

Course Title: **Managing Innovation**
Course Number: **290I (cross listed in Business and Engineering)**
Units: **3**

SYLLABUS

Course Purpose

Most innovations fail. Yet companies that don't innovate die. Managing innovation thus constitutes one of the most difficult and critical tasks facing a manager. Nor is this solely the concern of high tech companies – companies in traditionally “low tech” businesses such as consumer packaged goods (like Procter & Gamble) find that innovation translates directly into growth in new businesses, and better profits in existing businesses.

The course adopts a capabilities-based view of the firm, drawing from economic, organizational, and engineering perspectives. The goal of the course is to identify the sources of innovative success and failure inside corporations, and how companies can develop and sustain a capability to innovate. The course will count towards students' Management of Technology (MOT) certificate, and graduate level cross-registrants from the Graduate College of Engineering (*except those still in their first year of study*) and School of Information Management Sciences are encouraged.

The book, [Open Innovation: The New Imperative for Creating and Profiting from Technology](#) (Harvard Business School Press, 2003), will be a required text for this course. There is also a Course Reader.

Objectives and Teaching Methods

Managing innovation will ground a student in broad topics surrounding today's ecosystem for bringing innovation to market within the context of the firm. The course uses the Open Innovation text as a guide and builds on its ideas through use of cases to illuminate specific topics. Students should come to class well prepared for vigorous discussions of the cases and topics embodied in the text and readings.

The course is divided into five modules:

- The first module is understanding **disruptive technology**, a theory of why great companies fail in managing certain types of technological change. This theory was introduced by Clayton Christensen in his book, “The Innovator’s Dilemma”.
- The second module is about **Innovation and the Business Model**. A corporation’s hugely successful business model can act as a barrier to change and adoption of innovation, as well as a source of advantage. **Disruptive Technologies** fundamentally challenge the company’s current business model and its ability to react to adopt the innovation.
- The third module examines **Sources of Innovative Ideas**. Once we understand the barriers to change, we must then find out how companies can overcome their disabilities, and where to look for new ideas. We will examine university research, military research, individual inventors, and corporate discovery processes.
- The fourth module explores the **Management of Intellectual Capital**. In a world of plentiful ideas, companies must learn how to identify and access promising external ideas, and add value to them by connecting them with internal knowledge. In turn, companies can enhance their revenues and profits by enabling their knowledge to be used by others in their businesses.
- The fifth and final module considers **Creating Innovation Capabilities**. These are alternative ways that companies have tried to escape the limits of their current business. We will examine these experiments, and look for processes and structures (including incubators, spin-offs, corporate venture capital) that attempt to sustain a company’s success.

Required Readings and Materials

See the course schedule below.

Deliverables and Requirements; Evaluation and Grading

Class Attendance and Participation. Regular class attendance is mandatory. The instructor will “cold call” students at the beginning of class, and occasionally at other times - it is vital that you read and carefully consider the case and any other readings prior to class. Each student may have one unexcused absence without any penalty. Beyond that, any further absences (other than due to illness or family emergencies) will negatively impact your participation rating. In all cases, please give advanced notice if you will not be in class.

We will utilize an internet-based system as a virtual site for class notes, and further information for people who want to explore particular topics more deeply. Student volunteers will receive participation credit for contributing class notes. Online discussion and debate will also be encouraged here, though such contributions will not be evaluated.

Midterm Paper. Halfway through the course, you will need to identify a company to analyze and explain its business model, using the concepts in *Managing Innovation*. The instructor will also organize the class into pairs of MBAs and graduate engineers/SIMS students. Each pair must pick a company at least one of you already knows well, either from your work before Haas, your work during the summer, or a company you intend to join after Haas. Familiarity with a chosen organization is critical, because many of our concepts are hard to discern from a distance. The goal of the paper is not to do original field research, but to demonstrate your ability to apply our concepts in a situation of your choosing. If you cannot think of an organization, then you probably should not take this course.

