

DePaul University - Kellstadt Graduate School of Business

GSB 525 – Business Innovation and Design

Spring 2021

Instructors: Rafael Tenorio and Gabriella Bucci

E-mail: rtenorio@depaul.edu and gbucci@depaul.edu (best way to reach us)

Important: As the term progresses, we may need to adjust some parts of the syllabus (e.g. due dates or instructions for assignments) to keep the course running smoothly and in a way that is manageable for all. We will continuously work toward creating an excellent for all of us.

Course Description

This course explores the role of innovation in organizations, markets, and society. An analysis of the forces behind creativity and innovation provides the foundation for understanding what determines successful innovation outcomes. Within organizations, the discussion focuses on people, including individual creativity, and process, such as Design Thinking, Lean Startup, Inventive Problem Solving, and others. The course also explores the role of creativity in the economy and the empirical measurement of innovation in order to provide a useful and pragmatic view. The approach is largely applied and experiential, and includes group and individual projects and exercises that allow students to be immersed in the creativity and innovation process.

While innovation and creativity methods and processes are widely used by practitioners, they are also studied by academics. Thus, in addition to practical methods and approaches we will also learn what academic research tells us about the effectiveness of different methodologies, the impact of various innovation policies, and how innovation fits within the firm's overall strategy.

Course Objectives

In this class, students will learn to:

1. Critically evaluate different measures of innovation and creativity.
2. Understand the role of market forces in identifying and evaluating innovation opportunities.
3. Gain insight into how market structure, regulation, contracting, and joint ventures affect the supply of innovation.
4. Analyze empirical evidence about innovation activity, creativity, and performance in order to identify processes that are more likely to lead to successful outcomes.

5. Explore, enhance and demonstrate your own creative and innovative abilities to generate ideas and solutions to problems and opportunities.
6. Apply team creative collaboration principles to identifying problems and opportunities
7. Develop a practical approach to driving innovation in the organization through Design Thinking, Inventive Problem Solving, behavioral Design, Lean Startup, and other complementary techniques and methodologies.
8. Analyze the leader's role in creating an organizational environment that fosters leading edge thinking by reducing barriers to creativity and building a culture to support innovation in the workplace.
9. Analyze the impact of Business Model Innovation and Disruptive Innovation on overall innovation outcomes and trends in the economy.

Course Format

We will conduct this online course in an online asynchronous format. This means that you are not required to be online at any specific time. You can work through each week's materials at your own pace but keep in mind that there will be group-based work and weekly deadlines for discussion posts and assignments. **We will post new weekly content on Mondays.**

Please make sure to have the necessary technical resources to be able to access course materials and complete assignments. If you do not have access to the following resources, please let us know immediately so that we can make accommodations for you:

- A computer that connects to the internet (web cam helpful but not required).
- A working DePaul email address. All communication goes through your DePaul email address. You can forward your DePaul email address to your personal email if you wish.
- Access to Microsoft Office or similar software.
- Ability to playback video files.

Office Hours/Contact Hours

We will conduct office hours in two ways:

-By appointment at a mutually convenient date and time. Please email us to make an appointment. We will do our best to reply as quickly as possible.

-Every Thursday, we will host a live Zoom call from 6 to 7 p.m. Central (Chicago) Time. This session is open to anyone who wants to join and ask questions about the class, talk about the innovation news of the day, and -in general- chat and get to know each other in a synchronous way. **This is not a required session, but we encourage you to attend when you can for as long or as short a time as you are available. This will enrich our class experience and build a sense of community.**

Materials

1. No required text.
2. No required readings.
3. Required lecture slides and videos posted on D2L.
 - a. The slides and videos are the core content for this class.
 - b. We expect you to carefully study and learn the content in these lectures and videos.
 - c. Some weeks our lectures are longer compared to other weeks. We present the topics and also review evidence for each topic.

We will use the D2L Discussion Boards most weeks.

If You Are Interested

Once again, there are no required readings for this class. However, some of you may be interested in further pursuing some of the topics we discuss in the lectures. For those who are interested, we have carefully curated readings about the topics we cover. Each week on the syllabus you will find a few 'If You Are Interested' readings. **These are for you to read only if you wish, and we will not test you on them.** These readings are meant to serve as a resource if you wish to dig deeper into some of the topics now or as you continue your MBA and beyond. Perhaps you will want to come back to some of this material in the future, to help you develop ideas for papers/projects in other classes, or to help with a project at work.

