

**Department of Decision and Information Technologies
The Robert H. Smith School of Business
University of Maryland**

**BMGT 808D Spring 2004
Doctoral Seminar: Strategic Management of IT**

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Class Meets: T 3:30 – 6:10 pm
VMH 4535

COURSE DESCRIPTION: The goal of this seminar is to provide an understanding of the issues related to the adoption and use of information technologies in organizations, the leverage of value from information technologies, and the management of information technologies in organizations. Students will read and discuss various theories, conceptual issues, and empirical papers pertaining to research on these topics of inquiry.

COURSE OBJECTIVES: The major objective of the seminar is for each participant to develop a good understanding of the current state of knowledge regarding IT adoption, IT value, and IT management. Specifically, each participant will develop an understanding of:

- The factors and tactics that influence the adoption of IT by individuals and firms.
- The impacts of information technologies on firms, networks, and markets
- The economic value of IT
- The challenges, capabilities, processes, and organization designs associated with effective IT management
- The issues related to the management of systems development activities, including the effects of methodologies, project control approaches, and organizational arrangements.

Students are expected to develop a sound understanding of these key information systems research phenomena and be able to critically evaluate the contributions of research to date. Further, students will also develop an ability to articulate important research ideas and position their significance within the existing stream of information systems research.

COURSE TEXTBOOKS

Robert W. Zmud, Framing the Domains of IT Management: Projecting the Future ... through the Past, Pinnaflex Press, ISBN 1-893673-06-5.

In addition, the seminar will draw upon articles published in a variety of academic journals such as the MIS Quarterly, Information Systems Research, Management Science, and Organization Science.

Course Grading:

Article Synopses	10%
Essay #1	15%
Essay #2	15%
Research Paper Proposal	5%
Detailed Research Paper Outline	5%
Research Paper	30%
Seminar Participation	20%

Grade Components:

Article Synopses

Each week, each student will select two of the assigned readings and hand in a typed synopsis for those two articles. This synopsis must provide the following information:

- Focus of the article
- Author's view of the article's contribution
- What YOU learned from this article
- What YOU would have liked the author to do that he/she did not do

Each week, you will be given a numerical grade reflecting my evaluation of the quality of these synopses

Essay #1

You will choose one of the topics that is the focus of this seminar:

- IT adoption and value
- Management of systems development
- IT management

For the chosen topic, use the course readings and propose a simple model on some aspect related to that topic. A simple model consists of about four constructs. Your essay should introduce the specific phenomenon being described, provide a figure for the research model, define all the constructs in the research model, and provide arguments (citing relevant literature) for the relationships depicted.

Essay #2

Using ideas from all of the materials covered in the course, enrich your research model so that it more adequately explains the behaviors being examined. This enrichment might involve you deleting or adding variables (including moderating or mediating variables) and deleting or adding relationships to your Essay #1 research model.

Your essay should again introduce the specific phenomenon being described, provide a figure for the research model, define all the constructs in the research model, and provide arguments (citing relevant literature) for the relationships depicted. In addition, explicitly explain how and why this research model has improved that described in Essay #1.

Research Paper

This paper should develop a conceptual research model for a topic of interest to you that involves some aspect of IT value, management of systems development, or IT management. (A very successful outcome for the paper would essentially represent the “theory chapter” of a dissertation.) I expect the structure of the paper to be as follows:

Introduction

- What is the problem?
- Why is relevant?
- What is the intended contribution?

Synthesis of Relevant Prior Literature

- Contributing theories

Development of Research Model

- Constructs defined
- Relationships explained and justified

Important Research Directions

Conclusion

The chapters in *Framing the Domains of IT Management* provide good models for a successful research paper.

Research Paper Proposal

This includes both a description of the phenomenon you intend to examine in your manuscript, an explanation of why you have selected this phenomenon, and description of your literature search strategy. The more detail provided, the greater the feedback I can provide.

Research Paper Detailed Outline

This includes both a detailed outline of the paper as well as a bibliography. The bibliography should be provided by embedding your references within the detailed outline of the manuscript. That is, you should have a numbered reference list and then these numbers should be embedded appropriately within your outline.

