York University
Faculty of Liberal Arts and Professional Studies
School of Administrative Studies
Fall 2024
AP/ADMS4940 3.0 A
Innovation Management

Term: **Fall 2024**
Day: **Monday**
Time: **11:30 – 2:30 p.m.**
Location: **HNE 036**
Course Director: **Prof. You-Ta Chuang**
Email: ychuang@yorku.ca
Office Hours: **by appointments**
Start Date: **Sept 9, 2024**

Land Acknowledgment

York University recognizes that many Indigenous Nations have longstanding relationships with the territories upon which York University campuses are located that precede the establishment of York University. York University acknowledges its presence on the traditional territory of many Indigenous Nations. The area known as Tkaronto has been care taken by the Anishinabek Nation, the Haudenosaunee Confederacy, and the Huron-Wendat. It is now home to many First Nation, Inuit, and Métis communities. We acknowledge the current treaty holders, the Mississaugas of the Credit First Nation. This territory is subject of the Dish with One Spoon Wampum Belt Covenant, an agreement to peaceably share and care for the Great Lakes region (LA&PS Land Acknowledgement).

Note: the instructor reserves the right to change the course activities, the sequence of text materials, and the assignment of cases.

COURSE DESCRIPTION

Technology plays an important role in the competitive landscape. The challenge of managing technologies is immense. This course examines the challenges and the opportunities that technological change presents to companies and managers.

COURSE OVERVIEW

The course is intended to appeal to those interested in understanding technological innovation and evolution, managing technology-oriented firms, creating technology-driven startups, or consulting to such firms. Specifically, this course examines the challenges of the technology management process - identifying, formulating, evaluating and implementing viable technological innovation. The emphasis is on issues that affect a firm to manage the success of technological innovation. As such, we will view the firm as a whole, but we will draw upon, and integrate into our analysis, your understanding of the various functional areas of business and the external factors.

The learning objectives of this course include:

- To develop an awareness of the range, scope, and complexity of the phenomena, issues, and problems related to managing technological change.

- To develop understanding of "state of the art" concepts for managing technological change and the relationship between technological change and strategy.

- To develop a conceptual framework for assessing and auditing the technological capabilities of a business organization.

PREREQUISITES:

For students in the Honours Program, 78 credits

Students are personally responsible to ensure that they have the required prerequisites as stated in the course outline or in the course calendar. Students who do not have the prerequisites are at risk of being dropped from the course at any time during the course. The department will not be responsible for refunds resulting from students being dropped from a course due to a lack of the appropriate prerequisites.

REQUIRED TEXT(S)

No textbook; all reading materials are available on e-Resources at York Library or online (see below for the list of readings). While reading materials are heavy (approximately 40 pages/week), they are equivalent to one chapter of a textbook.

Cases can be purchased through https://www.iveycases.com/

COURSE EVALUATION

Midterm exam: 30%
Group Work: 40%
Class Participation: 10%
Final Exam: 20%

FORMAT OF THE COURSE

Each session is of a three-hour duration. In the early stage of the course, the role of the instructor is as a lecturer to help students make sense of the material. As the time goes by, the role of the instructor will shift to facilitate class discussions. The course is loaded with heavy reading assignments. Students are expected to finish the readings prior to the class. Moreover, this is a highly interactive course in which students are required to participate in **ALL** class activities and exercises.

MIDTERM EXAM

The mid-term exam is weighted 30% of your final grade. The purpose is to examine your knowledge regarding the course materials. For students who miss the exam, you are required to email me within 2 days of the date the exam takes place. Failure to do so will lead to a zero grade for the midterm.

FINAL EXAM

The final exam is 20% of your final grade.

GROUP WORK

This course puts great emphasis on group work (40%) since group work is a contemporary work design in the real business world. Accordingly, students will form a group of approximate 5 members, depending upon the size of the class. Please be advised that each group member is responsible for the group process and dynamics. Instructor will be involved in group issues only if necessary. In addition, students are not allowed to switch groups after the groups are formed.

There are three components of group work.

