# Rotman Commerce
## UNIVERSITY OF TORONTO

# Course Outline

**RSM 494 H1S**
Technology Strategy
Winter 2017
Course Meets: Tuesdays/6:00 – 8:00 p.m. / WO 35

Instructor:        Terry Amburgey. RT 7048
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Office Hours:      Wednesdays, 11:00 a.m. – 3:00 p.m., by appointment, RT 7048

## Course Scope and Mission

"This course focuses on the strategic management of technology and innovation in established firms. The conceptual framework of the course is an *evolutionary process perspective on technology strategy and innovation*. The fundamental ideas underlying this evolutionary perspective are (1) that a firm's technology strategy emerges from its technological competencies and capabilities, (2) that technology strategy is shaped by external (environmental) and internal (organizational) forces, and (3) that the enactment of technology strategy, through the experience that it generates, serves to further develop the firm's technological competencies and capabilities. Within this evolutionary perspective, the course draws on strategic management, economics and organization theory for analytical tools to address important challenges faced by managers in technology-based firms." (Burgelman, et. al., 2009: 21)

## Course Learning Outcomes
- The ability to identify different forms of technological innovation
- The ability to identify environmental features that determine a firm's ability to profit from technological innovation.
- The ability to determine organizational architectures and systems best suited for generating different forms of technological innovation.
- The ability to determine organizational architectures and systems best suited for generating organizational learning.

## Course Prerequisites
RSM392

## Required Readings
All students are required to have access to the readings & case packet used in the class. The packet is in the form of an ebook titled Technology Strategy available online from McGraw-Hill at https://create.mheducation.com/shop/. The ISBN-13 number is 9781309048733. Be sure to select the ebook with this ISBN number. I'm listed as the author. The default country for the page is the USA, be sure to change to Canada. There are also required readings listed in the weekly schedule available from the

University of Toronto Libraries Ejournals and generally through the internet. The cases for the class are contained in the reading packet.

**Evaluation and Grades**
Grades are a measure of the performance of a student in individual courses. Each student shall be judged on the basis of how well he or she has command of the course materials.

| Work | | Due Date |
| --- | --- | --- |
| Case Write Up | 25% | Feb 7 |
| Case Write Up | 25% | Apr 4 |
| Group Project | 40% | Apr 4 |
| Learning Journal | 10% | Apr 4 |

*Individual Case Analyses – 50%*

Each student will also do two written case analyses, each of which is worth twenty-five percent of the final grade. We will discuss two cases in class. The specific cases and dates are listed in the schedule at the end of the course outline. I encourage you to work with the rest of your project team on the cases. However, the case analyses must be your own work. I expect similarities between the case analyses of team members but they cannot be duplicates.

*Suggested Case Analysis Format*: The case analysis should be 10-15 pages doubled spaced, plus up to 3 additional pages of supplemental material. The case analyses are due on the day the case is discussed in class. Late submissions are penalized by 1 point per day up to one week. Case analyses will not be accepted more than one week late.

*Team Term Project – 40%*
Term projects will be completed in teams of 4-6 students formed by the second session.  Teams play central roles in this course because teams play central roles in organizations. In organizations, most people spend most of their time working in, interacting with, and managing teams. Working in teams provides an opportunity to learn from your colleagues, and provides a setting in which to discuss your ideas that approximates the management teams typically charged with such tasks.

In addition to working with your team on the term project, I strongly encourage you to meet regularly with your team to discuss the weekly readings and cases before the class meets.  This will help you to develop a more cohesive team, as well as ensuring that each member is fully conversant in the course material.

You will need to begin thinking about your term project early in the course. Please feel free to discuss your ideas with me whenever you are ready to do so.

You have wide latitude to choose the subject matter for your term project.  The term project entails analyzing the technology strategy of a company (of your choice). It is common (but not required) for a team to choose a technology with which at least one member is reasonably well acquainted.

*Report Format:* The project report should be 15-20 pages double-spaced, plus up to five additional pages of exhibits, and should be completely self-contained (all the information I need to understand the analysis is included).  You may append news clippings or other useful background materials that you don't want to summarize in a backup appendix (not included in the 10-15 pages).  Please be sure to cite your sources.

The team project is due on the last day of class. Late submissions are penalized by -1 point per day up to one week. Team projects will not be accepted more than one week late.

