

## Master of Science in Sustainability Management

### Sustainability Management - PS4100

#### 3 Credits

**Instructor:** Dr. Steven Cohen

### Learning Objectives

Sustainability management matters because we only have one planet and we must learn how to manage our organizations in a way that ensures that our planet is maintained. The course is designed to introduce you to the field of sustainability management. This is not an academic course that reviews the literature of the field and discusses how scholars think about the management of organizations that are environmentally sound. It is a practical, professional course organized around the core concepts of management and the core concepts of sustainability. The course will have a specific emphasis on urban sustainability as the planet's urban population continues to expand.

Each week we will read one or two cases in management and/or sustainability along with some background material designed to help you answer questions posed at the end of each case exercise. The cases always pose practical issues for decision makers to address—but issues that are best addressed with a firm grounding in the literature of management and sustainability.

The literature and case material we will study this semester are based on lessons learned in government, nonprofits, and the private sector. However, most of my own work focuses on government and nonprofits, so this course will emphasize management in public and nonprofit organizations and the role of public policy in sustainability.

In this course, you will be assigned to one team that will present a briefing in class on an assigned position for a particular case, for which another team will present an opposing view. You will also write three, two-page memos according to a specified format. The syllabus includes a schedule for each assignment. There is also a take home final exam that is due on the last day of class.

### Readings

1. Steven Cohen, William Eimicke, Management Fundamentals (Available on Canvas)
2. Steven Cohen, William Eimicke, Alison Miller, Sustainability Policy: Hastening the Transition to a Cleaner Economy
3. Steven Cohen, The Sustainable City (Selected Chapters)
4. New York State (2016). "Reforming the Energy Vision" White Paper
5. Black and Cherrier (2010). "Anti-consumption as part of living a sustainable lifestyle: Daily practices, contextual motivations and subjective values." *Journal of Consumer Behavior*
6. O'Rourke, D. (2014). "The Science of Sustainable Supply Chains." *Science*.
7. Lueneburger and Goleman (2010). "The Change Leadership Sustainability Demands." *MIT Sloan Management Review*
8. Haigh and Hoffman (2012). "Hybrid organizations: The next chapter of sustainable business." *Organizational Dynamics*
9. CFO Research Services and Jones Lang LaSalle (2010). "The Role of Finance in Environmental Sustainability Efforts."
10. International Energy Agency (2016). "World Energy Outlook 2016, Executive Summary."
11. Schwarz, J., B. Beloff and E. Beaver (2002). "Use sustainability metrics to guide decision-making." *Chemical Engineering Progress*
12. Hodge and Greve (2017). *On Public-Private Performance: A Contemporary Review*. Public Works Management & Policy
13. Weber, Elke (2017). "Breaking cognitive barriers to a sustainable future," *Nature Human Behavior*
14. Ellen MacArthur Foundation. (2017, August 29). *Cities in the Circular Economy: An Initial Exploration*.
15. Case Studies, available in the following locations:

The Sustainable City (Available on Canvas)

- Chapter 6: "Waste Management in New York City, Hong Kong, and Beijing"
- Chapter 8: "Building of the Smart Grid"
- Chapter 10: "Sustainable Urban Living"

## Master of Science in Sustainability Management

### Canvas

- “Colombia’s Bus Rapid Transit (BRT) Development and Expansion”
- “New York State Systems Benefit Charge”
- “Sustainability Planning in New York City”
- “From Waste to Sustainable Materials Management: Three Case Studies on the Transition Journey”
- “Public Private Partnerships for Green Space in NYC”
- “Nuclear Power and the Japanese Earthquake of 2011”
- “Bike Lanes in New York City”

### Harvard Business School

You must purchase these online in our Coursepack at: <https://hbsp.harvard.edu/import/648787>

- “Kvantum Inc: Social Media Dilemma and Talent Retention” - Product #: W15539
- “Esquel Group: Value Innovation through Sustainable Supply Chains” - Product #: ST75
- “Patagonia’s Path to Carbon Neutrality” - Product #: B5916
- “Poppy Barley: Weighing the Costs and Benefits of Sustainability Certification” - Product #: W18441
- “Natura Cosméticos, S.A.” - Product #: 412052

## Submissions

Group memos, individual memos and final exams are due on Canvas by 6:10PM on the day of class, in Word format only

Group PPTs are due on 9AM on the day of the presentation, to be emailed to all 3 CGAs

Late submissions automatically lose half a letter grade

Please make note that for group cases, the presentation should be made by only one group member. The same group member will answer the Q&A, but can seek clarifications from group members if needed.

