

Innovation in Projects and Networks

BI Norwegian Business School

Course Outline

Version 1.1: February 1, 2019

Introduction

Projects and networks are central features of innovation. They constitute contemporary and critical contexts for much of innovation activities in a range of industries and sectors. Understanding contemporary innovation and innovation challenges requires a good understanding of projects and networks as increasingly important elements of innovation. This course centers on networks and projects and their role for innovation, and more particularly the balance, interaction, and dynamics between the permanent and temporary features of innovation.

Modern economies to a greater extent rely on inter-organizational relations, collaborative networks, and various kinds of inter-organizational projects to create and diffuse innovation. In particular, networks play a pivotal role in explicating the propensity to innovate, the diffusion of innovation and ultimately the market success of innovation.

The underlying development accentuates the significant role of networks and projects for innovation, which contrasts to much conventional writings on innovation that typically has focused on the single firm as the primary locus for innovation. As a response to this development, this course will cover several streams of research to locate the contexts and institutional and network embeddedness of innovation, the network and inter-organizational dimensions of innovation. The course addresses social structure, the network of relations among actors, as an essential feature for goal attainment. In particular, networks play a pivotal role in explicating the propensity to innovate, the diffusion of innovation and ultimately the market success of innovation. Through the study of state-of-the-art network research, we will deliberate on the linkages between social structure and key properties of innovation. Students should also learn about the informal side of innovation and networks, the organizational side of innovation and networks, the role of project in managing networks, innovation networks of project-based firms, and innovation networking in times of open innovation. For all these themes academic papers will be discussed, which have important managerial and methodological implications.

The course also elaborates on the role of projects to drive innovation and new organizational forms to foster innovation, especially innovation in large-scale projects and project-based organizations. In that respect, the course seeks to combine recent research within the area of networks and projects to offer an alternative to the conventional firm-centric view on innovation. In that respect, the course seeks to move beyond merely addressing networks and projects as separate contexts and aspects of innovation, and develop an understand that addresses how projects and networks are aligned to drive and disseminate innovation.

The course consists of two modules and a final seminar where course papers will be presented. The first module centers on aspects related to projects and organizing by projects, whereas the second module addresses approaches to networks and innovation.

Learning outcomes

The course will give the participants understanding of the classic and recent literatures on innovation networks and innovation projects. The participants will gain knowledge about the classic and recent literatures on networks and projects, especially the part of this literature that is relevant for the understanding of innovation. The course aims at clarifying the role of the network and the role of the project in the process of innovation. The course also aims to provide theoretical perspectives on project-based firms as contexts for innovation in a range of empirical settings. In sum, this course aims at giving the participants a good understanding of:

- classic and recent literature on projects with a particular focus on innovation.
- classic and recent literature on networks with a particular focus on innovation.
- the role that projects have for the development of innovation.
- different kinds of innovation projects.
- the role that various kinds of inter-organizational networks have for the development of innovation.
- different kinds of inter-organizational networks in an innovation context.
- how networks and projects interact to shape and drive innovation.

Prerequisites

Admission to a PhD Program is a general requirement for participation in PhD courses at BI Norwegian Business School.

External candidates are kindly asked to attach confirmation of admission to a PhD program when signing up for a course with the doctoral administration. Candidates can be allowed to sit in on courses by approval of the course leader. Sitting in on courses does not permit registration for courses, handing in exams or gaining credits for the course. Course certificates or conformation letters will not be issued for sitting in on courses

Compulsory readings

See reading list.

Course outline

Topics covered:

- The nature and dynamics of innovation projects
- Innovation in projects
- Innovation in project-based firms
- Network perspectives on innovation
- Innovation networks and inter-organizational collaboration
- Network embeddedness of innovation and projects
- Doing research on projects, innovation and networks

Learning process and workload

The course is divided into two parts, and consists of six days of teaching. In total approximately 48 hours of scheduled tuition plus tutoring sessions.

Examination

A paper of 15 to 25 pages is required in addition to active participation in the seminars. The evaluation will be based on the student's participation in the seminars and teamwork as well as the submitted paper.

The paper should be original work, and be written specifically for this course, although the topic and empirical focus may overlap with the student's dissertation.

The grade is pass/fail.

Honor code

Academic honesty and trust are important to all of us as individuals, and represent values that are encouraged and promoted by the honor code system. This is a most significant university tradition. Students are responsible for familiarizing themselves with the ideals of the honor code system, to which the faculty are also deeply committed.

