

UNIVERSITY OF MARYLAND
Robert H. Smith School of Business

BMGT 808A
Spring 2005
Doctoral Seminar on eBusiness
and Supply Chain Management

General Information

Meeting Times: Wednesdays 10:00am – 12:40pm
Classroom: Van Munching Hall 2509

Instructors

Professor Samer Faraj 4321 Van Munching Hall Phone: 301-405-7053 sfaraj@rhsmith.umd.edu	Professor Joseph Bailey 4315 Van Munching Hall Phone: 301-405-2174 jbailey@rhsmith.umd.edu
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Office hours by appointment.

Readings

We will distribute electronic copies of most of the material we will use for the semester. Some material may only be available in paper form and will be distributed by session leaders during the course of the semester. Supplemental handouts may also be distributed during the semester.

Course Objectives and Description

Information technology is rapidly transforming the nature of work and reshaping organizations. Organizational processes and inter-organizational linkages are being transformed by the emergence of IT solutions in general and Internet based applications in particular. These technologies are facilitating market exchanges, access to consumers, and collaboration. They also affect transaction economics and enabling new business relationships within the supply chain. This course is a doctoral seminar that examines the assumptions, theories, and methodologies used in the study of the impact of information technology on organizations and organizing. The course involves extensive reading and discussion of the research literature. The goal of the course is to provide doctoral students with exposure to diverse theoretical approaches, methods, levels of analysis, and viewpoints that underlie research on IT's impact on organizations and on markets.

The course is intended primarily for doctoral students who seek an in-depth understanding of the current research literature. This is a seminar not a lecture course, which means that active class interaction is essential. Students are expected to come to

class fully prepared to discuss all the readings on a particular topic. Class participation grades will be allocated on the basis of both the quality and the quantity of contribution.

Grading

Grades will be assigned with weights on the following course requirements:

Class participation: 26%

Article Summaries (6): 24%

Research paper & presentation: 50%

Requirements

1) Class Participation (26%)

Students are required to lead one class discussion during the course of the semester. Leading a discussion involves work before, during, and after the class session. The discussion leader should become familiar with all the readings and prepare themes and questions for class discussion. A handout for class distribution needs to be prepared that synthesizes the readings for that day. During class, the student will provide an introductory (10 - 15 minutes) overview of the important themes and issues raised by the readings. He/she will then facilitate the class discussion for the remainder of the session, including reaching closure to the session in the end of the class (last 10 - 15 minutes). Grades for leading a discussion will depend on the level of preparation, framing of questions, and quality of discussion facilitation.

2) Article Summaries (24%)

Each student is required to prepare six article summaries throughout the semester. These summaries are to be less than two pages long and give the reader an overview of the motivation, method, key findings, and a critique of the article. This amounts to approximately 1 summary every-other class session. Please bring hardcopies of your summary and upload your summary to Blackboard the night before class.

The summaries will serve as quick review notes at comps time. The goal is not to simply summarize the readings but to frame the topic, provide a thoughtful evaluation of the material read, raise some theoretical or empirical questions, compare and contrast methodologies, approaches or findings across the readings.

3) Research Paper and Presentation (50%)

Each student is required to develop a review paper or an empirically-based paper by the end of the semester. This paper should develop a theoretical approach to a specific social issue associated with technology and organizations. Specifically, the paper must cover: a) a research question/motivation, b) a discussion of the importance of the issue and a review of the relevant literature, and c) a research model/framework. If the paper is theoretical, it should include a set of propositions. If the paper is empirical, it should

include an appropriate methodology and research design for examining it empirically. An initial 5 page proposal detailing the topic, research issues and relevant literatures, proposed data source, and analysis approach is due on March 2nd. The full paper (not to exceed 30 pages) is due on Monday May 16th, and should expand the proposal by refining the literature review and theoretical model, report data analysis results, and discuss the importance of the findings. Students will present their papers in class on May 4th and 11th.