Seminar Participation

Clearly an graduate seminar is an interactive learning environment and I expect everyone to be prepared to discuss, debate, and expound on the issues raised in the readings. Additionally, for each week, I would like you to put your “blue sky” hat on and come prepared with an answer to the question: if I had to do my dissertation in _____ (substitute the week’s topic), what would be an exciting research question to pose?

OVERVIEW OF TOPICS AND DATES

1/27 Introduction to the Seminar

Wanda Orlikowski and Suzi Iacono, Research Commentary: Desperately Seeking the “IT” in IT Research . A Call to Theorizing the IT Artifact, *Information Systems Research*, 12(2), 2001, 121-134.

Izak Benbasat and Robert W. Zmud, The Identity Crisis Within the IS Discipline: Defining and Communicating the Discipline’s Core Properties, *MIS Quarterly*, June, 2003, (pp. 183-194)

R. Agarwal and H. Lucas, The IS Identity Crisis: Focusing on High Visibility and High Impact Research, Working paper, 2004.

2/3 Organizations and Information Systems

What are some important organizational perspectives on the nature and role of information systems?

- Organizations as sense-making systems
- Organizations as institutional systems

Prasad, P., Symbolic Processes in the Implementation of Technological Change: A Symbolic Interactionist Study of Work Computerization, *Academy of Management Review*, 36(6), 1993, 1400-1429.

Orlikowski, W.J., The duality of technology: Rethinking the concept of technology in organizations, *Organization Science*, 3(3), 1992: 398-427.

Orlikowski, W.J., Yates, J., Okamura, K., and Fujimoto, M., Shaping electronic communication: The metastructuring of technology in the context of use, *Organization Science*, 6(4), 1995: 423-444.

Pentland, B.T. and Reuter, H., Organizational routines as grammars of action, *Administrative Science Quarterly*, 39, 1994: 484-510.

Optional Readings

W.R. Scott, *Institutions and Organizations*, Sage, 1995.

K.E. Weick, *Sensemaking in Organizations*, Sage, 1995.

2/10 Organizations and Information Systems

What are some important organizational perspectives on the nature and role of information systems?

- Organizations as economic systems
- Organizations as knowledge systems

Ghoshal, S. and Moran, Bad for Practice: A Critique of the Transaction Cost Theory, *Academy of Management Review*, 21(1), 1996, 13-47.

Williamson, O.E., Economic Organization: The Case for Candor, *Academy of Management Review*, 21(1), 1996, 48-57.

Moran and Ghoshal, S., Theories of Economic Organization: The Case for Realism and Balance, *Academy of Management Review*, 21(1), 1996, 58-72.

Spender, J.C., Making knowledge the basis of a dynamic theory of the firm, *Strategic Management Journal*, Volume 17, 1996: 45-62.

Grant, R.M., Prospering in dynamically competitive environments: Organizational capability as knowledge integration, *Organization Science*, 7, 1996: 375-387.

J. Nahapiet and S. Ghoshal, Social capital, intellectual capital, and the organizational advantage, *Academy of Management Review*, 23(2), April 1998.

March, J.G., Exploration and exploitation in organizational learning, *Organization Science*, 2(1), 1991.

Optional Readings

O.E. Williamson and S.G. Winter, *The Nature of the Firm: Origins, Evolution, and Development*, Oxford University Press, 1993.

I.Nonaka, and H. Takeuchi, *The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation*, Oxford University Press, 1995.

2/17 IT Impacts: Economic Value

A. Barua and T. Mukhopadhyay, Information Technology and Business Performance: Past, Present, and Future, in R. W. Zmud edited book, Chapter 5.

Erik Brynjolfsson; Lorin Hitt, Paradox Lost? Firm-Level Evidence on the Returns to Information Systems Spending, *Management Science*, Vol. 42, No. 4. (Apr., 1996), pp. 541-558.

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: 121-142.

Anandhi S Bharadwaj, S. Bharadwaj, and B. Konsynski, Information technology effects on firm performance as measured by Tobin's q, *Management Science*, Jul 1999; 45, 7.

Barua, A., Kriebel, C.H., and Mukhopadhyay, T., Information technologies and business value: An analytic and empirical investigation, *Information Systems Research*, 6(1), 1995: 3-23.

