

Shankar Sundaresan

Assistant Professor of Management (MIS)

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Education

Doctor of Philosophy University of Rochester	1997
Master of Science University of Rochester	1994
Bachelor of Technology Indian Institute of Technology, Madras	1985

Professional Experience

2005 – Present	Assistant Professor of Management (MIS) Rutgers School of Business - Camden, Rutgers The State University of New Jersey, Camden
1997 - 2005	Assistant Professor of Management Information Systems, Pennsylvania State University, University Park
1996 - 1997	Lecturer in Management Information Systems, Pennsylvania State University, University Park
1990 - 1991	Software Consultant Data Software Research Corporation
1985 - 1989	Software Engineer Larsen and Toubro Limited

Research Interests

- **Pricing and competitive analysis of information technology products and services**
 - Pricing under quality uncertainty (contingency pricing)
 - Pricing under obsolescence
 - Pricing under value uncertainty
 - Pricing under demand uncertainty (contingent auctions)
- **Managing information technology resources**
 - IT and Incentives for Knowledge Management
 - Corporate IT standards
 - Impact of IT on Supply Chains
- **Automated database design**
 - Reasoning and learning in automated database design

Teaching Interests

- Management Information Systems
- Economics of Information Systems
- Data communications and Networks
- Internet Technologies
- Database Management Systems
- Systems Analysis and Design

Honors and Distinctions

- | | |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2004 | Trade-mark on the term Knowledge Quotient™ (KQ)
(as part of a team at eBusiness Research Center, Penn State University; KQ is a score that tracks progress in implementing Knowledge Management initiatives) |
| 2003 | IBM Faculty Fellow Award
<i>(IBM awards a few of these prestigious fellowships annually from an international applicant pool, primarily to foster and disseminate research expected to be valuable to the industry)</i> |
| 2003 | Best mini-track paper (competitive strategy and IS),
Hawaii International Conference on System Sciences |
| 1999 | Winmill Software Faculty Fellow |
| 1997 | Best Research Paper Award |

Entity-Relationship Conference '97

- 1996 **Best Research Paper Award,
Workshop on Information Technology & Systems '96**
- 1995 **Best Research Theme Paper Award,
International Conference on Information Systems '95**

Publications

Articles published in refereed journals

1. Zhang, Zuopeng and Shankar Sundaresan, "Knowledge markets in organizations: Knowledge Sharing with Trust and Signaling," *Knowledge Management Research & Practice*, 8, 2010, pp 322-339.
2. Pangburn, Michael and Shankar Sundaresan, "Capacity Decisions for High-tech Products with Obsolescence," *European Journal of Operational Research*, 197, 2009, pp 102-111.
3. Bhargava, Hemant and Shankar Sundaresan, "Computing as Utility: Managing Availability, Commitment and Pricing through Contingent Bid Auctions" *Journal of Management Information Systems*, 21(2), 2004, pp 201-227.
4. Bhargava, Hemant and Shankar Sundaresan, "Contingency Pricing for Information Goods and Services under Industrywide Performance Standard" *Journal of Management Information Systems*, 20(2), 2003, pp 113-116.
5. Balakrishnan, Anant, Soundar Kumara, and Shankar Sundaresan, "Manufacturing in the Digital Age: Exploiting Information Technologies in Customer-directed Product Realization" *Information Systems Frontiers*, 1(1), 1999, pp. 25-50.
6. Storey, Veda C., Debabrata Dey, Harald Ullrich, and Shankar Sundaresan, "An Ontology-based Expert System for Database Design Automation," *Data & Knowledge Engineering*, 28(1), 1998, pp. 31-46.
7. Storey, Veda C., Roger H.L. Chiang, Debabrata Dey, Robert C. Goldstein, and Shankar Sundaresan, "Database Design with Common Sense Business Reasoning and Learning," *ACM Transactions on Database Systems*, 22(4), 1997, pp. 471-512.

