

MGMT 44810: Technology Strategy

Sandip Bisui, PhD	Course Information
Office: YONG 940	
Phone: +1 (303)-895-8432	Fall 2024; MWF; 3 Credit Hours
Email: sbisui@purdue.edu	Section 001: KRAN G016- 1:30-2:20 pm
Office Hours: MW 12-1 pm or by appointment	

Course Description

In today's business environment, it is increasingly apparent that business success is driven by a firm's ability to create and capture value through technology and innovation. Thus, the processes used by firms to develop new technologies, the choices they make regarding how to commercialize their technical knowledge, and the strategies they used to position and build a dominate competitive position all are important issues facing the firm. This course seeks to develop tools for understanding industry evolution with respect to new technology, forecast technological change, and understand the basis for technology in competitive advantage. We take an in-depth look at how technological innovation affects the competitive dynamics of markets, how firms can strategically manage these dynamics, and how firms can create and implement strategies to maximize their likelihood of success. The course introduces tools, concepts, and analytical frameworks that will enhance your ability to define and analyze strategic problems that stem from innovation and technological change, and to identify sources of competitive advantage from both an industry and firm-level perspective. Upon completing the course, you will be able to: 1. Improve ability to assess technology and innovation from a competitive perspective. 2. Learn about disruptive innovation and its effects on incumbents and new firms. 3. Consider internal processes for innovation management in existing firms. 4. Improve decision making and skills with respect to technology and innovation. Prerequisites: Strategic Management, Undergraduate Core or instructor approval.

Required Texts

Strategic Management of Technological Innovation by Melissa A. Schilling. 7th edition.

[Case Packet](#) from Harvard Business School.

How to Succeed

To achieve the learning goals from this class, I strongly encourage you to **attend classes, take notes, actively participate in classroom discussions, ask questions**, and have a meaningful exchange of ideas with your peers. Respect for one another's

ideas, backgrounds, and experiences is paramount, as it enhances our collective learning journey. I will try my best to facilitate original discussions and guide and support you throughout the course, but your active participation is crucial and develops a curious mindset about why you are doing something (for example, why you should use this framework in a given scenario). The following should be a useful checklist for you to follow during the course.

- 1) Attend all the classes. In lectures, we will cover the fundamentals of technology strategy and different strategic frameworks, and in application classes, we will be applying strategic frameworks to real-world scenarios.
- 2) Make sure to take notes during class and read the textbook thoroughly.
- 3) Participate actively in both in-class activities and Brightspace discussions.
- 4) Read the cases and be prepared to discuss how they relate to the strategic concepts.
- 5) Prepare for the quizzes and read the questions carefully before answering.

I fully expect everyone to keep up with the material. You should notify me or the dean of students should something happen, such as illness, that will affect your ability to participate.

Grade Components

The assignments for this course have been designed to provide you with the skills you will need to achieve the stated learning outcomes.

Assignment	% of Grade
Participation	15 %
Quizzes	30 %
Case Assignments	30 %
Application Project	25 %

Participation

Management is largely an oratory skill. Leaders need to be able to articulate their ideas in a clear and concise manner. Students need to be able to make additive and constructive comments and learn how to articulate these in a clear and concise manner. This class will have three types of participation.

- a) In-class participation: We will do several iclicker questions during lectures. I will ask a question (mostly multiple choice/ true false), and students need to answer them using the iclicker app.
- b) In-class discussions: We will do several think-pair-share during lectures. I will give a prompt, and students will be paired up in small groups to discuss it.
- c) Brightspace discussions: Along with class participation, there will be discussion questions on Brightspace. I will post the topic of discussion and you are expected to have a discussion with your peers on the topic. You are

expected to post your thoughts on the given topic and then have a fruitful discussion with your peers about it.

These activities are designed to facilitate interactions among students and facilitate participation. In class discussion is direct face-to-face interactions, and the Brightspace discussion is online. These exercises should help you to present your thoughts not only in this class but later in your career as well. You will also learn how to interact with other colleagues in a formal way and put forward your own thoughts in a more collegial manner. While I am incentivizing you to participate by assigning points to these, the actual quality of the discussion will still depend on whether you enjoy expressing your views.

