

CLAREMONT GRADUATE UNIVERSITY
PETER F. DRUCKER AND MASATOSHI ITO SCHOOL OF
MANAGEMENT

Management 330

SUSTAINABLE BUSINESS

SYLLABUS

Spring Semester, 2009, Module I

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Please note:

**This syllabus has been prepared for web viewing.
If you want to make a hard copy, please compact the
pages first by eliminating the page breaks so that you do
not waste paper. Thank you.**

1. PURPOSE OF THE COURSE

Arguably, no other issue is more in the forefront of contemporary management than the issue of the impact of human activity, including business activity, on the natural environment. In addition to the longstanding issues of exhaustion of global resources, degradation of the environment, loss of biodiversity, and the human impacts of business activity, recent evidence suggests that global warming or “climate change” is a growing and urgent problem that must be addressed *in the near term* to avoid long-term and disastrous impacts for all living beings on this planet. Indeed, many commentators have called global warming “the most important issue of our time”.

What has come to be known as “sustainable business” is a *set of principles and practices that reduce the negative social and environmental impacts of business activity*. However, the issue of sustainable business goes beyond this core of principles and practices. As environmental impact issues evolve, and as individuals and societies become increasingly engaged in seeking to moderate and even reverse environmental harming, managers must also develop an understanding of

the social, political, and regulatory forces at work in the business environment. In addition, the development of sustainable business practices and products is changing the structure and processes of production and competition across a wide variety of industries. It is also providing numerous opportunities for the development of new products, new business processes, and even, new industries. In the longer term, the issue of sustainability is likely to change what we understand as “business enterprise.”

This course has been designed to provide you with a solid understanding of the importance and scope of the social and environmental impacts of business activity; of the principles and practices that comprise sustainable business; of the forces at work that influence the pace, scope, and direction of sustainability efforts within societies, polities, and businesses; and of the effects of the issue of sustainability on competition, business innovation, and the concept of business enterprise itself. In addition to this content-based agenda, many of the class sessions include modules on skill-building, introducing you to analytical models and techniques that allow more thorough and in-depth analysis of the issues involved in sustainable business practice.

In this class, this learning agenda is organized into *six key practices*, as follows:

Practice 1: Knowing what is going on

An in-depth understanding of the issues is essential for managers in this area. In this session we will focus on “the problems”: the environmental and human problems and dilemmas that sustainable business practices are intended to address and remediate.

Practice 2: Understanding regulation at all levels

Regulation has played, and will continue to play, a central role in guiding and controlling sustainable business practice. In this session we will look at global, national, state, local, business-level, third sector, and informal regulations regarding sustainable business practice. Particular attention will be paid to practice leaders at all levels.

Practice 3: Positioning: Products, activities, and customers

In this session we will look at how firms can position their products, activities and customers in terms of sustainable business practice. We will look at product differentiation using the example of the Toyota Prius. We will also look at building sustainability into value chain activities, using the concepts of the “total value chain” and of internalizing social and environmental costs.

Practice 4: Analyzing sustainability and the Forces of Competition

Using the example of the global automobile industry, we will look at how the introduction of sustainable products and activities can change and shape the forces of competition such as supplier power, complementor power, entry, and competitive rivalry. We will also look at the relationship between sustainability and the forces of competition in a variety of other industries.

Practice 5: Innovating sustainable practice: Tracking, implementing, and funding innovation

In this session we will look at the energy generation sector to develop skills in tracking innovation trends. We will also continue skill-building in positioning using the example of different players in this sector, and look at the various ways in which sustainability-related innovation is funded in this and other industries.

Practice 6: Looking outwards and forwards: Scanning and Scenarios

In this session we will practice using scenario analysis to explore different outlooks for business in the future as shaped by sustainability considerations, including the emergence of new industries, various outlooks for moving to a carbon-free economy, outlooks for dematerialization of the economy, and outlooks for business enterprise including increasing third sector activity and public/private partnerships.

2. CLASS ORGANIZATION AND PEDAGOGICAL APPROACH

2.1 Class Time and Office Hours

The class will be held on Thursdays from 4pm to 7pm.

I am happy to meet with you either before or after class. I will be at the Drucker School from about 2pm and can stay after class until about 9pm. If you would like to make an appointment to meet with me, please email me at liebesk@marshall.usc.edu. Otherwise, you can catch me before or after class.

There will be a field trip during the class to look at green building and other environmental practices in the city of Santa Monica. I will let you know the date of the field trip at the beginning of the class. It will be on either Saturday or Sunday in late February or March.

2.2 Learning materials for the Class

There is no assigned text for this class. There is a short course reader, which is required. However, most of the learning materials will be paperless. We will be making extensive use of resources on the web, including website review and exploration, streamed videos, and web-posted articles, to inform our learning. In addition, I will post both class notes and PowerPoint presentations on Sakai for you to download and read before class.

In selecting learning materials, I have emphasized breadth of exposure over depth of focus on any particular area. Sustainability is a new and emerging area of business practice. There is a wide variety of ideas, methods, approaches, and voices contributing to the stream of knowledge and ideas. In addition, the business context itself is enormously varied and complex, with a wide variety of players, influences, and policies. As an emerging field, scanning and exploring are critical to developing an understanding.

In terms of workload: it may seem to you as you read further in this syllabus that there is a lot to read. However, most of the websites I have listed are just one page, and what I am focusing on here is having you see and understand the wealth of information, viewpoints, approaches, activities, etc. that is “out there” in this area. I have designed each class session so that preparation should take between 2 and 3 hours of time outside the classroom. [The Toyota case analysis may take you somewhat longer.]

2.3 Pedagogical Approach

The primary learning modes in this class will be lecture-and-discussion sessions; group homeworks and presentations; and individual homeworks. As mentioned above, all these efforts will be grounded in extensive reading and web research.

PLEASE BRING YOUR LAPTOP TO EACH CLASS SESSION. WE WILL BE USING THEM IN CLASS TO RESEARCH AND WATCH MATERIALS ON THE WEB.

2.4 Grading

Your grade for this class will be assessed as follows:

Individual Homeworks [3] @ 15 pts each:	45 points
Group Homeworks [2] @ 15 pts each:	30 points
Attendance and Participation:	25 points
<u>Total</u>	<u>100 points</u>

2.4.1 Individual Homeworks

There are three individual homeworks for the class, in the form of managerial briefing papers. Each briefing paper should be one page long. Write each assignment from the point of view of someone briefing senior management.

