

MANAGEMENT OF NEW PRODUCT DEVELOPMENT

MS&E 266

Winter 2003

DEPARTMENT OF MANAGEMENT SCIENCE AND ENGINEERING

Professor Robert C. Carlson

Course Description

PERSPECTIVE

The emphasis in this course is on managing the process of new product development. The term “product” will be understood in its most general sense in which service may be an important component. Most products have an important element of service associated with them; and indeed, some “products” are entirely “services”. For example, we often talk of a software product which has no other function than to provide a service. In this course the perspective is that of the senior-level general manager with primary responsibility for managing this process. In some instances, we will examine the general management tasks of executives at middle functional levels and then tie those tasks to the overall general management of new product development.

A major theme throughout the course is the primary importance of the new product development function in the formulation and implementation of business and corporate strategy. We will examine strategic decisions within this function to see how they affect the ability of the firm to achieve its goals and to carry out its business and corporate strategies. Finally, we will determine the contributions to competitive advantage that new product development can make when it coordinates its role with those of the other functions.

To emphasize the role of the senior manager in setting new product development strategy, the course will use case studies. Most of the cases have a decision orientation with a specific manager or group of managers having responsibility for developing action plans. One objective of this course is to help you understand how new product development works within a company, the primary tasks that accompany different environments, and the ways in which it is possible to organize this process to accomplish those tasks.

COURSE OBJECTIVES

In this course, as in any business situation, there are multiple and occasionally conflicting objectives. They include the following:

1. To develop a managerial point of view — a capacity for analyzing problems on a functional, a business, and a companywide basis.
2. To develop an understanding of the “state of the art” thinking as it applies to the management of new product development.
3. To develop an awareness of the organizational structures and procedures used in firms and their strengths and weaknesses.
4. To suggest the range of general management issues that you should consider in handling individual new product development decisions with a strategic point of view.
5. To develop habits of orderly thinking and rigor in formulating, evaluating, and recommending changes in new product development strategy.
6. To gain an appreciation of the complexities associated with implementing changes in functional, business, and corporate strategies.

ON-CAMPUS AND OFF-CAMPUS STUDENTS

Students will take this course both on and off-campus. We have not yet found a way for Off-Campus Students to effectively participate in and be evaluated for classroom participation, which is an important element of the course for On-Campus Students and thus accounts for 30% of their final grade. Therefore Off-Campus Students will have additional requirements as explained below.

On-Campus Students

Class attendance is required for On-Campus Students, and they may take this course for either 3 or 4 units. They must participate in a group field study project. Their grades will be determined by their performance

- (1) On 2 written case analyses (approximately 35%) (16% and 19%)
- (2) In classroom case discussions (approximately 30%)
- (3) On the group field study project (approximately 35%)

Off-Campus Students with Fewer Than 3 Class Members at Their Location

The group field study project requires students to be together so they can interact and visit a company's location(s) as a group. If fewer than 3 students are at a location, those students may not participate in a group field study project. Instead, each student must take this course for 3 units and must write an individual paper. The main objective of this paper is to allow each student to investigate the new product development process of an organization and to use some of the ideas of this course to determine, classify, and evaluate that process. Any student who believes this is not appropriate for that student's particular situation (their company provides a service, uses another company to do their product development, is a consulting firm, etc.) should contact Professor Carlson who will aid in selecting a topic. This paper is due no later than the beginning of class on Wednesday, March 5, 2003, and may be no more than 10 pages (plus exhibits). The formatting requirements for all written work in this course must be followed. Grades will be determined by each student's performance

- (1) On 3 written case analyses (approximately 60%) (18%, 20%, and 22%)
- (2) On the individual paper (approximately 40%)

Off-Campus Students with 3 or More Class Members at Their Location

3 Units of Credit

A student in this situation may elect to take this course for 3 units. In such a case, the requirements and the grading will be exactly the same as noted above for Off-Campus Students with Fewer Than 3 Class Members at Their Location.

4 Units of credit

Students may elect to take this course for 4 units in which case they must participate in a group field study project. At least 3 students at a location must select this option as the number of members in the group must be 3, 4, or 5. Their grades will be determined by their performance

- (1) On 3 written case analyses (approximately 55%) (17%, 18%, and 20%)
- (2) On the group field study project (approximately 45%)

FORMATTING REQUIREMENTS FOR WRITTEN WORK

All submitted written work should conform to the following requirements. It should be printed on standard-size 8.5 x 11 inch paper. It should be double-spaced with margins of at least 1 inch, left and right, and 0.5 inches, top and bottom. The font size should be 12 point. Exhibits must be titled and included only if they are referred to in the text.

THE CASE METHOD

This course uses the case method. The use of cases in this course is similar to their use in other courses. For each case, we have attached suggested questions to help you prepare the case. However, these questions should serve only as a starting point. You should decide what the key issues are and how to address them.

Case Discussions

In a typical case, we will often ask someone to start the class by answering a specific question. Anyone who has prepared the case thoroughly will be able to handle such a leadoff assignment. Study groups may also be asked to lead off and present their analysis to the class. After a few minutes of initial analysis and recommendations, we will open the discussion to the rest of the class. As a group, we will try to build a complete analysis of the situation and address the problems and issues it presents. We also will talk about the implementation of those recommendations and the complexities of effecting change in organizations.