8. Dewan, Rajiv M., Abraham Seidmann, and Shankar Sundaresan, "Communication in Hierarchical Organizations and Standards Policies for Information Technology," *International Journal of Electronic Commerce*, 1(3), 1997, pp. 43-63.
9. Dewan, Rajiv, Abraham Seidmann, and Shankar Sundaresan, "Strategische Keuzen bij IS-structuren: Bedrijfsstandaarden versus decentrale optimalisatie," *Informatie*, Jaargang 37 Themanummer, 1995, pp. 678-687. (*Dutch version of the Conference best paper selected for Informatie*)

Papers under review

10. Sundaresan Shankar and Zuopeng Zhang, "Knowledge Sharing and Learning in Organizations: Role of Incentives and Information Systems."
11. Sundaresan, Shankar and Zuopeng Zhang, "Parallel Teams for Knowledge Creation: Role of Collaboration and Incentives."
12. Balakrishnan, Anant, Shankar Sundaresan, and Bo Zhang, "Browse and Switch: Retail-Online Competition under Value Uncertainty."

Articles published in refereed proceedings/ refereed conferences

13. Sundaresan, Shankar and Zuopeng Zhang, "Incentives for Multi-Dimensional Knowledge Sharing," in the *Proceedings of the Northeast Decision Sciences Institute Conference*, Montreal, Canada, April 2011.
14. Sundaresan, Shankar and Zhang, Zuopeng, "Knowledge Creation with Parallel Teams: Design of Incentives and the Role of Collaboration" in the *Proceedings of the Fifteenth Americas Conference on Information Systems*, San Francisco, California, August 2009.
15. Pangburn, Michael and Shankar Sundaresan, "Capacity Decisions for High-Tech Products with Obsolescence," in the *Proceedings of the Manufacturing and Service Operations Management Conference*, Beijing, China, 2007.
16. Sundaresan, Shankar and Zuopeng Zhang, "Incentives for Organizational Knowledge Discovery and Diffusion," in the *Proceedings of the Ninth Conference on Information Systems and Technology (CIST)*, Denver, October, 2004.
17. Sundaresan, Shankar and Zuopeng Zhang, "Facilitating Knowledge Transfer in Organizations Through Incentive Alignment and IT Investment," in the *Proceedings of the Thirty-Seventh Hawaii International Conference on System Sciences*, (Kona, HI), January, 2004.

18. Bhargava, Hemant and Shankar Sundaresan, "Contingent Bids in Auctions: Availability, Commitment and Pricing of Computing as Utility," in the *Proceedings of the Thirty-Seventh Hawaii International Conference on System Sciences*, (Kona, HI), January, 2004
19. Sundaresan, Shankar and Zuopeng Zhang, "Knowledge Transfer in Organizations: Role of Incentives and Information Systems," *Workshop on Information Systems and Economics*, Dec 14-15, 2003.
20. Bhargava, Hemant and Shankar Sundaresan, "Managing Quality Uncertainty through Contingency Pricing," in the *Proceedings of the Thirty-Sixth Hawaii International Conference on System Sciences*, (Kona, HI), January 6-9, 2003. **(Best mini-track paper in Competitive Strategy and IS)**
21. Bhargava, Hemant and Shankar Sundaresan, "Optimal Design of Contingency Pricing in IT-intensive Commerce," in the *Proceedings of the Twenty-Third International Conference on Information Systems*, Barcelona, December 15-18, 2002.
22. Bhargava, Hemant and Shankar Sundaresan, "Contingency Pricing under Duopolistic Competition," *Workshop on Information Systems and Economics*, Barcelona, Dec 14-15, 2002.
23. Bhargava, Hemant and Shankar Sundaresan, "Contingency Pricing for Telecommunications Services," in the *The 10th International Conference on Telecommunication Systems*, Naval Postgraduate School (Monterey, CA), October 3-6 2002.
24. Bhargava, Hemant, and Shankar Sundaresan, "Contingent Prices in Electronic Retailing," in the *Proceedings of the Tenth Workshop on Information Technology and Systems (WITS 2000)*, Brisbane, December 2000.
25. Bhargava, Hemant, and Shankar Sundaresan, "Contingent Prices in Electronic Commerce: Is revealing Information Always Beneficial?" *Workshop on Information d Systems Econmics (WISE 2000)*, Brisbane, December 2000.
26. Pangburn, Michael, and Shankar Sundaresan, "Intertemporal Pricing and Capacity Planning in the Semiconductor Industry," *Workshop on Information Systems Economics (WISE 2000)*, Brisbane, December 2000.
27. Storey, Veda C., Harald Ullrich and Shankar Sundaresan, "An Ontology to Support Automated Database Design, in the *Proceedings of the 16th International Conference on Conceptual Modeling (ER'97)*, Los Angeles, November 1997. **(Best Paper Award)**