Lead discussion on assigned readings (10%):
Starting from Session 4, there are assigned articles for this exercise. In each week, one group will take turns to be the lead for discussing the article of the week (approximately 15 minutes). There is no specific format as to how you are going to discuss the article. The principles are (1) what the main arguments in the article are; (2) any connections among the articles, lectures, and real world examples; (3) do you believe the arguments and why; (4) what practical implications are. Your performance evaluation will be based on how well you discuss these principles. For some articles, there are statistical analyses involved as they are research papers. You don't have to look into them in great details if you find them difficult.

Group project (25%):
There are three purposes of this exercise: (1) to enhance your information search and organization ability since you are required to search information on your own; (2) to make sense of course materials since you are required to apply the materials to analyze the chosen technology/firm; and (3) to enhance your presentation skills. Specifically, your group is required to identify a technology/firm and to use the course materials to analyze the evolution of the technology/firm. If you choose to analyze a technology, then your analysis should be at the level of the technology to describe (1) how the technology emerged; (2) the innovation/evolution process of the technology; (3) how firms compete for the technology/how firms use the technology to enhance firm performance, not technology performance. If you choose to examine a firm, then your focus should be to mapping the firm's technology strategy into the course materials and to describe (1) the firm's business model; (2) the firm's technology strategy; (3) the recommendation for the firm's future technology strategy. Note that you cannot choose firms that are in the assigned cases. Here are some examples of topics for your project:

Industry/technology level examples: COVID 19 vaccine development, sharing economy, self-driving cars, AI, and biopharma-technology
Firm level examples: Netflix, Uber, Tesla, Nike, Beyond Meat, Shopify, and Garmin.

As you have noticed, the scope of this exercise is not trivial but manageable. Yet, it is critical to start the work as early as possible and to have regular progress as the term goes. Group members are required to attend the meetings. Without any legitimate reasons, the individual who does not attend **any** of these two meetings will result in losing the group membership.

As to the presentation, each group will do a 25-minute presentation, followed by a 10-minute break (allowing the group who does critique to come up the assessment), a 10-minute group critique, a 5-minute response, and 10-minute Q&As where other students are invited to ask questions through the chat room function in Zoom meetings (the length of group presentation will depend on the number of groups in class). Since there is no written report, you need to clearly convey your work in these 25 minutes. That is the only chance you get your ideas across to audience. Your presentation

should contain **at least** the following topics and apply course materials to analyze the chosen technology/firm:

- ✧ A brief background/history of the chosen technology/firm
- ✧ Innovation/evolution of the technology/firm
- ✧ Analysis of how innovation/evolution came about
- ✧ If you choose to study a technology
  - You need to talk about how and why firms have (not) considered the technology and their strategies; and other competing technologies;
  - Competitive landscape of this technology;
  - How should firms compete in the future.
- ✧ If you choose to study a firm
  - You need to talk about the firm's technology strategy;
  - The actions of its rivals/competing technology;
  - What the firm should do in the future.

Finally, empirical evidence shows that to achieve a high level of group performance requires effective teamwork and input from individual group members. However, past experience tells us that groups are subject to the issues of free riders if there are no mechanisms in place to motivate group members to contributing their knowledge and time. Accordingly, individual grade for this component will be based on peer evaluation. For members' peer evaluations are one standard deviation above the average of the group's peer evaluation, the members will be rewarded additional 3 points. In contrast, for members' peer evaluations are one standard deviation below the average of the group's peer evaluation, the members' grades for this exercise will be the group grade subtracted 3 points.

As to peer evaluations, each individual member will fill up the evaluation form, available on course website, to provide his/her evaluations to other members. The evaluation, which is about the group presentation performance, will be based on four criteria:

1. Teamwork: contributes to group/firm performance, draws out the best from others, fosters activities moving the group/firm toward task completion, communicated and added value to group/firm tasks.
2. Initiative and dependability: Fulfill responsibilities on time and according to expectations of group or evaluator.
3. Quality of outputs: Oral reports and written products were of high quality and organization.
4. Contribution to knowledge and learning: Effectively understood, utilized, and demonstrated knowledge of course materials and added value to group/firm skill level.
5. Professionalism: attending meetings on time, responding to emails promptly, messages in a timely manner, being respectful to other members.

These criteria were selected because they approach the team concept from four very important aspects: the workings of the team (teamwork), the contribution of the individual (initiative/dependability), the output quality, and the core expectation of knowledge acquisition through all aspects of group work.