Final Paper. Again using course concepts from *Managing Innovation*, this assignment requires each pair of MBA and engineering/SIMS student to analyze a company’s innovation system, diagnose issues facing that system, and propose solutions to those problems.

Grades will be based on:

Midterm Paper	20%
Class Participation	40%
Final Paper	40%

Schedule

Session	Case	Case #	Readings
Module I	Disruptive Technology – Why Great Firms Fail to Innovate		
1	Course Introduction & Mechanics		
2	Gunfire at Sea (<i>handed out in previous class</i>)	1-698-081	
3	Intel Corporation’s Ecology of Strategy Making	Stanford SM-95	The Process of Strategy Development and Implementation, HBS working paper 00-075
4	Ecton Laboratories	9-699-018	Disruptive Technologies: Catching the Wave-HBR 95103
5	Hewlett Packard – The Flight of the Kittyhawk	9-697-060	Form your pair by end of class today
6	Review Day		Open Innovation -Introduction
Module II	Innovation and the Business Model		
7	Nypro –the Vistakon Project	9-694-062	When is Virtual Virtuous?

Session	Case	Case #	Readings
			Organizing for Innovation, HBR reprint 96103
8	Cultivating Capabilities to Innovate: Booz Allen	9-698-027	
9	Eli Lilly: Innovation in Diabetes Care	9-696-077	
10	Strategic Dealmaking at Millennium	9-800-032	
11	Review Session		<i>Open Innovation – Chapter 4</i>
Module III	Sourcing Innovative Ideas		
12	What's the BIG Idea?	9-602-087	
13	Centagenetix: Building a Business Model for Genetic Longevity	N9-602-105	
14	InnoCentive MIDTERM PAPER due	Distributed week before	Midterm paper due
15	University technology case, TBD , OR Bridge Networks case, OR Siemens Business Innovations case	Distributed week before	
16	Review Session		Open Innovation – Chapter 3
Module IV	Managing Intellectual Capital		
17	PI-x.com	1-601-019	Rivette, HBR article
	Rambus Inc.	SM-82	Assign Harhoff and Scherer RP article on skewed distribution of Patent values
18	Managing Intellectual Capital – Pat Sullivan		
19	Intellectual Ventures – Laurie Yoler or Peter Detkin		
20	Review Session		Read Chapter 8 of <u>Open Innovation</u>
Module V	Creating Innovation Capabilities		Start thinking about your Final Paper
21	Lucent: The Future of the New Ventures Group	N9-601-102	Making Sense of Corporate Venture Capital, HBR reprint 020305
22	<i>Dell Server Case</i>	Distributed in class week before	
24	Genzyme: Engineering the Market for Orphan Drugs	N9-602-147	Chapter 2, from <u>Open Innovation</u>
25	Intel Capital – The Berkeley Networks Investment	9-699-069	Chapter 3 from <u>Open Innovation</u>
26	Intel Labs (A): Photolithography Strategy in Crisis; David Tennenhouse?	600-032	Visit to Intel lablet
27	Innovation at Procter & Gamble	Distributed	Eric Mankin analysis of P&G, or

Session	Case	Case #	Readings
		in class week before	Gann and Salter study, Jeff Weedman coming to class
28	OnStar: Not Your Father's General Motors	N9-602-081	
29	Final Presentation and Review		Chapter 9 of <u>Open Innovation</u>
	Final Paper due		Final Papers due today

Teaching Guide

Requirements

This course should be taught by someone with broad experience in the research and theory of managing innovation. Practitioners, such as R&D managers from corporations, attorneys or others from the industry or service provider sector may bring too narrow a perspective on the issues of managing innovation. As the course is heavily case-based, the faculty should have direct experience with teaching using the case method.

This course is normally taught by the author of Open Innovation, with only a few guests who are specialists in their field.

Use of Mentors

Students are required to find firms where they will have access to information critical to writing the papers. In some instances, the students and firms will have strong relationships already in place, or will develop strong relationships going forward. These strong relationships should be encouraged, but should not influence the discussions in either the mid-term or final papers. Those papers should retain an objective view of the firm and its innovation practices.