28. Sundaresan, Shankar, Rajiv M. Dewan and Abraham Seidmann, "Impact of Corporate IS Standards on Group Communication," in the *Proceedings of the Thirtieth Annual Hawaii International Conference on System Sciences (HICSS 97)*, Hawaii, January 1997.
29. Storey, Veda C., Debabrata Dey, Shankar Sundaresan, Harald Ullrich and Shigetaka Yamakawa, "Learning Across Application Domains for Database Design Systems," in the *Proceedings of the Sixth Workshop on Information Technologies and Systems (WITS 96)*, Cleveland, December 1996.
(Best Paper Award)
30. Dewan, Rajiv, Abraham Seidmann, and Shankar Sundaresan, "Organizational Determinants of Corporate Information Systems Standards Policies," *Information Technology track of INFORMS 96*, Washington D.C, May 1996.
31. Dewan, Rajiv, Abraham Seidmann, and Shankar Sundaresan, "Strategic Choices in IS Infrastructure: Corporate Standards versus 'Best of Breed' Systems," *Proceedings of the Sixteenth International Conference on Information Systems (ICIS 95)*, Amsterdam, December 1995. *
(Best Paper Addressing Conference Theme Award).
32. Dewan, Rajiv, Abraham Seidmann and Shankar Sundaresan, "Multiperiod Economic Analysis of IT Standards," *Workshop on Information Systems Economics (WISE 95)*, London, December 1995.
33. Storey, Veda C., Roger H.L. Chiang, Debabrata Dey, Robert C. Goldstein, Arun Sundararajan, and Shankar Sundaresan, "Knowledge Reconciliation for Common Sense Reasoning," in the *Proceedings of the Fourth Workshop on Information Technologies and Systems (WITS 94)*, Vancouver, December 1994.

Working papers

34. Bhargava, Hemant and Shankar Sundaresan, "Quality Uncertainty in IT-intensive Commerce: Optimal Design of Quality-Contingent Prices."
35. Dewan, Rajiv, Marshall Freimer, Abraham Seidmann and Shankar Sundaresan, "Technology Adoption in Organizations: Use of Incentives and Standards for Control and Coordination"

White papers

36. Pal, Nirmal, Shankar Sundaresan, Judith Ray, Hemant Bhargava, Ed Glantz, Michael McHugh, "Knowledge Quotient (KQ): A way to Measure the Knowledge Intensity of Your Team," White paper, The Penn State eBusiness Research Center, 2004.
37. Ray, Judith, Shankar Sundaresan, Ed Glantz, Nirmal Pal, Hemant Bhargava, Michael McHugh, "Measuring the Business Impact of Knowledge management," White paper, The Penn State eBusiness Research Center, 2001.

Manuscripts in progress

38. Sundaresan, Shankar and Zuopeng Zhang, "Incentives, Organizational Culture and Information Systems for Multi-Dimensional Knowledge Sharing"
39. Sundaresan, Shankar and Michael Pangburn, "Optimization under Shared Integrand and Range Functions"
40. Sundaresan, Shankar "Supply Chain Contracts for Managing Multi-tier Suppliers."

Papers presented at other conferences

1. Sundaresan, Shankar and Michael Pangburn, "Characterizing optimization problems with Shared Integrand and Range Functions," INFORMS 2008, Washington D.C, October 2008.
2. Sundaresan, Shankar and Michael Pangburn, "Revenue Optimization Under Functions with Common Integrand and Range," INFORMS, Seattle, 2008.
3. Pangburn, Michael and Shankar Sundaresan, "Capacity Decisions for High-tech products with Obsolescence," INFORMS 2007, Puerto Rico, July 2007.
4. Zhang, Zhang and Shankar Sundaresan, "Incentives for Knowledge Discovery and Diffusion in the Firm," INFORMS 2004, Denver, October 2004.
5. Levi, Moti and Shankar Sundaresan, "Supply Chain Structures and Contracts for Managing Multi-tiered Suppliers," INFORMS 2004, Denver, October 2004.
6. Sundaresan, Shankar and Michael Pangburn, "Dynamic Pricing for Obsolescing Technology Products," INFORMS 2004, Denver, October 2004.