Any violation of the honor code will be dealt with in accordance with BI's procedures for cheating. These issues are a serious matter to everyone associated with the programs at BI and are at the heart of the honor code and academic integrity. If you have any questions about your responsibilities under the honor code, please ask.

Course faculty

Jonas Söderlund, PhD, Professor, BI Norwegian Business School. Jonas Söderlund has published widely on projects, project-based firms, capability development and innovation. He is a co-founder of KITE – a major research program addressing knowledge integration and innovation and one of the editors of the Project Management Journal. He sits on the editorial board of Organization Studies. His work has appeared in such journals as Research Policy, Organization Studies, Human Relations, Long Range Planning, Advances in Strategic Management, Management Learning, and International Journal of Management Reviews. Contact: jonas.soderlund@bi.no, +4646410862.

Andrew Davies, PhD, Professor, University College London. Andrew Davies is one of the leading scholars in the area of project-based organizations and innovation. He has published several seminal papers in this area in journals such as Research Policy, Industry and Corporate Change, MIT Sloan Management Review, California Management Review, and Organization Studies. He was an adjunct professor at BI Norwegian Business School for more than five years and has been on the faculty of University of Sussex and Imperial College.

Amir Sasson, PhD, Provost and professor of strategy at BI Norwegian Business School. Dr Sasson's research has addressed topics such as cluster formation, alliances, entrepreneurship, and innovation. He is a network theory specialist and has contributed to various academic discussions concerning the relationship between networks and value creation. His work has appeared in journals such as Organization Science, Journal of Management Studies, Long Range Planning, and ET&P.

Hans Georg Gemünden, PhD, Professor II, BI Norwegian Business School. Dr Gemünden is since 2016 an adjunct professor at BI. He formerly held the chair in innovation management at TU Berlin. He is one of the most prolific scholars in the area of innovation and project organizing. He has published more than 200 refereed papers in leading journals such as Organization Science, Journal of Product Innovation Management, and Research Policy. For many years, he was the editor-in-chief of the Project Management Journal.

Course administration

Any questions about the course can be sent to Professor Jonas Söderlund who is the course director of the course (see contact information above).

Questions about registration and administration should be sent to Birte Horn Hansen: birte.m.horn-hanssen@bi.no, or call +47 46410876.

Detailed schedule

Part I: Projects in innovation

April 2-April 4 2019

Day 1 April 2 2019

Faculty: Andrew Davies and Jonas Söderlund

Session 1: Introduction

- Presentation of aim and outline of the course
- Presentation of faculty
- Presentation of participants

Session 2. Innovation contexts

- Overview of the field of projects
- Overview of the field of innovation
- Workshop on innovation contexts

Day 2 April 3 2019

Faculty: Andrew Davies and Jonas Söderlund

Session 3. The nature and dynamics of innovative projects

- Introduction to innovative and vanguard projects
- Handout assignment
- Group work to analyze selected innovation projects
- Presentation of analysis

Session 4: Megaprojects and innovation

- Introduction to megaprojects
- Handout assignment
- Group work to analyze and compare three megaprojects
- Presentation of analysis

Day 3 April 4 2019

Faculty: Andrew Davies and Jonas Söderlund

Session 5. Project-based organizations, capabilities and learning

- Introduction to project-based organizations
- Handout of assignment to literature seminar
- Roundtable among students on selected papers and topics
- Presentation of discussion findings

Session 6. Publishing on innovation and projects

- Introduction to routines and projects
- Workshop on reviewing and publishing
- Presentation of analysis

Part II: Networks in innovation and synthesis
May 22-May 24 2019

Day 1 May 22 2019

Faculty: Amir Sasson

Session 1: Introduction to network theories and the classics

- The seminal work
- Inside the firm
- The role of geography
- Good ideas and patents

Session 2: Workshop on networks and innovation

Day 2 May 23 2019

Faculty: Hans Georg Gemünden and Jonas Söderlund

Session 3a: The informal side of innovation and networks, focus on key individual roles in innovation networks, champions, relationship promoters, and technological gatekeepers, and project managers as networkers.

Session 3b: The organizational side of innovation and networks, i.e. network competence, and its antecedents and performance effects.

Session 4a: The role of project characteristics in managing networks, the ability and limitations to control of international R&D projects and programs by means of design structure matrices, the usefulness of combining weak and strong ties.

