I. Instructor

A. Steve Lundregan – Senior Lecturer in Management Sciences

<table>
<thead>
<tr>
<th>Class</th>
<th>Wednesday and Friday, 3:55 – 5:15, Converse Hall 139</th>
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</thead>
<tbody>
<tr>
<td>Office</td>
<td>Fisher 648</td>
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<tr>
<td>Telephone</td>
<td>(614) 688-1225</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:Lundregan.5@osu.edu">Lundregan.5@osu.edu</a> (Preferred)</td>
</tr>
<tr>
<td>Office Hours</td>
<td>Wednesday and Friday, 2:30 – 3:30</td>
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B. Instructor’s Bio:

Steve Lundregan is a senior lecturer at Fisher College of Business and Associate Director of Strategy for Fisher’s Center for Operational Excellence. He teaches operations management, service operations, and innovation courses and was awarded the Undergraduate Program Teaching Award in 2013. His areas of expertise include strategy formulation, strategic management, operations strategy, innovation, change leadership, and service operations. He is known for his strategic thinking and problem solving skills, his engaging and inspiring leadership style, and his unique ability to connect ideas and people.

Steve joined the Fisher in 2012 after three decades of industry leadership experience. Steve held officer-level roles in marketing, strategy, and operations at Nationwide Insurance where he formulated and implemented innovative growth and performance improvement strategies for this Fortune 100 financial services firm.

In addition to his role at Fisher, Steve is currently a board member of Coordinated Health Mutual (InHealth Mutual) where he serves as Chairman of the Audit, Finance and Investment Committee. He is also co-founder of JKS Group, LLC. where he invests in and advises start-up and mid-size businesses.

Steve earned his BA in economics and MBA from The Ohio State University and holds Chartered Property Casualty Underwriter (CPCU) and Chartered Life Underwriter (CLU) professional insurance designations.
II. Course Materials

A. Text:

**Strategic Management of Technological Innovation, 4th edition**

ISBN-13 9780078029233. The book contains mini-cases that will be used as the discussion material in class. It is important that you have the 4th edition (2013) for the current cases. This text is available at OSU bookstores or on-line retailers. It is available in e-text.

B. Simulation:

**Back Bay Battery Simulation.**

An online simulation exercise is required for this course. Harvard Business School Press charges a minimum fee of $15.00 per student that must be paid online. I will give you a special registration URL when the simulation is activated. When you register the simulation will automatically associate you with the correct school/faculty/course and then require you to purchase your “seat” in the simulation.

III. Course Description and Objectives

A. Description

Management of Technology and Innovation is rapidly becoming one of the key enablers to organizational success. The purpose of BUSMGT 4240 is to help students develop a strong conceptual foundation for managing innovation. Emphasizing operational considerations, this course will introduce you to the critical elements of designing, developing and sustaining innovative products and services for strategic competitive advantage. The course is intended for a wide range of industry, service sector, or non-profit careers in which innovation is critical to the development of new products or services, and methods of production or delivery. The primary focus of this course will be on the tools, techniques and concepts necessary for designing, developing and managing the innovation processes. The contents of this course intentionally cross-functional boundaries of management incorporating concepts from Finance, Marketing, Operations and Technology.
A culmination point of this course features developing a new product or new service by applying the concepts and lessons learned from this course. Participants are expected to work in cross-functional teams throughout the semester, and they have to develop their innovative idea to the point of a “pitch” that potential investors could decide whether and how much to invest. More details are provided below in the group project section.

B. Objectives

1. Understand the various sources and types of innovation
2. How to develop an innovation strategy for your organization
3. When and how to introduce your innovative products and services
4. How to collaborate with customers and suppliers when developing new products and services
5. How to protect your innovation as patents and trade secrets
6. How to design your organization for sustaining innovation
7. How to manage New Product Development teams and projects
8. Develop working skills to design, develop and commercialize a new product or service of your choice

IV. Grading

A. Components and weights

1. 15% Midterm 1
2. 15% Midterm 2
3. 15% Final exam
4. 15% Class contribution and simulation
5. 40% Group project
B. Midterm & Final Examinations

The Midterm and Final Examinations will be a combination of case analysis, essay questions and multiple-choice questions. The material for these exams can be based on anything covered in the lecture, text, other assigned readings and videos and guest presentations. You are not required to memorize any formulae or concepts but are required to understand and apply these concepts to a given scenario or a problem. **No make-up, late or early exams will be given, except in the case of medical emergency.** Students should make arrangements now to avoid time conflicts.

