

Syllabus

Course description

Course title	INNOVATION MANAGEMENT Course Description version 1.0
Course code	27238
Scientific sector	SECS-P/08
Degree	Master Entrepreneurship and Innovation
Semester and academic year	2nd semester, ay 2020-21
Year	1 st study year
Credits	9
Modular	No

Total lecturing hours	54
Total lab hours	--
Total exercise hours	
Attendance	suggested, but not required
Prerequisites	not foreseen
Course page	https://www.unibz.it/en/faculties/economics-management/master-entrepreneurship-innovation/course-offering/

Specific educational objectives	<p>The course refers to the typical educational activities and belongs to the scientific area of Business Administration.</p> <p>To learn models, tools, methods to manage innovation within organizations. To develop critical and analytical reasoning about firms innovation management. To analyze and solve problems that arise in organizations that work on innovative projects. To learn how read, summarize and present scientific papers on innovation management.</p>
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Lecturer	<p>Alessandro Narduzzo, E508, anarduzzo@unibz.it; lecturer's page https://www.unibz.it/en/faculties/economics-management/academic-staff/person/5125-alessandro-narduzzo</p> <p>Siavash Farahbakhsh https://www.unibz.it/en/faculties/economics-management/academic-staff/person/36260-siavash-farahbakhsh</p>
Scientific sector of the lecturer	SECS-P/08
Teaching language	English
Office hours	please refer to the lecturer's web page
Lecturing assistant	Not foreseen
Teaching assistant	Not foreseen
Office hours	27
List of topics covered	Innovation in a systemic view - Sources of innovation – Types of innovation – Patterns and models of innovation – Technological cycles – Technological

	speciation – Managing innovation with power laws distributions – Design and decision attitudes to innovation - Management innovation – Innovation management tools - Design Thinking for Strategic Innovation - Managing open innovation - Innovation management in complex systems - Managing innovation through experimentation - Managing innovation through improvisation - Championing innovation - Building innovative organizations – Managing complex innovative projects – Chief innovation officers: present and future perspectives.
Teaching format	The course is based on both theoretical lectures and the discussion of case-studies and other empirical materials, and it requires the active participation of students in class discussions.

Learning outcomes	<p>Knowledge and understanding of innovation as a systemic phenomenon involving the creation and the development of novel organizational knowledge that is commercialized into innovative products and services. Applying knowledge and understanding to confront and analyse different models, to suggest the proper tools for specific situations, to understand how new products, organizational knowledge and managerial approach to innovation may create new value for the customers and new opportunities for the firm.</p> <p>Making critical and autonomous judgments in the analysis of empirical cases of innovation and in the comparison of theoretical models and perspectives. Communication skills to describe concepts and models and to present in a persuasive and proper way the results of critical analyses of innovation cases.</p> <p>Learning skills to deepen in an autonomous way a critical understanding of theoretical models on innovation and of the complex interaction between entrepreneurship and innovation.</p>
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Assessment	<p><i>Attending students are expected to join the team of experts on one of the topics (from 4 on) within March 26.</i></p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">WORKLOAD FOR ATTENDING STUDENTS</th> <th colspan="3">WORKLOAD FOR NON-ATTENDING STUDENTS</th> </tr> <tr> <th>Hours</th> <th>#</th> <th>Total</th> <th>Hours</th> <th>#</th> <th>Total</th> </tr> </thead> <tbody> <tr> <td>Lectures</td> <td>3</td> <td>14</td> <td>42</td> <td></td> <td>0</td> <td>0</td> </tr> <tr> <td>Readings</td> <td>3</td> <td>25</td> <td>75</td> <td>3</td> <td>45</td> <td>135</td> </tr> <tr> <td>Presentation and Workshop</td> <td>9</td> <td>1</td> <td>9</td> <td></td> <td></td> <td>0</td> </tr> <tr> <td>Wrap-up report</td> <td>10</td> <td>1</td> <td>10</td> <td></td> <td></td> <td>0</td> </tr> <tr> <td>Exam preparation</td> <td>2</td> <td>19</td> <td>38</td> <td>2</td> <td>19</td> <td>38</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>0</td> </tr> <tr> <td>TOTAL (hours)</td> <td></td> <td></td> <td>174</td> <td></td> <td></td> <td>173</td> </tr> <tr> <td>Standard effort (hours)</td> <td></td> <td></td> <td>175</td> <td></td> <td></td> <td>175</td> </tr> </tbody> </table>		WORKLOAD FOR ATTENDING STUDENTS			WORKLOAD FOR NON-ATTENDING STUDENTS			Hours	#	Total	Hours	#	Total	Lectures	3	14	42		0	0	Readings	3	25	75	3	45	135	Presentation and Workshop	9	1	9			0	Wrap-up report	10	1	10			0	Exam preparation	2	19	38	2	19	38							0	TOTAL (hours)			174			173	Standard effort (hours)			175			175
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Assessment language	English
Evaluation criteria and criteria for awarding marks	<p><i>Attending students' evaluation.</i></p> <p><i>The program covers the required readings ONLY:</i></p> <ul style="list-style-type: none"> • <i>Final exam (evaluated at least 18/30): 50%</i> • <i>Class Workshop Practicing Theory: 20%</i> • <i>Wrap-up paper: 30%</i>