## Group Process

1. Each student will have one group project to complete. Groups will be assigned randomly in advance of the first class session, and one person will be assigned the role of group manager. Students that add the course late will be added to an existing group. Groups will consist of 3-4 members.
2. Group members are responsible for setting meetings and identifying roles and responsibilities.
3. Group manager will submit work plan to Avantika two weeks prior to presentation, outlining each person’s role and a timeline for completed activities.
4. Group manager will email PowerPoint presentation to Avantika by 9am on the day of the presentation. The PowerPoint should contain no more than 5-6 slides.
5. One person in the group submits the written memo via Canvas.
6. Both Groups A and B will give a 10-minute briefing (5-minute presentation and 5-minute Q&A), in-person at the start of class on the assigned date.

## Master of Science in Sustainability Management

### Summary of Due Dates

Cases will be due by 6:10PM on the due date via upload to the Assignments section on Canvas.

Week	Case Study	Due by 6:10pm (via Canvas)
1	None	None
2	Kvantum Inc: Social Media Dilemma and Talent Retention	Group Case #1 DUE
3	Colombia's Bus Rapid Transit (BRT) Development and Expansion	Individual Memo #1 DUE
4	New York State Systems Benefit Charge Sustainability Planning in NYC	Group Case #2 DUE Group Case #3 DUE
5	From Waste to Sustainable Materials Management: Three Case Studies on the Transition Journey	Group Case #4 DUE
6	Sustainability Leadership: Panel Moderated by George Sarrinikolaou	None
7	Waste Management in New York City, Hong Kong, and Beijing (Chap. 6)	Group Case #5 DUE
8	Esquel Group: Value Innovation through Sustainable Supply Chains Patagonia's Path to Carbon Neutrality	Individual Memo # 2 Group Case #6 DUE
9	Public Private Partnership for Green Space in NYC Sustainable Urban Living (Chap. 10)	Group Case # 7 DUE Group Case #8 DUE
10	No Class (Election Day)	None
11	Poppy Barley: Weighing the Costs and Benefits of Sustainability Certification	Individual Memo #3 DUE
12	Building of the Smart Grid (Chap. 8) Nuclear Power and the Japanese Earthquake of 2011	Group Case # 9 DUE Group Case # 10 DUE
13	Natura Cosméticos, S.A. Bike Lanes in New York City	Group Case #11 DUE Group Case #12 DUE
14	None	FINAL EXAM DUE

### Method of Evaluation

- Individual Case Memos – 45%
- Final Exam – 35%
- Group Case Presentation & Memo – 10%
- Class Participation and Attendance – 10%

## Master of Science in Sustainability Management

### Grading Policy

ALL ASSIGNMENTS MUST BE SUBMITTED ON TIME. ANY LATE SUBMISSIONS RECEIVE AN AUTOMATIC REDUCTION OF ONE-HALF LETTER GRADE. IF AN ASSIGNMENT IS AN HOUR LATE OR A MONTH LATE, THE PENALTY IS THE SAME. IT IS A SMALL PENALTY AND IS NON-NEGOTIABLE.

### School Policies

#### *Copyright Policy*

Please note—Due to copyright restrictions, online access to this material is limited to instructors and students currently registered for this course. Please be advised that by clicking the link to the electronic materials in this course, you have read and accept the following:

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials. Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specified conditions is that the photocopy or reproduction is not to be "used for any purpose other than private study, scholarship, or research." If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of "fair use," that user may be liable for copyright infringement.

#### *Academic Integrity*

Columbia University expects its students to act with honesty and propriety at all times and to respect the rights of others. It is fundamental University policy that academic dishonesty in any guise or personal conduct of any sort that disrupts the life of the University or denigrates or endangers members of the University community is unacceptable and will be dealt with severely. It is essential to the academic integrity and vitality of this community that individuals do their own work and properly acknowledge the circumstances, ideas, sources, and assistance upon which that work is based. Academic honesty in class assignments and exams is expected of all students at all times.

SPS holds each member of its community responsible for understanding and abiding by the SPS Academic Integrity and Community Standards posted at <http://sps.columbia.edu/student-life-and-alumni-relations/academic-integrity-and-community-standards>. You are required to read these standards within the first few days of class. Ignorance of the School's policy concerning academic dishonesty shall not be a defense in any disciplinary proceedings.