7. Sundaresan, Shankar and Michael Pangburn, "Capacity Setting and Pricing for Multi-generation Technology Products," INFORMS 2003, Atlanta, October 2003.
8. Zhang, Zuopeng and Shankar Sundaresan, "Knowledge Sharing in Organizations: Role of Incentives and Information Systems," INFORMS 2003, Atlanta, October 2003.
9. Bhargava, Hemant. and Shankar Sundaresan, "Optimal Design of Contingency Pricing in IT-intensive Commerce," Conference on Pricing Research, Cornell University (Ithaca, NY), September 13-14 2002.
10. Bhargava, Hemant, and Shankar Sundaresan, "Contingent Prices in Electronic Commerce," Optimization in Supply Chain and Electronic Commerce, Gainesville, March 2002.
11. Pangburn, Michael and Shankar Sundaresan, "Capacity Planning and Intertemporal Prices in High-Tech Industry"
(This paper was presented at many universities in Jan-Feb 2002.)
12. Bhargava, Hemant and Shankar Sundaresan, "Contingency Pricing in Electronic Commerce,"
(This paper was presented at many universities in 2003.)
13. Ray Judy, Shankar Sundaresan, Nirmal Pal, Ed Glantz and Hemant Bhargava, "Knowledge Management Metrics: A framework," Conference on Knowledge Management, Toronto, January 2002.
14. Pangburn, Michael, and Shankar Sundaresan, "Intertemporal Pricing and Capacity Planning in the Semiconductor Industry," INFORMS, Miami, November 2001.
15. Sundaresan, Shankar, "Impact of Information Infrastructure on Supplier Networks in eBusiness," INFORMS 2000, San Antonio, November 2000.
16. Sundaresan, Shankar, "Information Infrastructure, Supplier Networks and Intermediaries in eBusiness," INFORMS 2000, Salt Lake City, May 2000.
17. Sundaresan, Shankar, "Information Infrastructure, Supplier Networks and Intermediaries in eBusiness," at the inaugural eBusiness Research Center Seminar Series, Penn State, Jan 26, 1999.
18. Pangburn, Michael and Shankar Sundaresan, "Inter-temporal Pricing Impact on High-technology Product Capacity Panning," at the OR Colloquium, Penn State, Feb 29, 1999.
19. Sundaresan, Shankar, "Managing IT Resources for Electronic Commerce," INFORMS 98, Seattle, October 1998.

20. Sundaresan, Shankar, “Organizational Structure and Information Technology Standards Policies,” Conference on Managing Information Technology, Oakland, Michigan, October 1998.

Participation in seminars and workshops

Seminar/Workshop Title	Dates	Location	Role
North East Decision Sciences Conference (NEDSI 2011)	Apr 2011	Montreal, Canada	Session Chair, Presenter
International Conference on Information Systems (ICIS 2010)	Dec 2010	St. Louis, MO	Participant
Workshop on Information Systems Economics (WISE 2010)	Dec 2010	St. Louis, MO	Participant
The Institute of Operations Research and Management Sciences (INFORMS 2008)	Oct 2008	Washington D.C	Session Chair, Presenter
North East Decision Sciences Conference (NEDSI 2010)	Mar 2008	New York, NY	Participant
Workshop on Information System Economics (WISE 2005)	Dec 2005	Irvine, CA	Participant
Workshop on Information System Economics (WISE 2004)	Dec 2004	College Park, MD	Session Chair / Discussant
The Institute of Operations Research and Management Sciences (INFORMS 2004)	Oct 2004	Denver	Session Chair /Presenter
Hawaii International Conference on System Sciences (HICSS 2004)	Jan 2004	Kona, HI	Presenter
Workshop on Information System Economics (WISE 2003)	Dec 2003	Seattle, WV	Co-Presenter
Big-10 IS Consortium	May 2003	Columbus	Presenter
Hawaii International Conference on System Sciences (HICSS 2003)	Jan 2003	Kona, HI	Presenter
Workshop on Information System Economics (WISE 2002)	Dec 2002	Barcelona	Presenter
International Conference on Information Systems (ICIS 2002)	Dec 2002	Barcelona	Presenter