Workshop Practicing Theory. Groups (max 3 students) choose among the topics listed in the syllabus the one they want to become experts. We want to practice these concepts, to understand their analytic power, their impact on decision making. Any type of exercise/simulation/discussion, that allow to understand how the key-concepts can be used, is appropriate. Workshops are meant to stimulate interactions among the students and are expected to last 30-40 minutes. To design the exercises/workshops you are invited to consult prof. Narduzzo in advance, during the office hours. To evaluate this task the following criteria are used:

1. Relevance of the topic selected for the exercise/workshop.
2. Ability to provide and stimulate insightful reasoning and reflections on the selected topic and on connections with other related topics.
3. Ability to involve the class.
4. Time management.

Wrap-up report: The paper (about 2,000 words) summarizes:

- a) the main issues (e.g. concepts, problems, phenomena) presented and discussed,
- b) explains in what sense this topic changes the way we think about innovation management,
- c) describes the workshop designed and used in class to practice with that topic.

The report is a stand-alone document: please include all the relevant references and (in Harvard format) and other details that make the document complete. Think about these reports as documents that you upload on MEI Linked-in group to provide a state of the art on the topic you are covering.

Deadline to uploading the report on the Teams platform: June 14

Non-attending students' evaluation.

Non-attending students do not have to write any report or assignment.

Final exam: 100%. The program covers **both required AND Supplementary readings** listed in this syllabus. To evaluate non-attending students' preparation, final exams for attending and non-attending students do not have exactly the same questions.

Final exam is an **open-book written exam** (90 minutes) and consists of open questions to assess the acquisition of both knowledge and analytical competencies. A case will be made available on the Reserve Collection before the exam. Students are expected to read the case in advance. Some questions assess the students' ability to use the acquired knowledge to analyze the case.

In case the written exam provides contradictory elements about the level of learning outcomes achieved by a student, the lecturer can decide to schedule an **integrative oral exam** within 15 days from the written exam date.

Required and supplementary readings

Schilling M. 2013. Strategic management of technological innovation. 4thed. Mc Graw-Hill. **ONLY the Selected Chapters** indicated for each topic of this course. List of readings for each topic of the course is provided below. **For each topic, readings are listed in the suggested order of reading.**

For each topic readings are listed in the suggested order of reading.

1. Innovation, innovative firms, innovation management – An introduction

Why does innovation matter? How practitioners and scholar think about innovation? Why and how do organizations want to manage the innovation journey. This first session introduces the framework adopted in this course to approach innovation and select the topics.

- AA.VV., 2013. *Unleashing the power of innovation*, PWC Report retrieved from: http://www.pwc.com/gx/en/innovationsurvey/files/innovation_full_report.pdf

Supplementary readings:

- Schilling 2013, **Chapter 2.**
- Baregheh A., Rowley J., & S. Sambrook. 2009. *Towards a multidisciplinary definition of innovation. Management Decision*, 47, 8, 1323-1339.
- McKinsey Global Survey. 2007. *How companies approach innovation*, The McKinsey Quarterly.