C. Class Contribution and Simulation

Students are expected to prepare for, attend, and make contributions to class. In addition to the text, a combination of articles and mini-cases will be used in this course. **You are expected to read these cases & articles before class.** Most of your learning will occur in preparing and discussing these cases in class. Case discussions will be a significant component of your class participation points.

1. Class Contribution

This class is designed to encourage not only student participation, but more importantly student contributions to our learning environment. Your contribution is demonstrated by your own class journal and my evaluation of the quality of questions and comments made during class, particularly during case discussions. Also, a consistent level of participation throughout the quarter will receive a much higher score than a high level of participation for just a few classes. **You are encouraged to check with me periodically** to find about your contribution grade.

2. Back Bay Battery Simulation

This simulation provides students with a first-hand experience of the inherent challenges in managing innovation portfolios. Students manage the R&D investments for Back Bay Battery Incorporated – one of over 20 major manufacturers of NiMH batteries. Specifically, the student role involves managing R&D funding for emerging technologies as well as existing technologies such that the company remains profitable. More details regarding this simulation will be discussed in class.
D. Group Projects

The purpose of the group project is to allow you to apply (and expand on) the ideas you have learned in an area that is of special interest to you. Each group will develop an idea for a new product or new service starting from idea generation to the point where the idea can be “pitched” to potential investors. This should include product/service design and launch plans. It may also include a working prototype (minimum viable product) or proof-of-concept (especially for service oriented projects). Examples of projects in this category include, a 3D printing company, an educational program for hospitalized children, or a new website to develop, market and protect your personal brand.

Groups consist of up to 5 students. Any exceptions must be approved in advance. I strongly suggest you begin working on this project from the first week and delegate tasks amongst your group members in an efficient manner. You are also encouraged to continuously check with me regarding the project scope and deliverables.

There are three different components of your group project that will be included in your grade (Refer syllabus for the due dates and the nature of the reports). There will also be a final group presentation at the end of the course. I may have other faculty and industry representatives evaluating your presentation (other than student and my evaluations).

In total, your group project is worth 40 points awarded as follows:

- Project update presentations: \(2 \times 5 = 10\) pts
- Final group presentation: \(10\) pts
- Final written project report: \(20\) pts

Each group member will be asked to turn in a confidential assessment of their own contribution as well as the contributions of each of their other group members. These assessments will be used to modify the individual member grades where obvious differences in effort and participation amongst group members exist.

This project requires the student teams to develop a new product or new service starting from idea generation to product/service design and launch. Although students are not required to actually materialize the final product, they are asked to bring it to the point where it can be “pitched” for funding.
The following deliverables (check the syllabus for their respective due dates) will help students’ progress in their projects. Updates do not require a formal document; a copy of the power point presentation with notes is sufficient. However, a formal paper is required for the final deliverable.

1. Project update 1 – “Idea”

What problem are you trying to solve? What solution concepts have you considered? Where did the idea originate? What type of innovation is this? How would you define the project scope? Plan 20 minutes for this presentation. Encourage class feedback to help you validate or refine your idea. Hint: In this presentation you can be slightly generic. Teams will have one more opportunity to alter their exact scope before the second deliverable.

2. Project update 2 – “Solution”

What is the specific solution you are developing? What type of consumers are you mainly targeting? What data supports your choices? Plan 10 minutes for this presentation. (Apart from questionnaires or focus groups you are advised to use further media tools like videos or photos providing evidence on why you think the customer needs ought to be addressed and/or why competitors fail to accomplish the required needs). Note: From this deliverable onwards your project scope is fixed for the rest of the semester!