With regard to content, consider the following questions:

- What are the key points in the situation?
- How can you present these points clearly and concisely so the content informs without excessive detail or critical omissions?
- What are the implications of your observations?

With regard to presentation and writing:

- Be sure to explicate each point you are making clearly.
- Do not use bullet points that allow for no elaboration of the issues.
- Use charts, tables, and graphs as you deem appropriate.
- Please write no smaller than 10 point typeface.

2.4.2 Group Homeworks

There are two group homeworks: one case analysis and one scenario analysis. Each group homework should be not more than two pages long. The case analysis guidelines and questions are given in detail in Class Session #4.

For each of the assigned group homeworks, your group should prepare one overhead for class presentation of your ideas and analyses. We will use these as a basis for class discussion.

A word on groups:

Please form yourself into groups of between 3 and 5 students at the beginning of the class. You may change your group membership during the class if so desired. Please be sure to inform me if you do change groups so I do not make errors in grading. Thank you.

2.4.3 Attendance and Participation

The effectiveness and enjoyment of any class depends on your willingness to engage and participate in the classroom. I hope you will be inspired to participate; there is so much to share and to discover in this emerging area, and every one of you has the possibility of significantly contributing to our knowledge and learning. After each class, I will make a note of people who contributed significantly to classroom discussion and learning.

Please be sure to arrive to class on time; late arrival will be reflected in your grade.

You are not permitted to miss a class session. Only absences due to a genuine emergency such as an illness requiring urgent medical care, or a significant personal or family emergency, will be excused. In such cases, please bring me a doctor's note or other suitable documentation to substantiate your excuse.

3. CALENDAR OF CLASS SESSIONS

Session 1	January 22 nd <i>Please note there are readings for this session; these are listed in Section 5 of this syllabus.</i>
Session 2	January 29 th
Session 3	February 5 th
Session 4	February 19 th
Session 5	February 26 th
Session 6	March 5 th
Session 7	March 12 th

Please note that on Thursday, February 12th there will be no class, as I have a meeting to attend in Portland. This class has been rescheduled to Thursday, March 12th.

Details of the contents of each class session together with reading and other session assignments are given in Section 5 below.

4. ABOUT YOUR PROFESSOR

I am Associate Professor Emeritus in the Department of Organization and Management at the Marshall School of Business, USC. Before becoming a university teacher, I worked in both the public and private sectors, including a stint working for the English Tourist Board, a number of assignments working on development projects in Africa and the Caribbean, and four years working for a large global agribusiness firm. I spent some time during this latter period working in the area of bio-ethanol production, developing projects and policies for the US Department of Energy and the World Bank. I grew up in England, and spent eight years living in Italy; I have been living in the USA for 27 years. My interests include sustainable business, strategic analytics, and Eastern and Western philosophy. I also enjoy being in the wilderness, backpacking, camping, exploring the world, art, music, photography and writing. I have two step-sons, one son, and two granddaughters.

5. SESSION CONTENTS AND ASSIGNMENTS

Note: This syllabus is dated November 10, 2008. I may do some updates and adjustments to this syllabus before class starts to reflect recent events -- political, economic, and social. In particular, I will want to include new actions and initiatives by President-elect Obama. I will post a final version of the syllabus on Sakai one week before class. Session 1 of the class will not be changed, nor will the Reader.

SESSION 1

January 22nd.

Introduction: What is Sustainability?

What is Sustainable Business?

We begin the course with an investigation of the definition of sustainability and will work towards developing a definition of “sustainable” business practices. We will look at various definitions and descriptions and discuss the scope of sustainability issues for firms, including products, customers, buying modes, inputs, and production methods.

During this session we will also look at a number of firms that have been leaders on sustainability issues, such as Patagonia, Ecover, Whole Foods, and others. We will also look at recent adaptive efforts by large firms such as Wal-Mart, Du Pont, and Virgin Atlantic Airlines. These examples will show some of the challenges and benefits of adoption of sustainable practices. See the Readings section below.

Skill Building: The Triple Bottom Line

The Triple Bottom Line is the most commonly used metric for assessing the impact of businesses in terms of financial capital, social costs and benefits, and environmental costs and benefits. We will begin to work with this assessment tool today, and will deepen our discussion and our use of metrics as the course progresses. See the Readings section below.

Skill Building: Carbon Footprinting

Before class: Go to

<http://www.carboncounter.org/offset-your-emissions/personal-calculator.aspx>

and calculate your personal carbon footprint. Bring your estimate to class.

READINGS AND OTHER RESOURCES FOR THIS CLASS SESSION

The following are required reading/watching for this session.

Please be aware that the web references given in this syllabus are not automatically linked in. If you have a recent version of Word, you can click on the reference and get connected. Otherwise, copy the web reference onto your browser to find the websites listed.

Powerpoints

The PowerPoint presentations for this class session and all subsequent class sessions are posted on Sakai. These will be posted one week before each class session.

Reader:

“The Biosphere Rules”. Gregory C. Unruh. *Harvard Business Review*, February 2008

Web Resources for you to look up, read, and explore for this class:

Definitions of Sustainability:

Wikipedia

<http://en.wikipedia.org/wiki/Sustainability>

http://en.wikipedia.org/wiki/Corporate_sustainability

Other useful language: Decarbonization and Dematerialization

Wikipedia

<http://en.wikipedia.org/wiki/Dematerialization>

Wow! There is no Wiki for Decarbonization, even though this has entered common into common usage. [“Low Carbon Economy” is also frequently used.

Sustainability Practice: Natural Capitalism

Wikipedia

http://en.wikipedia.org/wiki/Natural_Capitalism

Sustainability Practice: Cradle to Cradle

Wikipedia:

http://en.wikipedia.org/wiki/Cradle_to_cradle

Sustainability Practice: Biomimicry

<http://biomimicryinstitute.org/about-us/what-is-biomimicry.html>

Sustainability Measurement: The Triple Bottom Line

UN Principles for Responsible Investing

<http://www.unpri.org/principles/>

Dow Jones

<http://www.sustainability-index.com>

Read the sections on “Sustainability” and “Assessment” to see an application of the triple bottom line to businesses.