Suggested readings:

- A McKinsey Global Survey. 2010. *Innovation and commercialization*, The McKinsey Quarterly.
- Cheng, J.Y.J. and Groysberg, B., 2018. *Innovation Should Be a Top Priority for Boards. So Why Isn't It?. Harvard Business Review (website).*
- Wong, P.K., Viardot, E., Brem, A. and Chen, J., 2019. *The Routledge Companion to Innovation Management*. Routledge.
- Garud R., Tuertscher P. & A.H. Van de Ven. 2015. *Business Innovation Processes*, in Zhou, J., 2015. *The Oxford Handbook of Creativity, Innovation, and Entrepreneurship*. Oxford University Press, pp. 339-352.

2. Innovation management: problems, myths, traps

This class offers a problematic perspective to frame the management of innovation management both as a phenomenon and as a domain of expertise; any further theorizing can be reconnected to this ground.

- Van de Ven A.H. 1986. *Central Problems in the Management of Innovation. Management Science*, 32, 5, 590-607.
- Mendonca, L.T., Sneider, K.D. 2007. *Coaching innovation: An interview with Intuit's Bill Campbell. The McKinsey Quarterly. February.*

Supplementary readings:

- Tidd, J. and Bessant, J., 2018. *Innovation management challenges: From fads to fundamentals. International Journal of Innovation Management*, 22(05), p.1840007.
- Williams T.M. 1999. *The need for new paradigms for complex projects, International Journal of Project Management Vol. 17, No. 5, pp. 269-273.*

Suggested readings:

- Birkinshaw J., Bouquet C., & J.L. Barsoux. 2011. *The 5 Myths of Innovation. MIT Sloan Management Review*, 52, 2, 43-50.

- Kanter, R.M., 2006. *Innovation: the classic traps*. *Harvard business review*, 84(11), pp.72-83.

3. Innovation: models and conceptualizations

In this class we review and discuss well-known definitions, conceptualizations and models. Concepts and models provide complementary perspectives to understand innovation phenomena through multiple lenses.

- Schilling 2013, **Chapter 3**.

Supplementary readings:

- Bagno, R.B., Salerno, M.S. and da Silva, D.O., 2017. *Models with graphical representation for innovation management: a literature review*. *R&D Management*, 47(4), pp.637-653.
- Bessant, J., Lamming, R., Noke, H. and Phillips, W., 2005. *Managing innovation beyond the steady state*. *Technovation*, 25(12), pp.1366-1376.
- Eveleens, C., 2010. *Innovation management; a literature review of innovation process models and their implications*. *Science*, 800(2010), pp.900-916.

Suggested readings:

- Keupp, M.M., Palmié, M. and Gassmann, O., 2012. *The strategic management of innovation: A systematic review and paths for future research*. *International journal of management reviews*, 14(4), pp.367-390.
- Kline, S.J. and Rosenberg, N., 2010. *An overview of innovation*. In *Studies On Science And The Innovation Process: Selected Works of Nathan Rosenberg* (pp. 173-203).
- Phillips, F.Y., 2016. *The circle of innovation*. *Journal of Innovation Management*, 4(3), pp.12-31.
- Leonard, D., Barton, G. and Barton, M., 2013. *Make yourself an expert*. *Harvard business review*, 91(4), pp.127-31.

4. Managing innovation in open systems

To innovate, firms often need to draw from various outside sources of knowledge. At the same time, they also need to be focused on capturing returns to their innovative ideas. This gives rise to a paradox of openness - the creation of innovations often requires openness and commercialization of innovations requires appropriability.

- Lichtenthaler, U. and Lichtenthaler, E., 2009. *A capability-based framework for open innovation: Complementing absorptive capacity*. *Journal of management studies*, 46(8), pp.1315-1338.
- Autio, E. and Thomas, L., 2014. *Innovation ecosystems : Implications for Innovation Management*. *The Oxford handbook of innovation management*, pp.204-288.
- Spithoven, A., Clarysse, B. and Knockaert, M., 2011. *Building absorptive capacity to organise inbound open innovation in traditional industries*. *Technovation*, 31(1), pp.10-21.