Below is an example of how your grade will be calculated. In a hypothetical scenario, a group consists of 4 members. Assuming the group receives 80 for its presentation and the result of peer evaluation is as follow.

	Teamwork	Initiative/ dependability	Quality of output	Knowledge and learning	Professionalism	**Average**
Member 1	4	4	4	4	4	**4**
Member 2	4	3	2	3	3	**3**
Member 3	3	2	2	1	2	**2**
Member 4	2	0	1	1	1	**1**

The average of the peer evaluation is 2.5 and standard deviation is about 1.3. In this scenario, both Members 2 and 3 will receive 80 as their individual grades. Member 1 will receive 83 because his/her peer evaluation is one standard deviation above the average (4>2.5+1.3). In contrast, Member 4 will receive 77 because his/her peer evaluation is one standard deviation below the average (1<2.5-1.3).

Since peer evaluation significantly contributes to your individual grades, you should take it seriously. Moreover, you are required to submit your evaluation the day after your group presentation. **If you fail to submit your evaluation on time, you will receive 10 points penalty on your group project.**

Group critique (5%): The purpose of this exercise to provide you with an opportunity to share the responsibility of class learning. Specifically, for each group presentation, there will be one group who is responsible to assess the ideas and quality of the work put forward by the presenting group. Each group will have up to 10 minutes to present your assessment. Groups are encouraged to develop their own assessment criteria. It is required that you present your assessment with Powerpoint slides. Importantly, your assessment should at least include both positive aspects of the presentation (content and style), areas for improvement (content and style), and questions for the presenting group on its content. The 5% will be evaluated based on the degree of constructive feedback provided by the group. Only group members who are present at the time when the group is asked to offer the assessment will get the credits. In other words, group members who do not show up in the class at that time will receive no credits for this component.

CLASS PARTICIPATION

Class participation is essential for learning processes. Class participation is weighted 10% of your final grade. **Class participation is not about attendance, but rather your contribution to class discussion.** Thus, it is highly likely that students who attend the class each week without any participation record may fail this grade component.

Specifically, the course puts great emphasis on discussion of the course materials. Therefore, your input is greatly appreciated. In order to actively participate in discussions, you are recommended to

read the materials in advance. Class participation is evaluated on a regular basis and based on 10-point scale. The instructor will evaluate students' participation based on quantity and quality. Good quality participation is one that can stimulate in-depth, meaningful discussion. On the other hand, a repetitive comment or simply summary of the materials would be considered as the modest participation. In each session, each student will get points according to his/her relative to the class average. Normally, students will receive 8 or 9 points if their points are one standard deviation above the class average of the session. Students will receive points below 5 if their performances are one standard deviation below the class average. To account for the potential errors in evaluating participation and consider the situation where students might have to miss sessions for unexpected events (e.g., illness), your performance in this component will be based on the highest 7 sessions. If students have any difficulty in participating in discussion, they should contact the instructor as soon as possible to discuss how to help them to engage in the class discussion.

GRADING

The grading scheme for this course conforms to the 9-point system used in undergraduate programs at York University. For a full description of the York grading system, visit the York University Academic Calendar.

GRADE	GRADE POINT	PERCENT RANGE	DESCRIPTION
A+	9	90-100	Exceptional
A	8	80-89	Excellent
B+	7	75-79	Very Good
B	6	70-74	Good
C+	5	65-69	Competent
C	4	60-64	Fairly Competent
D+	3	55-59	Passing
D	2	50-54	Marginally Passing
E	1	(marginally below 50%)	Marginally Failing
F	0	(below 50%)	Failing

List of Readings (subject to change)

Session 2: Sources of innovation and innovation performance

- Birkinshaw, J., Bouquet, C., & Barsoux, J. (2011). The 5 myths of innovation. MIT Sloan Management Review, 52(2), 43-50.
- Kolbjornsrud, V. (2024). Designing the intelligent organization: Six principles for human-AI

collaboration. California Management Review, 66(2): 44-64.

- Richtner, et al. (2017). Creating better innovation measurement practices. MIT Sloan Management Review, 59(1), 45-53.

Session 3: Types of innovation

- Christensen, C. M., Raynor, M., and McDonald, R. (2015). What is disruptive innovation? Harvard Business Review, December, 44-53
- Hill, C.W.L. (1997). Establishing a standard: Competitive strategy and technological standards in winner-take-all industries. Academy of Management Executive, 11 (2), 7-25.
- Stringer, R. (2000). How to manage radical innovation. California Management Review, 42(4), 70-88.