Course Policies

The University's Code of Academic Integrity is designed to ensure that the principles of academic honesty and integrity are upheld. All students are expected to adhere to this Code. The Smith School does not tolerate academic dishonesty. All acts of academic dishonesty will be dealt with in accordance with the provisions of this code. Please visit the following website for more information on the University's Code of Academic Integrity:

<http://www.studenthonorcouncil.umd.edu/code.html>

On each exam or assignment you will be asked to write out and sign the following pledge. "I pledge on my honor that I have not given or received any unauthorized assistance on this exam/assignment."

Any student with special needs should bring this to the attention of the instructor as soon as possible, but not later than the second week of class."

Week-by-week schedule and list of readings

1. Introduction; Meta analysis of eBusiness Research (January 26)

Instructors: Joe Bailey and Samer Faraj

Student Leader: none

Required Readings

Powell, W. W. & Snellman, K. 2004. The knowledge economy. *Annual Review of Sociology*, 30: 199-220.

Varian, H.; Economics of information technology; working paper.

Borenstein, S. & Saloner, G. 2001. Economics and electronic commerce. *Journal of Economic Perspectives*(15): 1.

Orlikowski, W. & Barley, S. R. 2001. Technology and institutions: what can research on information technology and research on organizations learn from each other. *MIS Quarterly*, 25(2): 145-165.

Optional Readings

Video on “Whither WISE?”

Lee, A. S. (1995) “Reviewing a Manuscript for Publication,” *Journal of Operations Management*, Volume 13, Number 1, pp. 87-92, July.

Orlikowski, W. J. and C. S. Iacono (2001) “Research Commentary: Desperately Seeking the "IT" in IT Research—A Call to Theorizing the IT Artifact,” *Information Systems Research*, 12:2.

Kauffman, R. and Walden, E. “Economics and Electronic Commerce: Survey and Directions for Research,” *International Journal of Electronic Commerce* (5:4), 2001, pp. 5-116.

2. The Craft of Research: Theory and Methods (February 2)

Instructor: Samer Faraj

Student Leader: TBD

Required Readings

Bacharach, S.E. (1989): Organizational theories: some criteria for evaluation," *Academy of Management Review*, vol. 14, no. 4, pp. 496-515.

Sutton, R. I. and B. M. Staw (1995) "What Theory is Not," *Administrative Sciences Quarterly*, 40.

Wacker, J. (1998), 'A definition of theory: Research guidelines for different theory-building research methods in operations research,' *Journal of Operations Management*, 16, 4, 361-385

Amundson S. D. (1998). 'Relationships between theory-driven empirical research in operations management and other disciplines,' *Journal of Operations Management*, 16, pp. 341-359.

Davis, M. S. 1971. That's interesting! *Philosophy of the Social Sciences*, 1: 309-344.

Mingers, J. (2001) "Combining IS Research Methods: Towards a Pluralist Methodology," *Information Systems Research*, 12:3.

Optional

Weick, K. (1995), 'What theory is not, theorizing is,' *Administrative Science Quarterly*, 40, 3, 385-390.

Pinsonneault, Alain and Kenneth L. Kraemer (1993). "Survey Research Methodology in Management Information Systems: An Assessment." *Journal of Management Information Systems*, 10 (2, Fall), 75-105.

3. The Structural and Organizational Impact of IT (February 9)

Instructor: Joe Bailey

Student Leader: TBD

Required Readings

Hitt, L. M. and Brynjolfsson, E. "Productivity, Business Profitability, and Consumer Surplus: Three Different Measures of Information Technology Value," *MIS Quarterly* (20:2), June 1996, pp. 121-142.

Mukhopadhyay, T., Rajiv, S. and Srinivasan, K. (1997). "Information technology impact on process output and quality." *Management Science* December.

Dewan, S. and Min, C-K. (1997). "The substitution of information technology for other factors of production: a firm level analysis" *Management Science* December.

Sambamurthy, V., Bharadwaj, A., and Grover, V. "Shaping Agility Through Digital Options: Reconceptualizing the Role of Information Technology in Contemporary Firms." *MIS Quarterly* (27:2), June 2003, pp. 237-264.

