

PhD Course DESTEC
Sustainable Ecosystems in the Digital Age
Paola Belingheri, RTD-A
(6 hours)

Abstract: Recent trends in digitalization and globalization have increased the need for firms to cooperate to offer increasingly sophisticated and flexible value propositions that can create value for diverse groups of customers. For this reason, many sectors are seeing the emergence of business ecosystems, a new type of market where groups of firms from different sectors and with complementary know-how, collectively contribute to a focal value proposition. This course will explore these new ecosystems, their building blocks, their competitive dynamics, and firm strategies that enable to compete sustainably in these new settings.

Each lesson will include a case-study, including, during the last lesson, an illustration of the results emerging from the research on electric vehicle ecosystems conducted in cooperation with DESTEC, the Vienna University of Economics and Business, the University of Klagenfurt and Sussex University.

Lesson 1 Introduction to Business Ecosystems: Creating and Capturing Value (2 hours, 13th October 2020)

- Introduction: definition of business ecosystems versus entrepreneurial ecosystems
- Business ecosystems' characteristics: modularity, complementarity, roles, and components
- Competition in business ecosystems: creating and capturing value through bottlenecks
- Case study: the smart cities ecosystem

Bibliography:

- Bremner, R. P., Eisenhardt, K. M., & Hannah, D. P. (2017). Business ecosystems. In Collaborative Strategy. Edward Elgar Publishing.
- Chan, B. & Paramel, R. (2018) The Smart City Ecosystem Framework – A Model for Planning Smart Cities, IIOT World. [<https://iiot-world.com/smart-cities-buildings-infrastructure/smart-cities/the-smart-city-ecosystem-framework-a-model-for-planning-smart-cities/>]
- Jacobides, M. G., Cennamo, C., & Gawer, A. (2018). Towards a theory of ecosystems. Strategic Management Journal, 39(8), 2255-2276.
- Kapoor, R. (2018). Ecosystems: broadening the locus of value creation. Journal of Organization Design, 7(1), 12.

Lesson 2: Digital Platforms (2 hours, 3rd of November 2020)

- Introduction: the platform revolution
- Network effects: platform growth
- Architecture and design: from the value chain to platform models
- Competitive strategy: why and how platforms outperform traditional markets
- Case Study: Borsino Rifiuti, a platform for waste reuse in the circular economy

Bibliography:

- Cusumano, M. A., Gawer, A., & Yoffie, D. B. (2019). The business of platforms: Strategy in the age of digital competition, innovation, and power. New York: Harper Business.
- Parker, G. G., Van Alstyne, M. W., & Choudary, S. P. (2016). Platform revolution: How networked markets are transforming the economy and how to make them work for you. WW Norton & Company.

Lesson 3: Bottlenecks and Innovation in Business Ecosystems (2 hours, 10th November 2020)

- Technology vs strategic bottlenecks and their relationship with value creation and value capture
- Upstream and downstream technology bottlenecks and their implications for firm innovation
- Competition, cooperation, and strategic bottlenecks
- Open innovation in business ecosystems
- Case Study: Who is shaping innovation in the electric vehicle ecosystem?

Bibliography:

- Adner, R., & Kapoor, R. (2010). Value creation in innovation ecosystems: How the structure of technological interdependence affects firm performance in new technology generations. *Strategic management journal*, 31(3), 306-333.
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- Hannah, D. P., & Eisenhardt, K. M. (2018). How firms navigate cooperation and competition in nascent ecosystems. *Strategic Management Journal*, 39(12), 3163-3192.
- Masucci, M., Brusoni, S., & Cennamo, C. (2020). Removing bottlenecks in business ecosystems: The strategic role of outbound open innovation. *Research Policy*, 49(1), 103823.
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Paola Belingheri is an Assistant professor at the School of Engineering, University of Pisa since 2018. Following a Master Degree Cum Laude in management engineering from University of Bologna, she obtained a PhD in Management from LUISS Guido Carli. She was a Post-doc researcher at the Vienna University of Economics and Business, in the Energy & Strategy Think-Tank, where she started researching firm strategy and innovation in the Electric Vehicle Ecosystem. She has also been a visiting researcher at the University of Sussex. At the University of Pisa she teaches business models and their innovation, ecosystem strategy, project management, and capital budgeting. She is a member of the Business Engineering for Data Science (B4DS) research team, and has set up the Gender Equality through Data Intelligence (GEDI) initiative together with the University of Bolzano and the University of Perugia.

Buona serata,