Session 4: Role of competition

- Birkinshaw, J. (2023). How incumbent firms respond to emerging technologies. California Management Review, 66(1): 48-71.
- Chang, H-H & Sokol, D. D. (2022). How incumbents respond to competition from innovative disruptors in the sharing economy – The impact of Airbnb on hotel performance. Strategic Management Journal, 43, 425-446.

Session 6: Collaboration strategies and protecting innovation

- Arena, M., Cross, R., Sims, J, Uhl-Bien, M. (2017). How to catalyze innovation in your organization. MIT Sloan Management Review, 2017 Summer, 39-47.
- Hoang, H & Rothaermel, F. T. (2016). How to manage alliances strategically. MIT Sloan Management Review, 2016 Fall, 69-76.
- Pisano, G. P., & Teece, D. J. (2007). How to capture value from innovation: Shaping intellectual property and industry architecture. California Management Review, 50(1), 278-296.

Session 7: Choosing innovation projects

- Day, G. S. (2007) Is it real? Can we win? Is it worth doing? Managing risk and reward in an innovation portfolio. Harvard Business Review, 85(12), 110-120.
- Kandybin, A. (2009). Which innovation efforts will pay? MIT Sloan Management Review, 51(1), 53-60.
- Reitzig, M. (2011). Is your company choosing the best innovation ideas? MIT Sloan Management Review, 52 (4), 47-52.

Session 8: Organizing for innovation

- Hirst, G., van Knippenberg, D, Chen, C-H., Saramento, C. A., (2011). How does bureaucracy impact individual creativity? A cross-level investigation of team contextual influences on goal orientation-creativity relationships. Academy of Management Journal, 54: 624-641.
- Argyres, N., Rios, L.A., & Silverman, B.S. (2020). Organizational change and the dynamics of innovation: Formal R&D structure and intrafirm inventor networks. Strategic Management Journal, 41: 1953-2152.

Articles for lead discussion

- Angstrom, R.C., Bjorn, M., Dahlander, L., Mahring, M., & Wallin, M. W. (2023). Getting IA implementation right: Insights from a global survey. California Management Review, 66(1): 5-22.
- Garud, R., Kumaraswamy, A. Roberts, A., & Xu, L. (2020). Liminal movement by digital platform-based sharing economy ventures: The case of Uber technologies. Strategic Management Journal, 43. 447-475..
- Magistretti, S., Dell'Era, C., Cautela, C., & Kotlar, J. (2023). Design thinking for organizational innovation at PepsiCo. California Management Review, 65(3): 5-26.
- Wang, R. D., & Miller, C.D., (2020). Complementors' engagement in an ecosystem: A study of publishers' e-book offerings on Amazon Kindle. Strategic Management Journal, 41: 3-26.
- Zhao, M. (2006). Conducting R&D in countries with weak intellectual property rights protection. Management Science, 52 (8), 1185-1199.
- Vuori, T.O., & Huy, Q. N. (2016). Distributed attention and shared emotions in the innovation process: How Nokia lost the smartphone battle. Administrative Science Quarterly, 61: 9-51.

RELEVANT UNIVERSITY REGULATIONS

Please refer to the website (https://sas.laps.yorku.ca/students/).

