

**Information Systems
PhD Research Seminar**

Winter 2023

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COURSE DESCRIPTION

This course is intended to deepen students' understanding of the philosophical, theoretical, and empirical foundations of the social research on technology. The course involves reading and discussion of a set of classic, seminal papers covering major topics in information systems, supplemented by relevant research in organization theory, strategy, organizational behavior, operations management, international business, etc. The course emphasizes the integration of diverse literatures and the application of different perspectives. Students are encouraged to identify their research topics, and leverage this course to explore and develop their own ideas.

COURSE OBJECTIVES

- Internalize a set of core literature related to technology, organization, and strategy
- Identify and evaluate potential research topics for further in-depth study
- Integrate different research streams to form a theoretical foundation

COURSE ACTIVITIES

- This is a seminar, which means that it is based on active class interaction. 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 quantity of contribution.

- Students are required to lead and facilitate several class sessions during the course of the semester. This involves activity before, during, and after the class session. Before the class session, all student should become familiar with all the readings for that class and prepare themes and questions for class discussion. During the class session, the student will provide a 10 - 15 minute overview of the important themes and issues raised by the readings, will then facilitate a discussion of these and related topics for the remainder of the session, including closing the session in the last 10 - 15 minutes of the class. Grades for facilitating a session will depend on the level of preparation, framing of overview and summary, and quality of discussion facilitated.
- For each session, each student is also required to find two recent publications from a major outlet, and discuss the connection between the identified papers and the required reading. Such connection can include: how the identified publications apply, integrate, extend, and/or contradict the readings that week. Students are expected to send their found papers 36 hours before the class to all classmates. All students need to skim the papers received from other classmates and be prepared to participate in discussions during class.
- Each student will prepare two reaction papers on assigned readings. These 1-page (single space) papers are due at the beginning of each class, and are intended to evoke some thoughtful consideration of the material read, for example, exploring an issue or concept in greater depth, raising some theoretical or empirical questions, comparing and contrasting approaches or findings across the readings, etc. Student also need to present and discuss your reaction paper during the session.
- After submitting the reaction paper, each student is responsible for preparing takeaways after the corresponding class. The takeaways should summarize thoughts and ideas developed during class discussion. Takeaways can be short - less than 1 page would be sufficient - and submitted to the professor after the class.
- To integrate course material, students will write a 20-page research proposal paper, which is due at the end of the term. This paper provides an opportunity for students to reflect upon and integrate ideas across sessions. The paper should formulate an interesting research question on technology in organizations and society and position the research question within background literature. Unlike a standard research proposal, the paper should conclude with only a very short methodology section that identifies possible venues for gathering data to address research question.

GRADING AND METHODS OF EVALUATION

Leading Class Discussion	15%
Discussing Latest Papers	10%
Class Participation	10%
Pre-class Reaction Papers	10%
Post-class Takeaways	10%
Research Proposal Paper	45%

PLAGIARISM / ACADEMIC INTEGRITY

Scholastic offences are taken seriously and students are directed to read the appropriate policy, specifically, the definition of what constitutes a Scholastic Offence, at the following Web site:

http://www.uwo.ca/univsec/pdf/academic_policies/appeals/scholastic_discipline_grad.pdf

All required papers may be subject to submission for textual similarity review to the commercial plagiarism-detection software under license to the University for the detection of plagiarism. All papers submitted for such checking will be included as source documents in the reference database for the purpose of detecting plagiarism of papers subsequently submitted to the system. Use of the service is subject to the licensing agreement, currently between The University of Western Ontario and Turnitin.com (<http://www.turnitin.com>).