#### *Accessibility*

Columbia is committed to providing equal access to qualified students with documented disabilities. A student's disability status and reasonable accommodations are individually determined based upon disability documentation and related information gathered through the intake process. For more information regarding this service, please visit the University's Health Services website: <http://health.columbia.edu/services/ods/support>.

### Course Schedule

**Week 1:** Introduction to Management, Public Management, and Sustainability Management

**Week 2:** Internal Organizational Management: People, Work, Money, and Information

**Week 3:** External Organizational Management: Strategy and Communications

**Week 4:** The Role of Government in Promoting Sustainability

**Week 5):** The Circular Economy

**Week 6:** Sustainability Leadership: Panel Moderated by George Sarrinikolaou

## Master of Science in Sustainability Management

**Week 7:** Sustainable Urban Systems: Defined and Explained

**Week 8:** Management in the 21st Century: Sustainability, Outsourcing, Supply Chains, Network Management, and Public-Private Partnerships

**Week 9:** The Sustainable Lifestyle

**Week 10:** Election Day - No Class

**Week 11:** Sustainable Business and Finance

**Week 12:** The Centrality of Energy: Moving from Fossil Fuels to Renewable Energy

**Week 13:** Sustainability Metrics, Management Innovation, and Quality Management

**Week 14:** A Sustainable Planet and Conclusions

### **Week 1: Introduction to Management, Public Management, and Sustainability Management**

Reading Assignment:

- Management Fundamentals: Chapters 1 and 2
- Sustainability Policy: Hastening the Transition to a Cleaner Economy: Chapter 1

In-Class Videos:

- Sustainability Management: Lessons From and For New York City, America, and the Planet
- What is Sustainable Development?

### **Week 2: Internal Organizational Management: People, Work, Money and Information**

Reading Assignment:

- Management Fundamentals: Chapters 3 and 4

In-Class Video:

- 3-6-1 Google's Organizational Culture

### **Group Case #1: Kvantum Inc.: Social Media Dilemma and Talent Retention** (Purchase via Harvard Business Review)

The chief executive officer of Kvantum Inc. (KI) received a distressing email from the human resources manager at Data Research Services. The two companies shared office space, and Data Research Services (DRS) had invested seed capital in Kvantum. However, a Data Research Services employee was now accusing one of Kvantum's most competent junior data scientists of harassment. The Kvantum employee had apparently approached the Data Research Services employee personally and then again through a popular social networking website. If the allegations were verified, Kvantum could lose a valuable employee. Moreover, a workplace scandal could adversely impact the start-up's reputation. The issue required immediate action. Should it be considered misbehavior? If so, what kind of misbehavior? Most importantly, how should Kvantum resolve the problem?

In this case, you are the Human Resource Manager of Kvantum Inc. Write a memo to the Chief Executive Officer of Kvantum, suggesting possible solutions to the problem mentioned above. The memo should answer the following questions:

## Master of Science in Sustainability Management

1. **Group A & B:** What is the kind of relationship shared between KI and DRS? Why is it important for KI to maintain this relationship?
2. **Group A & B:** What issues are Kvantum Inc. facing?
3. **Group A:** Argue for a case that suggests that Samarth Sachdeva *should* be terminated from his job. What approach should Kvantum Inc. follow?
4. **Group B:** Argue for a case that suggests that Samarth Sachdeva *should not* be terminated from his job. What approach should Kvantum Inc. follow?

### Week 3: External Organizational Management: Strategy and Communications

#### Reading Assignment:

- Management Fundamentals: Chapters 10 and 11

#### In-Class Video:

- Patagonia and Transparency

### Individual Memo #1: “Colombia’s Bus Rapid Transit (BRT) Development and Expansion” (Available on Canvas)

Many major cities in Colombia struggle with managing transportation issues arising from growing populations and vehicle use and the development of sustainable public transportation alternatives. Rapidly developing metropolises suffer from highly congested roadways, extreme air pollution, and high rates of road related accidents. In Colombia, these issues stem partly from the over-saturation of independent bus operators, underinvestment in infrastructure, and inefficient operations. In 2002, Colombia championed the National Urban Transport Program (NUTP) that revolutionized the public transport system; implementing Strategic Public Transportation Systems (SPTS) and expanding Bus Rapid Transit (BRT) systems in major cities. In the process, Colombia had to overcome a variety of significant barriers. The first BRT system, TransMilenio, was built in Bogotá. Its initial success made it a model for the rest of the country. TransMilenio helped galvanize support for the national plan to expand BRT systems to 8 other cities in Colombia. The National Urban Transport Program (NUTP) is considering expanding the BRT system to five other cities in Colombia, but smaller in size than where they previously operated (populations less than 600,000). However, NUTP wants to avoid some of the issues that have developed with Phase II of TransMilenio, which include questions about funding for future phases and increased public debate about the merits of a bus network over rail system. Public approval for TransMilenio is fairly low, and users complain about lack of maps at stations, overcrowding, lack of safety, and high prices for many users who live on less than minimum wage. In light of this controversy, the Transportation Commissioner has asked you, the Deputy Commissioner for Capital Projects, to make a recommendation regarding BRT expansion. You have been asked to address these three questions:

