The Strategic Management of Technology
ISE 585 Sections: 31585 and 31785
Spring 2015 Monday 6:40-9:20PM

Instructor: Michael M. Mann, Ph.D.
Office: GER216C
Office Hours: Monday 5:30-6:30PM
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Phone: 310.944.5059

Teaching Assistant:
Office:
Office Hours: TBD
Contact Info:
Course Description
This course is intended to assist professionals who have, or anticipate having, managerial responsibilities in technology intensive enterprises to effectively manage the “technology balance sheet.” The course introduces processes, tools, and strategies for analyzing, planning, and managing the technological assets of the enterprise, and the related organizational implications.

Learning Objectives
The course objective is to develop an understanding and proficiency of the concepts, strategies, methods, and tools that underpin the development and execution of successful strategic management of technology and technology intensive enterprises.

Prerequisite(s): None
Co-Requisite(s): None
Concurrent Enrollment: None
Recommended Preparation: Writing and Presentation Skills

Course Notes
The course includes lectures, written case analyses, and class discussions of cases and assigned readings. Lectures by the professor may be augmented by special guest lectures on topics of particular significance. Each student will also develop and complete a term project focused on developing a strategic technology management plan that provides the vehicle for developing and demonstrating facility in employing the tools and concepts of the course.

The course is structured into modules, with appropriate readings and cases for each:
- Technology as an Asset
- The Technology Balance Sheet
- Resource Allocation
- Technology and Value
- Strategic Management of Intellectual Property
- Technology and Competitive Advantage
- Technology Life Cycle
- Technology Renewal and the Technology Tree
- Project and Portfolio Selection and Management
- Organizing and Managing the Technology Intensive Enterprise

The course will utilize Blackboard to post lecture slides and other information, as well as Webex to support participation of the DEN students.

Technological Proficiency and Hardware/Software Required
Students should be proficient with Microsoft Office and Project, or equivalent.

Required Readings and Supplementary Materials
Required: (Available in the USC Bookstore)
ISE585 Special Reader - Spring 2015

Suggested Supplementary Reading:
Finance for the Non-Financial Manager, Gene Siciliano
Financial Analysis Tools and Techniques, Eric A. Helfert
The Innovator’s Dilemma, Clayton M. Christensen
The Innovator’s Solution, Clayton M. Christensen and Michael E. Raynor
The Agile Startup, Jeff Sheinrock and Matt Richter-Sand
Description and Assessment of Assignments
Case studies are graded for completeness and responsiveness to the case study guidelines provided in class. The lowest case study grade will be eliminated in computing the aggregate grade for the case studies. In addition, an optional case may be completed and submitted to replace the second lowest graded case. You are welcome and encouraged to discuss the cases in groups, but the case write-ups must be developed and submitted individually and reflect each individual’s analysis.

There is a required term project consisting of the development of a five-year strategic technology management plan for an enterprise of the student’s choosing. The project grade is determined by the demonstration and use of the tools, concepts, and methods introduced in the course for developing and assessing a technology plan, as well as the clarity of a corresponding 15-minute presentation to the class.

There will be a mid-term exam, but the project will replace the final exam.

Participation is an important element of the learning process in this class. However, if direct participation in a class is not possible, participation credit for that class can be had by selecting an article related to the class content and submitting and posting it, along with a 1-2-page summary and analysis.

Grading Breakdown

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Cases</td>
<td>30%</td>
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<tr>
<td>Class Participation and Reading Summaries</td>
<td>15%</td>
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<tr>
<td>Midterm Examination</td>
<td>20%</td>
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<tr>
<td>Project Report and Presentation</td>
<td>35%</td>
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Assignment Submission Policy
Case studies and other written assignments are due no later than the start of the class for which they are assigned. Late submittals will not be graded. Written assignments should be submitted both electronically and in hard copy in class for on-campus students and using the DEN procedures for DEN students.