Global Reporting Initiative

<http://www.globalreporting.org/AboutGRI/>

Practice Leaders: Only the listed pages are required, but you may enjoy exploring these firms’ websites on sustainability issues.

Ecover:

<http://www.ecover.com/us/en/About>

Patagonia:

<http://www.patagonia.com/usa/patagonia.go?assetid=23429>

Whole Foods:

<http://www.wholefoodsmarket.com/values/sustainability.php>

Shaw Carpets:

<http://www.shawfloors.com/About-Shaw/Carpet-Recycling>

Adaptive Efforts: Only the listed pages are required.

Wal-Mart:

<http://walmartstores.com/Sustainability/>

Du Pont:

<http://www.bsdglobal.com/viewcasestudy.asp?id=123>

Virgin Atlantic Airlines:

www.virgin-atlantic.com:80/en/us/allaboutus/environment/index.jsp

BP [British Petroleum]

<http://www.bp.com/bodycopyarticle.do?categoryId=7040&contentId=7046747>

Columbia University:

<http://www.columbia.edu/cu/news/oncampus/sustainability.html>

ADDITIONAL RESOURCES:

Each session I list some additional resources. These are not required for class, but provided for your personal reference.

“Rethinking Production” by Hunter Lovins. This chapter can be downloaded from the end of the following page:

http://en.wikipedia.org/wiki/Cradle_to_cradle

Capitalism as if the World Really Mattered. Jonathan Porritt
For an overview of the book, see
<http://www.earthscan.co.uk/default.aspx?tabid=1016>

Profits with Principles. Ira A. Jackson and Jane Nelson.

Natural Capitalism. Paul Hawken, Amory Lovins, and L Hunter Lovins.

Cradle to Cradle: Rethinking the Way we Make Things. William McDonough and Michael Braungart.

Biomimicry. Janine Benyus.

There is a wonderful TED talk by the author:

http://www.ted.com/index.php/talks/janine_benyus_shares_nature_s_designs.html

SESSION 2

January 29th

Practice 1: Knowing what is going on

In this session, we investigate and assess various aspects of “the problem” that sustainable business practices are seeking to remediate. It is very important that, as business leaders, you are aware of what is actually going on, and that you know how to access reliable and well analyzed data on social and environmental issues. Using information from sources such as the Intergovernmental Panel on Climate Change [IPCC], the WorldWatch Institute, and the EPA, we will learn about the pace and extent of global resource depletion; ground, air and water pollution; loss of biodiversity through extinction; and climate change. We will also examine the welfare of humans on this planet using information from the Worldwatch Institute, the UN, and the World Bank. We will spend a substantial period of time examining and discussing the latest report of the IPCC, published in spring 2007.

Skill Building: Scenario Analysis

To complement the factual side of situation analysis, we will learn about the use of Scenario Analysis in assessing future and uncertain threats and opportunities. The IPCC scenarios will be used to illustrate this approach. This discussion will be supplemented by lecture notes on building and using scenarios in business planning. See the Readings section below.

READINGS AND OTHER RESOURCES FOR THIS CLASS SESSION

The following are required reading/watching for this session. For websites, you are required to read only the specific page references. You may, of course, explore these sites at your leisure!

Powerpoints

The PowerPoint presentations for this class session are posted on Sakai.

The following notes are also posted and should be read before class:

Introduction to Scenarios

Exploratory Scenarios

How to Build Scenarios

Course Reader:

Nothing for this session.

Web Resources for you to look up, read, and explore for this class::

Climate Change:

IPCC 2007 report:

Go to

<http://www.ipcc.ch/ipccreports/ar4-syr.htm>

and click on "SPM". This will give you the *Summary for Policy Makers*. Read pages 1 through 15. We will look at the scenarios listed later in the report during the class session.

Question:

Have you seen *An Inconvenient Truth*?

If not, I strongly suggest you watch it. It's not required for this class, but in my view it is required watching for anyone interested in their own future and that of other people and future generations of all living beings. The movie is somewhat alarmist in tone, and does not provide enough information about solutions. Nonetheless, it is a very important and informative film, and has played a key role in shifting public perception about global warming in the US.

Resource depletion: Some Examples

Oil:

<http://www.worldwatch.org/node/5666>

Fish:

<http://www.worldwatch.org/node/5444>

Biodiversity:

<http://www.worldwatch.org/node/5472>

Deforestation:

<http://www.mongabay.com/brazil.html>

Water:

<http://www.ecoearth.info/shared/reader/welcome.aspx?linkid=107463&keyword=climate%20change%20oil%20pollution>

Human welfare:

<http://www.worldwatch.org/node/5477>

http://en.wikipedia.org/wiki/World_population

http://publications.worldbank.org/e-commerce/catalog/product-detail?product_id=5424413

<http://www.un.org/millenniumgoals/>

Animal welfare:

Compassion in World Farming [short video]:

<http://www.joost.com/home?playNow=3145m2w#id=3145m34>

Signing up for McKinsey

Go to www.mckinseyquarterly.com and sign up as a visitor. We will be using a number of articles from this site in future class sessions. McKinsey is a global leader in bringing climate change to the attention of businesses, and in seeking to provide solutions.

ASSIGNMENTS FOR THIS SESSION: INDIVIDUAL HOMEWORK #1

Climate Change Briefing

Write a one page briefing document for senior management on climate change, based on the IPCC 2007 report. A briefing document is used by senior management to inform their decision-making. Before writing your document, reflect on the following:

- What information is most important to include? What is essential for senior management to know?
- How is it best presented?
- What are the possible implications of the findings of this report for managers?

This assignment is due at the beginning of class.

ADDITIONAL RESOURCES:

Each session I list some additional resources. These are not required for class, but provided for your personal reference.

Earth: The Sequel. Fredd Krupp.

This book offers up pragmatic and effective solutions to the climate change crisis. Fred Krupp is founder and leader of the Environmental Defense Fund, which has been a major player in seeking more action from the US government on climate change and other environmental issues. We will look at the EDF in the next session.

Peak Everything. Richard Heinberg.

A highly influential book about resource depletion and its implications.

The Long Emergency. James Kunstler.

Another highly influential book about resource depletion.

The Lorax. Dr. Seuss.

