15.913: Strategies for Sustainable Business (H1)

Professors: Matthew Amengual (E62-338), Jason Jay (E62-362), Richard Locke (E53-473)
Teaching Assistants: TBA
Course website: http://stellar.mit.edu/S/course/15/sp12/15.913/
Office Hours: By appointment

Introduction
Today, organizations of all kinds - including traditional manufacturing firms, those that extract resources, a huge variety of new start-ups, non-profits, and governmental organizations of all types - are tackling the massive challenges of sustainability. For some, this shift offers real opportunities — for new products and services, for reinventing old ones, or for solving problems in new ways. Other organizations tackling sustainability are engaged in very real struggles in which the solutions are far from obvious. Alongside questions about the problems of sustainability and how to reconcile free-market capitalism with the need for more sustainable business practices are real questions about how to move along the path towards sustainability. How can we translate these real-world challenges into future business opportunities? How can individuals, organizations, and society learn and undergo change at the pace needed to create a sustainable world?

In “Strategies for Sustainable Business,” we'll explore emerging strategies for sustainable businesses and organizations using in-class simulations, cases, role-playing, and speakers. This class will be followed by “Sustainable Business Lab (S-Lab)” (see syllabus below), in which we discuss current methodologies for sustainability analysis and measurement and focus on the action learning project.

Readings: Readings include a combination of analytic articles and company case studies drawn from a variety of different industries. ALL articles, class notes, slides, and other resources related to the course will be posted on the Stellar course web site: (http://stellar.mit.edu/S/course/15/sp12/15.913/). Please check this site regularly.

Attendance: We have designed this class as an integrated whole, and if you miss class it makes it very difficult to maintain a coherent conversation. You’ll miss ideas and concepts - many of them raised by your colleagues - that are not in the readings and you’ll have a more difficult time contributing to the discussion. So, if for some reason you are forced to miss class – and we hope that this will be a very rare occurrence (!) – please let the teaching assistant know in advance to obtain an excused absence. If you miss one class, you will get 10% of your grade deducted; 2 classes, 20% of your grade reduced; 3 absences = automatic failure. Of course, for illness, family emergencies, etc., we would grant an excused absence, but again, TAs must be notified in advance.
Requirements:
The requirements for the course and the contribution of each towards the final grade are:

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<td>Team Paper 2</td>
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<td>Individual Paper</td>
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1. Analysis Papers
   I. 2 Team Papers (4-5 pages double-spaced) – 1000-1250 words  30%
   Each assigned team of 2-3 people will select any case from the class to analyze and compare to another company of your choosing. The objective is to assess the key factors driving sustainability in the selected case to identify 1) the remaining challenges and opportunities for the case-study organization, and 2) the degree to which its approach can be applied to another company. Please explicitly discuss strategy, implementation, and impacts for both the case organization and the selected company. For instance, what is the “business case” for sustainability in these two organizations – how are they similar/different? Where could each organization most effectively start their sustainability plan? How would they most effectively implement it? The first team paper is due February 29th, and the second is due March 7th.

   II. Individual Paper (6-8 pages double-spaced) – 1750-2000 words  30%
   You will choose any 2 or 3 cases to analyze and compare in terms of strategy, implementation, impacts, and applicability to other companies or organizations. Cases include the traditional cases, the company/industry cases discussed in some of the readings, and the simulations. This individual paper is intended to be an systematic discussion of issues central to the class. Based on the information provided in the case materials, please be analytically judgmental and evaluative. You should propose alternate managerial views and action plans whenever appropriate and discuss the relevance and applicability of the frameworks proposed in the readings and lectures to these cases. In addition, you should relate your analysis to general trends in sustainability strategies. In short, you should write what you think of the situation in the cases and not merely what the authors of the cases say. This paper is an INDIVIDUAL assignment. It is due on the last day of class, March 14th.

2. Class Participation and Attendance  40%
   Your active participation in the discussion in class is integral to the design of this course. Class participation counts for 40% of your final grade. We expect you to be fully prepared, and to have read the cases and assigned readings and to fully participate in the discussion. (Those students for whom English is not a first language and/or may have difficulty speaking up in class are encouraged to meet with one of the faculty to discuss how your participation in class can be ensured.) We will send out mid-way evaluation notices to let you know if you are in need of participation improvement.
1. Course Overview and Case: Nestlé  
February 8
Lead Faculty: R. Locke

What does it mean for a private company to act “sustainably”? This session provides an introduction to the course and to the central challenge of sustainability. Sustainability, defined broadly to include social equity, economic development, and environmental restoration, offers new opportunities (but also challenges) for business.