3. Final group presentation – “Pitch”

Each group will prepare and present a final presentation to the class. Think of this as your “pitch” to a group of potential investors. You will have a limited amount of time to tell your story including (at a minimum) what your idea is, what problem your idea solves for customers, and how your will go-to-market with your idea. The current syllabus indicates the date for the presentation. All presentations are due the first day (if more than one day is scheduled.) Each group will have 30 minutes for presentation and class discussion. I will ask the class for feedback on each presentation that will be used for grading.


The final written report should not be more than 20 pages (double spaced) including all your appendix and supplemental materials. I will give you more information regarding the nature of the reports during the course. Each group is required to turn in a hard copy of your project report at the end of the semester. At a minimum, your report must tell me a story and address the following key questions:
a) What is your idea and what is it’s purpose? (i.e., what “job” will customers “hire” your idea for?)

b) What market segments are you targeting? (i.e., who are your target customers and why?)

c) What market conditions are you facing? (e.g., competitive rivalry, market size / growth, etc.

d) What is the nature of your innovation (e.g., breakthrough or platform?) and is it “disruptive”? Why?

e) What substitutes (alternatives) are available for customers?

f) What complements are possible? (i.e., what other products or services make your idea more valuable?)

g) What adoption risks could inhibit customer acceptance?

h) What is your launch strategy? (e.g., first-mover?)

i) What business model will you employ in order to capture value (make money)?

j) What is your “end game”? (e.g., Start-up and sell? Franchise? License? Dominant design?)

k) How will you protect your idea?

l) What risks or barriers could inhibit implementation?

m) What is your next step?

V. Honor Code

Any use of case analyses or any other material in any format from other sections of this course or any course taught at any time in the past or present will be considered a violation of the honor code. The Ohio State University and the Committee on Academic Misconduct (COAM) expect that all students have read and understand the University’s Code of Student Conduct, and that all students will complete all academic and scholarly assignments with fairness and honesty. Students must recognize that failure to follow the rules and guidelines established in the University’s Code of Student Conduct and this syllabus may constitute “Academic Misconduct.”
VI. Disability Accommodation

If you need an accommodation based on the impact of a disability, please arrange an appointment with me as soon as possible. We need to discuss the course format and explore potential accommodations. I rely on the Office for Disability Services (150 Pomerene Hall) for assistance in verifying need and developing accommodation strategies. You should start the verification process as soon as possible.

VII. Suggestions for surviving and thriving in this course

A. **Show up** – We work as a team in this class, so your participation and contribution are required. Give yourself a chance to learn by coming to class and I will try to make it interesting once you get there.

B. **Be prepared** – You can’t always control the opportunities, but you can improve your ability to respond by being prepared. In this class, I will provide the opportunity; you need to provide the preparation. In addition to contributing to your success, preparation will help me create an environment for all to learn.

C. **Pay attention** – In our complex world, you have to pay attention at all times to adapt and thrive. Whether you are a strategist looking at the big picture or an operator looking at details, paying attention is essential. In this class, we will employ your eyes, ears, and minds for the purpose of learning. You will be encouraged to pay attention with all of them.

D. **Think out-loud** – Asking questions is part of collaborative learning and problem solving, and that is what we do in this class. I encourage questions, dialogue, and debate. I want you to think for yourself and encourage you to make relevant comments, share ideas, or offer a counter-point.