Session 4b: Innovation networks and open innovation in project-based settings

Day 3 May 24 2019

Faculty: Jonas Söderlund

Session 5: Workshop on impact on own research

Session 6: Lessons learned and formulation of research questions targeting the frontiers of innovation in projects and networks

Innovation in Projects and Networks

Readings

Part I: Innovation in Projects

Session 1: The nature and context of project-based organizing

Cattani, G., S. Ferriani, L. Frederiksen, & F. Täube (2011): "Project-Based Organizing and Strategic Management: A Long-Term Research Agenda on Temporary Organizational Forms," *Advances in Strategic Management*, Vol. 28: 3-26.

Davies, A. (2017): *Projects: A very short introduction*. Oxford: Oxford University Press.

Davies, A. & L. Frederiksen (2010): "Project modes of innovation: the world after Woodward," Special Issue: Technology and organization: essays in honour of Joan Woodward, *Research in the Sociology of Organizations*, Vol. 29: 177-215.

Davies, A., Manning, S. & J. Söderlund (2018): Why neighboring disciplines fail to learn from each other: the case of innovation and project management. *Research Policy*. 47: 965-979.

Geraldi, J. & J. Söderlund (2018): Project studies: What it is, where it is going, *International Journal of Project Management*. 36: 55-70.

Lundin, R. A. & A. Söderholm (1995): "A theory of the temporary organization," *Scandinavian Journal of Management*, Vol. 11, No. 4: 437-455.

Scranton, P. (2014): "Projects as a focus for historical analysis: surveying the landscape", *History and Technology*. Vol. 30, No. 4: 354-373.

Shenhar, A. (2001): "One size does not fit all projects: exploring classical contingency domains," *Management Science*, Vol. 47, No. 3: 394-414.

Söderlund, J. (2004): "On the broadening scope of the research on projects: a review and a model for analysis", *International Journal of Project Management*, Vol. 22: 655-667.

Söderlund, J. (2011): "Pluralism in project management: Research at the crossroads of specialization and fragmentation," *International Journal of Management Reviews*, Vol. 13: 153-176.

Session 2: Projects and innovation management

Clark, K. & S. Wheelwright (1992): "Organizing and leading "heavyweight" development teams," *California Management Review*, Vol. 34, No. 3: 9-28.

De Meyer, A., C. H. Loch & M. T. Pich (2002): "Managing Project Uncertainty: From Variation to Chaos," *MIT Sloan Management Review*, Vol. 43, No. 2: 60-67.

Henderson, R. & K. Clark (1990): "Architectural innovation: the reconfiguration of existing product technologies and the failure of established firms," *Administrative Science Quarterly*, Vol. 35, No. 1: 9-30.

Hobday, M. (1998): "Product Complexity, Innovation and Industrial Organization," *Research Policy*, Vol. 26: 689-710.

Klein, B. & W. Meckling (1958): "Application of operations research to development decisions," *Operations Research*, 352-63.

Lenfle, S. & C. Loch (2010): "Lost roots: How project management came to emphasize control over flexibility and novelty," *California Management Review*, Vol. 53, No. 1: 32-55.

Pich, M. T., C. Loch & A. De Meyer (2002): "On uncertainty, ambiguity, and complexity in project management", *Management Science*, Vol. 48, No. 8: 1008-1023.

Sauser, B., Reilly, R. & A. J. Shenhar (2009): "Why projects fail? How contingency theory can provide new insights: A comparative analysis of NASA's Mars Climate Orbiter loss," *International Journal of Project Management*, 27: 665-679.

Shenhar, A. (2001): "One size does not fit all projects: exploring classical contingency domains," *Management Science*, Vol. 47, No. 3: 394-414.

Session 3: The nature and dynamics of innovative projects

Eisenhardt, K. M. & B. N. Tabrizi (1995): "Accelerating adaptive processes: product innovation in the global computer industry," *Administrative Science Quarterly*, Vol. 40, No. 1: 84-110.

Lenfle, S. & J. Söderlund (2018): Large-scale innovative projects as temporary trading zones: Toward an interlanguage theory. *Organization Studies*. Forthcoming.

Lindkvist, L., J. Söderlund & F. Tell (1998): "Managing product development projects: On the significance of fountains and deadlines," *Organization Studies* Vol. 19, No. 6: 931-951.

O'Reilly, C.A. & M. L. Tushman (2004): "The ambidextrous organization," *Harvard Business Review*, Vol. April: 74-81.

Takeuchi, H. & I. Nonaka (1986): "The new new product development game," *Harvard Business Review*, January-February: 137-146.

Wheelwright, S.C. & K. B. Clark (1992): "Creating project plans to focus," *Harvard Business Review*, March-April: 70-82.