While there will be no points for being present in a class, students who are absent will also miss the participation points. Research shows that students who are regular in class and participate actively often see an increase in their performance. Remember, many students speak English as a second language and, because of this, have to translate what is asked, think of an answer, and then translate this into speech. This is challenging for them, and we need to allow these students an opportunity, particularly because diverse perspectives are valuable and have been shown to lead to better outcomes. We will focus more on the content and thought process than English speaking abilities.

Quizzes

This class will have four (best three out of four) in-class quizzes. They will be a combination of true/false, and multiple-choice questions and short answer questions. This will be a closed book, closed notes quizzes, and no hand calculators or other devices/listening to music will be permitted. We will discuss more about the quizzes during the lectures.

Case Assignments

The format of the course will involve classes alternating between lectures, where I will present conceptual material, and cases, that will involve you splitting into groups and answering questions about the case.

Each group should complete 3 case write-ups (in groups) over the course. Please monitor the Brightspace announcements to get the group information. Each write-up should be no more than five double-spaced pages in length so you will need to be concise. Modest use of bullet points, headers and other stylistic conventions that facilitate the efficient communication of your ideas is encouraged. These write-ups should be in pdf format and uploaded on Brightspace at the link provided and are due at the end of the due date. The exact due dates are given in your Brightspace webpage.

Students often ask what I like to see in the content of case write-ups. I like to see submissions that correctly apply the concepts discussed in the lecture class to the case and corresponding questions at hand. The best submissions concisely identify multiple strategic options and logically evaluate the relative merits of those options using data to back up arguments. That said many good arguments

are not always supported by easily accessible data, and overreliance on measurable evidence can sometimes lead to erroneous conclusions.

The best submissions concisely describe strategy implementation in a way that considers the future. Suggested implementation steps help minimize the disadvantages and maximize the advantages of strategic options. Not only do the best papers identify short-term and long-term implementation steps, but they also consider how the environment will evolve in the future, how competitors will react, and whether the bases of competitive advantage will change for other reasons (e.g., changing consumer tastes, technologies, or supply base).

Fitting all of these issues into two or three pages is not easy, so conciseness is important. However, concise communication is a strong indicator of a student's understanding, and it is an incredibly important skill in the business world.

Application Project

There will be an application project that you will be working on throughout the semester. The application project will be a group-based assignment. You will work in the same group as your case assignments. This application project will help you understand how you should apply the different frameworks to real business problems. This will not only help you in this course but will also help you in your professional working job. One important criterion here is not to apply too many frameworks but to make sure to pick the best-suited one and then go in-depth to solve the problem.

The project will consist of an ongoing in-depth analysis of a technology of your team's choosing. The objective will be to examine it from the perspective of both the industry that it serves and one firm that uses it/created it. I will ask that each group choose TWO candidate projects by the end of the third week of classes, which will ultimately be narrowed down to the one you pick for your final project.

This should be an interesting opportunity to get your hands dirty on a real-world issue currently under investigation. Throughout the semester, you will examine your topic using the frameworks that we have been covering. This will result in two/three Project Updates in the form of report/team presentations. We will discuss more during the class and Instructions will be posted on BrightSpace.

Your Final Report of the technology and its implications for the intended or existing market should be thorough and should utilize as much as possible the concepts and frameworks covered in class and incorporate the findings of the project updates. These findings should be used as arguments to answer the following types of questions: From an industry perspective, what is the market potential of technology? What are the major technological hurdles remaining in its development? What complementary technologies are needed to bring the technology to market? Similarly, if you focus on the firm, the following questions may be more appropriate: What ongoing hurdles exist for commercializing the

technology more successfully? What are the existing competitors doing to block this new technology (whether disruptive or not). What does the firm need to do to get over these hurdles? Because each project is different, teams need to pick which questions are most relevant and which are not. The deliverable will be a five-page writeup about your findings and recommendations, and each group needs to present it in class (10/12-minute presentation as if you are presenting it in front of the board members of the company). Grading will be based on both the write-up and the presentation. I will work with each group to identify the potential topic and assist you throughout the process (except in the application of the framework).

Note: It is considered a violation of the Honor Code to copy or otherwise record any assignment/quiz questions for the aid of others. Further, any and all outside assistance (e.g. via email, texting, etc.) during an assignment/quiz is considered cheating.

