Fox School of Business
TEMPLE UNIVERSITY

MIS 9003 – MIS Doctoral Seminar – Spring 2016
Economic Research on Strategic Management of IT
Wednesday 9:30 AM – 12:00 PM

As of Jan. 3, 2016

Instructor

- Dr. Min-Seok Pang (Ph.D., University of Michigan)
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- Office Hours: Wednesday 1-3pm, or by appointment
- Course Site : http://community.mis.temple.edu/mis9003spring2016/

Course Objective

The purposes of this seminar are threefold. First, it aims to help students build a "mental map" of contemporary research on strategic management of information technology (IT) in the "economics of information systems (IS)" discipline. This seminar focuses on a range of core IS research topics such as business value of IT, IT governance, IS outsourcing, and system development, so that the students can develop broad and deep understanding of important issues in strategic management of enterprise information systems.

Second, this course intends to guide the students to become scholars who can produce original, high quality research in economics of IS. Toward that end, the students are required to submit two deliverables. One, the students will conduct an in-depth literature review(s) on one or two research streams of their choosing. Two, by the end of the semester, the students will produce original research proposals that consist of their own theoretical development and hypotheses.

Third, this course will use two textbooks listed below to help the students understand how to come up with good research ideas and to develop them to concrete research proposals. The students will learn how to explore a wide range of knowledge and ideas from various backgrounds and to exploit them for promising research opportunities.

Readings and Textbooks

- List of selected journal articles available below.
- Johnson, S. (2010) *Where Good Ideas Come From: The National History of Innovation*, New York, NY: Riverheads Books.
- Glaesor, E. (2011) *Triumph of the City: How Our Greatest Invention Makes Us Richer, Smarter, Greener, Healthier, and Happier*, New York, NY: Penguin Books.

Grading and Deliverables

Weekly Brief (20%)

- Each week, a student is assigned to one or two papers and required to summarize them in no more than 300 words.
- Briefs are to be submitted to the class site (http://community.mis.temple.edu/mis9003spring2016/) by the end of the day before a class (i.e. Tuesday 11:59 PM EST).
- The students will lead a discussion for the assigned paper(s) in-class. In discussing a paper, the students are also expected to explain background theories and/or econometric methodologies to the fellow students.

Participation (20%)

- The students are expected to actively participate in in-class discussions.

Literature Review (20%)

- The students are required to submit an in-depth literature review on one or two research topics of their choosing. Topics should be from the ones listed in the course schedule below or closely related to them.
- The literature review should be no more than five-page long in double-space, 11-point text, one-inch-margin in all four sides.

Presentation of Research Proposal Idea (10%)

- In Week 10 (date TBA), the students will present their ideas for final research proposals.

Final Research Proposal (30%)

- By the end of the semester, the students will submit a proposal for original research that has a strong potential for publication in a premier IS journal (*Management Science*, *MIS Quarterly*, or *Information Systems Research*).
- The research proposal will consist of Introduction, Theoretical Background, Hypotheses Development, Empirical Methods, and potential data sources. It may not include analysis results.
- The research proposal should be no more than 15-page long in double-space, 11-point text, one-inch-margin in all four sides.

Course Policies

- Keep monitoring announcements on the class site (http://community.mis.temple.edu/mis9003spring2016/).
- Email: Use @temple.edu email account for all correspondents with the instructor. Email messages sent from a non-Temple account may not be responded.
- Inclement Weather: Generally, in case of inclement weather, a class will not be canceled as long as the University is open.
- Cell phones should be turned off, muted, or turned to vibrate during class. Please do not send or receive texts, tweets, e-mail, etc. or other communications during class.

- <u>Please arrive for class on time</u>. Be advised that being late to class disturbs the peers' learning.

Course Schedule (tentative)

This schedule is <u>tentative</u> and subject to change.

