

146083.41001 (ITM515)

Strategic Technology Management

Spring 2023

Course Info

- Methodology: Blended(hybrid) learning
- Online session: Video lectures on eClass (must be completed before in-person session)
- In-person session: TUE 14:00 PM - 15:00 PM @406 Frontier Hall
 - Case presentations & discussions
 - Term project presentation
 - Exams

Instructor Info

- Prof. Hakyoon Lee (E-mail: hylee@seoultech.ac.kr; Tel: 970-6469)
- Office: 607 Frontier Hall (Office hour: by appointment)

Course Overview

Technology & innovation management is a rapidly emerging area as technological innovation has been at the core of sustainable competitive advantage for firms. The course provides an overview of technological innovation management with an emphasis on the integrative relationship of technology development with strategic planning, marketing, finance, engineering and operations over the entire life cycle of technology. Through a combination of lectures, case studies, and term-projects, this course will examine not only the fundamentals of managing innovation and technological dynamics, but also the formulation and implementation of innovation strategies within an organization.

Learning Objectives

The aims of the course are 1) to deepen the understanding of the nature, sources, types, and patterns of innovation; 2) to understand the patterns of technological evolution and innovation at the industry level; 3) to understand conceptual frameworks for formulating and implementing innovation strategies within a business organization; 4) to master best practices of new product development; 5) to apply frameworks, concepts, and tools of technology innovation management to business situations.

Textbooks

- (Required) Schilling, M. A. (2023). Strategic Management of Technological Innovation, Seventh Edition, McGraw-Hill Irwin, New York, NY.
- (Recommended) Lee, H. (2020). Business Netflixing, Nexus Biz, Seoul, Republic of Korea.

Grading

- Attendance: Not effective but mandatory!
- Case presentation and discussion (10%): Opening cases (See the guideline on page 3)
- Term-project (30%): Business planning for tech startup (See the guideline on pages 4-5)
- Mid-term exam (30%): Closed-book; 1.5 hours
- Final exam (30%): Closed-book; 1.5 hours

Schedule

Week	Date	Online session (Lecture)	In-person session (Case)
1	02/21	Course introduction	
2	02/28	Ch.1 Introduction	N/A
3	03/07	Ch.2 Sources of innovation	The Rise of Cultured Meata
4	03/14	Ch.3 Types and patterns of innovation	Innovating in India: The chotuKool Project
5	03/21	Ch.4 Standards battles and design dominance	Netflix and the Battle of the Streaming Services
6	03/28	Ch.5 Timing of entry	Failure to Launch at Uber Elevate
7	04/04	Ch.7 Choosing innovation projects	N/A
8	04/11	Mid-term exam	
9	04/18	Term-project proposal presentation	
10	04/25	Ch.8 Collaboration strategies	Zeta Energy and “The Holy Grail” of Batteries
11	05/02	Ch.9 Protecting innovation	The Patent Battle Over CRISPR-Cas9 Gene Editing
12	05/09	Ch.11 Managing the new product development process	Scrums, Sprints, and Burnouts: Agile Development at Cisco Systems
13	05/16	Ch.13 Crafting a deployment strategy	Deployment Tactics in the Global Video Game Industry
14	05/23	Final exam	
15	05/30	Term-project final presentation	

*Schedules are subject to change.

<Case presentation on opening cases>

Overview

Each chapter of the textbook begins with an opening case, and each class of the course ends with case presentations by students. Students are assigned cases at the beginning of the semester. On designated class, the assignee makes a presentation on the assigned case and provokes discussions with the help of discussion questions provided at the end of case descriptions. To actively participate in discussions, all other students also should read the case materials in advance and seek answers to discussion questions.

List of cases

No	Case	Chapter	Date	Presenter	Discussant
1	The Rise of Cultured Meata	Ch.2	03/07		
2	Innovating in India: The chotuKool Project	Ch.3	03/14		
3	Netflix and the Battle of the Streaming Services	Ch.4	03/21		
4	Failure to Launch at Uber Elevate	Ch.5	03/28		
5	Zeta Energy and “The Holy Grail” of Batteries	Ch.8	04/25		
6	The Patent Battle Over CRISPR-Cas9 Gene Editing	Ch.9	05/02		
7	Scrums, Sprints, and Burnouts: Agile Development at Cisco Systems	Ch.11	05/09		
8	Deployment Tactics in the Global Video Game Industry	Ch.13	05/16		

Evaluation criteria

- Presentation contents (40%)
- Answers to discussion questions (20%)
- Presentation skills (20%)
- Participation as discussants (20%)

<Term project on business plan for tech startup>

Overview

The term project is to design your own business plan for your own created business that can be enabled or facilitated by IT. The rapid advances in IT and emerging technologies such as AI, IoT, Metaverse, Cloud, Blockchain, and AR/VR have changed not only our everyday life, but also have provided new and rich business opportunities.

In particular, tech startups that solve industrial problems using new technologies, such as fintech, edutech, proptech, legaltech, foodtech, agtech, and agetech, have been in the limelight. Since business planning for tech startup requires various concepts, tools, and frameworks in business management as well as deep understanding of the dynamics of technological innovation, it will be a fruitful practice of what you learn in the course.

Students will work in groups of five or six for the projects. The team formation will be made by the instructor and announced at the third week of the semester. Students need to make a presentation on their proposal which only covers the basic concepts of alternative business ideas at the ninth week. At the last class of the semester, final deliverables should be presented and submitted.

Tasks

- Come up with a business idea that can be implemented by IT.
- Detail the business concept and build its business model.
- Design strategic, technological, marketing, organizational, and financial plans by applying frameworks, concepts, and tools studied in the course.

Outline

0. Executive Summary
1. Strategic Plan
 - 1.1. Mission, Vision, Goals
 - 1.2. Strategic analysis
 - 1.3. Strategy formulation
2. Product/Service Plan
 - 2.1. Product/Service concept
 - 2.2. Business model
3. Technology Plan
 - 3.1. Technology trend analysis

- 3.2. Technology acquisition plan
- 4. Marketing Plan
 - 4.1. STP analysis and strategy
 - 4.2. 4P marketing mix
- 5. Organization Plan
 - 5.1. Organizational structure
 - 5.2. Personnel plan
- 6. Financial Plan
 - 6.1. Start-up funding
 - 6.2. Break-even analysis
 - 6.3. Projected financial statement

Evaluation criteria

- Business idea (40%): originality, innovativeness, profitability
- Business plan (40%): feasibility, consistency, richness, concreteness
- Presentation skill (20%): effectiveness in communication

Submission format

- Proposal: MS PowerPoint 1-2 pages per each idea
- Final: MS PowerPoint 20-30 pages (excluding Appendices)

Important dates

- April 18: Proposal presentation & discussion
- May 30: Final presentation