HEALTH AND WELLNESS

As part of a successful graduate student experience at Western, we encourage students to make their health and wellness a priority. Western provides several on campus health-related services to help you achieve optimum health and engage in healthy living while pursuing your graduate degree. For example, to support physical activity, all students, as part of their registration, receive membership in Western's Campus Recreation Centre. Numerous cultural events are offered throughout the year. Please check out the Faculty of Music web page <http://www.music.uwo.ca>, and our own McIntosh Gallery <http://www.mcintoshgallery.ca>. Information regarding health- and wellness-related services available to students may be found at <http://www.health.uwo.ca>.

Students seeking help regarding mental health concerns are advised to speak to someone they feel comfortable confiding in, such as their faculty supervisor, their program director (graduate chair), or other relevant administrators in their unit. Campus mental health resources may be found at http://www.health.uwo.ca/mental_health/resources.html.

To help you learn more about mental health, Western has developed an interactive mental health learning module, found here: http://uwo.ca/health/mental_wellbeing/education/module.html. This module is 30 minutes in length and provides participants with a basic understanding of mental health issues and of available campus and community resources. Topics include stress, anxiety, depression, suicide and eating disorders. After successful completion of the module, participants receive a certificate confirming their participation.

DETAILED SESSION SCHEDULE

SESSION 1: Understanding Philosophical Foundations

Readings:

- Burrell, G. and Morgan, G. "In Search of a Framework," *Sociological Paradigms and Organisational analysis: Elements of the Sociology of Corporate Life*, 1979: 1-37, London: Routledge.
- Orlikowski, W.J. and Baroudi, J.J. "Studying Information Technology in Organizations: Research Approaches and Assumptions," *Information Systems Research* (2:1), 1991: 1-28.
- Su, N. "Positivist Qualitative Methods," In Catherine Cassell, Ann Cunliffe, and Gina Grandy (Eds.), *The SAGE Handbook of Qualitative Business and Management Research Methods*, Sage, 2018: 17-32.
- Walsham, G. "The Emergence of Interpretivism in IS Research," *Information Systems Research* (6:4), 1995: 376-394.
- Benbasat, I., Goldstein, D. K., and Mead, M. "The Case Research Strategy in Studies of Information Systems," *MIS Quarterly* (11:3), 1987: 369-386. (Skim)
- Dubé, L., and Paré, G. "Rigor in Information Systems Positivist Case Research: Current Practices, Trends, and Recommendations," *MIS Quarterly* (27:4), 2003: 597-636. (Skim)

SESSION 2: Conceptualizing Technology

Readings:

- Huber, G.P. "A Theory of the Effects of Advanced Information Technologies on Organizational Design, Intelligence, and Decision Making," *Academy of Management Review* (15:1), 1990: 47-71.
- Kling, R. "Computerization and Social Transformations," *Science, Technology, and Human Values* (16:3), 1991: 342-367.
- Pinch, T.J. and Bijker, W.E. "The Social Construction of Facts and Artifacts," in W.E. Bijker, T. Hughes and T. Pinch (Eds.), *The Social Construction of Technological Systems*, Cambridge, MA: The MIT Press, 1987: 17-50.
- Barley, S.R. "Technology, Power, and the Social Organization of Work," *Research in the Sociology of Organizations* (6), 1988: 33-80.
- Orlikowski, W.J. "The Duality of Technology: Rethinking the Concept of Technology in Organizations," *Organization Science* (3:3), 1992: 398-427.
- Orlikowski, W.J. "Using Technology and Constituting Structures: A Practice Lens for Studying Technology in Organizations," *Organization Science* (11:4), 2000: 404-428.

SESSION 3: Designing Technology - I

Readings:

- Boland, R. J., Jr. "The Process and Product of System Design." *Management Science* (24:9), 1978: 887-898.
- Robey, D. and Markus, M.L. "Rituals in Information System Design," *MIS Quarterly* (8:1), 1984: 5-15.
- Kirsch, L.J. "The Management of Complex Tasks in Organizations: Controlling the Systems Development Process," *Organization Science* (7:1), 1996: 1-21.
- Carlile, P. R. "A Pragmatic View of Knowledge and Boundaries: Boundary Objects in New Product Development," *Organization Science* (13:4), 2002: 442-455.
- Levina, N. "Collaborating on Multiparty Information Systems Development Projects: A Collective Reflection-in-Action View," *Information Systems Research* (16:2), 2005: 109-130.
- Faraj, S., and Sproull, L. "Coordinating Expertise in Software Development Teams," *Management Science* (46:12), 2000: 1554-1568.