Week	Date	Topic
1	01-12	*Business Value of IT*
2	01-19	*Organizational Capabilities*
3	01-26	*Firm Boundary*
4	02-02	*Competition*
5	02-09	*System Development*
6	02-16	*IT Governance*
	TBA	Literature Review Due
7	02-23	*Outsourcing*
	03-01	Spring Break (No Class)
8	03-08	*Innovation*
9	03-15	*Labor*
10	TBA	*Student Presentations of Research Proposals*
11	03-29	*Healthcare*
12	04-05	*Government*
13	04-12	*Student-Selected Topics and Papers*
14	04-19	*Student-Selected Topics and Papers*
	05-01	Research Proposal Due

Required Readings (tentative, subject to change)

Week 1 – Business Value of IT

- Johnson, Introduction and Chapter 1 (The Adjacent Possible).
- Hitt, L.M. and Brynjolfsson, E. (1996) "Productivity, Business Profitability, and Consumer Surplus: Three Different Measures of Information Technology Value," *MIS Quarterly* (20:2) pp. 121-142.
- Anderson, M.C., Banker, R.D., and Ravindran, S. (2006) "Value Implications of Investments in Information Technology," *Management Science* (52:9) pp. 1359-1376.
- Aral, S. and Weill, P. (2007) "IT Assets, Organizational Capabilities, and Firm Performance: How Resource Allocations and Organizational Differences Explain Performance Variation," *Organization Science* (18:5) pp. 763-780.
- Dewan, S., Shi, C., and Gurbaxani, V. (2007) "Investigating the Risk–Return Relationship of Information Technology Investment: Firm-Level Empirical Analysis," *Management Science* (53:12) pp. 1829-1842.
- Zheng, Z.C. and Nault, B.R. (2007) "Industry-Level Supplier-Driven IT Spillovers," *Management Science* (53:8) pp. 1199-1216.

Week 2 – Organizational Capabilities

- Johnson, Chapter 2 (Liquid Network).
- Bresnahan, T.F., Brynjolfsson, E., and Hitt, L.M. (2002) "Information Technology, Workplace Organization, and the Demand for Skilled Labor: Firm-Level Evidence," *Quarterly Journal of Economics* (117:1) pp. 339-376.
- Bharadwaj, S., Bharadwaj, A., and Bendoly, E. (2007) "The Performance Effects of Complementarities Between Information Systems, Marketing, Manufacturing, and Supply Chain Processes," *Management Science* (18:4) pp. 437-453.
- Rai, A., Pavlou, P.A., Im, G., and Du, S. (2012) "Interfirm IT Capability Profiles and Communications for Cocreating Relational Value: Evidence from the Logistics Industry," *MIS Quarterly* (36:1) pp. 233-262.
- Tambe, P., Hitt, L.M., and Brynjolfsson, E. (2012) "The Extroverted Firm: How External Information Practices Affect Innovation and Productivity," *Management Science* (58:5) pp. 843-859.
- Im, G. and Rai, A. (2014) "IT-Enabled Coordination for Ambidextrous Interorganizational Relationships," *Information Systems Research* (25:1) pp. 72-92.

Week 3 – Firm Boundary

- Johnson, Chapter 3 (The Slow Hunch).
- Baker, G.P. and Hubbard, T.N. (2004) "Contractibility and Asset Ownership: On-Board Computers and Governance in U.S. Trucking," *Quarterly Journal of Economics* (119:4) pp. 1443-1479.
- Ray, G., Wu, D., and Konona, P. (2009) "Competitive Environment and the Relationship between IT and Vertical Integration," *Information Systems Research* (20:4) pp. 585-603.
- Dewan, S. and Ren, F. (2011) "Information Technology and Firm Boundaries: Impact on Firm Risk and Return Performance," *Information Systems Research* (22:2) pp. 369-388.
- Rawley, E. and Simcoe, T.S. (2013) "Information Technology, Productivity, and Asset Ownership: Evidence from Taxicab Fleets," *Organization Science* (24:3) pp. 831-845.
- Rai, A., Arikan, I., Pye, J., and Tiwana, A. (2015) "Fit and Misfit of Plural Sourcing Strategies and IT-Enabled Process Integration Capabilities: Consequences of Firm Performance in the U.S. Electric Utility Industry," *MIS Quarterly* (39:4) pp. 865-885.