Pinsonneault, A. and Kraemer, K.L "Middle Management Downsizing: An Empirical Investigation of The Impact of Information Technology," *Management Science* (43:5), May 1997, pp. 659-680.

Brynjolfsson, E, T. W. Malone, V. Gurbaxani, and A. Kambil, 1994 "Does Information Technology Lead to Smaller Firms," *Management Science*. V. 40, no. 12, December.

Optional

Dewan, S., Michael, S., and Min, C-K. (1998). " Firm characteristics and investments in information technology: scale and scope effects." *Information Systems Research*. 9:3.

Pinsonneault, A. and S. Rivard, (1998) "Information Technology and the Nature of Managerial Work: From the Productivity Paradox to the Icarus Paradox?" *MIS Quarterly*, September, pp. 287-311.

4. IT's Impact on Firm Performance (February 16)

Instructor: Joe Bailey

Student Leader: TBD

Required Readings

Kohli, Rajiv and Devaraj, Sarv. 2003. Measuring Information Technology Payoff: A Meta-Analysis of Structural Variables in Firm-Level Empirical Research .*Information Systems Research*, 14(2), 127-145.

Zhu K. and Kraemer, K. "e-Commerce Metrics for Net-Enhanced Organizations: Assessing the Value of E-commerce to Firm Performance in the Manufacturing Sector," *Information Systems Research* (13:3), September 2002, pp. 275-296.

Melville, Nigel; Kraemer, Kenneth; Gurbaxani, Vijay. 2004. Review: information technology and organizational performance: an integrative model of IT business value, *MIS Quarterly*, Jun2004, Vol. 28 Issue 2, p283

Bharadwaj, A. "A Resource-based Perspective of Information Technologies and Business Value: An Empirical Investigation." *MIS Quarterly* (24:1), March 2000, pp. 169-198.

Bresnahan, Timothy, Brynjolfsson, Erik and Lorin M. Hitt (2002). "Information Technology, Workplace Organization and the Demand for Skilled Labor: Firm-level Evidence," *Quarterly Journal of Economics*, 117(1): 339-376.

Brynjolfsson, E. and Hitt, L. "Paradox Lost? Firm-Level Evidence On The Returns To Information Systems Spending," *Management Science* (42:4), April 1996, pp. 541-559.

Optional Readings

Barua, A., Konana, P., Whinston, A. B., and Yin, F. 2004. An empirical investigation of net-enabled business value, *MIS Quarterly* 28(4), 585.

Barua, A., Kriebel, C., and Mukhopadhyay, T. "Information Technologies and Business Value: An Analytic and Empirical Investigation," *Information Systems Research* (6:1), March 1995, pp. 3-24.

Sanathanam, R. and Hartono, E. "Issues In Linking Information Technology Capability To Firm Performance," *MIS Quarterly* (27:1), March 2003, pp. 125-154.

5. IT's Impact on the Structure of Markets (February 23)

Instructor: Joe Bailey

Student Leader: TBD

Required Readings

Malone, Thomas W., JoAnne Yates, and Robert I. Benjamin. 1987. Electronic Markets and Electronic Hierarchies. *Communications of the ACM* 30 (6):484-497.

Hitt, L. M. "Information Technology and Firm Boundaries: Evidence from Panel Data," *Information Systems Research* (10:2), June 1999, pp. 134-150.

Hess, C. M. and Kemerer, C. F. "Computerized Loan Origination Systems: An Industry Case Study of the Electronic Markets Hypothesis," *MIS Quarterly* (18:3), September 1994, pp. 251-275.

Zaheer, A. and N. Venkatraman (1994) "Determinants of Electronic Integration in the Insurance Industry: An Empirical Test," *Management Science*, vol. 40, no. 5, May.

Bapna, R., P. Goes, A. Gupta, and Y. Jin. 2004. User heterogeneity and its impact on electronic auction market design: an empirical exploration, *MIS Quarterly* 28(1), 21.