SESSION 4: Designing Technology - II

Readings:

- Simon, H.A., "The Science of Design: Creating the Artificial," *Design Issues* 4(1/2: Designing the Immaterial Society), 1988: 67-82.
- Hevner, A.R., March, S.T., Park, J. and Ram, S. "Design Science in Information Systems Research," *MIS Quarterly* (28:1), 2004: 75-105.
- Dibiaggio, L. "Design Complexity, Vertical Disintegration and Knowledge Organization in the Semiconductor Industry," *Industrial and Corporate Change* (16:2), 2007: 239-267.
- Sein, M.K., Henfridsson, O., Puroo, S., Rossi, M., and Lindgren, R. "Action Design Research," *MIS Quarterly* (35:1), 2011: 37-56.
- Yoo, Y., Boland Jr., R.J., Lyytinen, K. and Majchrzak, A. "Organizing for Innovation in the Digitized World," *Organization Science* (23:5), 2012: 1398-1408.
- Taylor, S.S. and Hansen, H. 2005. "Finding Form: Looking at the Field of Organizational Aesthetics," *Journal of Management Studies* (42:6), 2005: 1211-1231.
- Austin, R.D., Devin, L. and Sullivan, E.E. "Accidental Innovation: Supporting Valuable Unpredictability in the Creative Process," *Organization Science* (23:5), 2012: 1505-1522.

SESSION 5: Technology Adoption

Readings:

- Venkatesh, V. and F. D. Davis. "A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies," *Management Science* (46:2), 2000: 186-204.
- Venkatesh, V., Morris, M.G., Davis, G.B., and Davis, F.D. "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly* (27:3), 2003: 425-478.
- Sproull, L., Kiesler, S., and Zubrow, D. "Encountering an Alien Culture," *Journal of Social Issues* (40:3), 1984: 31-48.
- DeSanctis, G. and Poole, M.S. "Capturing the Complexity in Advanced Technology Use: Adaptive Structuration Theory," *Organization Science* (5), 1994: 121-147.
- Majchrzak, A., Rice, R.E., Malhotra, A., King, N., and Ba, S. "Technology Adaptation: The Case of A Computer-Supported Inter-organizational Virtual Team," *MIS Quarterly* (24:4), 2000: 569-600.
- Mathieson, K. "Predicting User Intentions: Comparing the Technology Acceptance Model with the Theory of Planned Behavior," *Information Systems Research* (2:3), 1991: 173-191.

SESSION 6: Technology and Communication

Readings:

- Kiesler, S. and Sproull, L. "Group Decision Making and Communication Technology," *Organization Behavior and Human Decision Processes* (52), 1992: 96-123.
- Yates, J. and Orlikowski, W.J. "Genre Systems: Structuring Interaction Through Communication Norms," *The Journal of Business Communication* (39:1), 2002: 13-35.
- Orlikowski, W.J. and Yates, J. "Genre Repertoire: The Structuring of Communicative Practices in Organizations," *Administrative Science Quarterly* (39:4), 1994: 541-574.
- Levina, N. and Orlikowski, W. J. "Understanding Shifting Power Relations Within and Cross Organizations: A Critical Genre Analysis," *Academy of Management Journal* (52:4), 2009: 672-703.
- Levina, N., and Vaast, E. "Innovating or Doing as Told? Status Differences and Overlapping Boundaries in Offshore Collaboration," *MIS Quarterly* (32:2), 2008: 307-332.
- Wasko, M.M., and Faraj, S. "Why Should I Share? Examining Social Capital and Knowledge Contribution in Electronic Networks of Practice," *MIS Quarterly* (29:1), 2005: 35-37.
- Jarvenpaa, S.L. and Leidner, D.E. "Communication and Trust in Global Virtual Teams," *Organization Science* (10:6), 1999: 791-815.