1. Should NUTP expand the BRT system to other cities despite recent controversies with TransMilenio? Why or why not? If yes, create a plan for expansion and include a stakeholder engagement plan. If no, be sure to explain why, paying particular attention to key stakeholders.
2. How can the program overcome low public approval? What are the key factors for success and steps for achieving them?
3. What are the political and managerial costs and benefits of your strategy?

Additional information regarding Colombia’s Bus Rapid Transit can be found in this video.

### Week 4: The Role of Government in Promoting Sustainability

#### Reading Assignment:

- Sustainability Policy: Hastening the Transition to a Cleaner Economy: Chapters 2 and 3
- Management Fundamentals: Chapter 7
- The Sustainable City: Chapters 1 and 5
- New York State, 2016, “Reforming the Energy Vision” White Paper

## Master of Science in Sustainability Management

### In-Class Video:

- GSFA 2017 | C40 Cities and Citi Foundation | We Live Here Together

### Group Case #2: “New York State Systems Benefit Charge” (Available on Canvas)

You work for the Public Service Commission, the group that approved the state’s Clean Energy Fund (CEF) effective January 21, 2016. Your team is tasked with developing the CEF progress report and providing advice to other states that have public benefit funds, but might be considering the CEF model. The following questions need to be considered in your review:

1. **Groups A & B:** What is the role of the government in sustainability? How does this role differ at the local, state and national levels in the U.S.?
2. **Group A:** Argue that the Clean Energy Fund, in its current state, is beneficial for the State of New York.
3. **Group B:** Argue that the Public Utility Commission should focus on the energy market transition.
4. **Groups A & B:** Explain the costs, benefits, and challenges of your recommendation.

### Group Case #3: “Sustainability Planning in NYC” (Available on Canvas)

Mayor Bloomberg launched “PlaNYC 2030: A Greener, Greater New York” in 2007 and formed the Office of Long-Term Planning and Sustainability to implement the plan’s 100+ initiatives across the categories of Energy, Transportation, Water, Solid Waste, Green Buildings, and Climate Change, among others. Working with over 25 city agencies to implement, the plan is based on the idea that environment and economic development are linked, and sustainability must be embedded in a city for it to flourish long-term and attract and retain businesses and residents. Bloomberg’s successor, Mayor de Blasio, has rebranded and revamped PlaNYC to “One New York: The Plan for a Strong and Just City,” with a new focus on equity and reducing poverty, recognizing that the environment is highly connected to these issues. You are a team working for a sustainability consulting firm, and your firm has been hired by another large American city that is interested in developing a sustainability plan for the first time. Your client wants you to consider the challenges that New York City faced in the transition from PlaNYC to OneNYC, the major differences between the two plans, and make a recommendation on how to approach the city’s first sustainability plan. You have been asked to address the following questions:

1. **Group A & B:** What are the major differences between the PlaNYC and OneNYC plans?
2. **Group A:** Recommend an approach that focuses primarily on environmental initiatives based on ideas from PlaNYC.
3. **Group B:** Recommend an approach that focuses primarily on social initiatives based on ideas from OneNYC.
4. **Group A & B:** What are the advantages and disadvantages of your recommendation? What are the potential challenges?
5. **Group A & B:** What is the role of metrics/measurement in your recommended plan?

### Week 5: Circular Economy

#### Reading Assignment:

- Ellen MacArthur Foundation. (2017, August 29). Cities in the Circular Economy: An Initial Exploration.
- Ellen MacArthur Foundation. (2013). Towards the Circular Economy.

#### In-Class Videos:

- Circular Economy in Cities
- Dutch Businesses Work to Test the Concept of a Circular Economy

### Group Case #4: “From Waste to Sustainable Materials Management: Three Case Studies of the Transition Journey” (Available on Canvas)



## Master of Science in Sustainability Management

1. **Group A & B:** Explain the concept of circular economy in the waste management system.
2. **Group A:** Choose the San Francisco case study from the paper and give its details, pros, and cons.
3. **Group B:** Choose the Flanders case study from the paper and give its details, pros, and cons.
4. **Group A & B:** Give suggestions (new plans) as to how the case study you chose could become more successful.
5. **Group A & B:** Using examples from the other two case studies, suggest how they can be incorporated into the selected case study's overall waste management plan.