Grading

The grade you make is based on the following required components and weights:

| | |
|------------------------|-----|
| Case Reports | 30% |
| Discussion Boards | 20% |
| Course Project | |
| Foundation Report | 20% |
| Final Report and Video | 30% |

The grading scale in this course is:

| | | | |
|----|---------------|----|---------------|
| A | 93% and above | C | 73-76% |
| A- | 90-92% | C- | 70-72% |
| B+ | 87-89% | D+ | 67-69% |
| B | 83-86% | D | 60-66% |
| B- | 80-82% | F | 59% and below |
| C+ | 77-79% | | |

Description of Assignments

A. Case Reports (written in teams of three)

You will have two case reports due in weeks 4 and 9 (April 19 and May 24). The reports will be based on background information, lecture content, and questions that we post on D2L. Case reports are limited to a maximum of four pages (unless otherwise noted) and will be graded on a 10-point scale.

If a team member has not worked on a case report, that person's name may be omitted from the report. A team member may request to dissolve the group and work independently.

Case Report Requirements and Grading:

- a. Reports must incorporate relevant class material, demonstrating a deep understanding and knowledge of concepts and frameworks from class, applying them correctly to the case.
- b. There is no re-teaching of class material. Use the class material and concepts in your analysis without re-teaching them.
- c. Analysis in the report is positive (not normative) and shows a high level of independent, critical thinking, and thoughtfully addresses the case questions. A good description of what is positive and what is normative is [here](#).
- d. There are no unsubstantiated claims in the report.
- e. Report does not quote extensively from the case but explains things in your own words.
- f. Report is well organized.
- g. Report consistently uses active voice.
- h. Spelling, punctuation and grammar are accurate.

As reports deviate from the above criteria, the score on the report will be lower.

B. Discussion Boards—Individual grade

There will be required discussion board activities in weeks 1,2, 4, 5, and 7; and an optional board on week 8. Your discussion board grade will be an individual grade, and we will update it twice; midway through the course and at the end of the course.

Discussion Board Requirements and Etiquette:

- a. Posts demonstrate knowledge of the class concepts and are linked to evidence and/or course material.
- b. Adhere to the posting requirements. In general, each discussion board topic requires one comment, either as a thread or as a reply. Most weeks have two discussion board topics -- which means that you will write two total posts for the week, one for each topic.
- c. Timely -adhere to the time window set aside for each discussion, not posted at the last minute. Timely posting leads to productive discussions, in that it allows class members to respond to each other's comments. Posts will be marked down if they are consistently entered during the last hours the board is open.

- d. If your post is related to an existing thread, you must reply to the existing thread, not create a new thread.
- e. Respectful -even when there is strong disagreement.
- f. Stimulate thinking. Do not be afraid to challenge existing comments.
- g. Encourage others to provide evidence and/or refer to course concepts to support their arguments.
- h. Move the class understanding forward.

Posts that simply state “I agree” or “I was going to say the same thing” or repackage what a previous classmate said are not actually discussion posts and will not be credited as such.

Please do not write in all CAPS. If you want to emphasize a word or phrase you may write it in bold, italics, underline it, or put an asterisk before and after the word or phrase.

We will actively monitor the discussion boards and participate when we see fit. We will keep track of the posting requirements and the quality of your comments.

C. Final Project—written in your case report team of three

The purpose of the project is twofold:

- a. To learn more about the innovation process at a company, [open-source](#) community, or [maker-style environment](#) and,
- b. To use innovation methods or processes from class to develop two innovations that are relevant to your organization and that will be presented to management and/or investors in a 25-minute (max) video presentation. Each member of the team must appear and contribute to the video.

There are three deliverables for the project:

- a. Project Foundation Report -- due in Week 7, May 10, 11:59 p.m.
- b. Final Report -- due June 7, 11:59 p.m.
- c. Video in mp4 format (and accompanying pitch deck) – due June 7, 11:59 p.m.

(i) Project Foundation—due Week 7, May 10, 11:59 pm.

The purpose of the project foundation report is to introduce and describe the organization you have selected (subject to our approval), explain the innovation process, culture, and challenges in the organization, and identify needs or problems in the organization that can be solved through innovation.

