This course addresses selected management challenges and opportunities presented by technology. We move beyond the nuts and bolts of how technology works to examine the social, cultural, and political issues that make managing technology more than a “technical” job. Management requires deciding what to do next when faced with complex situations, limited time, and constraints on information and resources.

This class will provide students with the theories, tools, techniques and processes they need to make effective decisions in technology-intensive environments. We will critically evaluate how technology is produced, used, consumed and transformed and practice management skills with real business cases. Since today’s post-industrial workplaces all depend upon software to some extent, information technology will be a major focus. Each class will examine a specific decision or process that today’s technical manager faces such as how to:

- Develop communities to aid in the creation, development, and distribution of technology
- Develop and manage platform based technologies
- Integrate new technology into the workplace
- Structure and manage technical teams
- Use technology to support collaboration and dispersed teams
- Manage the responsibilities associated with information technology
- Ally with partners when creating, disseminating or supporting new technology.

Students will read articles from scholarly journals and the popular press, dissect real business cases, participate in class exercises, write response essays, work on group projects, and make presentations. To gain from the experiential learning that this course offers, students will need to engage in preparatory work prior to class.
Required Readings Course packet

There is no textbook for the course. Some additional materials may be distributed as the course progresses.

Course Requirements

Course Requirements and Grading

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<tr>
<th>Requirement</th>
<th>Percentage</th>
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<tr>
<td>Group Project</td>
<td>40%</td>
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<tr>
<td>2 Individual Written Assignments</td>
<td>30%</td>
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<tr>
<td>Participation</td>
<td>30%</td>
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Your grade will be based on:

1) **Group Project** ‘Turn Around Teams’ – You are free to form your own groups of 4-6 people to rescue or “turn around” a technology related product or service that is no longer growing due to either technical or market conditions. Because technology trajectories change quickly, and because functionality and features can rapidly converge, knowing when to end or how to revive a technology that is no longer growing is one of the essential jobs of technology managers. Both require redeploying or realigning organizational resources.

Your group will select a technology product or service that may end up in the discard pile that includes external zip drives, vacuum tube computer monitors and walkmans. Competition for the survival of new products can come from external or internal sources. For example, one might consider whether the market is large enough to support both a Facebook and a Myspace. On the other hand, Apple’s own introduction of the ipod touch could also cannibalize their existing line of ipods.

You can also think about ways in which changes in technology affect either a product or a service. For example, will digital distribution of film eradicate Netflix and Blockbuster’s business models? Will newspapers be able to survive with the continued shift of advertising revenue to online sources? The threat does not have to be current, but you should consider a five year time horizon. Your focus should be at the product as opposed to the firm level (e.g. Netflix mail distribution not Netflix the firm). To have enough time to develop the project, you must turn in a short description of your team and your project by the end of the fourth class, **April 23rd**. I am happy to meet with teams to discuss the feasibility of your project.

Your task will be to:
1) Analyze the nature of the threats your technology faces;
2) Plan a course of action to either revive it or redirect the organization’s resources to new areas and:
3) Align and structure the product team to achieve this course of action.
After analyzing the threat, you may decide to change your business model or stop production or redeploy organizational resources. Regardless of the action you choose, it will be critical for your team to justify the course of action you choose and to properly align and structure your organization to pursue the selected course of action. That is, you will not be graded according to what you choose, but on the analytics and coherence of your plan.

The project will consist of a 10-12 page group paper analyzing these three areas: the factors responsible for the demise of this technology; your planned course of action and how you will achieve it. This is one of the hardest and least commonly understood elements of technical management. I strongly recommend that you interview existing product managers in the organization you select or in managers similar situations to gather ideas.

Your turnaround team will make a group presentation on the final day of class. It is due on **June 4th** and this, combined with the paper, is worth **40%** of your grade. Each member of the group will be asked to evaluate every other group member anonymously on the last day of class on the following dimensions: attendance at group meetings, effort, meeting deadlines, and quality of work. Individual student ratings will be adjusted according to the group feedback.

2) **2 Individual Written Assignments** – There are two writing assignments that together will be worth **30%** of your grade. Your 2-4 page (double spaced) analysis is due at the beginning of the session in which the case is discussed. Late assignments are not accepted as it would be unfair for anyone to have the benefit of class discussion before writing their paper.