Most general managers spend very little time reading, and even less time writing reports. Most of their interactions with others are verbal. This is true for general managers in new product development, as well as in other functions. For this reason, we have given a high priority in this course to the development of verbal skills. You should consider the classroom as a laboratory in which you can test your ability to convince your peers of the correctness of your approach to complex problems and of your ability to achieve the desired results through the use of that approach. Some criteria for effective class participation are:

1. Is the participant a good listener?
2. Are points that are made relevant to the discussion and linked to the comments of others?
3. Do the comments show evidence of a thorough analysis of the case?
4. Is there a willingness to participate?
5. Is there a willingness to test new ideas, or are all comments “safe” ?
(for example, repetition of case facts without analysis and conclusions is “safe”, but a somewhat off-the-mark comment that leads to creative discussion will be considered valuable)
6. Do comments clarify, highlight, and synthesize the important aspects of earlier comments and lead to a clearer statement of the concepts being covered and to new insights?
7. Do the comments identify overlooked points and points that turn out to be influential in further discussion?
8. Are comments well thought-out rather than just thrown out?

GUIDELINES FOR WRITTEN CASE ANALYSES

1. **General:** Each student must prepare a written analysis based on a thorough analysis of a case. Written papers are due at the start of class on the day that case is being discussed and must conform to the previously mentioned formatting requirements. The name of the case should be on the first page of the text. Your Student ID number only should be on the back of the last page. Please do not put your name on the paper.
2. **Page Limitation:** The page limit for the papers is four pages of text, plus exhibits. Note that these are maximum limits. Please try to make your papers concise and coherent.
3. **Exhibits:** Exhibits should contain specific types of analyses, such as financial analyses, breakeven charts, capacity analyses, cost analyses, etc. In general, exhibits should contain information that supports and is relevant, but would be too detailed for the body of the paper. Exhibits should not simply be an extension of the text. Exhibits must be titled and included only if they are referred to in the text.
4. **Proofreading:** You should proofread all papers. Papers for this course should be of the same quality that you would provide to the management of a business with which you are dealing. (Note: Pencil or ink corrections for typographical errors are acceptable.)
5. **Preparation:** You are encouraged to work together in preparing for every class for which you are not submitting an individual written analysis. For the individual written analysis, you may not discuss the case with others. All the work submitted must yours only.

Cases for Written Assignment

First Assignment	(Both On and Off-Campus Students)	Medtronic
Second Assignment	(Off-Campus Students Only)	Inktomi
Third Assignment	(Both On and Off-Campus Students)	Dell

THE GROUP FIELD STUDY PROJECTS

The group projects are a key part of the learning experience of the course. During the first week of the course you should form a group of 3 to 5 individuals. Each team will undertake a field study project. Each team member should expect to spend approximately 25 hours on the project over the course of the quarter. Past experience suggests that a significant number of you will want to set up field studies with companies in which you have some particular interest and/or knowledge. I encourage you to make use of these sites for the project. No more than one group can perform a field study at a given organization.

The field study involves working with a company on a specific issue in their new product development process that is of interest to the company. The team will be involved with one aspect of a company's process and interact with the company over the period of the project. The main objectives of the project are to allow you to have a firsthand experience with the new product development process in a company and to investigate one aspect of it in some depth.

The first step in developing a field study is to select an appropriate issue in the company's new product development process on which to focus. It is important that the project be very focused to ensure that your team has sufficient time to understand the issues involved and make feasible recommendations.

The results of the project will be transmitted to both the company and to us in a paper of no more than 10 pages (plus exhibits) and delivered to us no later than 3/05/03. A presentation of each group's findings will be made in class near the end of the quarter.

Time Line for Field Studies

- **Wednesday 1/22 Establish Teams:**
Submit a one-page memo identifying the team members.
- **Monday 2/03 Choice of Project:**
Turn in a one-page memo identifying the site for your project and the main company contact. Include
 - (1) The company name and address
 - (2) Industry and product (service) line
 - (3) Name, title, e-mail address, and telephone number of your contact
 - (4) The specific issue in the new product development process on which you plan to focus
- **Wednesday 2/12 Preliminary Project Outline:**
Submit a one-page memo defining your objectives for the project and a preliminary outline of your report.
- **Wednesday 2/26 Interim Status Report and Final Outline:**
Turn in a one-page memo describing the status of the project and a final outline of the report.
- **Wednesday 3/05 Papers due.**

OTHER ADMINISTRATIVE DETAILS

Since every faculty member has somewhat different expectations as to class behavior and course norms, we would like to outline a few of ours.

1. There are only 17 class sessions in this course, and we consider that the minimum required to cover the essentials of this topic area. We understand that other demands may require you to miss a class, but you should not have more than one absence from class.
2. Please let us know in advance if you must miss a class. If you do miss a class, it will be your responsibility to find out from your classmates what materials were covered, what additional assignments were made, and what handouts you may have missed.
3. We expect you to be prepared for every class. Since we sometimes call on individuals whose hands are not raised, you should let us know before class if some emergency has made it impossible for you to be prepared adequately for that class.
4. If at any point during the term you would like to see us about your class participation, written work, course matters, or anything else, please make an appointment with us or stop by during our office hours.
5. As stated previously, for purposes of general class preparation, group work is acceptable and encouraged. However, at no time should you use notes or papers from other courses where these materials might have been taught.
6. Off-Campus Students may submit written work (progress reports, written case analyses, group field study project, etc.) either via the SCPD transport system or directly to Professor Carlson by e-mail [r.c.carlson@stanford.edu]. These days e-mail is faster and generally more reliable.

GRADING

There will be no exams in this course

Your course grade will be determined by

1. which student category you are in and
2. for how many units you are taking this course.

One final reiteration with regard to the Honor Code. You are encouraged to work together in preparing for every class for which you are not handing in a written case analysis. All of the analysis and the actual preparation of the written case analysis should be done on an individual basis. Working together on such an assignment will be considered a violation of the Stanford Honor Code.