The Prix Pictet: A prize for sustainability-themed photography.
This year, the first of the prize, the theme is water. See the slideshow:
<http://news.bbc.co.uk/2/hi/entertainment/7701187.stm>

“The Story of Stuff”. Video:

<http://www.storyofstuff.com/>

Highly partial but very influential video on the consumer society of the US and its environmental consequences.

“Heat.” A two-hour TV program on global warming, its causes, and possibilities for remediation:

<http://www.pbs.org/wgbh/pages/frontline/heat/view/>

Frontline: “Mexico: The Business of Saving Trees”

An inspiring *Frontline World* story about a woman in Mexico who has helped to reforest a large area in central Mexico, yielding benefits from both tourism and sales of “gourmet” carbon credits to benefit local people. The site provides both an information page and a short video.

http://www.pbs.org/frontlineworld/rough/2008/03/mexico_the_busi.html

Drought:

<http://www.guardian.co.uk/environment/2008/nov/02/climate-change-desertification-water-drought>

Water scarcity and pollution in Kenya: what it looks like [short video]

<http://www.joost.com/home?playNow=3145m2w#id=3145m2x>

The “Problem of China”

<http://www.hulu.com/watch/23336/design-e2-china-from-red-to-green>

SESSION 3

February 5th.

Practice 2: Understanding regulation at all levels

In this session we will examine the ways in which the issue of sustainability is transforming the context of contemporary business. We will focus on the issue of global warming, and look at how different countries, polities, societies and businesses are acting to change the formal and informal regulatory environments. We will focus particularly on environmental policies in the EU, which may serve to provide a blueprint for other countries seeking to reduce emissions of heating gases. In addition, we will look at global initiatives and at local government initiatives, including the state of California; Austin, Texas; Manchester, England; and Bogota, Columbia. We will also look at the influence of business groups, third sector organizations, other social groups and individuals on formal and informal regulation. For industry organizations, we will discuss the influence of the United States Climate Action Partnership, media firms such as Ethical Corporation, and consulting firms such as McKinsey. For third sector organizations, we will use examples such as the Environmental Defense Fund, Greenpeace, the Worldwatch Institute and Climate Counts to show the variety of ways in which such organizations can significantly change the business context. We will also look at examples of environmental activists and other individuals such as Vandana Shiva and Amory Lovins. We will discuss how the influence parties such as these are able to generate transfers to other areas where issues of sustainability obtain, such as deforestation, mining, power generation and water use.

Skill Building: Stakeholder Analysis

Stakeholder analysis is a key tool in helping firms to understand how their activities affect other parties. Stakeholder analysis also allows managers to understand the organization and potential influence of other parties who are interested in the issue of sustainability on the firm.

Skill Building: Total Value Chain Analysis

Total Value Chain Analysis focuses on all the parties involved in the production, use, and disposal of a product, including suppliers, production workers, consumers, and post-consumer workers. It also includes any and all parties that may be impacted by spillovers from the activities of supply, production, consumption, and disposal. We will be discussing and using this tool more in the next session.

READINGS AND OTHER RESOURCES FOR THIS CLASS SESSION

The following are required reading/watching for this session. For websites, you are required to read only the specific page references.

Powerpoints

The PowerPoint presentations for this class session are posted on Sakai. Please also download and read the following notes:

Note on Stakeholder Analysis

Note on Total Value Chain Analysis

Course Reader:

“Climate Business/Business Climate”. *Harvard Business Review*, October 2007.

Note: There is also an article to read about Amory Lovins listed below under Web Resources: People.

Web Resources for you to look up, read, and explore for this class::

This is a very brief selection of the thousands of organizations and individual players, and their initiatives in the area of global sustainability. Just look at the listed pages, unless otherwise indicated. You are of course welcome to explore at your leisure!

Carbon Emissions Regulation

Worldwatch Institute briefing

<http://www.worldwatch.org/node/5839>

Government leadership: The UN and associated bodies

United Nations Framework Convention on Climate Change:

http://unfccc.int/essential_background/items/2877.php

Clean Development Mechanism

<http://www.alternative-energy-news.info/clean-development-mechanism/>

Government leadership: The EU and its members

Environmental protection in the EU [two short videos]

Part 1:

<http://www.joost.com/home?playNow=3145m2w#id=3145m2s>

Part 2:

<http://www.joost.com/home?playNow=3145m3i#id=3145m5n>

European carbon emission regulation [short video from 2004]:

<http://www.joost.com/home?playNow=3145m3i#id=3145m4w>

European airline emissions regulation [short video]

<http://www.joost.com/home?playNow=3145m2w#id=3145m2v>

Renewable energy in Germany:

http://en.wikipedia.org/wiki/Renewable_energy_in_Germany

Government leadership: US States

<http://www.ft.com/cms/s/0/97c3a200-89c6-11dd-8371-0000779fd18c.html>

Government leadership: California

Look at sections on climate change and renewables

<http://www.energy.ca.gov/index.html>

Government leadership: The US Federal Government

Lost Eight Years [from EDF]:

<http://www.edf.org/page.cfm?tagID=28228>

Cities:

Austin, Texas:

www.cityofaustin.org/council/downloads/mw_acpp_points.pdf

Manchester, England:

<http://www.manchesterismyplanet.com/about.asp>

Third Sector leadership:

Environmental Defense Fund

<http://www.edf.org/home.cfm>

Greenpeace: Scan through its successful campaigns

<http://www.greenpeace.org/international/about/victories>

Worldwatch Institute

<http://www.worldwatch.org/>

India Resources Center

<http://www.indiaresource.org/>

Climate Counts

http://www.climatecounts.org/scorecard_overview.php

Global Reporting Initiative

<http://www.globalreporting.org/AboutGRI/>

Business leadership:

United States Climate Action Partnership [USCAP]:

<http://www.us-cap.org/>

Carbon Disclosure Project:

<http://www.cdproject.net/aboutus.asp>

Ethical Corporation:

<http://www.ethicalcorp.com/content.asp?ContentID=3823>

People:

Vandana Shiva

A highly influential force in the areas of conservation and assessing and critiquing the impacts of globalization on the environment and people.

http://en.wikipedia.org/wiki/Vandana_Shiva

Amory Lovins

Lovins has been working on energy conservation for 30 years. An advisor to scores of global corporations, he is the founder of Rocky Mountain Institute and enormously influential in engaging businesses in conservation and in the larger discussion around climate change.