Reading:
Nestle: Sustainable Agriculture Initiative – (HBS 9-705-018)

3. Social State of the World  
February 13
Lead Faculty: M. Amengual

Sustainability is not only about future generations. A look at the data on poverty and inequality around the world reveals the difficulty of meeting the needs of people living today. How can businesses act to improve the lives of the current generation? In this class, we will begin by looking at how firms act through in response to global social challenges.

Readings:
Case: IKEA Rugmark Case


Rigged Rules and Double Standards, Oxfam, pp. 64-79

2. The State of the World  
February 15
Lead Faculty: M. Amengual

NOTE: Complete & Submit the Personal Footprint Assignment for Class 2 (see Stellar site) by 10 pm on Monday, 13 February

Why is sustainability an important problem for business? A look at the science – and at the possible political and economic consequences of current trends.

Readings:
Video: David Suzuki and the Salmon cycle, by Wicked Delicate Films; http://vimeo.com/3470764
Video: Saving the Planet, by George Carlin; http://www.youtube.com/watch?v=7W33HRc1A6c
Recommended Readings:

Tracking the Ecological Overshoot of the Human Economy, by M. Wackernagel et al., 2002, PNAS.

Science and Technology for Sustainable Well-Being, by John P. Holdren, Science

4. Supply Chain: Walmart  February 21
Lead Faculty: R. Locke

Wal-Mart has made substantial investments in greening their facilities and in selling green products. Can the world’s largest retailer make a real difference? Does their strategy make sense? For whom? Are they organized to effectively deliver the strategy?

Reading:
Wal-Mart’s Sustainability Strategy OIT-71.
2010 Update (B-Case) OIT-71B

Wal-Mart, CSR Report

“Sustainability as growth strategy”, Grist.

5. Strategy: Patagonia Case  February 22
Lead Faculty: J. Jay

Patagonia is a recognized leader in mitigating the environmental impact of its products and contributing its profits to environmental causes. What about its market position, corporate structure, and product offerings allow it to pursue this strategy? At the same time, Patagonia seeks to resolve a basic tension between the business imperative for growth with planetary limits to growth. Is this possible? What is the strategic business case for actually selling less stuff? If we are to move toward a “steady state economy” that operates within the “safe operating space for humanity,” what would sustainable businesses, products and services look like?

Readings:
Case: Patagonia
6. Operations: TBA  February 27

Lead Faculty: TBA

How can companies address sustainability through their operations? What are the opportunities for simultaneous increase in social, environmental, and economic performance through operational innovation?

Reading:
Case: TBA

7. Getting Unstuck – Internal Organization, systems again  February 29

Lead Faculty: J. Jay

Why do firms have trouble addressing the problem of “worse before better”? How would you recommend a firm facing the problem – for example, a firm that is highly overloaded – address it? Why do firms find it so difficult to do new things?

Readings:

8. Marketing: Entrepreneur panel with market analysis emphasis  March 5

Lead Faculty: M. Amengual
Special Guests: TBA

What is possible in developing new markets and industries focused on sustainability? How do we chart the market opportunities? What is distinctive about market analysis, value creation and capture for sustainability-related businesses? How do firms consider regulatory uncertainty? How do they consider customers’ willingness to pay for sustainable products, and the influence of NGO’s and other opinion formers?

Recommended Readings:
TBA

9. Collective Action: FISHBANKS SIMULATION  March 7

Lead Faculty: M. Amengual

NOTE: DOUBLE SESSION – CLASS WILL END AT 7PM

We explore the dynamics of renewable resources in market economies. Through an interactive computer-based simulation, you will play the role of entrepreneurs seeking to maximize your profits as you invest in and manage a fishing fleet. We will discuss the implications of the simulation for the design and implementation of effective policies to
promote sustainable and productive use of renewable resources, including ecological, political, institutional, and other issues.

Reading:
Fishbanks Briefing and Role Description

The Sea, A Survey. The Economist, January 2009. 78

Lead Faculty: M. Amengual

Faced with the collective problems firms need to work with government, civil society organizations, and one another to find solutions. How can we construction institutions to resolve collective action problems? Once built, what challenges to managers face in working within new institutional contexts?

Readings:
Marine Stewardship Council Case

Due for S-Lab students: Detailed Project Work Plan

11. Reflections & Conclusions March 14
Lead Faculty: M. Amengual

What are the implications of our work together for individual responsibility and personal action? How should one think about the link between business and politics?