SESSION 7: Technology and Culture

Readings:

- Hofstede, G. *Culture's Consequences*, 1980: Beverly Hills, CA: Sage. (Skim)
- Ang, S., and Inkpen, A. C. "Cultural Intelligence and Offshore Outsourcing Success: A Framework of Firm-level Intercultural Capability," *Decision Sciences* (39:3), 2008: 337-358.
- Koh, C., Ang, S., and Straub, D. W. "IT Outsourcing Success: A Psychological Contract Perspective," *Information System Research* (15:4), 2004: 356-373.
- Dibbern, J., Winkler, J., and Heinzl, A. "Explaining Variations in Client Extra Costs Between Software Projects Offshored to India," *MIS Quarterly* (32:2), 2008: 333-366.
- Rai, A., Maruping, L. M., and Venkatesh, V. "Offshore Information Systems Project Success: The Role of Social Embeddedness and Cultural Characteristics," *MIS Quarterly* (33:3), 2009: 617-641.
- Cramton, C. D. and Hinds, P. J. "An Embedded Model of Cultural Adaptation in Global Teams," *Organization Science* (25:4), 2014: 1056-1081.
- Su, N. "Cultural Sensemaking in Offshore Information Technology Service Suppliers: A Cultural Frame Perspective," *MIS Quarterly* (39:4), 2015: 959-983.

SESSION 8: Technology and Knowledge

Readings:

- Constant, D., Kiesler, S. and Sproull, L. "The Kindness of Strangers: On the Usefulness of Weak Ties for Technical Advice," *Organization Science* (7), 1996: 119-135.
- Levina, N., and Vaast, E. "The Emergence of Boundary Spanning Competence in Practice: Implications for Implementation and Use of Information Systems," *MIS Quarterly* (29:2), 2005: 335-363.
- Cramton, C. "The Mutual Knowledge Problem and Its Consequences for Dispersed Collaboration," *Organization Science* (12), 2001: 346-371.
- Edmondson, A.C., Bohmer, R.M. and Pisano, G.P. "Disrupted Routines: Team Learning and New Technology Implementation in Hospitals," *Administrative Science Quarterly* (46), 2001: 685-716.
- Bechky, B.A. Sharing Meaning Across Occupational Communities: The Transformation of Understanding on a Production Floor," *Organization Science* (14:3), 2003: 312-330.
- Kotlarsky, J., Scarbrough, H., and Oshri, I. "Coordinating Expertise across Knowledge Boundaries in Offshore-Outsourcing Projects: The Role of Codification," *MIS Quarterly* (38:2), 2014: 607-627.
- Cattani, G., Dunbar, R., and Shapira, Z. "Value Creation and Knowledge Loss: The Case of Cremonese Stringed Instruments," *Organization Science* (24:3), 2013: 813-830.

SESSION 9: Technology and Capability

Readings:

Kogut, B., and Zander, U. "Knowledge of the Firm, Combinative Capabilities, and the Replication of Technology," *Organization Science* (3:3), 1992: 383-397.

Brown, J.S. and Duguid, P. "Organizational Learning and Communities-of-Practice: Toward a Unified View of Working, Learning, and Innovation," *Organization Science* (2:1), 1991: 40-57.

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

Alavi, M. and Leidner, D.E. "Review: Knowledge Management and Knowledge Management Systems: Conceptual Foundations and Research Issues," *MIS Quarterly* (25), 2002: 107-136.

Boland, R.J., Jr. and Tenkasi, R.V. "Perspective Making and Perspective Taking in Communities of Knowing," *Organization Science* (6:4), 1995: 350-372.