Read:

"Using Energy More Efficiently: An Interview with Rocky Mountain Institute's Amory Lovins" in *McKinsey Quarterly*

Peter Schwartz:

<http://www.gbn.com/PersonBioDisplayServlet.srv?pi=23910>

Schwartz is an expert in scenario analysis and advisor to numerous corporations and the Pentagon. Schwartz specializes in risk assessment related to climate change. He founded the Global Business Network. Many other luminaries are connected with this network, including Stuart Brand and George Lakoff.

<http://www.gbn.com/AboutHomeDisplayServlet.srv>

ASSIGNMENT FOR THIS SESSION: INDIVIDUAL HOMEWORK #2

Write a one page briefing paper for senior management on:

Carbon regulation in the EU: Implications for the US.

Describe one measure that is being or has been implemented in the EU that you think may be adopted in the US. What might the implications be for US business?

ADDITIONAL RESOURCES

These are not required for class, but are listed for your personal reference.

McKinsey Quarterly:

There are numerous articles on the McKinsey website regarding carbon emissions, climate change, and remediation measures. Some examples:

"Preparing for a Low Carbon Future."

"Business Strategies for Climate Change"

"How Companies Think About Climate Change"

"Curbing the Growth of Global Energy Demand"

"How the World Should Invest in Energy Efficiency"

Books:

Worldwatch Institute. *State of the World Reports: 2003, 2004, 2005, 2006, 2007.*

Global Business Network and Peter Schwartz:

Article: "Acting on Climate Change"

<http://www.gbn.com/ArticleDisplayServlet.srv?aid=48022>

Governments and other Governmental Bodies:

China:

http://en.wikipedia.org/wiki/Renewable_energy_in_China

<http://www.renewableenergyworld.com/rea/news/story?id=23531>

UK Sustainable Development Commission:

<http://www.sd-commission.org.uk/index.php>

Asia: A list of resources

<http://www.lib.berkeley.edu/SSEAL/SouthAsia/environmental.html>

Bogota: Car free days

<http://www.un.org/Pubs/chronicle/2003/issue2/0203p76.html>

Third Sector Organizations:

Green TV:

<http://www.green.tv/>

Television Trust for the Environment:

<http://www.tve.org/network.html>

Business Leadership:

Ben and Jerry's Climate Change College [video]:

<http://www.joost.com/home?playNow=3145m2w#id=3145m2w>

People:

George Monbiot

Monbiot is a highly influential journalist who writes for The Guardian, an English newspaper that has long been an opinion leader in the area of climate change. For an example of a Monbiot column, see

<http://www.guardian.co.uk/commentisfree/2008/aug/05/kingsnorthclimatecamp.climatechange>

Monbiot has also written a very influential book, which I highly recommend, even though it's Euro-oriented:

Heat: How to Stop the World From Burning.

THURSDAY, FEBRUARY 12TH: NO CLASS TODAY.
THIS CLASS SESSION'S TIME HAS BEEN RESCHEDULED TO THURSDAY,
MARCH 12TH.

SESSION 4

February 19th.

Practice 3: Positioning: products, activities, and customers

In this session we will look at how firms can position their products, activities and customers in terms of sustainable business practice. With regards to products, we will examine the way that sustainability has been used to create points of differentiation in product markets by conducting a detailed analysis of the positioning of the Toyota Prius in the US and the EU. With regards to activities, we will investigate how sustainable practices throughout the value chain influence differentiation, cost, and risk. We will focus on the “total value chain” which involves all stages of supply, production, use/consumption, and disposal. Sustainable activities underly all issues of positioning along this dimension. For example, sustainable practices may build a firm’s brand name capital, and the absence of sustainable practices may undermine it, regardless of the “sustainability” of its end products. In addition, using sustainable practices has created significant cost advantages for firms even in traditional industries, such as DuPont and General Electric. Finally, organizing activities sustainably may significantly reduce a firms’ exposure to risks, including regulatory shocks, sudden changes in input costs, and environmental shocks themselves.

Skill Building: Positioning Analysis

This module will briefly review and discuss the basics of positioning analysis.

Skill Building: Social Cost-Benefit Analysis; Carbon cost benefit and payback

Managers of businesses seeking to move to sustainable practices must be able to analyze the scope and depth of the impact of activities that reduce environmental wellbeing and/or social welfare. These types of analysis are also highly useful in assessing and demonstrating the effectiveness of sustainable practices.

READINGS AND OTHER RESOURCES FOR THIS CLASS SESSION

The following are required reading/watching for this session. For websites, you are required to read only the specific page references. You may, of course, explore these sites at your leisure!

Powerpoints

The PowerPoint presentations for this class session are posted on Sakai. Please also download and read the following PowerPoints:

Thinking Strategically

Advantage and Positioning

and this note:

Note on Social Cost-Benefit Analysis

Reader:

Case: *Toyota Motor Corporation: Launching Prius*. HBS Case # 9-706-458.

For more details, please see the Class Assignment section below.

Review the article *Climate Business/Business Climate* assigned for Session # 3.

Web Resources for you to look up, read, and explore for this class:

Carbon Emission and Mileage Ratings for US Cars:

EPA Ratings:

<http://www.epa.gov/greenvehicles/Index.do;jsessionid=82304d36917318656374>

Carbon Emission and Mileage Ratings for EU Cars:

UK:

<http://www.carpages.co.uk/co2/>

Please do additional research yourselves for the assignment for this class.

Other firms' positioning: The Food Industry

Whole Foods:

<http://www.wholefoodsmarket.com/values/green-action.php>

Tesco:

http://www.ft.com/cms/s/0/133d5be4-a718-11db-83e4-0000779e2340.html?nclick_check=1

Carpe Diem Restaurant, Bristol, England [short video]:

<http://www.joost.com/home?playNow=3145m2w#id=3145m30>

Organic farms in Britain "For for Life" Part 3 [short video]:

<http://www.joost.com/home?playNow=3145m3i#id=3145m3k>

Carbon footprinting the supply chain:

<http://www.cdproject.net/corporate-supply-chain.asp>

ASSIGNMENT FOR THIS CLASS: GROUP HOMEWORK #1

Case Analysis: Toyota Motor Corporation: Launching Prius.