Recommended Readings:
Living Lightly and Inconsistently on the Land, Donella Meadows,
15.915 Laboratory for Sustainable Business “S-Lab” (H2)
Spring 2012
Monday – Wednesday 4-5:30 PM
E51-325

Professors: Matthew Amengual (E62-338), Jason Jay (E62-362), Richard Locke (E53-473)
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Office Hours: By appointment

Introduction & Projects

The goal of S-Lab is to provide an opportunity for you to apply the concepts, theories, and tools through working with host organizations on their actual sustainability projects. Your team will professionally and effectively deliver analysis, advice, and recommendations that are immediately useful to your host organization and will advance the field of sustainability as a whole. You will make a formal presentation to your host at the end of your project and provide them with a final report, including supporting written analysis and data as appropriate, and will present a project poster for the MIT and wider community.

We post the S-Lab project proposals on the course website, and students are expected to review the proposals and post their project preferences and interests during 15.913 (H1) to initiate team formation. When you form your S-Lab team, you should aim for four (4) students, with no more than two (2) students per team from the same program, and focusing on building a strong mix of skills and experience. On February 13, 5:30-7:00, we will have a required workshop on forming effective teams. There will also be optional project mixers after class, 5:30-6:30, on February 8, 15, 21, and 22 to help you form effective teams for the projects. On April 2, 5:30-6:30 there will be an optional but highly recommended team building workshop.

Projects Bids are due February 22nd. Each team will bid on its top four (4) projects. Based on the interests and capabilities of the teams, the faculty then matches the team with a host organization, and the host organization then decides whether to accept the team. Team matches to host organizations will be completed by late February. At this time, we expect student teams to make first contact with the hosts to introduce themselves and begin developing the Work Plan.

We expect that if you submit a project bid you are committing to stay in the course through the completion of the project. If you don’t submit a project bid, we will assume that you are dropping the course.

Requirements:
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<td>Work Plan</td>
<td>Team</td>
<td>20%</td>
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<tr>
<td>Draft Final Report (to advisor and host)</td>
<td>Team</td>
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<td>Poster for S-Lab Day</td>
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<tr>
<td>Final Report &amp; Poster/Presentation</td>
<td>Team</td>
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1. **Work Plan**  
Each team will have a faculty member serve as the advisor for all aspects of the project. It is your team’s responsibility, however, to negotiate and manage all aspects of the work plan and the project. **Your detailed work plan is due on March 16, 2012.** The work plan is essentially a contract between you, your team, your host organization, and your S-Lab faculty advisor for what you will do—both the product that you will share with the host and the faculty, as well as the key steps you will take to generate that product. It sets out an agreement to which you are expected to adhere.

The work plan should contain:
1. Clear, concise problem statement – enables your team to understand the host’s objectives for this project.
2. Description of the key deliverables – aligns expectations between your team and the host.
3. Detailed description of tasks to accomplish work, with the assignment of those tasks to specific people – align expectations within the team for the completion of the project.
4. Detailed timeline for tasks (start and completion) - to track your own progress over the project.

The work plan provides the framework for the Final Report.

2. **Final Report and Presentation**  
We are targeting a long-term impact for your S-Lab project reports, and we will make your Final Report publicly available to advance the field as a whole. The Final Report for your S-Lab host organizations should build on the Work Plan, and should contain:
1. Objectives of the project
2. Background information and references
3. Analysis and results (including methodologies and tools developed by the team)
4. Specific recommendations that reflect the objectives, strategy, concerns of the host organizations.
5. Possible: direct application to a host organization's specific data (as demonstration of feasibility, back-up for specific recommendations, etc.)
6. References to relevant research, best practices, industry standards, etc.

The Final Report can be seen as providing a "user's manual" for the host organizations going forward. As such, they need to be professionally written and clearly represent where the information came from, and how it will need to be modified going forward to reflect dynamic conditions. You have the opportunity to make a substantial contribution to the host organizations - and the field in general - through your projects. We have confidence that you will make that contribution.

You will deliver a **draft of your Final Report to your host organization and faculty adviser by May 9, 2012.** Your team will also create a **poster that describes your project for the May 14 S-Lab Day** for presentation to the MIT community and host organizations. The **Final Report, with Poster and/or Presentation, is due on May 16, 2012** to your host and faculty adviser.
Please Note: If confidential information is included in the Final Report to the host organization, please also submit a version of the Final Report without this information to your faculty adviser that could be publicly released.

The final report should be no more than 20 double-spaced pages of text (5,000 words), plus any tables and appendices that help the reader.