### Week 6: Sustainability Leadership: Panel Moderated by George Sarrinikolaou

### Week 7: Sustainable Urban Systems: Defined and Explained

#### Reading Assignment:

- Sustainability Policy: Hastening the Transition to a Cleaner Economy: Chapter 5
- The Sustainable City: Chapter 2

#### In-Class Video:

- Can Los Angeles Be Sustainable?

### Group Case #5: "Waste Management in New York City, Hong Kong, and Beijing" (Chapter 6 of *The Sustainability City*, Available on Canvas)

Hong Kong is one of the many regions in the world that faces waste capacity issues, due to high population growth, increased economic activity, and limited landfills. Your team of consultants has been hired by the Hong Kong Environmental Protection Department (EDP) to provide recommendations on improving waste management in Hong Kong. The Department has asked you to consider waste practices in other large cities, both in neighboring China and in the United States. Consider the practices of New York City and Beijing as you are developing your recommendation, and consider these questions:

1. **Groups A & B:** What are the major challenges to effective waste management in large, densely populated cities?
2. **Group A:** Argue that the EDP will be able to solve their landfill problem through recycling and a reduction of food waste going to the landfill.
3. **Group B:** Argue that recycling and food waste reduction is not enough and therefore the EDP will have to implement a new waste program. Suggest a new waste program for EDP to implement.
4. **Group A:** Using an example from New York City, what recycling mechanism should Hong Kong incorporate as part of its overall waste management plan?
5. **Group B:** Using an example from Beijing, what recycling mechanism should Hong Kong incorporate as part of its overall waste management plan?
6. **Groups A & B:** How will your plan address the planned closure of the three landfills in 2020?

### Week 8: Management in the 21st Century: Sustainability, Outsourcing, Supply Chains, Network Management, and Public-Private Partnerships

#### Reading Assignment:

- O'Rourke, D. (2014). "The Science of Sustainable Supply Chains." *Science*.
- Lueneburger and Goleman (2010). "The Change Leadership Sustainability Demands." *MIT Sloan Management Review*
- Management Fundamentals: Chapters 8 and 9
- The Sustainable City: Chapter 9
- Hodge and Greve. (2017). On Public-Private Performance: A Contemporary Review. *Public Works Management & Policy*

#### In-Class Videos:



## Master of Science in Sustainability Management

- Modernizing LaGuardia: Skanska's Role in the \$5.1B Public-Private Partnership
- Fjällräven - Re-Kånken - Designer's Vision

### Individual Memo #2: Esquel Group: Value Innovation Through Sustainable Supply Chains (Purchase via Harvard Business Review)

The Esquel, one of the world's largest cotton-based textile and apparel manufacturing companies, produces shirts for from scratch through a vertically integrated supply chain for many major brands, including Tommy Hilfiger, Hugo Boss, Ralph Lauren, Lacoste, and Nike, and department stores around the world. Its leadership, comprising Chairman Marjorie Yang, Vice Chairman Teresa Yang, and CEO John Cheh, had made significant strides over the past two decades, fostering and developing sustainability practices across their supply chain. Set in the early part of 2012, this case tracks their decision-making process as they saw an opportunity to develop a greenfield site in the city of Guilin in Guangxi Province, China. They named this new development project "Integral", following the Buddhist concept of harmony between the natural and surrounding environment, the workplace and the workforce culture, and the pursuit of innovation, community, and excellence. The main issues the Esquel leadership faced were to define the vision and mission for Integral around the short and long-term value proposition of the Integral site. What could be the contribution of the Integral site to the Esquel network, and in what ways could they make the Integral site a showcase for the sustainability focus of the organization?

You are the Sustainability Manager at the Esquel group. Write a memo addressing the following questions:

1. How has the Esquel Group incorporated sustainability into its day-to-day business, including its supply chain?
2. What are the major challenges faced by the Esquel Group?
3. Explain the Integral greenfield project and advocate why the Esquel group *should/should not* move forward with the project while addressing the labor supply and cost challenges of the garment manufacturing industry in China?