Part 1: Case Discussion Questions

Prepare the following questions for discussion in class only: No written assignment is due on these questions. Please focus on the differentiation aspects of the case, rather than the issue of the timing of the product introduction.

Discussion Question 1:

What were the principal motives for Toyota's development of the Prius?

Question 2:

What were the major uncertainties that the firm faced in developing and selling the Prius?

Part 2: Case Update

This is a written hand-in assignment. Please write two pages on the following questions. Do not use bullet points.

Background:

When the Prius was launched, Toyota sought differentiation in terms of both *mileage* and *carbon emissions*. Since that time, there have been many new entries of "green vehicles" into the market.

Question 1:

Using data for the US [from the EPA, see above under web resources, and any other sources you may want to use] and the EU [from whatever sources you can find on the web], analyze the positioning of the Prius in the US and EU market today, and assess its current competitive advantage in terms of product differentiation. Present your results in the form of a table or graph. Your analysis must include carbon and mileage considerations, but may include other criteria as you deem appropriate.

Note:

I do not expect you to conduct an exhaustive analysis of all cars that have entered these two markets since the Prius was launched. Take two or three new vehicles in each market, and base your relative positioning analysis on them. The intention here is to give you practice in positioning analysis for "sustainable" products.

Question 2:

What advice do you have for Toyota's management, based on your analysis and other information you have learned so far in this class?

ADDITIONAL RESOURCES

These are not required for class, but are listed for your personal reference.

Electric Cars: Energy Independence:

<http://www.newrules.org/electricity/drivingourway.html>

Embodied carbon measurement:

<http://www.guardian.co.uk/environment/2007/jan/25/supermarkets.ethicalliving>

Food miles:

<http://www.timesonline.co.uk/tol/news/uk/article1813836.ece>

“More Profits with Less Carbon”. Amory Lovins. *Scientific American*, August 2005.

SESSION 5
February 26th.

Practice 4: Analyzing Sustainability and the Extended Forces of Competition

In this session we will examine how the introduction of sustainable practices can change forces of competition at the industry level. For instance, adopting sustainable practices can not only change the structure of a firm's supply chain, but also change the bargaining power between producers and suppliers. Similarly, adoption of sustainable practices may lower entry barriers as new entrants may be more competent in the new practices than incumbents. Other forces of competition – rivalry, substitution, complementor power and buyer power – may also be influenced. Finally, regulations aimed at promoting sustainable business practice may significantly change competitive dynamics.

During this session, we will examine changing forces of competition in the automobile industry, where the shift to reduce vehicle emissions and increase mileage is changing competitive dynamics, lowering some entry barriers, and increasing supplier power. Building on our examination of the Toyota Prius last week, we will build a model of changing forces during the class, using the web resources based below.

We will also draw on examples of shifting competition from other industries such as retailing and home building.

Skill Building: The Extended Five Forces of Competition

This module will briefly review and discuss the basics of the Extended Five Forces framework.

READINGS AND OTHER RESOURCES FOR THIS CLASS SESSION

The following are required reading/watching for this session. For websites, you are required to read only the specific page references. You may, of course, explore these sites at your leisure!

Powerpoints

The PowerPoint presentations for this class session are posted on Sakai. Please also download and read the following PowerPoints:

The Extended Five Forces
and this note:

Note on Rents, Strategic Behavior and Industry Dynamics

Reader:

Nothing for this session.

Web Resources for you to look up, read, and explore for this class::

The Automobile industry:

Changes in suppliers and supplier power: Batteries

A123

<http://www.a123systems.com/>

Enerdel

<http://www.enerdel.com/>

LG Chem

<http://ipsnews.net/news.asp?idnews=40185>

Changes in buyers and buyer power

Green fleets:

http://www.greencarcongress.com/2007/06/ikea_uk_switche.html

<http://www.autobloggreen.com/2007/05/17/national-car-rental-snags-fleet-of-prius-hybrids-for-uk-rentals/>

Changes in complementors and complementor power:

Electricity:

http://www.treehugger.com/files/2006/12/180_million_plu.php

Hydrogen:

<http://www.hydrogenhighway.ca.gov/>

Biofuels:

<http://www.reuters.com/article/GlobalAgricultureandBiofuels08/idUSN1555102520080115>

Changes in substitutors and substitutor power:

Public transport:

<http://www.transfuture.net/>

<http://www.dismantle.org/curitiba.htm>

Car Sharing:

<http://www.carsharing.net/>

<http://www.zipcar.com/>

Changes in industry entry and entry barriers:

Tesla Motors:

<http://www.teslamotors.com/>

Think:

<http://www.think.no/think/Our-Company>

<http://www.latimes.com/news/printedition/highway1/la-hy-neil25-2008jun25,0,6115678.story>

Pininfarina/Bollore

<http://www.autobloggreen.com/2008/05/06/pininfarina-to-unveil-their-electric-car-this-autumn/>

Changes in regulation:

See earlier materials. Also:

California green tagging:

<http://latimesblogs.latimes.com/uptospeed/2008/07/california-puts.html>

California zero emission mandates:

<http://blog.wired.com/cars/2008/03/the-california.html>

EU carbon taxing:

<http://ipsnews.net/news.asp?idnews=40185>

Changes in rivalry:

Technological competition:

<http://articles.latimes.com/2007/dec/08/business/fi-garage8>

Product competition:

http://autos.yahoo.com/green_center-top100/

ADDITIONAL RESOURCES

These are not required for class, but are listed for your personal reference.

Nova: Car of the Future:

<http://www.pbs.org/wgbh/nova/car/program.html>

Amory Lovins: Winning the Oil Endgame: TED Talk

http://www.ted.com/index.php/talks/amory_lovins_on_winning_the_oil_endgame.html

Iain Carson and Vijay Vaitheeswaran. *Zoom: The Global Race to Fuel the Car of the Future*

SESSION 6
March 5th.

Practice 5: Innovating Sustainable Business Practice: Tracking, Implementing, and Funding Innovation

Business firms are a major source of innovations that can serve to remediate environmental impacts, be they new products or new processes. We will look at the emergence of new products and new processes, at the founding of new firms, and the flow of venture funding into sustainability innovations. Energy generation, building, and transport are the industrial sectors that produce the largest amount of greenhouse gases. We have already looked at the auto industry. We will start this session by looking at innovations in the energy sector. First, we will look at conservation. Then, we will look at innovations in “cleaning” old power generation technologies such as “clean-burning” coal systems, carbon sequestration and carbon scrubbing. Finally, we will look at “new” energy generation technologies such as solar power, wind power, and geothermal power. We will then move on to looking at innovations in the building sector. We will also look at various forms of innovation funding, including government monies, private sector funding initiatives, and venture capital.