Week 4 – Competition and Partnership

- Johnson, Chapter 4 (Serendipity).
- Chi, L., Ravichandran, T., and Andrevski, G. (2010) "Information Technology, Network Structure, and Competitive Action," *Information Systems Research* (21:3 pp. 543-570.

- Chellappa, R.K., Sambamurthy, V., and Saraf, N. (2010) "Competing in Crowded Market: Multimarket Contact and the Nature of Competition in the Enterprise Systems Software Industry," *Information Systems Research* (21:3) p. 614-630.
- Tanriverdi, H. and Uysal, V.B. (2011) "Cross-Business Information Technology Integration and Acquirer Value Creation in Corporate Mergers and Acquisitions," *Information Systems Research* (22:4) pp. 703-720.
- Ceccagnoli, M., Forman, C., Huang, P., and Wu, D.J. (2012) "Cocreation of Value in a Platform Ecosystem: The Case of Enterprise Software," *MIS Quarterly* (36:1) pp. 263-290.
- Tafti, A., Mithas, S., and Krishnan, M.S. (2013) "The Effect of Information Technology–Enabled Flexibility on Formation and Market Value of Alliances," *Management Science* (59:1) pp. 207-225.

Week 5 – System Development

- Johnson, Chapter 5 (Error).
- Krishnan, M.S., Kriebel, C.H., Kekre, S., and Mukhopadhyay, T. (2000) "An Empirical Analysis of Productivity and Quality in Software Products," *Management Science* (46:6) pp. 745-759.
- Banker, B.D. and Slaughter, S.A. (2000) "The Moderating Effects of Structure on Volatility and Complexity in Software Enhancement," *Information Systems Research* (11:3) pp. 219-240.
- Grewal, R., Lilien, G.L., and Mallapragada, G. (2006) "Location, Location, Location: How Network Embeddedness Affects Project Success in Open Source Systems," *Management Science* (52:7) pp. 1043-1056.
- Subramanyam, R., Ramasubbu, N., and Krishnan, M.S. (2012) "In Search of Efficient Flexibility: Effects of Software Component Granularity on Development Effort, Defects, and Customization Effort," *Information Systems Research* (23:3) pp. 787-803.
- Ramasubbu, N. and Kemerer, C.F. (2015) "Technical Debt and the Reliability of Enterprise Software Systems: A Competing Risks Analysis," *Management Science*, forthcoming.

Week 6 – IT Governance and Control

- Johnson, Chapter 6 (Exaptation).
- Kirsch, L.J., Sambamurthy, V., Ko, D.-G., and Purvis, R.L. (2002) "Controlling Information Systems Development Projects: The View from the Client," *Management Science* (48:4) pp. 484-498.
- Banker, R.D., Hu, N., Pavlou, P.A., and Luftman, J. (2011) "CIO Reporting Structure, Strategic Positioning and Firm Performance," *MIS Quarterly* (35:2) pp. 487-504.
- Xue, L., Ray, G., and Gu, B. (2011) "Environmental Uncertainty and IT Infrastructure Governance: A Curvilinear Relationship," *Information Systems Research* (22:2) pp. 389-399.
- Li, C., Peters, G.F., Richardson, V.J., and Watson, M.W. (2012) "The Consequences of Information Technology Control Weaknesses on Management Information Systems: The Case of Sarbanes-Oxley Internal Control Reports," *MIS Quarterly* (36:1) pp. 179-203.

- Chatterjee, D. and Ravinchandran, T. (2013) "Governance of Interorganizational Information Systems: A Resource Dependence Perspective," *Information Systems Research* (24:2) pp. 261-278.

Week 7 – Outsourcing

- Johnson, Chapter 7 (Platforms).
- Gopal, A., Sivaramakrishnan, K., Krishnan, M.S., and Mukhopadhyay, T. (2003) "Contracts in Offshore Software Development: An Empirical Analysis," *Management Science* (49:12): pp. 1671-1683.
- Susarla, S., Subramanyam, R., and Karhade, P. (2011) "Contractual Provisions to Mitigate Holdup: Evidence from Information Technology Outsourcing," *Information Systems Research* (21:1) pp. 37-55.
- Gopal, A. and Koka, B.R. (2012) "The Asymmetric Benefits of Relational Flexibility: Evidence from Software Development Outsourcing," *MIS Quarterly* (36:2) pp. 553-576.
- Susarla, S. (2012) "Contractual Flexibility, Rent Seeking, and Renegotiation Design: An Empirical Analysis of Information Technology Outsourcing Contracts," *Management Science* (58:7) pp. 1388-1407.
- Langer, N., Slaughter, S.A., and Mukhopadhyay, T. (2014) "Project Managers' Practical Intelligence and Project Performance in Software Offshore Outsourcing: A Field Study," *Information Systems Research* (25:2) pp. 364-384.