S. Devaraj and R. Kohli, Performance Impacts of Information Technology: Is Actual Usage the Missing Link? *Management Science*, March 2003, 49(3).

2/24 **IT Impacts: Economic Value**

S. Devaraj and R. Kohli, Measuring Information Technology Payoff: A Meta-analysis of Structural Variables in Firm-level Empirical Research, *Information Systems Research*, June 2003, Volume 14 (2).

Varun Grover and Pradipkumar Ramanlal, Six Myths of Information and Markets: Information Technology Networks, Electronic commerce, and the Battle for Consumer Surplus, *MIS Quarterly*, 23(4), 1999, 465-495.

T. Mukhopadhyay, S. Rajiv, and K. Srinivasan, Information Technology Impact on Process Output and Quality, *Management Science*, 43(12), 1997.

Sanjeev Dewan and Chung-ki Min, The Substitution of Information Technology for Other Factors of Production: A Firm Level Analysis, *Management Science*, Volume 43, Number 12, December, 1997.

Mani Subramani and Eric Walden, The Impact of E-commerce Announcements on the Market Value of Firms, *Information Systems Research*, Volume 12, Number 2, June 2001.

Bruce Dehning, Vernon J. Richardson, and Robert W. Zmud, The Value Relevance of Announcements of Transformational Information Technology Investments, *MIS Quarterly*, December, 2003.

Research Paper Proposal Due

3/2 **IT Impacts: Strategic Value**

A. Segars and J. Dean, Managing the nexus of information technology and radical change: An organizational capabilities perspective, in R. W. Zmud, Chapter 12.

V. Sambamurthy, Business strategy in hypercompetitive environments: Rethinking the logic of IT differentiation, in R. W. Zmud., Chapter 13.

V. Sambamurthy, Anandhi Bharadwaj, and Varun Grover, Shaping Agility Through Digital Options: Reconceptualizing the Role of IT in Contemporary Firms, *MIS Quarterly*, June, 2003, pp. 237-263.

Anandhi S. Bharadwaj, A Resource-Based Perspective on Information Technology Capability and Firm Performance: An Empirical Investigation, *MIS Quarterly*, March 2000, 24, 1.

Brad Wheeler, NeBIC: A Dynamic Capabilities Theory for Assessing Net-enablement, *Information Systems Research*, June 2002: 125-146.

Kevin Zhu, Kenneth L Kraemer., e-commerce metrics for Net-enhanced organizations: Assessing the value e-commerce to firm performance in the manufacturing sector, *Information Systems Research*, September 2002, Volume 13(2)

3/9

IT Impacts: Organizational Level

M. Lynne Markus and Dan Robey, Information Technology and Organizational Change: Causal Structure in Theory and Research, *Management Science*, 34 (5), 1988, 583-598.

Wanda J Orlikowski, Using technology and constituting structures: A practice lens for studying technology in organizations, *Organization Science*, Jul/Aug 2000; 11, 4; pg. 404.

Dan Robey and M. Boudreau, Organizational Consequences of Information Technology: Dealing with Diversity and in Empirical Research, in R. W. Zmud edited book, Chapter 4.

G. DeSanctis and M. Scott Poole, Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory, *Organization Science*, Volume 5, Number 2, 1994.

Orlikowski, W.J., Improvising organizational transformation over time: A situated change perspective, *Information Systems Research*, 7(1), March, 1996: 63-92.

Burkhardt, D., and Brass, M., Changing Patterns or Patterns of Change: The Effects of a Change in Technology on Social Network Structure and Power, *Administrative Sciences Quarterly*, 35(1), 1990, 1034-127.

Essay #1 due

3/16

IT Impacts: Markets and Inter-organizational Links

Hitt, Lorin M., Information technology and firm boundaries: Evidence from panel data, *Information Systems Research*. June 1999, Volume 10 (2)

Mani Subramani and N. Venkatraman, Safeguarding Investments in Asymmetric Interorganizational Networks: Theory and Evidence, *Academy of Management Journal*, in press.

Lind, M.R. and Zmud, R.W., Improving interorganizational effectiveness through voice mail facilitation of peer-to-peer relationships, *Organization Science*, 6(4), 1995: 445-461.