Skill Building: Metrics: Carbon Rating

In this module we will examine various ways of assessing the carbon footprint of various energy-generating technologies, using biofuels as an example.

READINGS AND OTHER RESOURCES FOR THIS CLASS SESSION

The following are required reading/watching for this session.

Powerpoints

The PowerPoint presentations for this class session are posted on Sakai.

Reader:

Nothing for this session.

Web Resources for you to look up, read, and explore for this class:

This is just a sample of what is available. You may want to check out other websites for your assignment.

Conservation:

Review the McKinsey article “Using Energy More Efficiently: An Interview with Rocky Mountain Institute’s Amory Lovins” in *McKinsey Quarterly* assigned for Session 3.

[Other Amory Lovins articles are listed under Additional Resources.]

Retrofitting etc.:

“Clean” Coal:

<http://www.foxnews.com/story/0,2933,446266,00.html>

Carbon sequestration:

<http://www.bp.com/iframe.do?categoryId=9025056&contentId=7047455>

http://www.sustainablelifemedia.com/content/story/climate/09172007_1

Wind Power:

Thumbnail:

<http://www.bp.com/sectiongenericarticle.do?categoryId=9024940&contentId=7046497>

Economist:

http://www.economist.com/specialreports/displaystory.cfm?story_id=11565667

Wind Power: Countries, States, Cities

Wind power in Denmark and Texas [short video]:

<http://video.msn.com/video.aspx?mkt=en-US&brand=msnbc&vid=6266fa18-666b-4d02-9a38-952858230437>

Texas:

<http://www.youtube.com/watch?v=K2PvLKKvfy0>

Wind power: Competitors

Vestas:

www.vestas.com

China: Competitive advantage of Chinese wind turbine manufacturers:

<http://solveclimate.com/blog/20080128/heads-china-be-1-wind-turbine-maker-09>

Solar power: Countries

Germany:

http://www.economist.com/business/displaystory.cfm?story_id=10961890

Solar power: Technologies and Competitors

Photovoltaic systems

See the Economist article listed above.

Also:

<http://www.bp.com/iframe.do?categoryId=9025053&contentId=7047306>

http://www.suntech-power.com/about/about_suntech.php

Centralized systems

[http://technology4life.wordpress.com/2008/01/31/the-world%
c2%b4s-largest-pv-solar-plant-open-in-southern-spain/](http://technology4life.wordpress.com/2008/01/31/the-world%c2%b4s-largest-pv-solar-plant-open-in-southern-spain/)

Distributed systems

<http://www.solarcity.com/solarlease/default.aspx>

Thermal solar systems: Large plants

Distributed heated liquid systems

http://www.fplenergy.com/portfolio/solar/solar_plant.shtml

<http://en.wikipedia.org/wiki/Image:Solarplant-050406-04.jpg>

Solar tower systems

http://en.wikipedia.org/wiki/Image:Solar_two.jpg

Sterling Engine models

<http://www.stirlingenergy.com/>

<http://www.youtube.com/watch?v=fUrB7KRvxUk>

Wave power

http://www.economist.com/science/tq/displaystory.cfm?story_id=11482565

Geothermal

Philippines

<http://www.philippines.hvu.nl/leyte2.htm>

Biofuels: Products and Carbon Metrics

The concept of Net Energy Gain [NEG]

http://en.wikipedia.org/wiki/Net_energy_gain

Conventional ethanol:

<http://web.mit.edu/newsoffice/2007/ethanol.html>

Cellulosic ethanol:

<http://www.technologyreview.com/Energy/18227/?a=f>

Algae-derived ethanol: Read the introduction and the section on History

http://en.wikipedia.org/wiki/Algae_fuel

Greenfuels Corp:

<http://www.greenfuelonline.com/>

Comparison Chart:

http://seattlepi.nwsource.com/dayart/20080503/biofuels_compare.gif

Green building

The Economist:

http://www.economist.com/science/tq/displaystory.cfm?story_id=11999259

Germany's Passivhaus model:

<http://en.wikipedia.org/wiki/Passivhaus>

Cool Buildings:

www.yesmagazine.org/coolbuildings

CBRE:

http://www.cbre.com/NR/rdonlyres/2A133A0E-0434-427E-9C9E-B70E6A4F85E3/0/PressReleaseCBRichardEllisEntersUSGBCGreenPortfolioProgram_FINAL.pdf

Masdar City:

http://en.wikipedia.org/wiki/Masdar_City
<http://www.youtube.com/watch?v=yWVsi0Utmgl>

ASSIGNMENT FOR THIS SESSION: INDIVIDUAL HOMEWORK #3

Choose ONE energy technology from the following:

1. Energy conservation
2. "Clean" coal
3. Wind power
4. Solar power

Write a one page briefing document analyzing the impact of President-Elect Obama's stated plans for renewable and low-carbon energy generation in the US on the development and expansion of this technology. In particular:

1. What is the overall target for renewables and low carbon technologies set by President-Elect Obama in his recent statements?
2. What might be the projected output for this technology in the future as a proportion of total US energy demand Eg by 2012, 2015, 2020, 2025?
3. What will be the major impact of expansion of the use of this technology? Eg, on prices, carbon emissions?

ADDITIONAL RESOURCES:

These are not required for class, but are listed for your personal reference.