Grover, V. and Ramanlal, P. "Six Myths of Information and Markets: Information Technology Networks, Electronic Commerce, and the Battle for Consumer Surplus," *MIS Quarterly* (23:4), 1999, pp. 465-495.

Optional Readings

Duliba, et al. "Appropriating Value From Computerized Reservation System Ownership in the Airline Industry," *Organizational Science*, Nov/Dec 2001.

6. Electronic Markets (March 2)

Instructor: Joe Bailey

Student Leader: TBD

Required Readings

Smith, M., Bailey, J., and Brynjolfsson, E. (2000). "Understanding digital markets: review and assessment." In Erik Brynjolfsson and Brian Kahin (eds). *Understanding the digital economy*. MIT Press.

Brynjolfsson, E., Hu, Y., and Smith, M. "Consumer Surplus in the Digital Economy: Estimateing the Value of Increased Product Variety at Online Booksellers," *Management Science* (49:11), 2003, pp. 1580-1596.

Brynjolfsson, E. and Smith, M. "Frictionless Commerce? A Comparison of Internet and Conventional Retailers," *Management Science* (46:4), 2000, pp. 563-585.

Hann, I. and Terwiesch, C. 2003. Measuring the frictional costs of online transactions: the case of a name-your-own-price channel, *Management Science* 49(11), 1563-1579.

Johnson, E. J., Moe, W. W., Fader, P. S., Bellman, S., and G. L. Lohse. 2004. On the depth and dynamics of online search behavior, *Management Science*, 50(3), 299-308.

Hitt, L. and Frei, F. X. "Do Better Customers Utilize Electronic Distribution Channels? The Case of PC Banking," *Management Science* (48:6), 2002, pp. 732-748

Optional

Clemons, E. K., I. Hann, and L. Hitt (2002) "Price Dispersion and Differentiation in Online Travel: An Empirical Investigation," *Management Science*, vol. 48, no. 4, April.

Bakos, Y (1997) "Reducing buyer search costs: Implications for electronic marketplaces," *Management Science* Dec.

Lucking-Reiley, D. H. (1999) "Using Field Experiments to Test Equivalence Between Auction Formats: Magic on the Internet." *American Economic Review*, December 1999, vol. 89, no. 5, pp.1063-1080.

7. IT's Impact on Firm Relationships and Integration (March 9)

Instructor: Joe Bailey

Student Leader: TBD

Required Readings

Kulp, S. C., Lee, H. L., and E. Ofek. 2004. Manufacturer benefits from information integration with retail customers, *Management Science* 50(4), 431-444.

Ho, V. T., Ang, S., and D. Straub. 2003. When subordinates become IT contractors: persistent managerial expectations in IT outsourcing, *Information Systems Research* 14(1).

Mukhopadhyay, T. and S. Kekre (2002) "Strategic and Operation Benefits of Electronic Integration in B2B Procurement Processes," *Management Science*, vol. 48, no. 10, October.

Subramani, M.R. 2004. How do suppliers benefit from IT use in supply chain relationships? *MIS Quarterly* 28(1), 45-73

Mukhopadhyay, T. and Kekre, S. 1995 Business value of information technology: a study of electronic data interchange, *MIS Quarterly* 19(2), 137-156.

Bakos, J. Y. and E. Brynjolfsson, (1993) "From Vendors to Partners: Information technology and incomplete contracts in buyer-supplier relationships," in *Journal of Organizational Computing*.

Optional Readings

Iacovou C. L., Benbasat I., and Dexter, A. S. "Electronic Data Interchange and Small Organizations: Adoption and Impact of Technology," *MIS Quarterly* (19:4), December 1995, pp. 465-485.

Lee, Hau L., V. Padmanabhan and Seungjin Whang, (1997) "Information Distortion in a Supply Chain: The Bullwhip Effect," *Management Science*, V. 43, n. 4, pp. 546-558.