Supplementary readings:

- Nambisan S., & M. Sawhney. 2011. *Orchestration processes in network-centric innovation: Evidence from the field*. *The Academy of Management Perspectives*, 25(3), 40-57.
- Garriga, H., von Krogh, G., & Spaeth, S. 2013. *How constraints and knowledge impact open innovation*. *Strategic Management Journal*, 34(9): 1134-1144.
- Adner, R., & Kapoor, R. 2015. *Innovation ecosystems and the pace of substitution: Re-examining technology S-curves*. *Strategic Management Journal*.

- Spithoven, A., Vanhaverbeke, W. and Roijackers, N., 2013. Open innovation practices in SMEs and large enterprises. *Small business economics*, 41(3), pp.537-562.
- Chiaroni, D., Chiesa, V. and Frattini, F., 2011. The Open Innovation Journey: How firms dynamically implement the emerging innovation management paradigm. *Technovation*, 31(1), pp.34-43.

Suggested readings:

- Lichtenthaler U. 2011. Open Innovation: Past Research, Current Debates, and Future Directions. *The Academy of Management Perspectives*, 25:1 75-93.
- Adner R. 2006. Match your innovation strategy to your innovation ecosystem. *Harvard business review*, 84(4), 98.
- van de Vrande V., J. P. J. de Jong, W. Vanhaverberke, & M. de Rochemont. 2009. Open innovation in SMEs: Trends, motives and managerial challenges, *Technovation*, 29, 423-437.
- Felin, T., & Zenger, T. R. 2014. Closed or open innovation? Problem solving and the governance choice. *Research Policy*, 43(5): 914-925.
- Huizingh, E.K., 2011. Open innovation: State of the art and future perspectives. *Technovation*, 31(1), pp.2-9.

5. Managing Innovation in a Pareto World

We discuss how managing innovation changes when firms make decisions in a world where most of the phenomena follow "power-law" distributions. How does this affect business and management decisions on innovation?

- Fleming, L., 2007. Breakthroughs and the "long tail" of innovation. *MIT Sloan Management Review*, 49(1), p.69.
- Spencer, R. and Woods, T., 2010. The long tail of idea generation. *International Journal of Innovation Science*.

Supplementary readings:

- Andriani, P. and Mckelvey, B., 2011. Managing in a Pareto world calls for new thinking. *M@n@gement*, 14(2), pp.89-118.

Suggested readings:

- Snowden, D., 2003. Innovation as an objective of knowledge management. Part I: The landscape of management. *Knowledge Management Research & Practice*, 1(2), pp.113-119.
- Cirillo, P. Taleb N.M. 2020. Tail Risk of Contagious Diseases. WP. URL: https://www.academia.edu/42307438/Tail_Risk_of_Contagious_Diseases

Practicing theory:

<http://scaledinnovation.com/analytics/simulations/bagrow-simulator.html>

6. Managing innovation as designing

How can ideas from design inform and improve management? And, how can designing complement analyzing and deciding as core managerial skills?

- Boland R. J. and Collopy, F. Design Matters for Management. In Boland R. J. and Collopy, F. ed., 2004. *Managing as designing* (pp. 3-18). Redwood City, CA: Stanford University Press.
- Weick, K.E., 2004. Designing for thrownness. In Boland R. J. and Collopy, F. ed., 2004. *Managing as designing* (pp. 74-78). Redwood City, CA: Stanford University Press.

Supplementary readings:

- Collopy Boland 2005 NextD_Journal_22_Managing_is_Designing_E

Suggested readings:

- Zott, C. and Amit, R., 2010. *Business model design: an activity system perspective. Long range planning*, 43(2-3), pp.216-226.

7. Managing innovation as exaptation

Innovation management through an evolutionary perspective. Innovation management consists of managing a system of interdependent and evolving components. Innovation as exaptation will be discussed.

- Adner R., & D. A. Levinthal. 2002. *The Emergence of Emerging Technologies. California Management Review*, 45, 1, 50-66.

Supplementary readings:

- Abernathy W. J., & J. M. Utterback. 1978. *Patterns of industrial innovation. Technology Review*, 80, 40-47.
- McCaffrey, T. and Pearson, J., 2015. *Find innovation where you least expect it. Harvard Business Review*, 93(12), pp.82-89.

Suggested readings:

- Bonifati G., 2010. 'More is different', exaptation and uncertainty: three foundational concepts for a complexity theory of innovation, *Economics of Innovation and New Technology*, 19:8, 743-760.
- Cattani G. 2006. *Technological pre-adaptation, speciation and the emergence of new technologies: How Corning invented and developed fiber optics. Industrial and Corporate Change*, 15, 2, 285-318.