Amory Lovins:

“Winning the Oil Endgame”: TED Talk

http://www.ted.com/index.php/talks/amory_lovins_on_winning_the_oil_endgame.html

Winning the Oil Endgame: Book

winningtheoilendgame.com

Rocky Mountain Institute:

<http://www.rmi.org/sitepages/pid23.php>

Charlie Rose Interview:

video.google.com/videoplay?docid=4569577556800822039

Solar Power: A Grand Plan for the US

<http://www.sciam.com/article.cfm?id=a-solar-grand-plan>

Solar Power: The Problem of Subsidies

http://www.economist.com/world/international/displaystory.cfm?story_id=10989479

Wind Power in Texas:

http://en.wikipedia.org/wiki/Wind_power_in_Texas

T. Boone Pickens' Plan [short video]:

<http://www.cnn.com/2008/US/05/19/pickens.qa/#cnnSTCVideo>

<http://www.pickensplan.com/theplan/>

http://www.alternet.org/environment/100806/how_t._boone_pickens'_energy_plan_just_got_killed/

“Clean Coal”

http://en.wikipedia.org/wiki/Clean_coal_technology

<http://www.sciam.com/blog/60-second-science/post.cfm?id=first-oxyfuel-clean-coal-power-plan-2008-09-04>

Article on how “Clean Coal” technologies work:

<http://science.howstuffworks.com/clean-coal1.htm>

USC Energy Institute:

http://www.usc.edu/research/initiatives/future_fuels/

Solar Power: Video: “Saved by the Sun”

<http://www.pbs.org/wgbh/nova/solar/>

USC Center for Sustainable Cities:

<http://college.usc.edu/geography/ESPE/>

Retrofitting buildings in Cambridge, MA. [30min video from NOW]

<http://www.pbs.org/now/shows/413/index.html>

Green Downtown Office Buildings: A report by CBRE

http://www.cbre.com/NR/rdonlyres/8F858ABA-C189-42AC-BC26-CA9F0F2535F7/0/Green_Downtown_Office_Markets_White_Paper.pdf

SESSION 7

March 12th.

Practice 6: Looking outwards and forwards

In our final session, we will look at the longer term future: Changes in the business context; the emergence of new industries; the emergence of a new understanding of what the “business of business” is.; and even, the emergence of a new model of the business enterprise itself.

Concluding Discussion: Sustainability, Business, and Society

We will end the class with a discussion of how you may intend to promote sustainable practices in your management career and also incorporate sustainable practices into your life.

READINGS AND OTHER RESOURCES FOR THIS CLASS SESSION

The following are required reading/watching for this session.

Powerpoints

The PowerPoint presentations for this class session are posted on Sakai.

Reader:

Nothing for this class.

Web Resources for you to look up, read, and explore for this class::

Business Context Scenarios:

Climate and Carbon:

Al Gore:

http://www.ted.com/index.php/talks/al_gore_s_new_thinking_on_the_climate_crisis.html

Amory Lovins: “Winning the Oil Endgame”: TED Talk

http://www.ted.com/index.php/talks/amory_lovins_on_winning_the_oil_endgame.html

The Low Carbon Future:

“Business Strategies for Climate Change” *McKinsey Quarterly*

Dematerialization: Beyond Stuff

http://marketplace.publicradio.org/display/web/2007/10/26/a_year_without_s_hopping/

<http://www.youtube.com/watch?v=UTE8DYwgni8>

<http://www.tumbleweedhouses.com/>

Beyond Stuff: Affluenza

<http://en.wikipedia.org/wiki/Affluenza>

<http://www.youtube.com/watch?v=b-dib6hSlcU>

New Industries: Recycling

Waste Management:

<http://www.wm.com/wm/services/recycling.asp>

<http://www.wm.com/wm/services/waste-to-energy.asp>

InEnTec:

<http://www.xconomy.com/seattle/2008/07/23/from-garbage-to-ethanol-inentecs-method-at-heart-of-120-million-refinery/>

Interface Carpets:

http://www.interfaceinc.com/news/press/reclaimed_carpet.html

www.interfacesustainability.com

What IS the Business of Business?

Read

“From Risk to Opportunity: How global executives view sociopolitical issues”.

McKinsey Quarterly.

Capitalism and Sustainability:

http://www.env-econ.net/2006/03/capitalism_and_.html

<http://www.news.cornell.edu/stories/Oct05/sustain.summit.cover.ssl.html>

New Models of Enterprise

Social Entrepreneurship:

<http://www.pbs.org/opb/thenewheroes/whatis/>

<http://www.pbs.org/opb/thenewheroes/meet/green.html>

Micro-Enterprise:

<http://www.pbs.org/opb/thenewheroes/meet/ruiz.html>

Micro-Finance:

<http://www.climatechangeorp.com/content.asp?ContentID=5283>

Partnership:

www.rjcarch.com/PDF/08_0712%20It%20Takes%20a%20Village.pdf

ASSIGNMENT FOR THIS SESSION: GROUP HOMEWORK #2

Your final assignment is to prepare two exploratory scenarios for the future based on one of the following topics:

1. The future of global carbon regulation
2. The future of recycling
3. The future of the material economy

Your total assignment should be 2 pages long. I am happy to receive this assignment in the form of written documents, posters, or PowerPoint displays. If you are producing electronic media, please email them to me at liebesk@marshall.usc.edu.

Before engaging this assignment, review the notes on scenarios from Session # 2.: *Introduction to Scenarios, How to Build Scenarios, and Exploratory Scenarios*.

Some guidelines:

Each scenario should represent a distinct state of the world. Develop each scenario as a system-state with various dimensions, some of which should be exclusive to one scenario.

It might be helpful to you to imagine your scenarios as “alternative worlds”.

Please do not use the “expected future” for one scenario; we do not have such a state of the world for any of these explorations. Also, do not base scenarios on levels of a particular state variable, as in “high X” and “low X”: this partitioning represents variations within a single system-state, not a complete system-state.

You do not need to quantify the dimensions in your scenarios, but it would be helpful to you to consider some of the underpinning data. For instance, if we were considering scenarios for future carbon reduction, what would need to happen to reduce global CO₂ emissions to 1990 levels by 2020? 2030? How many coal plants would need to be scrapped? Substituted for? How could this goal be brought about? Etc.

Please be sure to make a one-page presentation document from your homework. If you prepared one or two posters, you may bring those to class to present. Thank you.

ADDITIONAL RESOURCES AND REFERENCES

These are not required for class, but are listed for your personal reference.

“Recycling for Profit: The New Green Business Frontier” David Biddle. *Harvard Business Review*, November-December 1993.

Affluenza: The whole show

<http://www.pbs.org/kcts/affluenza/>

Your Monday or Your Life by Joe Dominguez and Vicki Robin.

<http://www.yourmoneyoryourlife.org/fom-about-summary.asp>

EDF Strategy: November 2008

<http://www.edf.org/article.cfm?contentID=8393>