Assignment Description:

With growing indications that companies will need eventually to comply with the Paris Agreement goals, you are asked to prepare a plan for a Fortune 500 company that will allow it to make the transition required for such compliance in the best way possible. You are expected to approach this task from a systems POV and use the different tools presented in class. You need to pay attention to the challenges/risks and opportunities both internally (culture changes if necessary, getting employee buy-in, potential changes in organizational structure, etc.) and externally (stakeholder engagement, strategic analysis, ecosystem considerations, etc.). You will need to provide a clear strategy and roadmap for the implementation of your plan. While you are welcome to apply different approaches, your work should include **value chain analysis, stakeholder map, ecosystem map, culture analysis (current vis-a-vis desired one), clear steps the company needs to take to comply with the Paris goals and design approach you're taking**.

Altria Group Notes:

- In order to comply with the Paris Agreement, Altria must increase their transparency, accountability in order to achieve their set targets. In recent years, they have set emission, waste, and water neutrality goals for 2025, however, these goals need to be strengthened in order to be a leading company in environmental awareness progress.
- Altria's recent acquisition of Juul signals a strong awareness of growing market trends, and furthermore, also takes a step into reducing cigarette waste that is caused by tobacco cigarettes. However, in this recent acquisition, we recommend the company to increase spending in R&D to develop innovative and sustainable manufacturing of e-cigarette components, as well as further developing their waste system.
- Using and implementing sustainable practices can be a major point of marketing that provides the company with a competitive advantage in an otherwise saturated industry. Marketing the company as one that places sustainability at the core of their business model could potentially increase sales and stakeholder engagement. For our project, it is significant that we also analyze the possible impacts on profits that such a strategy could have.
- Altria has already made some progress in setting goals to become more sustainable. By analyzing the complete system of Altria's production and management, we can find the leverage points where these sustainable practices can be further enhanced. Taking a closer look at their current goals and cross-checking them with the practices they are

currently implementing, will give us an idea of how this problem is being approached in relation to systems thinking.
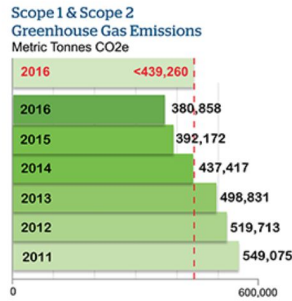
- The environmental effects of tobacco products are currently well researched and known. However, there are a number of gaps in such research when it comes to e-cigarettes, a highly impactful and growing market today. If Altria where to invest in research that focuses on the environmental consequences posed by electronic cigarettes, they could take sustainable practices a step further in their companies.
- They could even take this manufacturing a step further in sustainability by looking into pods that would be recyclable. A customer is still able to refill a pod and then will have to throw them out. There are available plastic alternatives.
- In May 2018, Altria changed their organizational structure into two divisions; one for "core tobacco products" and the other for "innovative tobacco products". In addition, COO Howard Willard was named new Chief Executive in the same month.

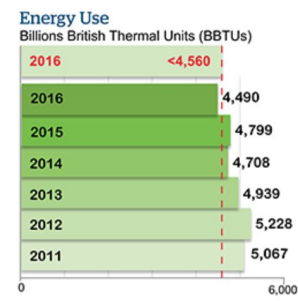Ways that Altria can change their business to adhere to the Paris agreement goals:

"In 2016, Altria established new long-term goals to reduce our environmental impact by the end of 2025. In 2018, we added a Scope 3 goal for 2030 and formally committed to the Science Based Targets initiative to help keep a rise in global temperature to well below $2^{\circ}C$." -altria.com

Our previous five-year goals focused on reducing our environmental impact by the end of 2016. Here are these goals and progress through 2016:
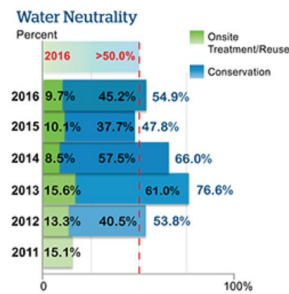
Reduce absolute Scope 1 & 2 emissions by 20%

Scope 1 & Scope 2
Greenhouse Gas Emissions
Metric Tonnes CO2e

Year	Value
2016	<439,260
2016	380,858
2015	392,172
2014	437,417
2013	498,831
2012	519,713
2011	549,075

0 — 600,000

Cut absolute energy use by 10%

Energy Use
Billions British Thermal Units (BBTUs)

Year	Value
2016	<4,560
2016	4,490
2015	4,799
2014	4,708
2013	4,939
2012	5,228
2011	5,067

0 — 6,000

Send 95% of facility waste for recycling or beneficial use

Waste & Recycling
Percent Recycled or Beneficially Reused

Year	Value
2016	>95.0%
2016	79.4%
2015	71.9%
2014	72.9%
2013	82.4%
2012	75.0%
2011	91.0%

0 — 100%

Achieve 50% water neutrality

Water Neutrality
Percent

Legend: Onsite Treatment/Reuse, Conservation

Year	Onsite	Conservation	Total
2016	>50.0%		
2016	9.7%	45.2%	54.9%
2015	10.1%	37.7%	47.8%
2014	8.5%	57.5%	66.0%
2013	15.6%	61.0%	76.6%
2012	13.3%	40.5%	53.8%
2011	15.1%		

0 — 100%

Reduce packaging materials by 5 million pounds

Product & Packaging
Millions of Pounds of Material Reduction

2012–2016   >5.0

2012   2013   2015 2016

2014

Year	Value
2012	1.0
2013	4.5
2014	0.1
2015	0.9
2016	1.5

0 — 10.0

Altria's environmental management framework:

Environmental Management Framework

Our Environmental Management Framework helps set direction, guide decision making and promote continuous improvement. The framework includes management structure, policies, programs and measurement.