*Learning Journal – 10%*
Each student is required to prepare a learning journal over the course of the term. A learning journal is a collection of notes, observations, thoughts and other relevant materials built-up over a period of time and maybe a result of a period of study, learning and/or working experience. Its purpose is to enhance your learning through the process of writing and thinking about your learning experiences. A learning journal

should focus on your personal responses, reactions and reflections to new ideas or new ways of thinking about a subject that you have been introduced to through reading the course material, discussion during class, and workplace experiences. There is no prescribed format. However if you are in doubt I suggest the following format for the final paper:

Executive summary – one page describing the content and structure of the write-up

Initial thoughts and questions – one to two pages on your initial thoughts about the class, your goals in taking the class, and any initial questions you have about the class.

Weekly sessions – six to eight pages describing your thoughts about assigned readings and class discussions.

Journal summary – one to two pages summarizing your experiences in the class, the degree to which your goals for the class were or were not met. I suggest 8-10 pages, double-spaced, 11 or 12 pt. font. Overall, 4,000 words of content is appropriate.

*Evaluation Criteria and Grading*.  Grades for project reports, individual case analyses, and learning journals will be determined using the four criteria listed below in order of importance:

1. Integration with appropriate conceptual models (explicit links to course concepts and models)
2. Quality of presentation (organization of argument, presentation style, creativity in content/format) implementation. Please note that clear, concise, and correct writing will be considered in the evaluation of the case analyses. That is, you may lose points for writing that impedes communication: poor organization, weak paragraph development, excessive wordiness, hard-to-follow sentence structure, spelling mistakes and grammatical errors.
3. Quality of analyses (rigor, originality, and brilliance of your ideas)
4. Completeness of any proposed recommendations and/or steps for implementation.

## COURSE FORMAT AND EXPECTATIONS

Please note that clear, concise, and correct writing will be considered in the evaluation of all of your assignments. That is, you may lose points for writing that impedes communication: poor organization, weak paragraph development, excessive wordiness, hard-to-follow sentence structure, spelling mistakes and grammatical errors. Students who require additional support and/or tutoring with respect to their writing skills are encouraged to visit the Academic Success Centre (www.asc.utoronto.ca) or one of the College Writing Centres (www.writing.utoronto.ca/writing-centres). These centres are teaching facilities – not editing services, where trained staff can assist students in developing their academic writing skills. There is no charge for the instruction and support.

The group project requires students to work in teams of 4-6.
Learning to work together in teams is an important aspect of your education and preparation for your future careers. That said, project-based teamwork is often new to students; to work well in teams, it helps to follow a set of core expectations to best succeed at your team projects.

1. Read the document entitled, "Working in Teams: Guidelines for Rotman Commerce Students" which is available on the RC portal under the Academic Services tab.

2. When working in a team, Rotman Commerce students are expected to:

- Treat other members with courtesy and respect;
- Honor the ground rules established by the team;
- Contribute substantially and proportionally to the final project;
- Ensure enough familiarity with the entire contents of the group project/assignment so as to be able to sign off on it as original work;
- Meet the project timeline as established by the team.

3. Resolving conflicts:

Conflicts are part of the team's process of learning how to work together. When handled well, it can generate creativity and bring-multiple perspectives to the solution.

Student teams are expected to work through their misunderstandings as soon as they arise (and prior to submission of the final project). When teams are unable to arrive at a solution that works for all members, the team must meet with the Rotman Commerce Team Coach** as soon as possible. The Coach will listen to the team and help develop options for improving the team process. All members of the project team must commit to, and, utilize their action plans.

**For an appointment with a Rotman Commerce Team Coach, please contact Nouman Ashraf at nouman.ashraf@rotman.utoronto.ca  Nouman is highly skilled at facilitating team dynamics and collaboration. Note that the Team Coach's s role is to provide guidance, support and advice on team matters – not to formally evaluate or assess teamwork for academic purposes.

## POLICY AND PROCEDURE

**Missed Tests and Assignments (including midterm examinations)**
Students who miss a test or assignment for reasons entirely beyond their control (e.g. illness) may submit a request for special consideration. Provided that notification and documentation are provided in a timely manner, and that the request is subsequently approved, no academic penalty will be applied.