Course Schedule: A Weekly Breakdown
(Schedules subject to change to accommodate guest speakers)
<table>
<thead>
<tr>
<th>Week 1</th>
<th>Jan. 12</th>
<th>Intro to the Strategic Management of Technology (SMT)</th>
<th>Deliverable/ Due Dates</th>
<th>Readings and Assignments</th>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class)</td>
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| Week 2 | Jan. 19 | MLK Day University Holiday |                       | Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class) |

| Week 3 | Jan. 26 | Intro to Technology Balance Sheet | Personal Profile. Be prepared to discuss assigned cases (no write-ups required) | Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class) |

| Week 4 | Feb. 02 | Technology Balance Sheet | Assigned Case Write-up | Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class) |

| Week 5 | Feb. 19 | Intro to Finance for Non-Financial Managers | Hoshi Printer | Assigned Case Write-Up | Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class) |

| Week 6 | Feb. 16 | Presidents' Day University Holiday |                       | Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class) |

<p>| Week 7 | Feb. 23 | Valuing Technology Intensive Enterprises | Selected Article Copies &amp; Commentary | Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class) |</p>
<table>
<thead>
<tr>
<th>Week 8</th>
<th>Mar. 2</th>
<th>Strategic Management of Intellectual Property</th>
<th>Robert Kovelman, Esq. (Patents)</th>
<th>Assigned Case Write-up</th>
<th>Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class)</th>
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<tbody>
<tr>
<td>Week 9</td>
<td>Mar. 9</td>
<td>Technology Roadmaps Technology Renewal and Technology Tree</td>
<td>Project Plan Assigned Case Write-up</td>
<td>Tushman: Preface, Section II Intro, 4 Reader: HBR82103, S0409A, F08018 Cases: HBR R0506A, R0707A Personal Profile (explained in class)</td>
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<td>Week 10</td>
<td>Mar. 16</td>
<td>Spring Recess</td>
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<td>Work on Project</td>
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<td>Week 11</td>
<td>Mar. 23</td>
<td>Midterm Examination</td>
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<td>Week 12</td>
<td>Mar. 30</td>
<td>Transitioning R&amp;D to the marketplace</td>
<td>Jon Lasch, Ph.D. Dan Singleton, Ph.D.</td>
<td>Assigned Case Write-up</td>
<td>Tushman: 1, 7, 23, 24 Case: HBR 9-295-127 Posted Papers</td>
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<td>Week 13</td>
<td>Apr. 6</td>
<td>Venturing</td>
<td>Matt Richter-Sand</td>
<td>Assigned Case Write-up</td>
<td>Tushman: 1, 7, 23, 24 Case: HBR 9-295-127 Posted Papers</td>
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<td>Week 14</td>
<td>Apr. 14</td>
<td>Organizing and Managing the Technology Intensive Enterprise</td>
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<td>Assigned Case Write-up</td>
<td>Tushman: 17, 20, 29, 30 Reader: HBR 85312 Case: HBR 9-691-037</td>
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<td>Week 15</td>
<td>Apr. 21</td>
<td>Project Presentations</td>
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<td>Assigned Case Write-up</td>
<td>Project Write-up Optional Case: HBR9-606-114</td>
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<td>Week 16</td>
<td>Apr. 28</td>
<td>Project Presentations</td>
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<td>Written Project Reports Due Optional Case Write-up Presentation Reviews</td>
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<tr>
<td>Week 17</td>
<td>May 5</td>
<td>Class Ended - No Final Examination</td>
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Statement for Students with Disabilities
Any student requesting academic accommodations based on a disability is required to register with Disability Services and Programs (DSP) each semester. A letter of verification for approved accommodations can be obtained from DSP. Please be sure the letter is delivered to me (or to TA) as early in the semester as possible. DSP is located in STU 301 and is open 8:30 a.m.-5:00 p.m., Monday through Friday. Website and contact information for DSP: http://sait.usc.edu/academicsupport/centerprograms/dsp/home_index.html, (213) 740-0776 (Phone), (213) 740-6948 (TDD only), (213) 740-8216 (FAX) ability@usc.edu.

Statement on Academic Integrity
USC seeks to maintain an optimal learning environment. General principles of academic honesty include the concept of respect for the intellectual property of others, the expectation that individual work will be submitted unless otherwise allowed by an instructor, and the obligations both to protect one’s own academic work from misuse by others as well as to avoid using another’s work as one’s own. All students are expected to understand and abide by these principles. SCampus, the Student Guidebook, (www.usc.edu/scampus or http://scampus.usc.edu) contains the University Student Conduct Code (see University Governance, Section 11.00), while the recommended sanctions are located in Appendix A.

Emergency Preparedness/Course Continuity in a Crisis
In case of a declared emergency if travel to campus is not feasible, USC executive leadership will announce an electronic way for instructors to teach students in their residence halls or homes using a combination of Blackboard, teleconferencing, and other technologies.