Lee, H., Clark, T., and Tam, K. (1999). "Research report: can EDI benefit adopters?" *Information Systems Research*. 10:2.

Raghunathan, S. and A. B. Yeh (2001) "Beyond EDI: Impact of Continuous Replenishment Program (CRP) Between a Manufacturer and Its Retailers," *Information Systems Research*, vol. 12, no. 4, December.

8. Experimental Research in IT and Supply Chain Management (March 16)

Instructor: Joe Bailey

Student Leader: TBD

Required Readings

Miranda, S. M. and Saunders, C. S. 2003. The social construction of meaning: an alternative perspective on information sharing, *Information Systems Research* 14(1), 87-106.

Dellarocas, C. 2003. The digitization of word of mouth: promise and challenge of online feedback mechanisms, *Management Science*, 49(10), 1407-1424.

Bolton, G. E., Katok, E. and Ockenfels, A. 2004. How effective are online reputation mechanisms? An experimental study" *Management Science* 50(11) 1587-1602.

Rice, S. 2004. Online Reputations with Noisy Transactions: An Experimental Study, 2004 Workshop on Information Systems and Economics.

Garbarino, E. and O. Lee 2003. Dynamic Pricing in Internet Retail: Effects on Consumer Trust, *Psychology and Marketing* 20(6); 495-513.

Croson, Rachel T.A., Donohue, Karen Lisa, Katok, Elena and Sterman, John, "Order Stability in Supply Chains: Coordination Risk and the Role of Coordination Stock" (October 2004). MIT Sloan Working Paper No. 4513-04.
<http://ssrn.com/abstract=607321>

Optional

Bolton, G. E. and Katok, E. 2004. Learning-by-Doing in the Newsvendor Problem: A Laboratory Investigation of the Role of Experience and Feedback, working paper.

9. Science of Networks (March 30)

Instructor: Samer Faraj

Student Leader: TBD

Required Readings

Watts, D. J. 2004. The new science of networks. *Annual Review of Sociology*, 30: 243-270.

Newman, M. E. J. 2003. The structure and function of complex networks. *SIAM Review*, 2: 167-256.

Brass, D. J., Galaskiewicz, J., Greve, H. R., & Tsai, W. 2004. Taking stock of networks and organizations: a multilevel perspective. *Academy of Management Journal*, 47(6): 795-819.

Madhavan, R., Gnyawali, D. R., & He, J. forthcoming. Two's company, three's a crowd? Triads in cooperative-competitive networks. *Academy of Management Journal*.

Faraj and Johnson 2005. Generalized exchange or reciprocity? The structural dynamics of online knowledge networks. Working Paper, University of Maryland.

Venkatraman, N. & Lee, C.-H. 2004. Preferential linkage and network evolution: A conceptual model and empirical test in the U.S. video game sector. *Academy of Management Journal*, forthcoming.

10. Knowledge networks (April 6)

Instructor: Samer Faraj

Student Leader: TBD

Schultze, U. and W. J. Orlikowski, 2004 "A practice perspective on technology-mediated network relations: the use of Internet-based self-serve technologies, *Information Systems Research*, 15(1), 87-106.

Uzzi, B. 1997. Social structure and competition in interfirm networks: The paradox of embeddedness. *Administrative Science Quarterly*, 42: 35-67.

Hansen, M. T. 1999. The search-transfer problem: the role of weak ties in sharing knowledge across organizational subunits. *Administrative Science Quarterly*, 44: 82-111.

Reagans, R. & McEvily, B. 2003. Network structure and knowledge transfer: the effect of cohesion and range. *Administrative Science Quarterly*, 48: 240-267.

Wasko, M. & Faraj, S. 2005. Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice. *MIS Quarterly*, 29(1).

Fulk, J., Heino, R., Flanagin, A. J., Monge, P. R., & Bar, F. 2004. A test of the individual action model for organizational information commons. *Organization Science*, 15(5): 569-585.

