Libera Università Internazionale
degli Studi Sociali Guido Carli

LUISS

Syllabus

Academic Year	2021/2022
Program	Data Science and Management
course	Digital Ecosystems
Term	I semester
Year	1
SSD	SECS-P/10
Credits	6

INSTRUCTIONAL GOALS	The course will review and analyze current theories of ecosystems in the fields of Information Systems, Organization Studies and Business Strategy. Much of current ecosystem formation and the business relationships it entails evolve around the production, sharing, analysis and exchange of various data sources and types. The key objectives of the course would accordingly be to 1) analyze the ways by which data partake in the establishment of ecosystems and 2) provide an in-depth understanding of the wider technological and business environment within which data are generated and exchanged and data analytics, machine learning and more widely data science initiatives develop.
INTENDED LEARNING OUTCOMES They describe what a learner is expected to know, understand and be able to demonstrate after completion of a learning path.	**Knowledge and understanding**: The course will provide the conceptual frameworks and perspectives for the analysis of digital ecosystems. These will include the intellectual tools by which digital ecosystems can be accounted for, identified and demarcated from their environments and their joint operations mapped, tracked and governed. **Applying knowledge and understanding**: On successful completion of the course students will be able to: • Identify the forces (e.g. network effects) and processes (data complementarities) that drive digital ecosystem formation • Link practices of data generation and use to the forces and processes that drive ecosystem formation • Describe technological architectures that enable data generation and sharing and map them to the development of business relationships • Link data practices to business objectives and processes **Making judgements**: Students will be able to link the types of data that drive ecosystem formation to business needs and the services which ecosystem participants produce in conjunction with one another. The course will use several cases of ecosystems that are expected to help students link conceptual ideas and tools to real life situations and develop, tune and apply their analytical skills. **Communications Skills**: The course will provide students the key terms on the subject and acquaint them with the vocabularies, analytic strategies and descriptive resources used in the analysis of digital ecosystems.

	The course will pay due emphasis on active student participation, class talk, oral presentations but also written assignments. **Learning skills**: The course will entail a good deal of analytic techniques that are expected to give students the opportunity to develop their ability to analyze and map the technological and business forces that drive ecosystem formation. Blending workshop and practical cases the course will furthermore give students the necessary skills to apply knowledge and understanding to particular cases.
Pre-requisites	Basic knowledge of Information Systems, Organization and Business Studies
Course content	Introduction to Platforms and Ecosystems Complementarity and Ecosystem Formation Network Effects and Complementarity Complementarity and Service-oriented Architectures Data and Architecture Data, Value and Services Ecosystem Governance
Reference Books	The course will be based on collection of top journal articles and book excerpts in each of the themes of the course. Articles and other materials (cases) will be available through Luiss Learn. Here are some examples: • Adner, R. (2017) "Ecosystem as Structure: An Actionable Construct for Strategy", ***Journal of Management***, 43/1: 39-58. • Alaimo, C., Kallinikos, J, and Valderrama, E. (2020) "Platforms as Service Ecosystems: Lessons from Social Media", ***Journal of Information Technology***, 35/1: 25-48. • Alaimo,. C., Kallinikos, J. and Aaltonen, A. (2020) "Data and Value", in Nambisan, S. Lyytinen, K. and Yoo, Y. (eds.) ***The Handbook of Digital Innovation***, Cheltenham: Edward Elgar Publishing, 162-178. • Jacobides MG, Cennamo C and Gawer A (2018) "Towards a Theory of Ecosystems. ***Strategic Management Journal*** 39/1: 2255–2276. • Selander, L., Henfridsson, O., & Svahn, F. (2013) "Capability Search and Redeem across Digital Ecosystems", ***Journal of Information Technology***, ***28***(3), 183-187
Teaching Methods	The course will be based on lectures and classes organized around each one of the lecture topics. Classes will entail additional material and cases that will illustrate the key ideas presented on each lecture. Students will be encouraged to actively participate in the classes through questions, practical and theoretical elaborations
Assessment	Assessment will comprise 1) class participation 20% 2) written group assignments 40% and 3) oral examination 40% In the written group assignment students are required to demonstrate that they are able to: • describe technological architectures that enable data generation and sharing and map them to the development of business relationships; • link data practices to business objectives and processes; • link conceptual ideas and tools to real life situations and develop, tune and apply their analytical skills.. In the oral examination students are required to demonstrate that they are able to: • identify the forces (e..g, network effects) and processes that drive the formation of digital ecosystem formation; • link practices of data generation and use to the forces and processes that drive ecosystem formation The overall assessment will take into account the level of knowledge and understanding of the technological and business forces that drive ecosystem formation; their capacity for thinking creatively, innovatively, analytically and critically; their capacity to) analyze the ways by which data

	partake in the establishment of ecosystems; their understanding of the wider technological and business environment within which data are generated and exchanged; and their capacity to present effectively findings and conclusions.