The course topic outline, which follows, identifies the lecture topics that will be presented throughout the semester in order to allow the student to achieve the goals and objectives of the course. For each topic, the corresponding lecture slides/chapters/assignments are identified, and it will be the student's responsibility to:

- a) read the assigned material before the corresponding lecture
- b) attend lectures, asks questions, and participate in classroom discussions;
- c) actively work on the in-class exercises.

Completion of the assignments and attending the lectures are both required in order to achieve a complete mastery of the course content. The student is additionally cautioned that the material builds upon itself.

The student is responsible for all information and announcements given during lectures, including changes to quiz schedules and homework assignments. If a lecture session is missed, it will be the student's responsibility to obtain any missed notes and assignments from other students.

Policies Note that policies below may be superseded by updates in University policies also available in Brightspace

Professionalism/Class Etiquette Policy

As in the business world, you are expected to behave professionally during our class meetings, which means you should do the following:

- Make our classroom distraction-free from side conversations and devices. Keep devices (for example, cellphones and laptops) turned off and put away unless authorized for class activities; and talk in class only when it is your turn to do so.
- Please join the class on time and stay for the entire duration.

- Let me know if you will be late or have to leave early.
- If you must join late, be discreet and don't make any noise.
- Always pay attention to the class. I might ask questions.
- Be respectful to the perspectives of your peers, guests, and instructor. Please do not speak unless you are asked to and do not interrupt others.

Email Policy

Follow business email etiquette:

- Open emails with "Hi/Dear (Name)," indicate your name, class, and section, and end with a closing such as "Best (Name)".
- Carefully consider your subject heading (always include MGMT 44810) and proofread for spelling, grammar, and professional tone before you hit 'Send'
- Include enough information in the body of the email so that I can answer your question in a single response. I do my best to respond within one day during the week and two days on the weekend.
- Our class is the right place to practice professional behavior. Please be aware that repeated or severely unprofessional behavior may have consequences on your grade and standing in the course.

I'm happy to answer your questions. However, for questions about due dates or logistics, please ask yourself whether the answer is available elsewhere. If so, before contacting me, please check 1) your class notes or your classmates, 2) on Brightspace, or 3) on the Syllabus.

Grading

The Grading Scale in this course follows the Typical A-F structure, with +/- as appropriate. For full detail, this has been provided below:

Grading Scale

Final Letter Grade	Percentage (%)
A+	96 – 100
A	93 – 95.99
A-	90 – 92.99
B+	86 – 89.99
B	83 – 85.99
B-	80 – 82.99
C+	76 – 79.99
C	73 – 75.99
C-	70 – 72.99
D	60 – 69.99
F	0 – 59.99

Missed or Late Work

Missed or late work will result in 0 credit for that assignment. Contact me if you believe there is sufficient reason for you to be allowed to make up late material.

Grade Appeals / Corrections

I am happy to go over assignments with individuals wishing to review their work. Grades must be appealed within one week of posting to Brightspace. Please note, I will not review all your cumulative work at the end of the semester. This is a sign of someone who is fishing for more points without basis versus being engaged in the learning process. Any rounding up is at my discretion and may depend on your class participation.

Please also note that there will not be any individual allowances for extra credit. Any additional credit allowed for the course must be offered to all individuals to preserve equity. Because of this, it often negates any benefit for which an individual may lobby as it often does not change the ranking of the individual within the class. The ranking is the grade determinant in a class such as this which is curved.

Use of Artificial Intelligence (AI) Tools

Rapidly advancing machine learning technologies, including large language model (LLM) applications, are an important force impacting current business strategies. In light of this, we will collaboratively use LLMs to help familiarize us with the current state of technology, its uses, and limitations.

Acceptable uses of AI tools:

- AI tools can be used in class when explicitly stated by the instructor (e.g., work in your groups with ChatGPT to come up with the best answer you can to the following question...).
- LLMs can also be used as a comprehension tool when studying the assigned material for class; however, you are still responsible for reading all of the assigned material. Please note that the quizzes given on each reading may cover elements from the reading that an LLM may omit when summarizing, so it will be in your best interest to have read everything thoroughly even if using such a tool.
- LLMs can be used as a study aid for the final exam. Please note, however, that no materials of any kind may be used during the exam itself.