Week 8 – Innovation

- Glaeser, Introduction and Chapter 1 (What Do They Make in Bangalore?)
- Forman, C. and van Zeebroeck, N. (2012) "From Wires to Partners: How the Internet Has Fostered R&D Collaborations within Firms," *Management Science* (58:8) pp. 1549-1568.
- Kleis, L., Chwelos, P., Ramirez, R.V., and Cockburn, I. (2012) "Information Technology and Intangible Output: The Impact of IT Investment on Innovation Productivity," *Information Systems Research* (23:1) pp. 42-59.
- Setia, P., Rajagopalan, B., Sambamurthy, V., and Calantone, R. (2012) "How Peripheral Developers Contribute to Open-Source Software Development," *Information Systems Research* (23:1) pp. 144-163.
- Huang, P., Ceccagnoli, M., Forman, C., and Wu, D.J. (2013) "Appropriability Mechanisms and the Platform Partnership Decision: Evidence from Enterprise Software," *Management Science* (59:1) pp. 102-121.
- Mani, D., Srikanth, K., and Bharadwaj, A. (2014) "Efficacy of R&D Work in Offshore Captive Centers: An Empirical Study of Task Characteristics, Coordination Mechanisms, and Performance," *Information Systems Research* (25:4) pp. 846-864.

Week 9 – Labor

- Glaeser, Chapter 2 (Why Do Cities Decline?)
- Mithas, S. and Whitaker, J. (2007) "Is the World Flat or Spiky? Information Intensity, Skills, and Global Service Disaggregation," *Information Systems Research* (18:3) pp. 237-259.
- Aral, S., Brynjolfsson, E., and Wu, L. (2012) "Three-Way Complementarities: Performance Pay, Human Resource Analytics, and Information Technology," *Management Science* (58:5) pp. 913-931.
- Bloom, N., Garicano, L., Sadun, R., and Van Reenen, J. (2014) "The Distinct Effects of Information Technology and Communication Technology on Firm Organization," *Management Science* (60:12) pp. 2859-2885.
- Tambe, P. and Hitt, L.M. (2014) "Job Hopping, Information Technology Spillovers, and Productivity Growth," *Management Science* (60:2) pp. 338-355.
- Pierce, L., Snow, D.C., and McAfee, A. (2015) "Cleaning House: The Impact of Information Technology Monitoring on Employee Theft and Productivity," *Management Science*, forthcoming.

Week 10 – Student Presentations of Research Proposal Ideas

- Glaeser, Chapter 3 (What's Good about Slums?)

Week 11 - Healthcare

- Glaeser, Chapter 4 (How Were the Tenements Tamed?)
- Miller, A.R. and Tucker, C. (2009) "Privacy Protection and Technology Diffusion: The Case of Electronic Medical Records," *Management Science* (55:7) pp. 1077-1093.
- Menon, N.M. and Kohli, R. (2013) "Blunting Damocles' Sword: A Longitudinal Model of Healthcare IT Impact on Malpractice Insurance Premium and Quality of Patient Care," *Information Systems Research* (24:4) pp. 918-932.
- Bhargava, H. and Mishra, A.N. (2014) "Electronic Medical Records and Physician Productivity: Evidence from Panel Data Analysis," *Management Science* (60:10) pp. 2543-2562.
- Chan, J., and Ghose, A. (2014) "Internet's Dirty Secret: Assessing the Impact of Online Intermediaries on HIV Transmission," *MIS Quarterly* (38:4) pp. 955-975.
- Salge, T.O., Kohli, R., and Barrett, M. (2015) "Investing in Information Systems: On the Behavioral and Institutional Search Mechanisms Underpinning Hospitals' IS Investment Decisions," *MIS Quarterly* (39:1) pp. 61-89.

