

MGMT 2370: Management of Technology

Spring 2024 (Jan 22 – May 1, MW 1:45 - 3:15 pm, JMHH G55)

Professor: [Lori Rosenkopf \(rosenkopf@wharton.upenn.edu\)](mailto:rosenkopf@wharton.upenn.edu)
Office hour ([zoom link](#)): Mon 8-9 pm

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This course is designed to meet the needs of future managers, entrepreneurs, consultants and investors who analyze, develop and implement business strategies in technology-based industries. Throughout the course we emphasize the application of conceptual models and frameworks and connect them to current practice to help you think critically about the key responsibilities faced by technology-oriented managers. We take the perspective of both established and emerging firms competing through technological innovation and study the key strategic drivers of value creation and appropriation in the context of business ecosystems. We strive to develop a collaborative learning community among M&T second-years to absorb and share current developments in technology and the management of it.

Some overarching questions that the course will help answer are:

- What are the evolutionary patterns of technology development and market adoption? How do they shape strategic considerations for pursuing existing and new technologies?
- Why do firms struggle to embrace and compete with new technologies, and what can they do to create successful performance outcomes?
- How does the recent shift from industries and products to business ecosystems and technology platforms affect firms' competitive and cooperative strategies?
- What are different types of business models that firms can use to create and capture value from their technology? How should firms choose which business model to use?

The course uses a combination of interactive lectures, case analyses, simulations and team-based research during the spring semester in Philadelphia, and then culminates with a four-day May immersive trip to San Francisco. Drawing on the rich and emerging stream of research in technology management and strategy that moves beyond a “one size fits all” approach to technology firms, the course focuses on the choices that managers and entrepreneurs face in specific strategic situations. Importantly, as class discussion prioritizes strategic over technical issues, a technical background is not required for fruitful participation. Cases and simulations drawn from a diverse range of technology-based industries and emerging technology trends offer the opportunity to integrate and apply the theories and frameworks in a practical way. Guest speakers are invited to share their perspectives on specific and contemporary issues related to the course, and site visits showcase companies where Penn alumni have prominent roles.

Session guide

The 14 weeks of class sessions in Philadelphia will feature a mix of “core” sessions on Mondays and companion “working” sessions on Wednesdays. The list below reflects each week’s core topic. The working sessions are designed to reinforce and build on the week’s core topic, as well as providing time for teams to work on their projects. The final week of the class takes place in San Francisco in mid-May.

Introduction

- 1 Thinking about Technology
- 2 Managing Technology
- 3 Technological and Organizational Evolution

Strategy

- 4 Balancing Technology Portfolios (guest)
- 5 Back Bay Battery Simulation
- 6 Entrepreneurial Strategy

Implementation

- 7 New Product Development (guest)
- 8 Partnerships (guest)
- 9 Platform Strategy
- 10 Corporate Acquisition and Investment (guest)

Organization

- 11 Innovative Cultures (guest)
- 12 Managerial Levers
- 13 Practitioner Panel (guest)

Conclusion

- 14 Putting It All Together
- 15 Immersive – SF (mid-May)

Required deliverables and grading (see Canvas for full details)

- Preparation and reflection assignments (25%)
- Attendance and participation (25%)
- Team project (50%)
 - Interim deliverables (2)
 - Peer feedback (2)
 - Final deliverables (report, video, presentation)

Class policies

Attendance and health: We expect that you will attend class sessions in person unless you have an excused absence as specified by University policy. If so, notify our teaching team with a Course Absence Report to attend remotely or watch the session recording afterwards. For other health or technology challenges, contact the teaching team to discuss accommodations. If you are not feeling well, please do not come to the classroom!

Attendance and scheduling conflicts: In addition to university-mandated exceptions and health-related issues noted above, students receive two “free” absences before their attendance grade is impacted. This is meant to provide leeway for the broad array of situations (e.g. internship interviews, personal travel) that can arise during a semester. However, we will not excuse absences of this nature beyond the two allotted, and we rely on each student to plan accordingly.

Team project work: Each team member is expected to contribute substantially to the team project, and typically each member will receive the same grade. We reserve the right to adjust individual grades to reflect imbalances created by inadequate participation. Students should be proactive in communicating with each other and with the teaching team to address such imbalances before a grade adjustment is necessary.

Use of AI (as developed by Penn’s Center for Teaching and Learning for unrestricted use): You are welcome to use AI models (ChatGPT, GPT, DALL-E, Stable Diffusion, Midjourney, GitHub Copilot, and anything after) in a totally unrestricted fashion, for any purpose, at no penalty. However, you should note that all large language models still have a tendency to make up incorrect facts and fake citations; code generation models have a tendency to produce inaccurate outputs; and image generation models can occasionally come up with highly offensive products. You will be responsible for any inaccurate, biased, offensive, or otherwise unethical content you submit regardless of whether it originally comes from you or an AI program. If you use an AI program, its contribution must be acknowledged in the assignment; you will be penalized for using an AI program without acknowledgement. Having said all these disclaimers, the use of an AI program is encouraged, as it may make it possible for you to submit assignments with higher quality, in less time. The university's policy on plagiarism still applies to any uncited or improperly cited use of work by other human beings, or submission of work by other human beings as your own.

Food: Eating in the classroom is discouraged.

Electronics (as inspired by the WH 3010 policy of Professor Drew Carton): To create the most immersive and engaging learning environment, electronics are prohibited unless specifically allowed (for example, when we undertake simulations, or use a chat function with virtual guests, or for polling). During all other times, you are not permitted to use laptops, tablets, or your phones. To get credit for attendance you need to be off your phone and laptop unless you have received written permission from the teaching team or unless otherwise instructed.

Electronic devices have become central to our personal and professional lives, and I have allowed them in the past. Engagement seems to wane in proportion to the rise of competing deliverables over the semester, and many students have found the pervasiveness of devices distracting and the classroom experience less exciting as attention is so easily diverted. Members of last year's class specifically noted that an "unplugged" policy would heighten classroom experience. Furthermore, research supports this approach: Taking notes by hand leads to better long-term retention of knowledge than taking notes on a laptop (Mueller and Oppenheimer, 2014).

We spend the rest of our lives on our devices – let's stay off them as much as possible during this course so we can fully embrace our topics and learn as much as we can from each other.

Trip attendance and participation: Students are expected to attend all travel sessions, and to exhibit professionalism throughout the trip. We reserve the right to adjust grades to reflect departures from these standards.