Non-allowed uses of AI tools and other materials:

- No materials of any kind (including readings, notes, websites, AI tools, etc.) may be used during the quizzes, case assignments, and discussion posts.

Names, Pronouns, and Self-Identifications

The university recognizes the importance of a diverse student body, and we are committed to fostering equitable classroom environments. I invite you, if you wish, to tell us how you want to be referred to both in terms of your name and your pronouns (he/him, she/her, they/them, etc.). The pronouns someone indicates are not necessarily indicative of their gender identity.

Additionally, how you identify in terms of your gender, race, class, sexuality, religion, and dis/ability, among all aspects of your identity, is your choice whether to disclose

(e.g., should it come up in classroom conversation about our experiences and perspectives) and should be self-identified, not presumed or imposed. I will do my best to address and refer to all students accordingly, and I ask you to do the same for your colleagues.

Attendance Policy

This course follows the Academic Regulations: Attendance and Office of the Dean of Students: Class Absences posted in Brightspace under “University Policies and Statements.” The policies state that students are expected to be present for every meeting of the classes in which they are enrolled. Attendance might be taken at the beginning of each class and lateness will be noted. When conflicts or absences can be anticipated, such as for many University-sponsored activities and religious observations, you should inform me of the situation as far in advance as possible. For unanticipated or emergency absences when advance notification is not possible, contact me as soon as possible by email or phone. For cases that fall under excused absence regulations, you or your representative should contact or go to the [Office of the Dean of Students \(ODOS\) website](#) to complete appropriate forms for instructor notification. Under academic regulations, excused absences may be granted by ODOS for cases of grief/bereavement, military service, jury duty, parenting leave, or emergency medical care. In cases related to COVID-19, please follow the protocol given by the university.

Academic Integrity

Academic integrity is one of the highest values that Purdue University holds. Individuals are encouraged to alert university officials to potential breaches of this value by either emailing integrity@purdue.edu or by calling 765-494-8778. While information may be submitted anonymously, the more information is submitted the greater the opportunity for the university to investigate the concern. More details are available on our course Brightspace under University Policies and Statements.

Copyright Policy

See the University Policies and Statements section of Brightspace for guidance on Use of Copyrighted Materials. Effective learning environments provide opportunities for students to reflect, explore new ideas, post opinions openly, and have the freedom to change those opinions over time. Students and instructors are the authors of the works they create in the learning environment. As authors, they own the copyright in their works subject only to the university’s right to use those works for educational purposes. Students may not copy, reproduce, or post to any other outlet (e.g., YouTube, Facebook, or other open media sources or websites) any work in which they are not the sole or joint author or have not obtained the permission of the author(s).

Nondiscrimination

Purdue University is committed to maintaining a community that recognizes and values the inherent worth and dignity of every person; fosters tolerance, sensitivity, understanding, and mutual respect among its members; and encourages each

individual to strive to reach his or her potential. In pursuit of its goal of academic excellence, the University seeks to develop and nurture diversity. The University believes that diversity among its many members strengthens the institution, stimulates creativity, promotes the exchange of ideas, and enriches campus life. A hyperlink to Purdue's full Nondiscrimination Policy Statement is included in our course Brightspace under University Policies and Statements.

Mental Health/Wellness

If you find yourself beginning to feel some stress, anxiety and/or feeling slightly overwhelmed, try [WellTrack](#). Sign in and find information and tools at your fingertips, available to you at any time.

If you need support and information about options and resources, please contact or see the [Office of the Dean of Students](#). Call 765-494-1747. Hours of operation are M-F, 8 am- 5 pm.

If you find yourself struggling to find a healthy balance between academics, social life, stress, etc., sign up for free one-on-one virtual or in-person sessions with a [Purdue Wellness Coach at RecWell](#). Student coaches can help you navigate through barriers and challenges toward your goals throughout the semester. Sign up is free and can be done on BoilerConnect.

If you're struggling and need mental health services: Purdue University is committed to advancing the mental health and well-being of its students. If you or someone you know is feeling overwhelmed, depressed, and/or in need of mental health support, services are available. For help, such individuals should contact [Counseling and Psychological Services \(CAPS\)](#) at 765-494-6995 during and after hours, on weekends and holidays, or by going to the CAPS office on the second floor of the Purdue University Student Health Center (PUSH) during business hours. The [CAPS website](#) also offers resources specific to situations such as COVID-19.