Session 4: Innovation in megaprojects

Davies, A., D. Gann & T. Douglas (2009): "Innovation in megaprojects: systems integration at Heathrow Terminal 5," *California Management Review*, Vol. 51, No. 2: 101-125.

Davies, A., Dodgson, M. and Gann, D. (2016): "Dynamic capabilities for a complex project: innovation happen in a megaproject: The case of London Heathrow Terminal 5," *Project Management Journal*, 47(2): 26-46.

Davies, A., S. MacAulay, T. DeBarro & M. Thurston (2014): "Making innovation happen in a megaproject: London's Crossrail suburban railway system," *Project Management Journal*, Vol. 45, No. 6: 25-67.

Davies, A. & I. Mackenzie (2014): "Project complexity and systems integration: Constructing the London 2012 Olympics and Paralympics Games," *International Journal of Project Management*, Vol. 32: 773-790.

Flyvbjerg, B. (2014): "What you should know about megaprojects and why: An overview," *Project Management Journal*, Vol. 45, No. 2: 6-19.

Gil, N. (2009): "Developing cooperative project client-supplier relationships: how much to expect from relational contracts?," *California Management Review*, Vol. 5, No. 2: 144-169.

Gil, N., M. Miozzo & S. Massini (2009): "The new innovation potential of new infrastructure development: An empirical study of Heathrow airports T5 project," *Research Policy*, Vol. 41: 452-466.

Session 5: Project-based firms, capabilities and organizational learning

Brady, T. & A. Davies (2004): "Building project capabilities: from exploratory to exploitative learning," *Organization Studies*, Vol. 25, No. 9: 1601-1621.

Davies, A. and Brady, T. (2016). 'Explicating the dynamics of project capabilities', 'Special Issue: Festschrift for Peter Morris', *International Journal of Project Management*, 34: 314-327.

Davies, A. & T. Brady (2000): "Organisational Capabilities and Learning in Complex Product Systems: Towards Repeatable Solutions," *Research Policy*, Vol. 29: 931-53.

Gann, D., A. Salter, M. Dodgson & N. Phillips (2012): "Inside the world of the project baron," *MIT Sloan Management Review*, Vol. 53, No. 3, 63-71.

Hobday, M., (2000): "The project-based organisation: an ideal form for managing complex products and systems?," *Research Policy*, Vol. 29: 871-893.

Manning, S. & J. Sydow (2011): "Projects, paths and practices: sustaining and leveraging project-based relationships," *Industrial and Corporate Change*, Vol. 20, No.5: 1369-1402.

Prencipe, A. & F. Tell (2001): "Inter-project learning: processes and outcomes of knowledge codification in project-based firms," *Research Policy*, Vol. 30, No. 9: 1373-1394.

Söderlund, J. & F. Tell (2009): "The P-Form organization and the dynamics of project competence: Project epochs in Asea/ABB, 1950-2000," *International Journal of Project Management*, Vol. 27: 101-112.

Session 6: Projects and routines

Edmondson, A.C. (2012): "Teamwork on the fly," *Harvard Business Review*, April: 72-80.

Edmondson, A.C., R. M. Bohmer & G. P. Pisano (2001): "Disrupted routines: team learning and new technology implementation in hospitals," *Administrative Science Quarterly*, Vol. 46, No. 4: 685-716.

Gersick, C.J.G., & J. R. Hackman (1990): "Habitual routines in task-performing groups," *Organizational Behaviour and Human Decision Processes*, Vol. 47: 65-97.

Obstfeld, D. (2012): "Creative projects: a less routine approach towards getting things done," *Organization Science*. Vol. 23, No. 6: 3-21.

Innovation in Projects and Networks

Readings

Part II: Innovation in Networks

Day 1: Innovation and networks

Ahuja, G., G. Soda, A. Zaheer. (2012): The genesis and dynamics of organizational networks. *Organization Science* 23(2) 434-448.

Burt, R.S. (2004): Structural holes and good ideas. *American Journal of Sociology* 110(2) 349-399.

Phelps, C.C. (2010): A longitudinal study of the influence of alliance network structure and composition on firm exploratory innovation. *Academy of Management Journal* 53(4) 890-913.

Powell, W.W., K.W. Koput, L. Smith-Doerr. (1996): Interorganizational collaboration and the locus of innovation: networks of learning in biotechnology. *Administrative Science Quarterly* 41(1) 116-145.