### Group Case #6: "Patagonia's Path to Carbon Neutrality by 2025 (Purchase via Harvard Business School)

Patagonia, an outdoor clothing company based in Ventura, CA, has the goal of becoming carbon neutral by 2025. They are hoping to develop a strategy so that other companies can replicate the path they took. Patagonia believes the key to reaching their goal is through their supply chain. However, they have limited control over their suppliers since they are not largely not vertically integrated. The majority of their emissions, 80%, come from raw materials production. You are a leader of a team of sustainability consultants that have been commissioned by Patagonia to analyze their Carbon Neutrality Plan and develop additional ways they can reach their goal. The recommendation is to be in the form of a two-page action memo that addresses these questions:

1. **Groups A & B:** Is Patagonia's Carbon Neutrality Plan realistic?
2. **Group A:** Argue that Patagonia *should* focus on using existing fabrics (recycled and renewable materials) to reduce their carbon footprint.
3. **Group B:** Argue that Patagonia *should not* focus on using existing fabrics and should instead invest in new potential fabrics (like biopolymers) or technology that is not yet fully developed - through the Tin Shed Ventures - to reduce their carbon footprint.
4. **Groups A & B:** How can your suggestion be used as an example for other companies to replicate?

### Week 9: The Sustainable Lifestyle: Defined and Explained

Reading Assignment:

- The Sustainable City: Chapter 3
- Black and Cherrier (2010). "Anti-consumption as part of living a sustainable lifestyle: Daily practices, contextual motivations and subjective values." *Journal of Consumer Behavior*

In-Class Videos:

## Master of Science in Sustainability Management

- The High Line: NYC's Garden in the Sky
- We Asked Young People What Sustainable Living Means to Them. Here's What They Said.

### Group Case #7: "Public Private Partnership for Green Space in NYC" (Available on Canvas)

New York has some of the most highly visited and iconic public parks in the world. But what few of the millions of visitors realize is that many of the most famous green areas, such as Central Park and the High Line, are privately run and largely financed by private donations. It is a model that has been seen by some as an example to be reproduced and by others as a dangerous precedent that creates a two-tier system of well-funded parks in high-income areas, and underfunded parks in poorer ones. The Parks Commissioner, Mitchell Silver, has asked you, his Deputy Commissioner for Capital Projects, to develop an analysis of public private partnerships (PPPs) with the city's parks, and to consider how this model might or might not work in lower-income areas.

1. **Group A:** Present the argument *for* expanding the city's use of PPPs in the park system to lower-income areas. Use an example from Central Park to support your argument.
2. **Group B:** Present the argument *against* using PPPs in lower-income areas, and argue that it would be better to rely on public funding for these park systems. Use an example from the highline to support your argument.
3. **Groups A and B:** What are the political and managerial strengths and weaknesses of your recommendation?
4. **Groups A and B:** What are the cost and benefits of PPPs in New York City?

### Group Case # 8: "Sustainable Urban Living" (Chapter 10 of *The Sustainability City*, Available on Canvas)

The sharing economy, fueled by the Internet and the growth of peer-to-peer networks, is a growing model that is becoming more common among various sectors of the economy. Airbnb is one of the innovative companies to emerge using the sharing economy as their business model. Cities have many resources that can easily and effectively be redistributed and shared, but sharing economy services have also presented cities with unprecedented, complex questions.

Thus far, Airbnb has not worked closely with city governments when expanding to new areas, and has largely challenged any city governments that have opposed their operations or tried to enforce regulations. You are part of a team that works for Greg Greeley, President of Homes for Airbnb, and are helping him prepare for his meeting with Airbnb's CEO and head of Global Operations. Your team has been asked to recommend how closely and in what manner Airbnb should work with local governments, both in the U.S. and globally, moving forward. You have been asked to address the following questions:

1. **Group A:** Argue the Airbnb *should* work in close partnership with governments as it expands. Use an example from the case to support your argument
2. **Group B:** Argue that Airbnb *should not* work in close partnership with governments as it expands. Use an example from the case to support your argument
3. **Group A & B:** How should Airbnb account for the differences in types of government as it expands?
4. **Group A & B:** How might the sharing economy benefit or hurt the city?

### Week 10: No Class

### Week 11: Sustainable Business and Finance

#### Reading Assignment:

- Management Fundamentals: Chapter 6
- Haigh and Hoffman (2012). "Hybrid organizations: The next chapter of sustainable business." *Organizational Dynamics*
- CFO Research Services and Jones Lang LaSalle (2010). "The Role of Finance in Environmental Sustainability Efforts."