Basic Needs

Any student who faces challenges securing their food or housing and believes this may affect their performance in the course is urged to contact the Dean of Students for support. There is no appointment needed and Student Support Services is available to serve students 8 a.m.-5 p.m. Monday through Friday.

Emergency Preparedness

In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control. Relevant changes to this course will be posted onto the course website or can be obtained by contacting the instructors or TAs via email or phone. You are expected to read your @purdue.edu email on a frequent basis.

Disclaimer

I will adhere to this syllabus as much as is reasonable, but there is always the possibility that outside circumstances might require changes and adjustments. I retain the ability to amend or alter the syllabus without notice, though I will strive to provide as much notice as possible.

Course Calendar

Please find the tentative course calendar attached. The updated Course calendar is available on Brightspace.

Day	Class Type	Topic	Due (End of day)
August 19	Lecture	Introduction	
August 21	Lecture	Assignments & Expectations	
August 23	No Class		
August 26	Lecture	What is Technology Strategy?	
August 28	Lecture	Chapters 1-5	
August 30	Case Day	Case Group Creation	
September 2	No Class- Labor Day		
September 4	Lecture	Chapters 1-5	
September 6	Lecture	Chapters 1-5	
September 9	Lecture	Chapters 1-5	BrightSpace Discussion 1
September 11	Lecture	Chapters 1-5	
September 13	Lecture	Chapters 1-5	
September 16	Quiz 1	Syllabus: Chapters 1-5	
September 18	Case Day	Case 1- Discussion	
September 20	Case Day	Case 1- Assignment	Case 1 Writeup
September 23	Lecture	Chapters 6-9	
September 25	Lecture	Chapters 6-9	
September 27	Lecture	Chapters 6-9	BrightSpace Discussion 2
September 30- Oct 2	Application Project	Project Proposal- Group Presentations (First)	
October 4	Reserve Day		
October 7	No Class- Fall Break		
October 9	Lecture	Chapters 6-9	
October 11	Lecture	Chapters 6-9	BrightSpace Discussion 3
October 14	Lecture	Chapters 6-9	
October 16	Lecture	Chapters 6-9	
October 18	Lecture	Chapters 6-9	
October 21	Quiz 2	Syllabus: Chapters 6-9	
October 23	Case Day	Case 2- Discussion	BrightSpace Discussion 4

October 25	Case Day	Case 2- Assignment	Case Writeup
October 28	Lecture	Chapters 10-13	
October 30	Lecture	Chapters 10-13	
November 1	Lecture	Chapters 10-13	
November 4, 6, 8	Application Project	Project Presentation (Second)	
November 11	Lecture	Chapters 10-13	
November 13	Lecture	Chapters 10-13	
November 15	Lecture	Chapters 10-13	
November 18	Quiz 3	Syllabus: Chapters 10-13	
November 20	Case Day	Case 3- Discussion	BrightSpace Discussion 5
November 22	Case Day	Case 3- Assignment	Case Writeup
November 25	Quiz 4	Syllabus to be decided	
November 27-29	No Class- Thanksgiving Break		
December 2, 4, 6	Application Project	Project Presentations (Final)	Final Writeup Due December 1

About your instructor

Sandip Bisui is an Assistant Professor (tenure-track) of Strategic Management at the Daniels School of Business, Purdue University. He received his Ph.D. in Strategy and Entrepreneurship from the Leeds School of Business, University of Colorado (CU) Boulder. Sandip did his Undergraduate and Master's in Mathematics and Scientific Computing at the Indian Institute of Technology (IIT) Kanpur, India. Sandip also worked as a Research Associate at the Indian School of Business (ISB), India.

Sandip's research revolves around the applications of information economics in corporate strategy, knowledge and innovation. At a broad level, his dissertation, "Essays on Information Disclosures", focuses on the impact of information disclosures on new ventures' technologies. Sandip is also an engagement editor of Strategic Management Review and a member of Academy of Management and Strategic Management Society.

Area(s) of Expertise:

Strategic Management, Information Economics, Innovation and Entrepreneurship, Intellectual Property, Mergers and Acquisitions, Technology Commercialization

Visit <http://sandipbisui.com> to know more about his work.