8. Management innovation

Management innovation is the invention and implementation of a management practice, process, structure, or technique that is new to the state of the art and is intended to further organizational goals.

- Volberda, H.W., Van Den Bosch, F.A. and Heij, C.V., 2013. *Management innovation: Management as fertile ground for innovation. European Management Review*, 10(1), pp.1-15.

Supplementary readings:

- Hamel G. 2006. *The Why, What and How of Management of Innovation. Harvard Business Review*, February, 72-84.
- Damanpour F., & Aravind D. 2012. *Managerial Innovation: Conceptions, Processes, and Antecedents, Management and Organization Review*, 8, 2, 423-454.

Suggested readings:

- Grant R. M. 2008. *The Future of Management: Where is Gary Hamel Leading Us?, Long Range Planning*, 41, 469-482.
- Wu L-Y. 2010. *Which companies should implement management innovation? A commentary essay. Journal of Business Research*. 63, 321-323.

9. Innovation management: techniques and tools

We review a repertoire of tools traditionally adopted by firms to manage innovation. We discuss to what extent they cope with the problems introduced in Class 3. In particular, we wish to focus on those tools that deal with complexity and

uncertainty.

- Hidalgo A., & Albors J. 2008. *Innovation management techniques and tools: a review from theory and practice*. *R&D Management*, 38, 2, 113-127.

Supplementary readings:

- Ilevbare, I.M., Probert, D. and Phaal, R., 2013. *A review of TRIZ, and its benefits and challenges in practice*. *Technovation*, 33, 2, pp.30-37.

Suggested readings:

- Phaal R., Farrukh C.J.P., & Probert D.R. 2006. *Technology management tools: concept, development and application*. *Technovation*, 26, 336–344.

Practicing the exam I

Students are asked to read in advance the case Netflix (available on Teams)

10. Innovation management: innovation measurements

Measuring innovation is a tricky issue. On the one hand, there is a need to assess the impact of innovation; on the other hand, the complexity of the phenomenon suggests avoiding simplistic solutions. The most common measures of innovation look at inputs (e.g. intensity of R&D investment) or outputs (e.g. number of patents). The approach proposed for this class proposes to extend this repertoire by including the assessment of the innovation as a process.

- Gamal D. 2011. *How to measure organizational innovativeness? An overview of Innovation framework and Innovation audit*. TIEC.)

Supplementary readings:

- Melendez, K., Dávila, A. and Melgar, A., 2019. *Literature Review of the Measurement in the Innovation Management*. *Journal of technology management & innovation*, 14(2), pp.81-87.

Suggested readings:

- Adams R., J. Bessant, & R. Phelps. 2006. *Innovation management measurement: A review*, *International Journal of Management Review*, 8, 1, 21-47.
- Morris L. 2011. *Innovation metrics*. In *Innovation Master Plan: the CEO's guide to innovation*. www.innovationlabs.com
- Kylliäinen 2018 *Measuring Innovation – The Definitive Guide to Innovation Management KPIs*.

15. Managing innovative complex projects

After having explored specific aspects of the management of innovation, is now time to step back and widen up our understanding of innovation as a collective and organized achievement. Innovation is often institutionalized and developed within a project-based framework, characterized by clear goals and high uncertainty.

- Dougherty, D., 2017. *Organizing for innovation in complex innovation systems*. *Innovation*, 19(1), pp.11-15.
- Lenfle, S., Le Masson, P. and Weil, B., 2016. *When project management meets design theory: revisiting the Manhattan and Polaris projects to characterize 'radical innovation' and its managerial implications*. *Creativity and Innovation Management*, 25(3), pp.378-395.

Supplementary readings:

- DeFries, R. and Nagendra, H., 2017. *Ecosystem management as a wicked*

problem. Science, 356(6335), pp.265-270.