MANAGEMENT GUIDANCE
- Mission
- Environmental Management Principle & Policies
- Supplier Code of Conduct
- Environmental Goals
- Leadership Involvement

ACTIONS/IMPLEMENTATION
- Environmental Sustainability Teams
- Training
- Environmental Sustainability Initiatives

REVIEW/FEEDBACK
- Certification & Recognition
- Review of Benchmarking Results
- Management Review

MEASUREMENT
- Environmental Metrics Information Systems
- Facility Assessments
- Reporting

RAZ NOTES:

Hi Altria team,

I enclosed below a pic of your work on the value mapping tool from the last class. As I've mentioned in class please consider materiality when you look for the best intervention point/s, i.e. where it would make the most sense to make changes in order to reduce the company's carbon footprint so it can comply with the Paris Agreement. You need to research the company's environmental impacts to be able to proceed with ideas for change. A good place to start is the the company's latest corporate responsibility progress report. You can find it here: http://www.altria.com/Interactive/2017CRReport/files/assets/common/downloads/publication.pdf

1) In a case of Altria I would try to figure out how far reaching will be a compliance with the Paris Agreement goals comparing to their current commitments/action, i.e. is it very far from their current 15% current commitment or not that far. This analysis will also give you an idea on how radical should be the change you're interested at. I would suggest to look for a company that you can compare to that is already committed for the Paris Agreement goals - it doesn't have to be in the same industry, but should have similar characteristics in terms of its value chain. Look for the companies that are already part of the Science-based Targets Initiative (see here - https://sciencebasedtargets.org/companies-taking-action/) for one that can serve as your benchmark.

2) Check the case studies on the Science-Based Targets Initiatives (https://sciencebasedtargets.org/case-studies-2/) to learn more on the implementation processes and who was involved in them. For example, in the Pfizer's case you can read the following:

The process of setting and then working out how to meet our target has been very collaborative. Initially three different departments across the company came together: the environmental health and safety group, the environmental law group, and the global engineering group. We discussed and established proposed targets, which were endorsed by our Environmental Sustainability and Environmental, Health and Safety leadership teams, and then received final approval by our Executive Leadership Team (the CEO and his direct reports). In setting these targets there had been a lot of discussion with individual facilities as to how they would contribute, and these plans were then finalized with the sites by the Engineering group, which works very closely with these facilities to harness their ideas and creative solutions to achieve our goals.

3) Learn and analyze using system thinking tools which parts in the company's value chain are more material in terms of making a significant commitment to carbon reduction targets -

production? raw materials? consumer use? products' end of life? In other words, which part/s of the value chain you should be focusing on in particular?

4) Map the key stakeholders of the company - who are the ones that can help move the company in this direction and support the commitment to the Paris Agreement targets? Check this article on the potential role of investors for example - https://www.greenbiz.com/article/what-does-paris-compliant-climate-change-strategy-look

5) Consider the need in internal cultural change to support and sustain the possibly radical shift required in order to achieve compliance with the Paris Agreement goals. These articles can provide you with some ideas on it can be done:

- How to Create Change in Your Organization, with Bryan Walker, *Designing for Change* instructor and IDEO partner and managing director
- Changing Company Culture Requires a Movement, Not a Mandate, *Harvard Business Review*
- How to Prototype Organizational Change, with Mathew Chow, Director of Organizational Design at IDEO San Francisco
- Tackling Big Change in Your Organization, with Owen Rogers, IDEOPartner and Senior Design Lead

In addition this framework, focusing on the need to align formal and informal institutions in the organization to create effective culture can also provide guidance on the necessary steps (resource: Graham, John R. and Harvey, Campbell R. and Popadak, Jillian A. and Rajgopal, Shivaram, Corporate Culture: Evidence from the Field (March 2, 2017). 27th Annual Conference on Financial Economics and Accounting Paper; Duke I&E Research Paper No. 2016-33; Columbia Business School Research Paper No. 16-49. Available at SSRN:https://ssrn.com/abstract=2805602):

DELIVERABLE:
-look at data of Target:
creating intervention in all parts of the value chain
-second part is execution, how do you increase chances to effectively execute it, look at some questions on their culture, relationship with stakeholders, suppliers, partners, communities, also to understand the power dynamics
-where are the obstacles that you need to overcome

-predict what will go wrong
-how to avoid
-resource: sciencebasedtargets.org

- help to identify the places to intervene, map the stakeholders
- map value-chain
- Analysis of culture; does the culture need to be changed?

PRESENTATION:

-what directions we have in mind
-challenges/opportunities
-what we have learned, what we are doing next
-give the big picture, get a sense of what've done