Each team will submit a report that describes the organization and lays out the foundation for the final project. The report is limited to 6 pages maximum and must include the following:

- a. A description of the company, open-source community, maker-style project (we must approve your choice, please contact us), including recent accomplishments and innovations.
- b. Innovation culture, management, and incentives of the organization.

- c. Innovation challenges in the organization, such as financial, technical, political issues, the effect these have had on innovation, and how these challenges affect ongoing innovation processes.
- d. The role of technology-push and demand-pull in the organization's innovation processes.
- e. Other information about the research and development process and approach to innovation in the organization you select (this can include timeline, team composition and collaboration, how innovation is measured and tested, open vs, closed-source, role of end and lead users, idea collection processes, etc.)
- f. A preliminary look at the types of innovations that could improve this organization's competitive position. This may include problems or needs that new innovations may address going forward. This is not intended to be a deep dive (let's leave this for the final-final project).
- g. Division of parts of project—who will do what—with a short description of the opportunities and barriers for each role.

For a-f above you may use primary sources—interviews—or secondary sources like articles, reports etc.

Unless the team identifies a member who has not contributed (or only minimally contributed) to the report, the entire team will earn the same grade on the Project Foundation Report. A team may identify a member who has not (or only minimally) contributed to the report by leaving that person's name off the report, or by contacting Gabriella or Rafael to discuss the issue in advance.

(ii) Final Deliverables—due June 7, 11:59 pm.

Final Report—The purpose of the final report is to lay the groundwork for two innovations that you will present in the video pitch.

Your Final Report must include:

- a. Brief summary of the needs or problems you identified in your foundation report. You may have gathered more information or further thought about this and you may want to expand/modify the ideas you laid out in your foundation. Whether you have new information or not, please give a brief summary of those needs/problems.
- b. Customer segments including at least 2 personas (more if you want) that will inform your innovation ideas.
- c. The class methods or processes you have chosen to ideate and innovate, and why you selected them.
- d. Short but clear statement of your goals (3-4 sentences).
- e. A brief description of two innovations that address the problems or needs you identified in (a)
- f. How innovation will be measured and tested, and where the testing will take place. The time frame for prototype turnaround, A/B testing etc.
- g. Any other relevant aspects (especially those covered in the class).

Unless the team identifies a member who has not contributed (or only minimally contributed) to the report, the entire team will earn the same grade on the 6-page report. A team may identify a member who has not (or only minimally) contributed to the report by leaving that person's name off the report, or by contacting Gabriella or Rafael to discuss the issue. Teams will also provide peer- assessments of their contribution and their team members' contributions to the final deliverables.

Video and Pitch Deck – The Innovations:

The purpose of the video and pitch deck is to present your innovations to management or a group of investors. Your innovations. Must be relevant to your organization and can be products or processes

Your video must include:

- a. A detailed description of your innovations and why they are relevant for your organization. What needs/pain points are addressed by the innovations?
- b. The opportunities and barriers related to the innovations. This can include market opportunities or barriers, financing, marketing, technology, etc.
- c. How you will measure whether your innovations are successful or not including a description of experiments A/B tests etc.
- d. Timelines for testing, learning, adjusting and re-testing.
- e. If applicable, you can include a prototype in your presentation.

Limit is 25 minutes.

We will grade each team member individually in the video. If a team member is not in the video, we will assume that person did not contribute.

The Final Deliverables Score for each team member will be:

$$(Report\ grade + Individual\ video\ grade) / 2$$

Final Deliverables Due June 7 at 11:59 pm Central Time.

Schedule of Deliverables

| Assignment | Due Date. All are due at 11:59 pm Chicago time |
|---------------------------|---|
| Video Introduction | Week 3 April 12 (on discussion board) |
| Case Report 1 | Week 4 April 19 |
| Project Foundation | Week 7 May 10 |
| Case Report 2 | Week 9 May 24 |
| Final Deliverables | Week 11 June 7 |

Course Organization

The learning unit in this course is the week. The term has 10 instructional weeks, and we will follow a weekly schedule that begins on Monday (i.e., new lecture notes and videos and discussion questions will be posted on Mondays).

Academic Integrity

All work completed for this course must adhere to the University Academic Integrity Policy which you can review at <http://academicintegrity.depaul.edu>.