#### In-Class Video:

- Delivering Impact: Sustainable Business & Finance at Bloomberg

## Master of Science in Sustainability Management

### Individual Memo #3: Poppy Barley: Weighing the Costs and Benefits of Sustainability Certification (Purchase via Harvard Business Review)

In November 2016, the co-founders of Poppy Barley Inc. (Poppy Barley) had just finished discussing the company's fiscal projections and sustainability goals for the upcoming 2017 year. Poppy Barley, a made-to-measure footwear retailer in Edmonton, Alberta, had grown rapidly. The co-founders, who were sisters, wanted to further both their product line and their commitments to corporate sustainability. Would becoming certified as a sustainable business publicize their commitments and values, and improve their triple bottom line? If so, which certification should they choose? On the other hand, given the company's growth stage, would directing finite resources toward certification detract from other important business areas? You are a sustainability consultant hired by the Poppy Barley company, write a memo addressing to the owners of the company that includes answers to the following questions:

1. How has Poppy Barley incorporated sustainability into its business and what features make the company stand apart in the made-to-measure shoe market?
2. What are the company's 2017 sustainability goals and why would a third party sustainability certification be worth it, keeping in mind the limited resources and customer satisfaction?
3. Evaluate the three options given for obtaining a sustainability certificate and suggest which option the company should go for.
4. What are other ways - other than sustainability certification - through which the company can enhance their sustainability?

### Week 12: The Centrality of Energy: Moving from Fossil Fuels to Renewable Energy

#### Reading Assignment:

- Sustainability Policy: Hastening the Transition to a Cleaner Economy: Chapter 4
- International Energy Agency. (2016). "World Energy Outlook 2016, Executive Summary."

#### In-Class Video:

- Microgrids: Evolving the Power Grid

### Group Case #9: "The Building of the Smart Grid" (Chapter 8 of *The Sustainable City*, Available on Canvas)

Your consulting firm has been hired by the U.S. Department of Energy to work on developing a set of recommendations for strengthening the nation's energy policy. The DOE acknowledges that the centralized power grid is not perfect, and that it faces risk from natural disasters, as well as physical and cyber-attacks. Wide-ranging blackouts have the power to cripple our economy and disrupt livelihoods. The DOE has specifically asked you to look at the feasibility of microgrid development, and wants guidance on how microgrids can be implemented most effectively in the United States. Consider the following in your recommendation:

1. **Group A:** Argue that the U.S. government *should* pursue the development of microgrids. Which stakeholders (e.g., local government, state government, and public utility companies) should be included?
2. **Group A:** What are the benefits of microgrids? Use at least one example from the case to support your answer.
3. **Group B:** Argue that the U.S. government *should not* pursue the development of microgrids.
4. **Group B:** What challenges must be overcome in the development of microgrid infrastructure? Use at least one example from the case to support your answer.
5. **Groups A & B:** What is the role of renewable energy in your recommendation?

### Group Case #10: "Nuclear Power and the Japanese Earthquake of 2011" (Available on Canvas)

## Master of Science in Sustainability Management

This case study discusses the factors that led to the Fukushima Daiichi nuclear disaster in 2011, when a series of equipment failures and nuclear meltdowns released radioactive chemicals from the power plant, resulting in a level-7 nuclear crisis. The case study chronicles the chronology of the accident and the history of the plant; and it examines Japan's historical dependence on nuclear power, Japanese nuclear power regulation, and the politics of nuclear power in Japan. **More info here.**

You are the Japanese Minister of Energy, and the Japanese Prime Minister has asked you to form a team to come up with a ten-year energy plan for Japan. He is particularly concerned about the use of nuclear power – on the one hand, the country is heavily dependent on nuclear energy sources, but on the other hand, he does not want to see a second nuclear catastrophe. In addition, many Japanese citizens oppose restarting reactors that have been offline since the disaster.

1. **Group A:** Present the case *for* maintaining nuclear power as a primary source of energy in Japan's energy plan over the next ten years.
2. **Group B:** Present the case *against* maintaining nuclear power as a primary source of energy in Japan's energy plan over the next ten years.
3. **Groups A and B:** How will your position increase or decrease greenhouse gas emissions? What are the economic challenges associated with your energy plan? How do you propose to overcome these challenges?
4. **Groups A and B:** How will you address the safety concerns of citizens of your plan?