3) **Participation.** Participation counts for **30%** of your grade and includes class attendance, informed involvement in class discussions, cases and exercises. Attendance is critical for your learning in the class – if you cannot attend class, notify me in advance via e-mail. I will cold call (ask you to speak even if you have not volunteered) so it is a good idea to do the readings, reflect on the discussion questions and come prepared for discussion for every class. In class, good classroom discussions occur when everyone listens well, responds directly, and is courteous, and professional at all times. Disagreement is helpful when discussing a complex issue, but keep the conflict at a professional, not personal, level. Participation grades will be reduced for unprofessional comments, lack of attention, or ignoring your fellow students’ comments.
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<th>Session</th>
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<th>Topic</th>
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<td><strong>Technology and Community:</strong> Distributed Innovation and Production</td>
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M250 Course Readings

Key

**CASES** will be discussed in depth – read closely.

**DR (Discussion reading)** will also serve as the basis for class discussion – these are usually academic articles or chapters. Unless otherwise noted, read closely also.

**BR (Background reading)** are relevant materials to help you understand the case or issue we will discuss in class. We may not discuss this material in depth.

**PP (Popular press)** are articles from the popular press or non-academic book chapters that address the issues at hand for that session.

### Class 1: Technology and Community: Distributed Innovation and Production

*April 2*

Introduction and syllabus overview

**CASE:** HBS Threadless video case.


*Classroom Discussion Questions*

1. How has the Mozilla browser project and team survived despite several ownership changes? What has been critical to its success?
2. What should drive product development within Mozilla? How does one “lead” such a project/organization? What functions should the organization retain? Which functions should the community lead?

3. What are the consequences of moving to a revenue based model for the Mozilla Foundation? For the community?

In Class Handouts


Class 3: Developing Technology: Your Team & Product Development

April 16


DR: Sosa, Manuel E., Steven D. Eppinger, Craig M. Rowles. 2007. “Are Your Engineers Talking to One Another When They Should?” Harvard Business Review Article, Reprint R0711J.


In Class Handout:

Classroom Discussion Questions

(1) What challenges does managing a technical team present?
(2) How can you structure your team and the product development process to be adaptable to market conditions?
(3) How can you enable your team to manage product dependencies?

Written Assignment #1: Revisit an experience you have had on a project team (technical or otherwise). 1) How would you characterize the product development process? In what ways did it enable and in what ways did it hinder your team? 2) If you were building a technical product today how would you approach product development? 3) As a leader, what three behaviors, tools or techniques would you adopt when managing your next project? Be specific. Assignment is due at the start of class.
Class 4: Developing Technology: Creating Platforms

April 23


Classroom Discussion Questions
1. What specific steps did Lee Nackman take to create a common internal platform for software development within IBM? How would you characterize their approach to software development?
2. When do you want to create a platform? What are their advantages and disadvantages?
3. When do you want to open your platform up to others? What specific steps did IBM take to open up their platform and create an ecosystem around it?
4. How do platforms apply to other industries beyond software?

In Class Handouts

Class 5: Developing Technology: Product Design, Prototyping and Experimentation

April 30


Classroom Discussion Questions
1. What do you think led to Jeff Hawkin’s success with the Palm when so many handheld innovators before him had difficulty?
2. At what stage in the development process would you want to prototype? Who should be involved and at what level of participation?

3. How might prototyping affect your product development process?

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**Class 6: Consuming Technology: New Approaches to Enterprise IT**

May 7

**CASE:** McAfee, A. P. 2007. “Wikis at Dresdner Kleinwort Wasserstein” (A) HBS Case No. 606-074.


**Classroom Discussion Questions**

1. Should DKW adopt a corporate wide wiki? What are the advantages and disadvantages?
2. If you think the answer is yes, what implementation strategy would you pursue?
3. How would this approach differ from an implementation strategy for traditional enterprise technology?
4. What makes enterprise systems so challenging to design and implement?
5. Have you had a role in designing or implementing an enterprise system? What went right? What went wrong?

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**In Class Handouts**

McAfee, A. P. 2007. “Wikis at Dresdner Kleinwort Wasserstein” (B), HBS Case No. 606-075.

