- **Ph.D. Research Seminar in Information Systems:** Applications-driven empirical research on business value of IT, economics of information systems planning and implementation, and integration of mathematical programming and econometric methods for efficiency evaluation.

CONSULTING (2001 – present): Engaged with several software and high-tech companies, including:

Information Work Productivity Institute (an industry-academia research consortium),
SAP AG, MatrixOne Inc., IBM Research, and Gartner Group.

SERVICE

Director, Center for Practice & Research in Software Management, 2002 - 2006

Research projects with industry partners have included a diverse set of projects such as estimation of the business value of collaboration software for product development and evaluation of the productivity impact of information systems in manufacturing plants. Both projects have generated several research papers, conference presentations, and interest from industry practitioners.

The PRISM research center obtained a software grant from Compuware Corporation in 2004 to support curriculum development in software management and object-oriented programming. Other research includes joint research with the Information Work Productivity Institute (IWPI), an industry research consortium, to develop better models for measuring the productivity of information work and its impact on organizational capabilities.

INDRANIL R. BARDHAN

UT Dallas Faculty Senate: Committee Member, 2007 – present
Member, UT Dallas Provost’s Tuition Planning committee, 2007-08.

COMMITTEES: Served on the following UTD School of Management committees:

- Teaching Evaluation committee (2004-06),
- M.S. in Healthcare Management committee (2006 -),
- Information Technology Infrastructure committee (2001-2004),
- AIM Senior Lecturer recruiting committee (2005-06), and
- AIM area committee for course development in information management (2002 –).
- External chair of the examining committee (Enyue Lu, Ph.D. in Computer Science, 2004).
- External chair of the examining committee (Meikang Qiu, Ph.D. in Computer Science, 2007).

PROFESSIONAL AFFILIATIONS:

- Institute for Operations Research & Management Sciences (INFORMS)
- Association for Information Systems (AIS)
- Production & Operations Management Society (POMS)
- Decision Sciences Institute (DSI)