### Week 13: Sustainability Metrics, Management Innovation, and Quality Management

Reading Assignment:

- Management Fundamentals: Chapter 5
- Sustainability Policy: Hastening the Transition to a Cleaner Economy: Chapter 6
- Schwarz, J., B. Beloff and E. Beaver. (2002). "Use sustainability metrics to guide decision-making." *Chemical Engineering Progress*. (Canvas)

In-Class Videos:

- The Sustainability Scorecard, by Bloomerang
- Our 2018 Unilever Sustainable Living Plan Progress: Eight Years of Pioneering and Learning

### Group Case #11: "Natura Cosméticos, S.A." (Purchase via Harvard Business School)

A cosmetics company with a strong brand, robust growth in international and domestic markets, and premium price and margins, Natura was consistently rated as one of the preferred places to work in Brazil. Its focus on social and environmental responsibility was a source of innovation; strong employee motivation contributed to the company's superior productivity and market share gain in Brazil's cosmetics, fragrances, and toiletries (CF&T) industry. By 2009, Natura's direct sales business model generated income for over 1 million people in Brazil and Latin America. Natura was the first organization in Brazil to produce an integrated report. Senior leadership was convinced that Natura's success over the years had been aided by its corporate responsibility and strategy to continuously seek improvements in both financial and nonfinancial (environmental, social, and governance) performance. You are an analyst reporting to Rodolfo Guttilla, Director of Corporate Affairs for Natura, and he's asked you to help him prepare for his meeting with key stakeholders to discuss the future of integrated reporting at Natura. Guttilla has emphasized the need for a more integrated report that will promote the actions needed to develop and implement innovative solutions to the company's sustainability challenges. Please address the following issues:

1. **Group A:** Argue that the best strategy moving forward in order to solve problems and improve their reporting process is to expand the groups of stakeholders to continue solving problems. Provide a strategy to use stakeholder engagement to solve a problem the company is facing
2. **Group B:** Argue that the best strategy moving forward is to focus on the use of Web-based technologies to promote the organization's integrated reporting and sustainability objectives while solving problems. Provide two strategies for how Natura will do this.

## Master of Science in Sustainability Management

3. **Groups A and B:** What are the advantages of linking financial and nonfinancial performance, and how will your strategy include this?
4. **Groups A and B:** How will your plan impact integrated reporting and the company over the long term?

### Group Case #12: “Bike Lanes in New York City” (Available on Canvas)

Under New York City’s Bike Master Plan, the city plans to add 1,800 miles of new bike paths and lanes to its infrastructure by 2030. This effort seeks to achieve multiple goals including reducing greenhouse gas emissions by encouraging alternate forms of transportation, and fighting the obesity epidemic while also making it safer for the existing cycling community. Former Mayor Bloomberg’s efforts in terms of promoting bicycle ridership in the city have incorporated innovative strategies including the Citi Bike bike-sharing system, an extensive public outreach campaign, and the Ninth Avenue Bicycle Path, which was the first urban on-street parking-and signal-protected bicycle facility in the U.S. As a result, New York City boasts the largest number of bike commuters as well as the largest supply of bike lanes and paths in the country. On the other hand, the city lags behind many other U.S. cities with the lowest proportion of bike share commuters, the highest cyclist fatality and injury rate and the lowest rate of women, children and senior cyclists. Additional information can be found [here](#).

Mayor de Blasio has decided to hold an open forum to discuss the Bike Master Plan’s progress to-date and the plan to move forward with the remainder of its goals. Your team has been asked to develop a recommendation that will be the basis for discussion at the forum. Consider the following in your recommendation:

1. **Groups A and B:** Quickly explain the history of bike sharing in New York City and the challenges that were overcome to get to this point.
2. **Group A:** Argue *for* the continued expansion of the shared bike program. Discuss the importance of Private Partner Relationships in your program.
3. **Group B:** Argue *against* the continued expansion of the shared bike program in the city. Propose an alternative to expanding the program
4. **Groups A and B:** How does your plan complement the city’s bike lane expansion plan?

## DISTRIBUTE QUESTIONS FOR TAKE-HOME FINAL EXAM MEMO

### Week 14: A Sustainable Planet and Conclusions

#### Reading Assignment:

- Sustainability Policy: Hastening the Transition to a Cleaner Economy: Chapter 8
- Management Fundamentals: Chapter 12
- The Sustainable City: Chapter 11
- Weber, Elke (2017). “Breaking cognitive barriers to a sustainable future,” *Nature Human Behavior*

#### In-Class Videos:

- The World is Poorly Designed. But Copying Nature Helps.
- Can Namib Desert Beetles Help Us Solve Our Drought Problems?
- What Can a Humpback Whale Teach a Wind Turbine?

## SUBMIT AND DISCUSS FINAL