Week 12 – Government

- Glaeser, Chapter 5 (Is London a Luxury Resort?)
- Pang, M.-S., Tafti, A., and Krishnan, M.S. (2014) "Information Technology and Administrative Efficiency in U.S. State Governments - A Stochastic Frontier Approach," *MIS Quarterly* (38:4) pp. 1079-1101.
- Pang, M.-S. (2014) "IT Governance and Business Value in the Public Sector Organizations - The Role of Elected Representatives in IT Governance and Its Impact on IT Value in U.S. State Governments," *Decision Support Systems* (59:1), pp. 274-285.
- Pang, M.-S., Tafti, A., and Krishnan, M.S. (2015) "Do CIO IT Budgets Explain Bigger or Smaller Governments? - Theory and Evidence from U.S. State Governments," *Management Science*, forthcoming.
- Pang, M.-S. (2015) "Politics and Information Technology Investments in the U.S. Federal Government in 2003-2015," A Working Paper.
- Pang, M.-S. and Pavlou, P.A. (2015) "Does IT Use by the Police Keep the City's Finest Safer?," A Working Paper.

Week 13 – Student-Selected Papers (To be updated)

- Glaeser, Chapter 6 (What's So Great about Skyscrappers?)
- Each student will choose a paper for reading, with the instructor's guidance and permission, from top-tier academic journals with a topic of previous weeks.

Week 14 – Student-Selected Papers (To be updated)

- Glaeser, Chapter 7 (Why Has Sprawl Spread?)

Academic Integrity – ZERO TOLERANCE

Plagiarism and academic dishonesty can take many forms. The most obvious is copying from another student's materials, but the following are also forms of this:

- Copying materials directly from the Internet (or another source) without a proper citation crediting the author
- Turning in an assignment from a previous semester as if it were your own
- Having someone else complete your assignment and submitting it as if it were your own
- Use of assignments completed in one class as any part of a project assigned in another class
- Sharing/copying homework assignments.

There will be zero tolerance for blatant plagiarism or any other type of academic dishonesty. In particular, plagiarizing someone's work (be it a classmate's or on the Internet) is strictly prohibited.

Under this zero tolerance policy, in any occurrence of academic cheating, a formal complaint will immediately be filed with the University Discipline Committee (UDC). This incident will be listed on the student's permanent academic record. The instructor will not discuss the penalty for violating this policy and simply direct the student to this paragraph in the class syllabus.

Academic Honesty

Temple University believes strongly in academic honesty and integrity. Plagiarism and academic cheating are, therefore, prohibited. Essential to intellectual growth is the development of independent thought and a respect for the thoughts of others. The prohibition against plagiarism and cheating is intended to foster this independence and respect.

Plagiarism is the unacknowledged use of another person's labor, another person's ideas, another person's words, another person's assistance. Normally, all work done for courses is expected to be the individual effort of the student presenting the work. Any assistance must be reported to the instructor. If the work has entailed consulting other resources -- journals, books, or other media -- these resources must be cited in a manner appropriate to the course. It is the instructor's responsibility to indicate the appropriate manner of citation. Everything used from other sources -- suggestions for organization of ideas, ideas themselves, or actual language -- must be cited. Failure to cite borrowed material constitutes plagiarism. Undocumented use of materials from the World Wide Web is plagiarism.

Academic cheating is, generally, the thwarting or breaking of the general rules of academic work or the specific rules of the individual courses. It includes falsifying data; submitting, without the instructor's approval, work in one course which was done for another; helping others to plagiarize or cheat from one's own or another's work; or actually doing the work of another person.

The penalty for academic dishonesty can vary from receiving a reprimand and a failing grade for a particular assignment, to a failing grade in the course, to suspension or expulsion from the University. The penalty varies with the nature of the offense, the individual instructor, the department, and the school or college.

Students who believe that they have been unfairly accused may appeal through the School or College's academic grievance procedure.