In such cases, students must notify Rotman Commerce on the date of the missed test (or due date in the case of course work) and submit supporting documentation (e.g. Verification of Student Illness or Injury form) to the Rotman Commerce Program Office within **48 hours** of the originally scheduled test or due date. Students who do not provide Rotman Commerce or the instructor with appropriate or sufficient supporting documentation will be given a grade of 0 (zero) for the missed test or course deliverable.

**Note that the physician's report must establish that the patient was examined and diagnosed at the time of illness, not after the fact.  Rotman Commerce will not accept a statement that merely confirms a report of illness made by the student and documented by the physician.**

**Missed work will be handled by a re-weighting of another deliverable.**

**Late Assignments**
All assignments are due at the end of the day on the date specified in the course outline. Late submissions will be penalized by 1 point if the assignment is not received on the specified date, at the specified time. A further penalty of 1 point will be applied to each subsequent day.

Students who, for reasons beyond their control, are unable to submit an assignment by its deadline must obtain approval from the instructor for an extension. Supporting documentation will be required as per the policy on missed tests and assignments.

**Accessibility Needs**
The University of Toronto is committed to accessibility. If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: accessibility.services@utoronto.ca or http://www.accessibility.utoronto.ca/.

**Academic Integrity**

Academic Integrity is a fundamental value essential to the pursuit of learning and scholarships at the University of Toronto. Participating honestly, respectively, responsibly, and fairly in this academic community ensures that the UofT degree that you earn will continue to be valued and respected as a true signifier of a student's individual work and academic achievement. As a result, the University treats cases of academic misconduct very seriously.

*The University of Toronto's Code of Behaviour on Academic Matters* http://www.governingcouncil.utoronto.ca/policies/behaveac.htm outlines the behaviours that constitute academic misconduct, the process for addressing academic offences, and the penalties that may be imposed. You are expected to be familiar with the contents of this document. Potential offences include, but are not limited to:

In papers and assignments:
- Using someone else's ideas or words without appropriate acknowledgement.
- Submitting your own work in more than one course without the permission of the instructor.
- Making up sources or facts.
- Obtaining or providing unauthorized assistance on any assignment (this includes collaborating with others on assignments that are supposed to be completed individually).

On test and exams:
- Using or possessing any unauthorized aid, including a cell phone.
- Looking at someone else's answers
- Misrepresenting your identity.
- Submitting an altered test for re-grading.

Misrepresentation:
- Falsifying institutional documents or grades.
- Falsifying or altering any documentation required by the University, including (but not limited to), medical notes.

All suspected cases of academic dishonesty will be investigated by the following procedures outlined in the *Code of Behaviour on Academic Matters.* If you have any question about what is or is not permitted in the course, please do not hesitate to contact the course instructor. If you have any questions about appropriate research and citation methods, you are expected to seek out additional information from the instructor or other UofT resources such as College Writing Centres or the Academic Success Centre.

**Email**
At times, the course instructor may decide to communicate important course information by email. As such, all UofT students are required to have a valid UTmail+ email address. You are responsible for ensuring that your UTmail+ email address is set up AND properly entered on the ROSI system.  For more information please visit http://help.ic.utoronto.ca/category/3/utmail.html

Forwarding your utoronto.ca email to a Hotmail, Gmail, Yahoo or other type of email account is not advisable. In some cases, messages from utoronto.ca addresses sent to Hotmail, Gmail or Yahoo accounts are filtered as junk mail, which means that important messages from your course instructor may end up in your spam or junk mail folder.

**Blackboard and the Course Page**
The online course page for this course is accessed through Blackboard. To access the course page, go to the UofT Portal login at https://portal.utoronto.ca/ and log in using your UTORid and password. Once you have logged in, look for the My Courses module where you'll find the link to all your course websites. If you don't see the course listed here but you are properly registered

for the course in ROSI, wait 48 hours. If the course does not appear, go to the Information Commons Help Desk in Robarts Library, 1st floor, for help, or explore the Portal Information and Help at http://www.portalinfo.utoronto.ca/content/information-students and review the Frequently Asked Questions.

**Recording Lectures**
Lectures and course materials prepared by the instructor are considered by the University to be an instructor's intellectual property covered by the Canadian Copyright Act. Students wishing to record a lecture or other course material in any way are required to ask the instructor's explicit permission, and may not do so unless permission is granted (note: students who have been previously granted permission to record lectures as an accommodation for a disability are, of course, excepted). This includes tape recording, filming, photographing PowerPoint slides, Blackboard materials, etc.