Suggested readings:

- Roehrich, J.K., Davies, A., Frederiksen, L. and Sergeeva, N., 2019. *Management innovation in complex products and systems: The case of integrated project teams. Industrial Marketing Management, 79, pp.84-93.*
- Khanagha, S., Volberda, H., Sidhu, J. and Oshri, I., 2013. *Management innovation and adoption of emerging technologies: The case of cloud computing. European Management Review, 10(1), pp.51-67.*
- Lane, D.A., 2011. *Complexity and innovation dynamics. Handbook on the economic complexity of technological change, 63.*
- Dougherty, D., 2017. *Taking advantage of emergence for complex innovation eco-systems. Journal of Open Innovation: Technology, Market, and Complexity, 3(3), p.14.*

11. Building innovative organizations: ambidexterity and improvisation

Firms may adopt organizational forms that are more suitable to support innovation. Through the concepts of organizational ambidexterity and organizational bricolage we discuss how firms may combine exploration and exploitation.

- Birkinshaw J., C. Gibson. 2004. *Building Ambidexterity Into an Organization. MIT Sloan Management Review, Summer, 47-55.*

Supplementary readings

- Schilling 2013, **Chapter 10.**
- Pina e Cunha M. 2005. *Bricolage in Organizations. FEUNL Working Paper #474.*

Suggested readings:

- Bock, A. J., Opsahl, T., George, G. & Gann, D. C. 2012. *The effects of culture and structure on strategic flexibility during business model innovation. Journal of Management Studies, 49(2): 279-305.*
- Lam A. 2004. *Organizational Innovation. In Fagerberg J., Mowery D., and R.R. Nelson. Handbook of Innovation. Oxford University Press.*
- Pina e Cunha M., Vieira da Cunha J., & K. Kamoche. 1999. *Organizational improvisation: what, when, how and why. International Journal of Management Reviews, 1, 3, 299-341.*

12. Building innovative organizations: knowledge and learning (to learn)

Build the habits and routines that lead to growth to break down the barrier to innovation.

Institutional leadership through coaching. Essentially, we define firms as organization of resources to create value: hierarchy, control, division of labour are traditionally the cornerstones of our way of thinking about firms. To what extent this approach fits with innovation?

- Anthony, S.D., Cobban, P., Nair, R. and Painchaud, N., 2019. *Breaking Down the Barriers to Innovation. Harvard Business Review, 97(6), pp.92-+.*
- Bunderson, J.S. and Sutcliffe, K.M., 2003. *When to put the brakes on learning. Harvard Business Review, 81(2), pp.20-21. Republished in 2019 Special Issue.*

Supplementary readings:

- Gino, F. and Staats, B., 2016. *Why Organizations Don't Learn. Harvard Business Review, 94(1-2), pp.24-24. Republished in 2019 Special Issue.*
- Andersen, E., 2016. *Learning to learn. Harvard Business Review.*

Suggested readings:

- Argyris C., 1991. *Teaching smart people how to learn*. Harvard Business.
- Ibarra, H. and Scoular, A., 2019. *The leader as coach*. Harvard Business Review, 97(6), p.110.
- Christensen U.L. 2019. *How to Teach Employees Skills They Don't Know They Lack*. Harvard Business Review, Winter, pp.76-77.
- Levitt, B. and March, J.G., 1988. *Organizational learning*. Annual review of sociology, 14(1), pp.319-338.

13. Building innovative organizations: psychological safety

Organizational culture may inhibit organization. Building a psychologically safe environment is regarded a contextual condition to nurture innovation.

- Edmonson A.C. 2011. *Strategies For Learning From Failure*. Harvard Business Review. April 48-55.

Supplementary readings:

- Delizonna, L., 2017. *High-performing teams need psychological safety. Here's how to create it*. Harvard Business Review, 8, pp.1-5.

Practicing Theory:

Task: Identify empirically tested solutions (i.e. processes, rules, devices) that organizations can adopt to create or enhance a psychologically safe environment. See Google's Project Aristotle

- <https://www.forbes.com/sites/zackfriedman/2019/01/28/google-says-the-best-teams-have-these-5-things/#1dacac175a30>

14. Managing innovation through experimentation

Innovation is conceived as a process of experimentation that is grounded on a trial-and-error logic. Its effectiveness depends on the organizations' ability to consistently adopt and adapt to this mindset.

- Thomke S. 2001. *Enlightened experimentation: The new imperative for innovation*. Harvard Bus. Rev. 79(2) 66–75.