Singh, H., D. Kryscynski, X. Li, R. Gopal. (2016): Pipes, pools, and filters: How collaboration networks affect innovative performance. *Strategic Management Journal* 37(8) 1649-1666.

Tsai, W. (2001): Knowledge transfer in intraorganizational networks: Effects of network position and absorptive capacity on business unit innovation. *Academy of Management Journal* 44(5) 996-1004.

Whittington, K.B., J. Owen-Smith, W.W. Powell. (2009): Networks, propinquity, and innovation in knowledge-intensive Industries. *Administrative Science Quarterly* 54(1) 90-122.

Wang, C., S. Rodan, M. Fruin, X. Xu. (2014): Knowledge networks, collaboration networks, and exploratory innovation. *Academy of Management Journal* 57(2) 484-514.

Day 2: Innovation, projects, and networks

The informal side of innovation and networks: key individual roles in innovation networks, champions, relationship promoters, technological gatekeepers, and project managers as networkers.

Gemünden, H. G., Salomo, S. and Hölzle, K. (2007): Role Models for Radical Innovations in Times of Open Innovation. *Creativity and Innovation Management*, Vol. 16, pp. 408-421.

Rese, A., Baier, D. and Gemünden, H. G. (2013): Too many Cooks Spoil the Broth: Key Persons and Their Roles in Inter-Organizational Innovations. *Creativity and Innovation Management*, Vol. 22, No. 4, 390-407.

Walter, A., Parboteeah, K. P., Riesenhuber, F., and Högl, M. (2011): Championship Behaviors and Innovation Success. An Empirical Investigation of University Spin-Offs. *Journal of Product Innovation Management*, 28 (4), pp. 586-598.

The organizational side of innovation and networks, i.e. network competence, and its antecedents and performance effects.

Ritter, T. and Gemünden, H. G. (2003): Network Competence: It's Impact on Innovation Success and its Antecedents. *Journal of Business Research*, Vol. 56, No. 9, S 745-755.

Ritter, T. and Gemünden, H. G. (2004): The Impact of a Company's Business Strategy on its Technological Competence, Network Competence and Innovation Success. *Journal of Business Research*, Vol. 57, No. 5, pp. 548-556.

Walter, A., Auer, M. und Ritter, T. (2006): The impact of network capabilities and entrepreneurial orientation on university spin-off performance. *Journal of Business Venturing*, Vol. 21, pp. 541–567

The role of project and program characteristics in managing networks, the ability and limitations to control international R&D programs by means of a design structure matrix, the usefulness of combining weak and strong ties.

Kratzer, J., Gemünden, H. G. and Lettl, C. (2008): Revealing the Dynamics and their Consequences of Formal and Informal Networks in Multi-institutional Product Development collaborations. *Research Policy*, Vol. 37, pp. 1356-1370.

Michelfelder, I. and Kratzer, J. (2013): Why and How Combining Strong and Weak Ties within a Single Interorganizational R&D Collaboration Outperforms Other Collaboration Structures. *Journal of Product Innovation Management*, Vol. 30(6), pp. 159–1177.

Innovation networks and open innovation in project-based settings

Gann D. M. and Salter, A. J. (2000): Innovation in project-based, service-enhanced firms: the construction of complex products and systems. *Research Policy*, Vol. 29, pp. 955–972.

Laursen, K., and Salter, A. J. (2006). Open for innovation: the role of openness in explaining innovation performance among UK manufacturing firms. *Strategic Management Journal*, 27(2), pp. 131-150.

Day 3: Creating a synthesis and future outlook

Alvesson, M. & J. Sandberg (2011): "Generating research questions through problematization," *Academy of Management Review*, 36(2): 247-271.

Bakker, R.M., DeFillippi, R.J., Schwab, A., Sydow, J. (2016): "Temporary organizing: promises, processes, problems." *Organization Studies*. 37(12), 1703-1719.

Engwall, M. (2003): "No project is an island: linking projects to history and context." *Research Policy* 32, 789-808.

Grabher, G. and O. Ibert (2011): "Project ecologies: A contextual view on temporary organizations." In P. Morris, J. Pinto and J. Söderlund (Eds.), *Oxford Handbook of Project Management*, Oxford: Oxford University Press.

Lindkvist, L. (2005): "Knowledge Communities and Knowledge Collectivities: A Typology of Knowledge Work in Groups." *Journal of Management Studies*, 42(6), pp. 1189-210.

Manning, S. (2017): "Managing Projects and Teams in Inter-organizational Contexts: The Rise of Project Network Organizations." *Research Policy*. 46, 8: 1399-1415.