

# Innovative Ventures, Enterprises & Clusters

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**August 19-23, 2024**

## **Lecturer**

*Timo Mitze. I am an associate professor for Economics at the University of Southern Denmark. My current teaching and research activities relate to Innovation Economics & Management, International Business Studies, Urban & Regional Economics, and Applied Data Analysis.*

## **Course objectives**

Think of Tesla, Novo Nordisk and OpenAI and ask yourself the questions: What are key factors behind entrepreneurial decisions to incorporate innovative ideas and technologies into new ventures? Under what conditions do these risky ventures eventually grow to successful multinational enterprises dominating entire industries and international markets? And what do strategic business location decisions have to do with this? This course tries to equip students with essential competences to answer these questions. Key goals are to understand i) why research, development, and innovation (RD&I) are essential for business and performance and ii) how innovative activities can be effectively managed in new ventures, established firms and innovative clusters.

To achieve these goals, the course draws equally on insights from economics and management science dealing with topics such as 1) entrepreneurship, 2) firm dynamics and growth and 3) location and network theory. Establishing a close link between these theories is motivated by the observation that RD&I activities typically exhibit distinct geographical patterns and mainly concentrate in hot spots such as the Silicon Valley in IT, social media and AI, the European biotech and life-science clusters and the Ruhr Valley for Green Energy and Industry 4.0. Further topics included are: Intellectual property (IP) protection, patent systems, patent portfolio management, open innovation, digitalization of business models, innovation, and cluster policy etc. The course works with theoretical and empirical materials on equal footing.

## **Course content**

The course is split into two parts. However, I will always make sure to outline overlaps and commonalities between these parts when dealing with real-world business phenomena. In order to provide a comprehensive understanding of these phenomena, the course makes electively use of different methods and concepts from the field of economics, management science and data analysis as outlined above.

*Part I: Innovation Economics and Management*

Concepts of Innovation • Modelling Innovation Processes • Disruptive Innovation • Entrepreneurship and Innovative Ventures • Management of Innovation • Effects of Innovation on Enterprises and Markets • Innovation Policy

*Part II: Location Theory and Clusters Analysis*

Geography of Innovation • Spatial Location Decisions of Firms • Mapping High-Tech Clusters: Tools and Applications • Managing Clusters • Cluster Life Cycle • Cluster Effects and Policy

**Prerequisites**

*There are no particular prerequisites for course participation. It is intended that students can start from their individual study background to deepen their knowledge on applied innovation, entrepreneurship, and business cluster research. However, students should be familiar with basic economic and management concepts. It is helpful (but not needed) that students have some prior knowledge in applied data analysis. Skills in MS Excel, Stata or similar statistical software packages are welcome.*

**Instructional methods**

The course is based on a mix of classical lectures, applied data analysis and supervised group work. It is planned that the students present and discuss the results of their group work during the last day of the BISS.

**Reading list**

(\*) = Mandatory for all students; (M) = Master students only

Atkinson, R.; Ezell, S. (2012): *Innovation Economics: The Race for Global Advantage*, Yale University Press: Yale.

(M) Baptista, R.; Swann, P. (1998): Do Firms in Cluster innovate more? in: *Research Policy*, Vol. 27, pp. 525-540.

Berger, T.; Chen, C.; Frey, C. (2018): Drivers of disruption? Estimating the Uber effect, in: *European Economic Review*, Vol. 110, pp. 197-210.

(M) Cappelli, R.; Corsino, M.; Laursen, K.; Torrisi, S. (2023): Technological competition and patent strategy: Protecting innovation, preempting rivals and defending the freedom to operate, in: *Research Policy*, Vol. 52(6), 104785.

(M) Chesbrough, H.; Crowther, A.K. (2006): Beyond high tech: early adopters of open innovation in other industries, in: *R&D Management*, Vol. 36(3), pp. 229-236.

(\*) Christensen, C.; Raynor, M.; McDonald, R. (2015): What is disruptive innovation? in: *Harvard Business Review*, December 2015: 44-53

Duranton, G.; Martin, P.; Mayer, T.; Mayneris, F. (2010): *The Economics of Clusters*, Oxford University Press: Oxford.

(\* Engel, J. (2014): *Global Clusters of Innovation*, Edgar Elgar, Chapter 1 (plus selected cases).

(\* Gilardoni, E. (2007): Basic approaches to patent strategy, in: *International Journal of Innovation Management*, Vol. 11(3), pp. 417-440.

Grönlund, J.; Rönberg Sjödin, D.; Frishammar, J. (2010): Open Innovation and the Stage-Gate Process: A Revised Model for New Product Development, in: *California Management Review*, Vol. 52(3), pp. 106-131.

Kline, S. J.; Rosenberg, N. (1986): An overview of innovation, in: Landau, R.; Rosenberg, N. (Eds.): "The positive sum strategy: harnessing technology for economic growth", Washington DC, National Academic Press, pp. 275-305.

McCann, P. (2006): *Modern Urban and Regional Economics*, 2nd edition, Oxford University Press: Oxford.

OECD (1999): *Boosting Innovation: The Cluster Approach*, available at: [http://www.oecd-ilibrary.org/science-and-technology/boosting-innovation\\_9789264174399-en](http://www.oecd-ilibrary.org/science-and-technology/boosting-innovation_9789264174399-en)

OECD (2001): *Innovative Clusters: Drivers of National Innovation Systems*, available at: [http://www.oecd-ilibrary.org/science-and-technology/innovative-clusters\\_9789264193383-en](http://www.oecd-ilibrary.org/science-and-technology/innovative-clusters_9789264193383-en)

(\* OECD (2005): *OSLO Manual. Guidelines for Collecting and Interpreting Innovation data*, 3rd edition, Paris: OECD, available at: <http://www.oecd.org/sti/inno/oslomanual-guidelinesforcollectingandinterpretinginnovationdata3rdedition.htm>

(\* Porter, M. (2000): Location, Competition and Economic Development: Local Clusters in a Global Economy, in: *Economic Development Quarterly*, 14(1), pp. 15-34.

(\* Rogers, E. (2003). *Diffusion of Innovation*. Fifth edition, Free Press: New York et al.

(\* Swann, P. (2009): *The Economics of Innovation*, Edgar Elgar Publishing.

Toole, A.; Chaki, K.; Hannon, C. et al. (2020): *Inventing AI: Tracing the diffusion of artificial intelligence with U.S. patents*, U.S. Patent and Trademark Office, IP Data Highlights No. 5, available at: <https://www.uspto.gov/sites/default/files/documents/OCE-DH-AI.pdf>

### **Time schedule**

7 hours of teaching per day (an hour lasts 45 minutes).

*Morning:* Lecture from 08.45 to 10.15; break from 10.30 to 10.45, and another lecture 10.30-12.00. *Lunch break:* 12.00-13.00. *Afternoon:* Lectures from 13.00 to 14.30 and 14.45 to 15.30. *Afterwards:* supervised group work.

### **Assessment**

The assessment of the study performance is organized as follows: 1) Group work – class presentation and written summary (50%); 2) written exam based on general course curriculum (50%). Please note: The workload of the exam differs for bachelor and master students.