Supplementary readings:

- Bojinov, I., Saint-Jacques, G. and Tingley, M., 2020. *Avoid the Pitfalls of A/B Testing Make sure your experiments recognize customers' varying needs*. Harvard Bus. Rev., 98(2), pp.48-53.

Suggested readings:

- Carpenter, S.R., Chisholm, S.W., Krebs, C.J., Schindler, D.W. and Wright, R.F., 1995. *Ecosystem experiments*. Science, 269(5222), pp.324-327.

Practicing the exam II

Students are asked to read in advance the case Tesla (available on Teams)

16. Design Thinking for Strategy

This approach to innovation combines creative and analytical approaches, and requires collaboration across disciplines. This process—which has been called design thinking—draws on methods from engineering and design, and combines them with ideas from the arts, tools from the social sciences, and insights from the business world.

- *Bason, C. and Austin, R.D., 2019. The Right way to lead design thinking. Harvard Business Review, 97(2), p.82+.*

Supplementary readings:

- *Carlgrén, L., Elmquist, M. and Rauth, I., 2016. The challenges of using design thinking in industry—experiences from five large firms. Creativity and Innovation Management, 25(3), pp.344-362.*

Suggested readings:

- *Fraser H. 2006. Turning Design Thinking into Design Doing, Rotman Magazine, Spring/Summer, 24-29.*
- *Micheli, P., Wilner, S.J., Bhatti, S.H., Mura, M. and Beverland, M.B., 2019. Doing design thinking: Conceptual review, synthesis, and research agenda. Journal of Product Innovation Management, 36(2), pp.124-148.*
- *Liedtka, J., 2015. Perspective: Linking design thinking with innovation outcomes through cognitive bias reduction. Journal of product innovation management, 32(6), pp.925-938.*
- *Glen, R., Suci, C. and Baughn, C., 2014. The need for design thinking in business schools. Academy of Management Learning & Education, 13(4), pp.653-667.*
- *Carlgrén, L., Rauth, I. and Elmquist, M., 2016. Framing design thinking: The concept in idea and enactment. Creativity and Innovation Management, 25(1), pp.38-57.*
- *Brown T. 2008. Design Thinking, Harvard Business Review, June, 1-11.*

17. Innovation Management in SMEs

To what extent the management of innovation changes because of the size of the firm? To what extent successful innovative SMEs define innovation goals and processes that differ from those set by large corporation?

- *Berends, H., Jelinek, M., Reymen, I. and Stultiëns, R., 2014. Product innovation processes in small firms: Combining entrepreneurial effectuation and managerial causation. Journal of Product Innovation Management, 31(3), pp.616-635.*

Supplementary readings:

- *Bigliardi, B. and Galati, F., 2016. Which factors hinder the adoption of open innovation in SMEs?. Technology Analysis & Strategic Management, 28(8), pp.869-885.*
- *Freel, M. and Robson, P.J., 2017. Appropriation strategies and open innovation in SMEs. International Small Business Journal, 35(5), pp.578-596.*

Suggested readings:

- *Mazzarol, T. and Reboud, S., 2020. Innovation in Small Firms. In Entrepreneurship and Innovation (pp. 131-164). Springer, Singapore.*
- *Santoro, G., Ferraris, A., Giacosa, E. and Giovando, G., 2018. How SMEs engage in open innovation: a survey. Journal of the Knowledge Economy, 9(2), pp.561-574.*
- *Pertuz, V. and Pérez, A., 2020. Innovation management practices: review and guidance for future research in SMEs. Management Review Quarterly, pp.1-37.*

18 Reinventing innovation management in a digital world

Models and practices for the management of innovation have been developed before the digital. How digital transformation is changing innovation management and strategic innovation management?

- Nambisan, S., Lyytinen, K., Majchrzak, A. and Song, M., 2017. *Digital Innovation Management: Reinventing innovation management research in a digital world*. *Mis Quarterly*, 41(1).
- Holmström, J., 2018. *Recombination in digital innovation: Challenges, opportunities, and the importance of a theoretical framework*. *Information and organization*, 28(2), pp.107-110.

Supplementary readings:

- Pisano, G.P., 2019. *The Hard Truth About Innovative Cultures*. *Harvard Business Review*.