3. Class Participation and Attendance

Class participation counts for 30% of your final grade. We expect you to be fully prepared, and to have read the cases and assigned readings and to fully participate in the discussion. (Those students for whom English is not a first language and/or may have difficulty speaking up in class are encouraged to meet with one of the faculty to discuss how your participation in class can be ensured.) The attendance policies are similar to those in 15.913. If you miss one class, you will get 10% of your grade deducted; 2 classes, 20% of your grade reduced; 3 absences = automatic failure. Of course, for illness, family emergencies, etc., we would grant an excused absence, but again, TAs must be notified in advance.

I. APPLYING THE KNOWLEDGE: METHODS, TOOLS, AND APPLICATIONS

1. Introduction and Methods/Tools: Life Cycle Analysis

Lead Faculty: M. Amengual
Special Guest Faculty: Dr. Randy Kirchain, MIT Material Systems Lab; Dr. Edgar Blanco, MIT Center for Transportation and Logistics

How can a company develop a systematic approach to its sustainability activities? What are the current methods and theories? This session will introduce the project-focused portion of the course, looking at specific concepts that can be used to develop an organization’s sustainability strategy.

We will then start to examine current methods and tools for sustainability analysis, starting with Life Cycle Analysis (LCA) and its roots in various fields. What exactly is meant by “embodied energy,” “carbon footprint,” and “ecological footprint”? How are these levels measured and what are the strengths and constraints of these methods? How are they actually employed by companies and organizations to accomplish specific objectives?

Recommended readings:

Strategic sustainable development – selection, design, and synergies of applied tools, Roberts et al., Journal of Cleaner Production, 10 (2002) 197-124.
2. Applying Life Cycle: Sustainable Apparel Index  
April 4
Lead Faculty: M. Amengual
Special Guest: TBA

The Sustainable Apparel Index translates life cycle analyses of apparel manufacturing into prospective tools that enable design for environment, supplier selection, and other strategic decision making. We will explore the tools they have developed and the process of translating LCA insights into business practice.

Reading:


3. Value Chain Analysis: Mark Lundy, Costco Green beans  
April 9
Lead Faculty: M. Amengual

How can we identify the ways in which the value produced in a supply chain is distributed among its various participants? How can we use this information to structure supply chains so that they lead to shared-gains among all actors?

Reading:

Juan Francisco Project Report

4. Company-level assessment: TruCost  
April 11
Lead Faculty: J. Jay

How do we assess the Environmental, Social, and Governance performance of firms? How do corporate stakeholders (investors, employees, NGO’s) use these metrics?

Readings:

TBA

5. Stakeholder/partner analysis  
April 18
Lead Faculty: M. Amengual

Facing the challenges of sustainability requires interacting with a variety of non-market actors, such as government and civil society. How can a company map out the relevant stakeholders? What strategies are effective in communicating with stakeholders and building partnerships?

Readings:

Many actions that firms take that are beneficial to social and natural systems have financial returns, but these can be difficult to measure and quantify. As a result, such practices are often undervalued (especially in comparison with any concrete, short-term, costs firms incur in their sustainability efforts). In this session, we will introduce tools that managers can use allow for fuller accounting of the benefits and costs of benefits of sustainability.

Readings:
TBA

What are the other teams doing? How are they framing the problems, and what is the state of knowledge or best practice in this area? What are the specific concerns or capabilities of their host organizations?

In each of these sessions, several teams will be selected to provide a brief (10 minute) description of their projects – problem statement, key deliverables, results to date, and specific application to the host organization as a basis for class discussion and questions. Each presenting team should provide 1 reference article on their topic for background readings for the class. These articles will be posted on the course website, and will be recommended readings.

What are some of the current trends in sustainability – in companies, organizations, government? Recent S-Lab alums talk about their current jobs and the role that sustainability plays in their organization and industry.
11. Team Work Day  
May 9

Use class time to move forward on your projects. Faculty will hold office hours.

12. S-Lab Day  
May 14

NOTE: CLASS WILL BE HELD FROM 11:30 – 1 in E62-Lobby

Each team will create a poster that clearly presents their S-Lab project, including problem statement, state of knowledge or best practice, results, and specific application to host organization. The poster session is open to MIT community, host organizations, and interested parties.

Due: Poster

13. Wrap-up and Reflection  
May 16

Lead Faculty: M. Amengual

A chance to reflect back on the material we’ve covered in the semester, focusing particularly on the way in which so many “sustainability” issues are related to each other. Material that makes it clear that we are dealing with an interconnected system: a) it’s not just “climate” or “agriculture” or “social justice” – all the issues are deeply interrelated and b) actions that fail to understand the dynamics of the system may have counterproductive consequences. How did your S-Lab project reflect these – and different - considerations?

Due: Final Report