If permission is granted by the instructor (or via Accessibility Services), it is intended for the individual student's own study purposes and does not include permission to "publish" them in anyway. It is absolutely forbidden for a student to publish an instructor's notes to a website or sell them in any other form without formal permission.

## **Weekly Schedule**

| Class | Date | Topics | Deliverables | Readings |
|---|---|---|---|---|
| 1 | Jan 10 | Introduction | | Course Outline |
| 2 | Jan 17 | Technological Innovation | | Teece, David. 1986. "Profiting from Technological Innovation: Implications for Integration, Collaboration, Licensing, and Public Policy." *Research Policy*. Pp. 285-305. Library. <br> Prahalad, C.K., and Gary Hamel. "The Core Competence of the Corporation". Reading Packet. |
| 3 | Jan 24 | Technological Innovation & Strategy | | Burgelman, Robert A., and Robert E. Siegel. "Defining the Minimum Winning Game in High Technology Ventures". Reading Packet. <br> Christensen, Clayton M. and Michael Overdorf "Meeting the Challenge of Disruptive Change". Reading Packet |
| 4 | Jan 31 | Technological Evolution | | Abernathy, William J., and James M. Utterback. "Patterns of Industrial Innovation". R-world. <br> Saffo, Paul. Six Rules for Effective Forecasting. Reading Packet. <br> Christensen, Clayton M., Matt Verlinden, and George Westerman. 2002. "Disruption, Disintegration, and the Dissipation of Differentialbility". *Industrial and Corporate Change*. Pp. 955-993. Library. |
| 5 | Feb 7 | Industry Context | Eli Lilly & Company: Drug Development Strategy. | Eli Lilly & Company: Drug Development Strategy. Reading Packet. |
| 6 | Feb 14 | Organizational Context | | Henderson, Rebecca M. and Kim B. Clark. 1990. "Architectural Innovation: The Reconfiguraton of Existing Product |

| Class | Date | Topics | Deliverables | Readings |
|---|---|---|---|---|
| | | | | Technologies and the Failure of Established Firms". *Administrative Science Quarterly.*Pp. 9-30. Library<br>Burgelman, Robert M. and Andrew S. Grove. 1996. "Strategic Dissonance". *California Management Review.*Pp. 8-28. Reading Packet. |
| 7 | Feb 28 | Strategic Action | | Hamel, Gary, and C.K. Prahalad. "Strategic Intent". Reading Packet.<br>Burgelman, Robert M. and Andrew S. Grove. 2007. "Let Chaos Reign, then Reign in Chaos – Repeatedly: Managing Strategic Dynamics for Corporate Longevity". *Strategic Management Journal.* Pp. 965-979. Library. |
| 8 | Mar 7 | Internal and External Sources of Technology | | Cohen, Wesley M. and Daniel A. Levinthal. 1990. "Absorptive Capacity: A New Perspective on Learning and Innovation". *Administrative Science Quarterly*. P.p. 128-152. Library |
| 9 | Mar 14 | Linking New Technology and Novel Customer Needs | | Gourville. John T. 2006. "Eager Sellers and Stony Buyers: Understanding the Psychology of New-Product Adoption". Reading Packet.<br>Moore, Geoffrey A. 2004. "Darwin and the Demon: Innovating Within Established Enterprises". Reading Packet. |
| 10 | Mar 21 | Internal Corporate Venturing | | Hindo, Brian. 2007. "3M: Struggle between Efficiency and Creativity". Reading Packet.<br>Tushman, Michael and Charles O'Reilly. 1996. "Ambidextrous Organizations: Managing Evolutionary and Revolutionary Change". *California Management Review.* Pp. 8-30. Library. |
| 11 | Mar 28 | New Product Development | | Wheelwright, S.C. And Kim B. Clark. 1992. "Organizing and Leading Heavyweight Development Teams". *California Management Review. Pp. 9-28.* Library.<br>Christensen, Clayton M., Stephen P. Kaufman, and Willy Shih. "Innovation Killers: How Financial Tools Destroy Your Capacity to do New Things". Reading Packet |
| 12 | Apr 4 | Building Competence /Capabilities Through New Product Development | Riot Games: Can Culture Survive Growth? | Riot Games: Can Culture Survive Growth? Reading Packet |