COURSE OUTLINE

Session 1 **Sept 9**	Introduction Course outline review/Course Expectation/Administrative issues Topics: Nature and Importance of Innovation
Session 2 **Sept 16**	Topics: Sources of innovation and innovation performance • Birkinshaw, J., Bouquet, C., & Barsoux, J. (2011). The 5 myths of innovation. MIT Sloan Management Review, 52(2), 43-50. • Kolbjornsrud, V. (2024). Designing the intelligent organization: Six principles for human-AI collaboration. California Management Review, 66(2): 44-64. • Richtner, et al. (2017). Creating better innovation measurement practices. MIT Sloan Management Review, 59(1), 45-53. Case 1: Design thinking and innovation at Apple (Product # 609-066)
Session 3 **Sept 23**	Session 3: Types of innovation • Christensen, C. M., Raynor, M., and McDonald, R. (2015). What is disruptive innovation? Harvard Business Review, December, 44-53 • Hill, C.W.L. (1997). Establishing a standard: Competitive strategy and technological standards in winner-take-all industries. Academy of Management Executive, 11 (2), 7-25. • Stringer, R. (2000). How to manage radical innovation. California Management Review, 42(4), 70-88. Case 2: Sodastream takes on Coke and Pepsi (Product # 9B14M038)
Session 4 **Sept 30**	Topic: Role of competition • Birkinshaw, J. (2023). How incumbent firms respond to emerging technologies. California Management Review, 66(1): 48-71. • Chang, H-H & Sokol, D. D. (2022). How incumbents respond to competition from innovative disruptors in the sharing economy – The impact of Airbnb on hotel performance. Strategic Management Journal, 43, 425-446. *Article for lead discussion:* Wang, R. D., & Miller, C.D., (2020). Complementors' engagement in an ecosystem: A study of publishers' e-book offerings on Amazon Kindle. Strategic Management Journal, 41: 3-26. Case 3: Disney: Delivering more content in more ways? (Product# 9B19M114)
Session 5 **Oct 7**	Midterm exam 11:30-2:30
Session 6	Topic: Collaboration strategies and protecting innovation

Oct 21	• Arena, M., Cross, R., Sims, J, Uhl-Bien, M. (2017). How to catalyze innovation in your organization. MIT Sloan Management Review, 2017 Summer, 39-47. • Hoang, H & Rothaermel, F. T. (2016). How to manage alliances strategically. MIT Sloan Management Review, 2016 Fall, 69-76. • Pisano, G. P., & Teece, D. J. (2007). How to capture value from innovation: Shaping intellectual property and industry architecture. California Management Review, 50(1), 278-296. *Article for lead discussion:* Zhao, M. (2006). Conducting R&D in countries with weak intellectual property rights protection. Management Science, 52 (8), 1185-1199. Case 4: Tesla Inc: Strategic partnerships for growth (Product #9B19M033)
Session 7 **Oct 28**	Topic: Choosing innovation projects • Day, G. S. (2007) Is it real? Can we win? Is it worth doing? Managing risk and reward in an innovation portfolio. Harvard Business Review, 85(12), 110-120. • Kandybin, A. (2009). Which innovation efforts will pay? MIT Sloan Management Review, 51(1), 53-60. • Reitzig, M. (2011). Is your company choosing the best innovation ideas? MIT Sloan Management Review, 52 (4), 47-52. *Article for lead discussion:* Magistretti, S., Dell'Era, C., Cautela, C., & Kotlar, J. (2023). Design thinking for organizational innovation at PepsiCo. California Management Review, 65(3): 5-26. Case 5: Bayer in India: Intellectual Property Expropriation? (Product # 9B13M134)
Session 8 **Nov 4**	Topic: Organizing for innovation • Hirst, G., van Knippenberg, D, Chen, C-H., Saramento, C. A., (2011). How does bureaucracy impact individual creativity? A cross-level investigation of team contextual influences on goal orientation-creativity relationships. Academy of Management Journal, 54: 624-641. • Argyres, N., Rios, L.A., & Silverman, B.S. (2020). Organizational change and the dynamics of innovation: Formal R&D structure and intrafirm inventor networks. Strategic Management Journal, 41: 1953-2152. *Article for lead discussion:* Vuori, T.O., & Huy, Q. N. (2016). Distributed attention and shared emotions in the innovation process: How Nokia lost the smartphone battle.

	Administrative Science Quarterly, 61: 9-51. Case 6: Yunnan Baiyao: Traditional medicine meets product/market diversification (Product # 9B06M088)
Session 9 **Nov 11**	*Article for lead discussion:* Angstrom, R.C., Bjorn, M., Dahlander, L., Mahring, M., & Wallin, M. W. (2023). Getting IA implementation right: Insights from a global survey. California Management Review, 66(1): 5-22. Magistretti, S., Dell'Era, C., Cautela, C., & Kotlar, J. (2023). Design thinking for organizational innovation at PepsiCo. California Management Review, 65(3): 5-26. **Group Presentation**
Session 10 **Nov 18**	**Group Presentation**
Session 11 **Nov 25**	**Group Presentation**
Session 12 **Dec 2**	**Final exam**

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