We may use **Turnitin** plagiarism detection technology for all written work submitted for this class to ensure the work is the student's (or group's) own creation and is not in violation of DePaul University's Academic Integrity Policy. Submission of work for this course constitutes (i) a pledge that the work is the student's own original work and (ii) consent to have the work submitted to verify that fact.

If you use any materials beyond the text and lecture videos in anything you write or submit for this course, you must cite them properly. Proper citation includes using quotation marks for all quoted text and adding references for anything you paraphrase.

Course Outline

Week 1 (March 29)

Introduction

- Coarse Roadmap
- Creativity, Design, and Innovation
- Role of Creativity and Innovation in the Economy
- Measuring Creativity, Innovation, and Innovation Outcomes
- Myths of Innovation

If You Are Interested:

- Kyllianen, The Importance of Innovation – What Does it Mean for Businesses and our Society? White Paper, *Viima*, 2019.
- Papa et. al., A Theoretical Approach to the Concept of Innovation, Managerial Challenges of the Contemporary Society, 2010.
- Gerguri and Ramadani, The Impact of Innovation into the Economic Growth, *MPRA Paper No. 22270*, 2010
- Berkun, The Ten Myths of Innovation: The Best Summary, 2013, retrieved from scottberkun.com, 2013.

Week 2 (April 5)

Supply of Innovation

- Demographics and Education
- Market Structure
- Innovation Policy and R&D
- IP and Control Rights
- Prizes and Contracting
- Open Innovation

If You Are Interested:

- Tam, How Immigrants Drive Entrepreneurship and Innovation, *Behavioral Scientist*, 2020.
- Amabile, Motivating Creativity in Organizations: On Doing what you Love and Loving what you Do, *California Management Review*, 1997.
- Simon and Shallone, Effects of Firm Size and Market Structures in Technological Innovation: A Review of Literature, *Journal of Sustainable Development Studies*, 2013.
- Bloom et. al., A Toolkit of Policies to Promote Innovation, *Journal of Economic Perspectives*, 2019.
- Belleflamme, Patents and Incentives to Innovate: Some Theoretical and Empirical Economic Evidence, *Ethical Perspectives: Journal of the European Ethics Network*, 2006.
- Chesbrough, The Era of Open Innovation, *MIT Sloan Management Review*, 2003.

Week 3 (April 12)

Demand for Innovation

- Market Pull Factors
- Identifying Opportunities
- End-User Approaches

If You Are Interested:

- Motoyama and Malizia, Demand Pull or Supply Push? Metro-level Analysis of Startups in the United States, *Regional Studies, Regional Science*, 2017.
- OVO, Identifying the Best Innovation Opportunities, White Paper, 2016.
- Schuurman, User Innovation, in *Bridging the Gap Between Open and User Innovation?: Exploring the Value of Living Labs as a Means to Structure User Contribution and Manage Distributed Innovation*, 2015.

*****Video Introduction due on Discussion Board.**

Week 4 (April 19)

Role of Management and Culture in Fostering Creativity and Innovation

- Management of Innovation
- Evidence-Based Approaches to Innovation
- Corporate Culture

-Leadership

*****Case 1 Due 11:59 pm**

If You Are Interested:

- Hamel, The Why, What and How of Management of Innovation, *Harvard Business Review*, 2006.
- Damanpour and Aaravind, Managerial Innovation: Conceptions, Processes, and Antecedents, *Management and Organization Review*, 2011.
- Rosing et. al., Explaining the Heterogeneity of the Leadership-Innovation Relationship, *The Leadership Quarterly*, 2011.
- Cameron and Quinn, The Competing Values Framework, in *Diagnosing and Changing Organizational Culture 3e.*, 2011.
- Tushman et. al., The Ambidextrous CEO, *Harvard Business Review*, 2011.

Week 5 (April 26)

Design Thinking

- The Design Thinking Process**
- Design Thinking Variations**
- Complementary Tools (Mind Mapping, Journey Mapping)**
- Fundamentals of Brainstorming and Ideation**

If You Are Interested:

- Brown and Wyatt, Design Thinking for Social Innovation, *Stanford Social Innovation Review*, 2010.
- Kolko, Design Thinking Comes of Age, *Harvard Business Review*, 2015.
- Liedtka, Why Design Thinking Works, *Harvard Business Review*, 2018.
- Berkun, How to Run a Brainstorming Meeting, retrieved from scottberkun.com, 2007.
- Dam and Siang, 14 Barriers to Ideation and How to Overcome Them, *Interaction Design Foundation*, 2020.
- Cy, Detailed Book Notes on 'Mind Mapping Mastery' by Tony Buzan, *Medium*, 2019.
- Temkin et. al., Mapping the Customer Journey, *Forrester*, 2010.