Seminar/Workshop Title	Dates	Location	Role
Supply Chain and Electronic Commerce: Applied Optimization	Mar 2002	Gainesville	Invited speaker
Workshop on Information System Economics (WISE 2001)	Dec 2001	New Orleans	Discussant
International Conference on Information Systems (ICIS 2001)	Dec 2001	New Orleans	Discussant
INFORMS	Nov 2001	Miami	Session chair
eBRC Board meeting and Workshop	Nov 2001	State College	Presenter
Workshop on Information Technology and Systems (WITS' 2000)	Dec 2000	Brisbane	Presenter
Workshop on Information System Economics (WISE' 2000)	Dec 2000	Brisbane	Presenter
International Conference on Information Systems (ICIS'2000)	Dec 2000	Brisbane	Discussant
The Institute of Operations Research and Management Sciences (INFORMS Fall'2000)	Nov 2000	San Antonio	Session chair/ Presenter
The Institute of Operations Research and Management Sciences (INFORMS Spring 2000)	May 2000	Salt Lake City	Presenter
Workshop on Information System Economics (WISE'99)	Dec 1999	Charlotte	Discussant
Workshop on Information System Economics (WISE'98)	Dec 1998	New York	Participant
The Institute of Operations Research and Management Sciences (INFORMS Fall'98)	Oct 1998	Seattle	Session chair/ Presenter
Conference on Managing Information Technology (CMIT'98)	Oct 1998	Oakland	Invited Speaker
International Conference on Information Systems (ICIS'97)	Dec 1997	Atlanta	Participant
Workshop on Information System Economics (WISE'97)	Dec 1997	Atlanta	Participant
The Institute of Operations Research and Management Sciences (INFORMS Spring'97)	May 1997	San Diego	Participant
International Conference on Information Systems (ICIS'96)	Dec 1996	Cleveland	Participant
Workshop on Information System Economics (WISE'96)	Dec 1996	Cleveland	Participant

Seminar/Workshop Title	Dates	Location	Role
The Institute of Operations Research and Management Sciences (INFORMS Spring'96)	May 1996	Washington	Presenter
International Conference on Information Systems (ICIS'95)	Dec 1995	Amsterdam	Presenter
Association of Information Systems (AIS'95)	Aug 1995	Pittsburgh	Participant

Funded projects / grants

- 2003-2004, “Contingency Pricing Strategies for New Products and Firms in IT-intensive Commerce” with Hemant Bhargava, Smeal College Faculty Research Grant, Pennsylvania State University.
- 2003, **IBM Faculty Fellow Award** (\$40,000)
(IBM awards a few of these prestigious fellowships annually from an international applicant pool, primarily to foster and disseminate research expected to be valuable to the industry)
- 2003, Instructional grant of software by Rational Software (now part of IBM) (Enterprise Rational Suite) (approximately \$100,000)
- 2002-2003, “Analysis of Contingent Contracts in Electronic Commerce,” with Hemant Bhargava, Smeal College Faculty Research Grant, Pennsylvania State University.
- 2001-2002, “Capacity and Pricing Dynamics for Overlapping Generations of Hi-tech Products,” with Michael Pangburn, Smeal College Faculty Research Grant, Pennsylvania State University.
- 2001, “Knowledge Management Metrics,” with Judy Ray, Nirmal Pal, Ed Glantz and Hemant Bhargava, eBusiness Research Center.
- 1999-2002, “The Impact of Manufacturing Capacity on Inter-temporal Prices for High-Technology Products,” with Michael Pangburn, Smeal College New Faculty Research Projects, Pennsylvania State University, Grant: \$6,000.
- 1999, Instructional grant of software use of Cold Fusion Server product (approximately \$100,000)
- 1998-1999, “Teamwork Enhancement & Assessment Mechanism,” with Michael Pangburn, Faculty Teaching Innovation Project Grants, Schreyer Institute for Innovation and Learning, Grant: \$1,500.