E. **Collaborate and iterate** – In today’s business environment, progress often depends on your ability to work together in a structured way to solve complex problems or discover innovative solutions. In this class, I encourage you to work together, form a point-of-view quickly, support it or change it based on what you learn, then repeat the process early and often.
<table>
<thead>
<tr>
<th>Class</th>
<th>Date</th>
<th>In Class Topic</th>
<th>Assignments</th>
<th>Big Ideas and Learning Objectives</th>
<th>Case</th>
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<tbody>
<tr>
<td>1</td>
<td>13-Jan</td>
<td>Introduction &amp; Course Welcome</td>
<td>• Chapter 1&lt;br&gt;• A Leader’s Framework for Decision Making (HBR)&lt;br&gt;• Op Ex Framework (Carmen)</td>
<td>• What is technological innovation?&lt;br&gt;• <strong>The Innovation Tunnel</strong> and the importance of innovation strategies and management processes.</td>
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<td>2</td>
<td>15-Jan</td>
<td>Independent Study (NO CLASS)</td>
<td>Form Project Teams</td>
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<td>Given Imagings's Camera Pill</td>
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<td>3</td>
<td>20-Jan</td>
<td>Sources of Innovation</td>
<td>• Chapter 2&lt;br&gt;• Innovator’s DNA (HBR)&lt;br&gt;• Due: Project team member names</td>
<td>• Translating creativity into innovation.&lt;br&gt;• <strong>Absorptive capacity</strong> and internal sourcing of innovation.&lt;br&gt;• Innovation in <strong>collaborative networks</strong> and <strong>technology clusters</strong>.</td>
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<td>4</td>
<td>22-Jan</td>
<td>Independent Study (NO CLASS)</td>
<td>Select Project Idea</td>
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<td>Tato Nano: The World's First Rs. 1 Lakh Car</td>
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<td>5</td>
<td>27-Jan</td>
<td>Types and Patterns of Innovation I</td>
<td>• Chapter 3</td>
<td>• Product vs. process and radical vs. incremental innovation.&lt;br&gt;<strong>Technology S-curves</strong> and rates of improvement and adoption.</td>
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<td>6</td>
<td>29-Jan</td>
<td>Types and Patterns of Innovation II</td>
<td>• Disruptive Technologies: Catching the Wave (HBR)</td>
<td>• The diffusion of innovation and <strong>adopter categories</strong>.&lt;br&gt;• Emergence of <strong>dominant designs</strong>.&lt;br&gt;• <strong>Disruptive technologies</strong> and the <strong>innovator's dilemma</strong>.</td>
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<tr>
<td>7</td>
<td>3-Feb</td>
<td>Team Presentations 1</td>
<td>• First team project presentation due</td>
<td>• What is your innovative idea?</td>
<td>Student Team Projects</td>
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<td>8</td>
<td>5-Feb</td>
<td>Standards Battles and Design Dominance I</td>
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<td>Blu-ray versus HD-DVD: A Standards Battle in High-Definition Video</td>
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<td>9</td>
<td>10-Feb</td>
<td></td>
<td>• Chapter 4</td>
<td>• Learning effects and <strong>learning curves</strong>.&lt;br&gt;• Experimentation and <strong>absorptive capacity</strong>.&lt;br&gt;• <strong>Network externalities</strong> and <strong>complementary goods</strong>.&lt;br&gt;• Winner-take-all and <strong>path dependencies</strong>.</td>
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<tr>
<td>Week</td>
<td>Date</td>
<td>Topic</td>
<td>Chapters</td>
<td>Notes</td>
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| 10   | 12-Feb | Standards Battles and Design Dominance II | Chapter 4 | • Increasing returns and multiple dimensions of value.  
• The **buyer utility map**.  
• Actual, perceived, and expected components of value.  
• Returns to market share.  
• Are winner-take-all markets good for consumers?  
From SixDegrees.com to Facebook: The Rise of Social Networking Sites |
| 11   | 17-Feb | Timing of Entry | Chapter 5 | • **First-mover** advantages and disadvantages.  
• Factors influencing optimal timing.  
• Strategies to improve timing. |
| 12   | 19-Feb | Midterm 1 | Chapters 1 - 5, Supplemental Articles and Slides | • Test understanding and ability to apply |
| 13   | 24-Feb | Defining Strategic Direction | Chapter 6 | • External analysis: **Porter's Five Forces**.  
• Internal analysis: **Porter's Value Chain**.  
• **Core competencies and capabilities**.  
• Core rigidities and **dynamic capabilities**  
Genzyme's Focus on Orphan Drugs |
| 14   | 26-Feb | Choosing Innovation Projects | Chapter 7 | • Quantitative and qualitative methods for choosing projects.  
• Financing new technology ventures.  
• **Real Options** method for choosing projects.  
• **Aggregate Project Planning Framework**.  
Bug Labs and the Long Tail |
| 15   | 2-Mar | Team Presentations 2 | Second team project presentation due | • What is your innovative solution?  
Student Team Projects |
| 16   | 4-Mar | Collaboration Strategies | Chapter 8 | • Advantages of collaboration.  
• **Alliances, Joint Ventures, Licensing, and Outsourcing**.  
• Partner monitoring and governance.  
• **Collaborative Networks**.  
Dyesol: Partnering to Harness the Power of the Sun |
| 17   | 9-Mar | Protecting Innovation | Chapter 9 | • **Patents, Trademarks, and Copyrights**.  
• Proprietary versus **Wholly Open Systems**.  
• **Protection and Diffusion**.  
The Digital Music Distribution Revolution |
<p>| 18   | 11-Mar | Midterm 2 | Chapters 6-9, Supplemental Articles and Slides | • Test understanding and ability to apply |</p>
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<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Description</th>
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<tr>
<td>16-Mar</td>
<td>Spring Break</td>
<td>NO CLASS</td>
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<tr>
<td>20</td>
<td>25-Mar</td>
<td>Organizing for Innovation I</td>
</tr>
<tr>
<td>23</td>
<td>6-Apr</td>
<td>Managing NPD Teams</td>
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<tr>
<td>26</td>
<td>13-Apr</td>
<td>Team Presentations 3</td>
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<td>26</td>
<td>15-Apr</td>
<td>Final Exam</td>
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<tr>
<td>27</td>
<td>20-Apr</td>
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<tr>
<td>27</td>
<td>22-Apr</td>
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HBR: Harvard Business Review
Other Materials / Slides available in Carmen
# Project Presentation Feedback – Group Projects