Week 6 (May 3)

Brainstorming and Ideation Techniques

- SCAMPER**
- Six Thinking Hats**
- Morphological Analysis and Brainstorming**

Behavioral Design

- The Behavior-Centered Design Model**
- Fogg's Behavior Model**
- Wendel's Behavior Change Model**

-Eyal's Hook Model

If You Are Interested:

- Dam and Siang, Learn How to Do the best Ideation methods: SCAMPER, *Interaction Design Foundation*, 2020.
- Rump, Six Thinking Hats, *Medium* (Various), 2019.
- McCaffrey and Pearson, Find Innovation Where You Least Expect It, *Harvard Business Review*, 2015.
- Sunstein, Nudging: A very Short Guide, *Journal of Consumer Policy*, 2014.
- Fogg, A Behavior Model for Persuasive Design, *Stanford University Persuasive Technology Lab*, 2009.
- Wendel, *Designing for Behavior Change* (Preface), 2013.
- Batterbee, How to Create Habit-Forming Products Using the Hook Model, *UX Collective*, 2020.

Week 7 (May 10)

Learn Startup

UX Design

If You Are Interested:

- Blank, Why the Lean Startup Changes Everything, *Harvard Business Review*, 2013.
- Blank, The Path to Epiphany: The Customer Development Model, in *The Four Steps to the Epiphany*, 2005.
- Kos, The Lean Startup Ultimate Guide – Everything you Need to Know About the Lean Startup, *AgileLeanLife.com*, 2017.
- Gallo, A Refresher on A/B Testing, *Harvard Business Review*, 2017.
- Minhas, User Experience Design Process, *Medium*, 2018.
- Gube, What is User Experience Design? Overview, Tools, and Resources, *Smashing Magazine*, 2010.

*****Project Foundation Due 11:59 pm**

Week 8 (May 17)

The Theory of Inventive Problem Solving (TRIZ)

If You Are Interested:

- Illevbare et. al., A Review of TRIZ, and its Benefits and Challenges in Practice, *Technovation*, 2013.
- Souchkov, TRIZ for Business and Management: State of the Art, *Proceedings of the TRIZ Developers Summit*, 2019.
- Souchkov, TRIZ for Business and Management: State of the Art, *Proceedings of the TRIZ Developers Summit*, 2019.

-Mann and Domb, 40 Inventive Principles for Business, *The TRIZ Journal*, 1999.

Week 9 (May 24)

Business Models and Business Model Innovation

- Business Model vs. Business Strategy
- Business Model Generation
- Osterwalder's Business Model Canvas
- Business Model Patterns
- Game-Changing Moves
- Paths to Business Model Innovation
- Open Business Models

*****Case 2 Due 11:59 pm**

If You Are Interested:

- Osterwalder and Pigneur, *Business Model Generation* Book Preview, 2010.
- Cassadesus-Massanell and Ricart, How to Design a Winning Business Model, *Harvard Business Review*, 2011.
- Strategyzer, Business Models, <https://www.strategyzer.com/expertise/business-models>, 2020.
- Chesbrough, Why Companies Should Have Open Business Models, *MIT Sloan Management Review*, 2007.
- Cuofano, Innovation in Business: What is Business Model Innovation, *FourWeekMBA*, 2020.

Week 10 (May 31)

Dynamics of Innovation

- Technology and Market Dynamics
- Disruptive Innovation and the Innovator's Dilemma

If You Are Interested:

- Christensen, Exploring the Limits of the Technology S Curve, Part I: Component Technologies, *Production and Operations Management*, 1992.
- Christensen, Exploring the Limits of the Technology S Curve, Part II: Architectural Technologies, *Production and Operations Management*, 1992.
- Christensen and Bower, Disruptive Technologies: Catching the Wave, *Harvard Business Review*, 1995.
- Christensen et. al., What is Disruptive Innovation,? *Harvard Business Review*, 2015.

*****Final Deliverables Due June 7, 11:59 pm Chicago time**