Research Supervision

Graduate Work Supervised

Doctoral Level

- Zuopeng Zhang, “Incentives and Information Technology for Knowledge Management,” Ph.D., Pennsylvania State University, December 2005.
(Currently a faculty member at SUNY, Plattsburg)

Masters Level

- Mustafa Dara Duman, “A Systems Integration Approach to Data Warehousing,” MS, September 2001.
- Ralph Heidl, “Spatial Data processing on the Internet,” MS, July 2000.
- Jiangfeng Ye, “Dimensional Data Models and ER Model for Data Warehouse Design,” MS, May 2000.
- Kitty Baker, “Connecting Databases to the Internet ---Database Gateways,” MS, May 1999.
- Joseph Mampilli, “Website Architecture: Design Principles and Implementation Guidelines,” MS, May 1999.

Doctoral Dissertation Committees

- Craig Nowack, Ph.d., Pennsylvania State University, 2005.
- Daewon Sun, Ph.d., Pennsylvania State University, 2004.
- Hari Natarajan, Ph.d., Pennsylvania State University, 2003.
- Jeremy Mennis, Ph.d., Pennsylvania State University, 2002.
- Farooq Sheikh, Ph.d., Pennsylvania State University, 2000.

Ad-hoc Journal Referee

- Management Science
- Information Systems Research
- MIS Quarterly
- Communications of the ACM
- Telecommunications Policy
- INFORMS Journal on Computing
- Decision Support Systems
- Information and Management
- Journal of Management Information Systems
- International Journal of Electronic Commerce

Professional Affiliations

- Member Association for Information Systems, since 2001
- Member INFORMS, since 1993
- Member Association for Computing Machinery, since 1993
- Member Beta Gamma Sigma, since 1997

Teaching Interests and Experience

Curriculum Development

- Developed and redesigned MIS offerings in the curriculum at the undergraduate level
- Developed the new MIS undergraduate MIS major (principal role)
- Developed the IT portfolio in the MBA program (principal role)
- Developed the IS option in the PhD program (principal role)

Course Development

Redesigned or developed

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|-------------------------------------------------|--------------------|
| • Economics of Information Systems | MBA Elective |
| • Management Information Systems | MBA Core |
| • Managing Information Technology and resources | MBA Core |
| • Telecommunications and Network Security | MBA Elective |
| • Management Information Systems | Undergraduate Core |
| • Telecommunications and Internet Technologies | Undergrad Elective |

Designed and developed

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|--------------------------------------------------|--------------------|
| • eBusiness Technologies | MBA Elective |
| • eBusiness | MBA Elective |
| • Digital Technologies for the Modern Enterprise | MBA Elective |
| • Systems Analysis Design and Implementation | Undergrad Required |
| • Systems Development | Undergrad Elective |
| • Internet Technologies | Undergrad Elective |
| • Topics in Information Systems | Undergrad Elective |

Participated in teaching

- | | |
|----------------------------------|--------------|
| • Database Management Systems | MBA Elective |
| • Business Process Reengineering | MBA Elective |

Service Experience Summary

- Task force for enhancing the research environment

Participated in a task force that brainstormed ideas for improving the research environment at SBC and made a list of recommendations to the Dean and faculty

- Instructional Resource and Responsibilities Committee

Participated in the instructional resource and responsibility committee that evaluated the teaching performance and recommended nominations for full-time and part-time faculty best teacher awards

- MBA orientation / MBA welcome meetings

I have participated several times in the MBA orientation sessions to welcome our new MBA students and to present the course overview and faculty profile in the MIS and Operations Management areas

University-wide

- IST Curriculum Design Committee
- IST Minors Steering Committee

College-wide

- Teaching Review
- IT Advisory Board
- eBusiness MBA Electives Task Force
- MBA Renewal - IT Portfolio Task Force

Department

- Curriculum Redesign Taskforce
- Undergraduate Policy Committee
- Faculty Recruitment Committee
- Computer Policy Committee
- IS-Phd option Task Force
- Peer Teaching Review
- Faculty Recruitment Committee
- Primary Field Committee