Optional

Tsai, W. P. 2002. Social structure of "coopetition" within a multiunit organization: Coordination, competition, and intraorganizational knowledge sharing. *Organization Science*, 13(2): 179-190.

11. Technology and distributed work (April 13)

Instructor: Samer Faraj

Student Leader: TBD

Crowston, K., Howison, J., & Robleske, J. 2005. Coordination Theory. In P. Zhang & D. Galletta (Eds.), *Human-Computer Interaction in Management Information Systems*: M. E. Sharpe, Inc.

Hoegl, M., Weinkauff, K., & Gumuenden, H. G. 2004. Interteam coordination, project commitment, and teamwork in multiteam R&D projects: a longitudinal study. *Organization Science*, 15(1): 38-55.

Martins, L. L., Gilson, L. L., & Maynard, M. T. 2004. Virtual teams: what do we know and where do we go from here? *Journal of Management*, 30(6): 805-835.

Majchrzak, A., Rice, R. E., Malhotra, A., King, N., & Ba, S. 2000. Technology Adaptation: The Case of a Computer-Supported Inter-Organizational Virtual Team. *MIS Quarterly*, 24(4): 569-600.

Levin, D. Z. & Cross, R. 2004. The strength of weak ties you can trust: the mediating role of trust in effective knowledge transfer. *Management Science*, 50(11): 1477-1490.

Orlikowski, W. J. & Yates, J. 1994. Genre repertoire: The structuring of communicative practices in organizations. *Administrative Science Quarterly*, 39(4): 541-574.

12. Knowledge exchange across boundaries (April 20)

Instructor: Samer Faraj

Student Leader: TBD

Gittell, J. H. 2002. Coordinating mechanisms in care provider groups: relational coordination as a mediator and input uncertainty as a moderator of performance effects. *Management Science*, 48(11): 1408-1426.

Brown, J. S. & Duguid, P. 2001. Knowledge and organization: a social-practice perspective. *Organization Science*, 12(2): 198-213.

Boland, R.-J. & Tenkasi, R.-V. 1995. Perspective making and perspective taking in communities of knowing. *Organization Science*, 6(4): 350-371.

Carlile, P. R. 2002. A pragmatic view of knowledge and boundaries: boundary object in new product development. *Organization Science*, 13(4): 442-455

Orlikowski, W. J. 2002. Knowing in Practice: Enacting a Collective Capability in distributed Organizing. *Organization Science*, 13(3): 249–273.

Faraj, S. & Xiao, Y. 2005. Coordination in fast response organizations. *Management Science*, forthcoming.

13. Emerging Perspective on IT (April 27)

Instructor: Samer Faraj

Student Leader: TBD

Faraj, S., Kwon, D., & Watts, S. 2004. Contested artifact: technology sensemaking, actor networks, and the shaping of the Web browser. *Information Technology & People*, 17(2): 186-209.

Korpela, M., Mursu, A., & Soriyan, H. A. 2002. Information systems development as an activity. *Computer Supported Cooperative Work*, 11: 111-128.

Garud, R., Jain, S., & Kumaraswamy, A. 2002. Institutional entrepreneurship in the sponsorship of common technological standards: The case of Sun Microsystems and Java. *Academy of Management Journal*, 45(1): 196-214.

Bruun, H. & Hukkinen, J. 2003. Crossing boundaries: an integrative framework for studying technological change. *Social Studies of Science*, 33(1): 95-116.

Hanseth, O. & Braa, K. 2001. Hunting for the treasure at the end of the rainbow: standardizing corporate IT infrastructure. *Computer Supported Cooperative Work*, 10: 261-292.

Lyytinen, K. and G. M. Rose 2003. The disruptive nature of information technology innovations: the case of Internet computing in systems development organizations, *MIS Quarterly* 24(4), 557-594.

Optional

Fichman, R. G, (2004) "Real Options and IT Platform Adoption: Implications for Theory and Practice", *Information Systems Research*, 15(2) 132-154.

Term paper Presentations (May 4 and May 11)