McAfee, A. P. 2007. “Wikis at Dresdner Kleinwort Wasserstein” (C) HBS Case No. 606-076.

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**Class 7: Developing and Consuming Technology: Managing Information Responsibly**

May 14
CASE: Product Revolt #1: Facebook and Newsfeed


Product Revolt #2: Facebook and Beacon


Security


Privacy


Class Discussion Questions

1. As a manager at Facebook would you have launched either of these two products (newsfeed and beacon) in their original form? Why or why not? What would you have done differently?
2. Post launch of newsfeeds and beacon, would you have made the same changes that Facebook did? Why or Why not? What would you have done differently? What can you infer from these two events only a year apart?
3. How might these types of scenarios play out within an organization? What does the Nardi and O’Day article suggest?
4. More generally, how can one innovate and take advantage of the capabilities that digital technologies offer while balancing individuals’ right to privacy? What responsibilities do you owe to your user community – whether inside or outside the firm?

Written Assignment #2: Write a 750 word essay addressing the first two classroom discussion questions posed. Be sure to defend your position and feel free to augment these readings with additional case facts on either product – there is plenty on the Internet covering both of these product introductions and their subsequent
modifications. Feel free to include any personal experience you may have had with these products if it is relevant. Assignment is due at the start of class.

Class 8: Going to Market: Managing Innovation, Growth and Product Focus

May 21


Classroom Discussion Questions
1. What were the key factors behind Google’s early success?
2. Do you expect the search industry to become more or less concentrated? Is search a winner take all business?
3. Is Google a disruptive technology? For whom? Why?
4. What should Google focus on next? What criteria should Google use to determine their next steps?

Topic 9: Going to Market: Managing Partners, Allies and Enemies

May 28


Class Discussion Questions
1. How did Netscape perform in their negotiations with AOL? What is at stake? Why is AOL a critical partner for Netscape? How should this affect Netscape’s approach?
2. Evaluate Netscape's actions so far in developing a partnership with KPMG. What did they do well? Poorly? What have KPMG and Microsoft done well? Why is Microsoft so motivated to make a deal?
3. What, if anything, would you advise Jim Barksdale to do now?
(4) Revisiting the cases in this course, what general principles can you infer for determining who to partner with and when? Why is this more important for platform or networked technologies?

(5) What does this imply for those in future technical leadership roles? How can we ensure that the technical, business model and partnering aspects of decisions are all adequately considered?

In Class Handout

After Class Handout

| Class 10: Final Project Presentations | June 4th |

Final group projects are due at the beginning of class. If there are 8 groups, each group will have 15 minutes to present.
Class Policies

Academic Integrity
All students who take this course are governed by the University of California's standards of ethical conduct for students, in particular, the sections on academic conduct and integrity. These sections set forth the responsibilities of students and faculty to maintain a spirit of academic honesty and integrity at U.C. Davis. It is essential that you are aware of this code of conduct and the disciplinary actions that may be taken in the event of a violation. A copy of the Code of Academic Conduct may be found in your student handbook or at: http://sja.ucdavis.edu/pdf/CAC.pdf. Further details may be obtained from the GSM Associate Dean or the Office of Judicial Affairs.

Absences
Attendance is necessary for participation, and participation is critical to your learning, so the class participation for any missed class is zero. There is no way to make-up participation, as it requires being in class. Please attend all classes. There are no excused absences other than those defined by University policy. Attendance is for the final discussion and presentation of group projects is mandatory.

Written Assignments
Assignments are due in hard copy at the beginning of class. Assignments can not be emailed. Late assignments are not accepted. Please use a 12-point font, DOUBLE SPACED, 1” margins all around. Include page numbers and put your name on the front page. A title sheet is only necessary for the final paper (which is not included in the page limits).

Do not exceed stated lengths; writing beyond those lengths will not be graded. Please staple papers; do not include anything other than plain paper that will weigh down the instructor even further than usual.

Any references or other material that is not the author’s should be clearly cited in a bibliography that follows a widely accepted format. Any text string beyond five words in its original format requires a reference or citation. The bibliography does not count towards page limits.

Accommodations for Students with Disabilities
There will be accommodations made for students with disabilities, in accord with university guidelines.