<table>
<thead>
<tr>
<th>Evaluation dimension:</th>
<th>☑ Exceeded expectations</th>
<th>☑ About what I expected</th>
<th>☑ Less than I expected</th>
<th>Dimension Ranking (1 = best)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Quality of analysis (How completely and correctly were course concepts applied?)</td>
<td><img src="image1" alt="Rating" /></td>
<td><img src="image2" alt="Rating" /></td>
<td><img src="image3" alt="Rating" /></td>
<td><img src="image4" alt="Rating" /></td>
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<td>2. Quality of insights and ideas (How much did they challenge your thinking?)</td>
<td><img src="image5" alt="Rating" /></td>
<td><img src="image6" alt="Rating" /></td>
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<td>3. Quality of the presentation (How well was the presentation organized and delivered?)</td>
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<td><img src="image10" alt="Rating" /></td>
<td><img src="image11" alt="Rating" /></td>
<td><img src="image12" alt="Rating" /></td>
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<td>4. Quality of class engagement (How involved was the class in the discussion?)</td>
<td><img src="image13" alt="Rating" /></td>
<td><img src="image14" alt="Rating" /></td>
<td><img src="image15" alt="Rating" /></td>
<td><img src="image16" alt="Rating" /></td>
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**Comments:** Could be more effective if...

**Your name:**

**Team name:**
Peer Evaluation – Group Projects

Peer evaluations will be a part of your group projects. When you are evaluating the efforts of yourself and your peers you should take the following actions into account; quality of effort, quantity of effort, working relationship with group members, and completion of assignments in a timely fashion.

**Peer evaluations are due to the instructor along with the final project report. DO NOT hand in the peer evaluations with your projects. Please complete these evaluations and EMAIL them to the instructor.**

<table>
<thead>
<tr>
<th>Your Name: _______________________________</th>
<th>Team Name _____</th>
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**Group Members (including yourself):**

<table>
<thead>
<tr>
<th>Name: _______________________________</th>
<th>Weight (out of 100%)</th>
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**TOTAL 100%**

**Comments:**

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13