Ellen Christiaanse and N. Venkatraman Beyond Sabre: An Empirical Test of Expertise Exploitation in Electronic Channels, *MIS Quarterly*, March, 2002.

D. H. McKnight, V. Choudhury, and C. Kacmar, Developing and validating trust measures for e-commerce: An integrative typology, *Information Systems Research*, 13(3), September, 2002.

Pei-Yu Chen and Lorin M Hitt, Measuring switching costs and the determinants of customers' retention in Internet-enabled businesses: A study of the online brokerage industry, *Information Systems Research*. September 2002. Vol. 13 (3).

Sulin Ba and Paul A. Pavlou, Evidence of the Effect of Trust Building Technology in Electronic markets: Price Premiums and Buyer Behavior, *MIS Quarterly*, September, 2002.

3/30

Organizational and Individual Adoption and Use of IT

Agarwal, R., Individual adoption of information technologies, in R.W. Zmud.

Rob Fichman, The diffusion and assimilation of information technology innovations, in R. W. Zmud edited book, Chapter 7.

Robert G Fichman, Chris F Kemerer, The illusory diffusion of innovation: An examination of assimilation gaps, *Information Systems Research*, Sep 1999, 10, 3, 255-275.

Robert J. Kaufman, James McAndrews, Yu-Ming Wang. Opening the "Black Box" of Network Externalities in Network Adoption, *Information Systems Research*. March 2000. Vol. 11 (1)

Fulk, J., Social construction of communication technology, *Academy of Management Journal*, 36(5), October, 1993: 921-950.

Ann Majchrzak, Ronald E. Rice, Arvind Malhotra, Nelson King and Sulim Ba, Technology Adaptation: The Case of a Computer-Supported Inter-Organizational Virtual Team, *MIS Quarterly*, 24, 4, 2000.

Kalle Lyytinen and Gregory M. Rose, The Disruptive Nature of Information Technology Innovations: The Case of Internet Computing in Systems Development Organizations, *MIS Quarterly*, Volume 27, Number 4, 2003.

4/6

Managing the Systems Development Process

Curtis, Bill, Herb Krasner, and Neil Iscoe, A Field Study of the Software Design Process for Large Systems, *Communications of the ACM*, 31(11), 1988, 1268-1287.

Barki, H. and Hartwick, J., User Participation, Conflict, and Conflict Resolution: The Mediating Roles of Influence, *Information Systems Research*, 5(4), 1994, 422-438.

Newman, Michael and Daniel Robey., A Social Process Model of User-Analyst Relationships, *MIS Quarterly*, 16(2), June 1992, pp. 249-266.

John Sillince and Samar Mouakket, Varieties of Political Processes During Systems Development, *Information Systems Research*, Volume 8, Number 4, December, 1997.

James E. Hunton and Jesse D. Beeler, Effects of User Participation in Systems Development: A Longitudinal Field Experiment, *MIS Quarterly*, December 1997, 21, 4.

Detailed Research Paper Outline Due

4/13 **Managing the Systems Development Process**

Rajiv D Banker and Sandra A Slaughter, The moderating effects of structure on volatility and complexity in software enhancement, *Information Systems Research*, Sep 2000, 11, 3, 219-240.

M. Krishnan, C. Kriebel, S. Kekre, and T. Mukhopadhyay, Productivity and Quality in Software Products, *Management Science*, Volume 46, Number 6, June 2000.

Donald Harter, M. Krishnan, and Sandra Slaughter, Effects of Process Maturity on Quality, Cycle Time, and Effort in Software Product Development, *Management Science*, Volume 46, Number 4, April 2000.

Robert D Austin. The effects of time pressure on quality in software development: An agency model. *Information Systems Research*. Jun 2001, 12 (2)

Sulin Ba, Jan Stallaert, and Andrew Whinston, Introducing a Third Dimension in Information Systems Design – The Case for Incentive Alignment, *Information Systems Research*, Volume 1, Number 3, September, 2001.

Banker, Rajiv D. and Chris F. Kemerer, Performance Evaluation Metrics for Information Systems Development: A Principal-Agent Model, *Information Systems Research* (3:4), December 1992, pp. 379-400.