Suggested readings:

- Pisano, G.P., 2015. "You Need an Innovation Strategy." *Harvard Business Review* 93, no. 6: 44–54.
- Henfridsson, O., Nandhakumar, J., Scarbrough, H. and Panourgias, N., 2018. *Recombination in the open-ended value landscape of digital innovation*. *Information and Organization*, 28(2), pp.89-100.

19. Chief Innovation Officers. What we know. What they do

We review and discuss the European framework of capabilities for innovation manager.

- Karlsson, M. and Magnusson, M., 2019. *The systems approach to innovation management*. In *The Routledge Companion to Innovation Management* (pp. 73-90). Routledge.
- Naden C., 2020. *Inspiring successful innovation with new international standard*, ISO Website.

Supplementary readings:

- Mir, M., Casadesús, M. and Petnji, L.H., 2016. *The impact of standardized innovation management systems on innovation capability and business performance: An empirical study*. *Journal of Engineering and Technology Management*, 41, pp.26-44.

Suggested readings:

- Pransky, J., 2018. *The Pransky interview: Daniel Theobald, Co-founder and Chief Innovation Officer, Vecna Robotics*. *Industrial Robot: An International Journal*.
- Huer, J.B., 2018. *Higher Education Technology Leadership: A Delphi Study*. Lamar University-Beaumont.
- Wedell-Wedellsborg, T., 2014. *What It Really Means to Be a Chief Innovation Officer*. *Harvard Business Review*
- <https://www.worth.com/10-questions-for-your-chief-innovation-officer/>

Laboratory on Complexity and Innovation Dynamics (12 hours)

We introduce Agent-based modeling (ABM) to explore and reflect on the complex dynamics that characterizes the management of innovation. We start analyzing the interdependencies, then we discuss the diffusion processes.

<to be confirmed by the lecturer>

- Garcia, R., 2005. *Uses of agent-based modeling in innovation/new product development research*. *Journal of Product Innovation Management*, 22(5), pp.380-398.
- Gilbert, N., Ahrweiler, P. and Pyka, A. eds., 2014. *Simulating knowledge dynamics in innovation networks*. Heidelberg: Springer.

Supplementary readings:

- Arthur, W.B., 1994. Inductive reasoning and bounded rationality. *The American economic review*, 84(2), pp.406-411.
- Gilbert, N., Ahrweiler, P. and Pyka, A., 2007. Learning in innovation networks: Some simulation experiments. *Physica A: Statistical Mechanics and its Applications*, 378(1), pp.100-109.
- Karlsson, M. and Magnusson, M., 2019. The systems approach to innovation management. In *The Routledge Companion to Innovation Management* (pp. 73-90). Routledge.

Suggested readings:

- Arthur, W.B., 1999. Complexity and the economy. *science*, 284(5411), pp.107-109.
- Holland, J.H., 2014. *Complexity: A very short introduction*. Oxford.
- Nowak, A., Szamrej, J. and Latané, B., 1990. From private attitude to public opinion: A dynamic theory of social impact. *Psychological review*, 97(3), p.362.
- Rogers, E.M., 2010. *Diffusion of innovations*. Simon and Schuster.
- Schelling, T.C., 1969. Models of segregation. *The American Economic Review*, 59(2), pp.488-493.
- Schelling, T. C. "Dynamic models of segregation." *Journal of mathematical sociology* 1, no. 2 (1971): 143-186.
- Snowden, D., 2003. Innovation as an objective of knowledge management. Part I: The landscape of management. *Knowledge Management Research & Practice*, 1(2), pp.113-119.
- Phelps, C., Heidl, R. and Wadhwa, A., 2012. Knowledge, networks, and knowledge networks: A review and research agenda. *Journal of management*, 38(4), pp.1115-1166.
- Carayannis, E.G., Grigoroudis, E., Campbell, D.F., Meissner, D. and Stamati, D., 2018. The ecosystem as helix: an exploratory theory-building study of regional co-opetitive entrepreneurial ecosystems as Quadruple/Quintuple Helix Innovation Models. *R&D Management*, 48(1), pp.148-162.

Review session

We use this class to review and reflect on the distance between theory and practice in the field of Innovation Management. If IM is a complex, in a context dominated by uncertainty, why practitioners continuously produce easy recipes for success?