

## **Innovation Ecosystems MGIT - 4109**

### **Professors**

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### **Overview**

The course offers a perspective on innovation ecosystems, networks in which new products, companies, and even industries arise out of a fluid web of interdependencies among disparate actors. Innovation requires not only technical mastery, but also the ability to create dynamic partnerships, explore possible futures, and generate quick-and-dirty prototypes. These are the elements of a design mindset that, in the words of the director of X, Google's famous Moonshot Factory, "unlocks the space and reframes the question."

There have been many attempts at replicating Silicon Valley in other regions of the world. Most have failed, as Silicon Valley is the product of a unique confluence of circumstances that cannot be replicated in time or in space. Rather than attempt to replicate a model that proved successful in Northern California, we must recognize that every region has its own unique set of assets, and that the challenge of innovators is to identify them, organize them, and light the fuse. Colombia is no exception.

"Innovation Ecosystems" is based on the premise that enacting change is not essentially a problem of building institutions (government agencies, venture capital funds and so on). These are necessary, but not sufficient. The fundamental shift that needs to take place—inside firms and in the interaction across firms in a region—entails the development of powerful interlocking capabilities for design, technology creation, and organizational renewal.

The course offers a framework for extracting deeper lessons—both positive and negative—from the Silicon Valley experience. A particular focus will be the role of design, understood here as a discipline, an organizational capability, and a way of thinking. In a unique, cross-cultural partnership, Professor Barry Katz of Stanford University, and Professor Rafael Vesga, of the Uniandes School of Management, will lead presentations and discussions that explore the relevance of the Silicon Valley experience to Colombia. Guests from organizations in Silicon Valley and other locations, including Colombia, will be invited to share their experiences and points of view.

Building on the Silicon Valley experience, the course will explore contemporary themes that may impact the formation of innovation ecosystems in the present and future business environment: emerging 4th Industrial Revolution technologies, the post-pandemic workplace, and the ever-present possibility of Black Swans.

Our common goal is to draw from the Silicon Valley experience actionable lessons for Colombia.

## Objectives

- Understand the influence that the emergence of interlocked organizational capabilities for Design, Engineering and Strategic Management can have on the development of transformational firms and regional innovation ecosystems.
- Derive lessons of the experience of Silicon Valley from this perspective.
- Explore implications of this approach upon Colombian firms and regions.

## Methodology

We are committed to active learning and collaboration. Indeed, if there is one lesson to be learned from the experience of Silicon Valley, it is that innovation is a team sport. Working in teams, students will develop a project that will be presented in the last session of the course.

Students will have two roles in the course: as team members and as “members of the board” of other teams. Participation in class discussions is of prime importance, as well as formal feedback provided by students in their roles as team members to other teams.

## Course plan

The course requires attendance to classes at Universidad de los Andes for every session. Classes will take place on 4-hour time slots, according to the schedule below.

Students will assemble in teams and work throughout the course in a project; the results will be presented in the final session, July 15th.

Sessions will consist of presentations by the lecturers, interventions by guests from Silicon Valley, international and Colombian firms, and workshops dedicated to building the components of the final project.

Class sessions will follow this schedule:

**Class schedule**

Date	Weekday	Hours	Topic
05/07/2022	Tuesday	8am-12pm	<i>Ecosystems of Innovation: Introduction</i> What is the difference between a “technology cluster” and an “innovation ecosystem.”
06/07/2022	Wednesday	8am-12pm	<i>The Silicon Valley Ecosystem (1)</i> Silicon Valley arose through a mixture of deliberate planning and accident, but it grew into a self-sustaining force.
07/07/2022	Thursday	8am-12pm	<i>The Silicon Valley Ecosystem (2)</i> The design industry played a crucial role in the development of Silicon Valley, but in a vastly expanded sense.
08/07/2022	Friday	8am-12pm	<i>Lessons from the Silicon Valley experience for Colombia</i> Silicon Valley mobilized a highly specific set of regional, cultural, and institutional assets. What are the actual and potential assets available to Colombia?
09/07/2022	Saturday	8am-12pm	<i>Intersections of Management, Engineering and Design in Colombia</i> Exploration of recent developments at Colombian firms, with emphasis on lessons to be learned from the Silicon Valley and international experience.
09/07/2022	Saturday	1pm-5pm	<i>Workshop on the Course Project</i> We will apply elements of a “Design Thinking” process—needfinding, ideation, iterative prototyping—to identifying possibilities
11/07/2022	Monday	8am-12pm	<i>The 4th Industrial Revolution</i> In 2017 the World Economic Forum dedicated itself to the idea that humanity has embarked upon a “4th Industrial Revolution,” characterized by the fusion of the physical, the digital, and the biological. We will analyze and test this proposition.
12/07/2022	Tuesday	8am-12pm	<i>The 4th Industrial Revolution, Colombia</i> How could Colombian firms have meaningful impact in a global environment defined by converging technologies and accelerated change? Spotlight on initiatives by firms and other actors in Colombia.
13/07/2022	Wednesday	8am-12pm	<i>Black Swans and the “unknown known”</i> A “black swan” is defined as an event of low probability and high impact, that was obvious in retrospect. Such as a global pandemic.
14/07/2022	Thursday	8am-12pm	<i>The “Great Re-Set:”</i> Already by the first year of the pandemic it was clear that its effects would be systemic, global, and permanent. Drawing upon the WEF’s 2020 projections, we will conclude by attempting to take stock of the present situation.
15/07/2022	Friday	8am-12pm	<i>Final Presentations</i> Student teams will present final projects.

## Grades

Grades will be assigned according to this schedule:

	Individual	Team	Weight (%)
Class participation	x		30
Board Member Feedback provided to teams	x		30
Final presentations		x	40

## Readings

Tim Brown and Barry Katz, *Change By Design* (2019 edition), chapter 11.

Katz, B. M. (2015). *Make it new: a history of Silicon Valley design*. MIT Press.

Martin, R., & Martin, R. L. (2009). *The design of business: Why design thinking is the next competitive advantage*. Harvard Business Press.

Nicholas Bloom, "Does Working from Home Work? Evidence from a Chinese Experiment" (<https://www.gsb.stanford.edu/gsb-box/route-download/364391>)

Niño-Ruiz E. et al (2020) *Colombia y la nueva revolución industrial*. Ministerio de Ciencia Tecnología e Innovación, 2020

Ross, A. (2016) . *The Industries of the Future*. New York City: Simon & Schuster.

Schwab, K. (2017). *The fourth industrial revolution*. Currency.

Schoemaker, P. J., Heaton, S., & Teece, D. (2018). Innovation, dynamic capabilities, and leadership. *California Management Review*, 61(1), 15-42.