4/20 **Managing the Systems Development Process**

L. Kirsch, Software Project Management: An Integrated Perspective for an Emerging Paradigm, in Robert Zmud edited book, Chapter 15.

Laurie J. Kirsch, Portfolios of Control Modes and IS Project Management, *Information Systems Research*, Volume 8, Number 3, September, 1997.

L.J. Kirsch, V. Sambamurthy, D. Ko, and R.L. Purvis, Controlling Information Systems Projects: The View From The Client, *Management Science*, April, 2002.

Patricia Guinan, Jay Coopriider, and Samer Faraj, Enabling Software Development Team Performance During Requirements Determination: A Behavioral versus Technical Approach, *Information Systems Research*, Volume 9, Number 2, 1998.

S. Faraj and L. Sproull, Coordinating Expertise in Software Development Teams, *Management Science*, Volume 46, Number 12, December, 2000.

Mark Keil, Joan Mann and Arun Rai, Why Software Projects Escalate: An Empirical Analysis and Test of Four Theoretical Models, *MIS Quarterly*, 24, 4, 2000.

Essay # 2 due

4/27

The Management of Information Technologies

Carol Brown, Examining the Emergence of Hybrid IS Governance Solutions: Evidence from a Single Case Site, *Information Systems Research*, Vol. 8, No. 1, March, 1997.

V. Sambamurthy and Robert W. Zmud, Arrangements for Information Technology Governance: A Theory of Multiple Contingencies, *MIS Quarterly*, June 1999, 23, 2.

R. Agarwal and V. Sambamurthy, Principles and Models for Organizing the IT Function, *MIS Quarterly Executive*, Vol. 1, No. 1, 2002, 1-16

T. W. Ferratt, R. Agarwal, C. Brown, and J. E. Moore, IT Human Resource Management Configurations and IT Turnover: An Empirical Study, Working paper, 2004.

Carol Brown, Horizontal Mechanisms Under Differing IS Organization Contexts, *MIS Quarterly*, Sep 1999, 23, 3.

M. Lacity and L. Wilcocks, An anatomy of relationships in IT outsourcing: Beyond the customer-supplier dichotomy, in Robert Zmud edited book, Chapter 18.

Soon Ang and Detmar Straub, Production and Transaction Economies and IS Outsourcing: A Study of the US Banking Industry, *MIS Quarterly*, Volume 22, Number 4, December, 1998.

Natalia Levina and Jeanne W. Ross, From the Vendor's Perspective: Exploring the Value Proposition in Information Technology Outsourcing, *MIS Quarterly*, 27(3), September, 2003.

5/4

The Management of Information Technologies

P. Weill and M. Broadbent, Managing IT Infrastructure: A Strategic Choice, in Robert Zmud edited book, Chapter 17.

J. Ross and D. Feeny, The Evolving Role of the CIO, in Robert Zmud edited book, Chapter 19.

Curtis Armstrong and V. Sambamurthy, Information Technology Assimilation in Firms: The Influence of Senior Leadership and IT Infrastructures, *Information Systems Research*, Volume 10, Number, 4, December, 1999.

Blaize Horner Reich and Izak Benbasat, Factors that Influence the Social Dimension of Alignment Between Business and Information Technology Objectives, *MIS Quarterly*, Volume 24, Number 1, March, 2000.

Albert H Segars, Varun Grover, Profiles of strategic information systems planning, *Information Systems Research*, Sep 1999, 10, 3, 199-232

Rajiv Sabherwal, Rudy Hirscheim, and Tim Goles, The Dynamics of Alignment: Insights from a Punctuated Equilibrium Model, *Organization Science*, Volume 12, Number 2, March – April, 2001.

R. Agarwal and T.W. Ferratt, "Crafting an HR Strategy to Meet the Need for IT

Workers,” *Communications of the ACM*, Vol. 44, No. 7, July 2001, 59-64.

S. Ang and S. Slaughter, The missing context of information technology personnel: A review and future direction for research, in Robert Zmud edited book, Chapter 16.

5/11 **Student Presentations of Research Papers**

5/17 **Research paper due**