Nonaka, I. "A Dynamic Theory of Organizational Knowledge Creation," *Organization Science* (5:1), 1994: 14-37.

Berente, N., Lyytinen, K., Yoo, Y., and King, J.K. "Routines as Shock Absorbers During Organizational Transformation: Integration, Control, and NASA's Enterprise Information System," *Organization Science* (27:3), 2016: 551-572.

SESSION 10: Technology and Strategy

Readings:

Grant, R.M. "Prospering in Dynamically-Competitive Environments: Organizational Capability as Knowledge Integration," *Organization Science* (7:4), 1996: 375-387.

Grant, R. M. "Toward a Knowledge-Based Theory of the Firm," *Strategic Management Journal* (17:Winter Special Issue), 1996: 109-122.

Garud, R, Kumaraswamy, A., and Sambamurthy, V. "Emergent by Design: Performance and Transformation at Infosys Technologies," *Organization Science* (17:2), 2006: 277-286.

Garud, R., and Karnøe, P. "Bricolage Versus Breakthrough: Distributed and Embedded Agency in Technology Entrepreneurship," *Research Policy* (32), 2003: 277-300.

Su, N. "Internationalization Strategies of Chinese IT Service Suppliers," *MIS Quarterly* (37:1), 2013: 175-200.

Koppman, S., Mattarelli, E., and Gupta, A. "Third-World "Sloggers" or Elite Global Professionals? Using Organizational Toolkits to Redefine Work Identity in Information Technology Offshore Outsourcing," *Organization Science* (27:4), 2016: 825-845.

SESSION 11: Organizational Design

Readings:

- Galbraith, J. "Organization Design: An Information Processing View," *Interfaces* (4:3), 1974: 28-36.
- Vaast E. and Levina N. "Multiple Faces of Codification: Organizational Redesign in an IT Organization," *Organization Science* (17:2), 2006: 190-201.
- Baldwin C. "Designing Organizations around Technology," *MIT Sloan Management Review*, 2018: <https://sloanreview.mit.edu/article/designing-organizations-around-technology/>.
- Malone, T.W. and Benajamin, Y.J. "Electronic Markets and Electronic Hierarchies." *Communications of the ACM* (30:6), 1987: 484-497.
- Barrett, M. and Walsham, G. "Electronic Trading and Work Transformation in the London Insurance market," *Information Systems Research* (10:1), 1999: 1-22.
- Malhotra, A., Majchrzak, A., Carman, R., and Lott, V. "Radical Innovation Without Collocation: A Case Study at Boeing-Rocketdyne," *MIS Quarterly* (25:2), 2001: 229-249.
- Lacity, M.C. and Willcocks, L.P. "An Empirical Investigation of Information Technology Sourcing Practices: Lessons from Experience," *MIS Quarterly* (22:3), 1998: 363-408.

SESSION 12-13: Reflection, Wrap-Up, and Presentation

Readings:

- Deetz, S. "Describing Differences in Approaches to Organization Science: Rethinking Burrell and Morgan and their Legacy," *Organization Science* (7:2), 1996: 191-207.
- Weick, K.E. "Drop your Tools: An Allegory for Organizational Studies," *Administrative Science Quarterly* (41), 1996: 301-313.
- Orlikowski, W. J. and C. S. Iacono. "Research Commentary: Desperately Seeking "IT" in IT Research: A Call to Theorizing the IT Artifact," *Information Systems Research* (12:2), 2001: 121-134.
- Tilson, D., Lyytinen, K., Sørensen, C. "Research Commentary: Digital Infrastructures: The Missing IS Research Agenda," *Information Systems Research* (21:4), 2010: 748-759.
- Su, N., King, J. L., and Grudin, J. "Staying Alive: The IS field at the Half Century Mark," In Robert Galliers and Mari-Klara Stein (eds.), *The Routledge Companion to Management Information Systems*, 2018: 490-503.