

case study

The Final Straw: Delta Airlines single-use plastic onboard

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Background

A Brief History of Delta Airlines

Delta Air Lines was ranked third best airline in the U.S. according to the article *The Best and the Worst US Airlines in 2018* (Kheel, 2018). The airline started as a crop-dusting outfit back in 1924 when agricultural scientist and pilot, Collet Everman Woolman started the world's first crop dusting operation, Huff Daland Dusters. Delta Air Service was founded in 1928 after a series of mergers and breaking away from the parent company.

In 1929 and 1930, Delta Air Services began providing airmail service when the U.S. government granted them an airmail contract. While becoming a mail carrier, the company also introduced passenger service between Dallas, Texas, and Jackson, Mississippi. A couple of years later, World War II broke out, and the War Department contracted with Delta to transport troops and supplies to help support the war effort. At the end of the war in 1945, Delta Air Services returned to providing civilian services and over the next few years, Delta merged with several different comp companies, including Chicago and Southern Airlines to remain a top air carrier. Later on, the company merged with Delaware Airlines, and the current name of Delta Airlines was adopted.

Delta Airlines began the twenty-first century with routes to 221 cities in 48 states and 118 cities in 47 foreign countries. The company holds the record for having carried 117 million passengers aboard their flights and generation \$1 billion dollars in net income within a single year (Delta Air Lines, Inc, 2000).

Delta Leads Industry in Digitizing Contracts

The International Air Transport Association (IATA) requires airline industries convert 45 percent of their paper of their paper to digitized information. Seventy-seven percent of all freight shipped by Delta Cargo utilizes digital contracts or e-air waybills (e-AWB), exceeding the IATA's goal by a huge amount. In 2014, Delta Cargo adopted a single process e-AWB, which eliminated the need for customers to keep track of their eight-page contracts and transmits electronic data for all of their shipments. Before the starting use of the e-AWB, Delta cargo averaged than 37,000 paper contracts each month. After switching to the digitized versions, the company was able to reduce paper contract

usage to 14,700 contracts per month, saving over 1,500 trees per year and save 1.5 million gallons of water that is used in the development of paper. Ultimately, Delta's long-term goal is to be completely digital, and this is just one of the ways Delta is employing sustainability practices to help the environment (Kang, 2015).

Delta Airlines Vendor Selection

Delta carries over 100 million textile units on board its flights each year; these includes everything from bedding, table clothes, main cabin pillow covers, and their signature red blankets with a total of 21 different varieties of linens and textiles in all. Finding the right suppliers to create their quality look and feel is as important to Delta Airline and another way they have become more sustainable. Delta's supply chain management team recently launched a request for proposals from 24 different suppliers around the globe. They visited all vendors personally to watch the creation of the textiles from start to finish product. Delta examined the working conditions, environmental impact, emergency procedures and the business ethics of each textile suppliers. This process allows Delta to continue its work with contracted third-party vendors and maintain their relationships with Chinese manufacturers. This initiative was started at the end of 2014, and by March of 2015, Delta had selected nine suppliers with which to begin the vetting process. The team visited 27 different factories and evaluated each using 60-point pre-qualification criteria. Delta ultimately chose four different facilities, reducing their suppliers by two-thirds to increase efficiency and allow more responsive oversight of product quality and sustainability; thus, establishing another way that Delta has successfully implemented innovative sustainability initiatives into the airline's operations (Kang, 2015).

Delta Airlines Climate Change Initiative

Climate change influences Delta's short, medium, and long-term climate goals. In 2015, Delta realized, as leading carrier in the industry, that they needed to set an example about protecting the environment. Air travel accounts for 2% of all the global carbon emissions, and Delta, realizing the extreme threat posed by climate change, has committed to shrinking their carbon footprint (Delta Air Lines, Inc, 2019). The International Air Transport Association has established three goals to drive sustainability in aviation. The first short-term goal aims to improve fuel efficiency by 1.5 percent annually. The second mid-term goal caps net CO2 emissions by 2020 so that the overall climate impact will plateau in 2020. The organizations third long-term goal plans

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to cut 2005 CO2 emission levels in half by 2050 (Kang, 2015).

Delta has been working with regulators and different partners across the industry to find ways to decrease their impact on the environment. Their biggest contributor to the environmental footprint is the use of their jet fuel, but the company has met international targets for emissions reductions in order to improve their progress. Delta has started to invest in more fuel-efficient aircrafts and has made improvements to their pre-existing aircrafts as well. They have purchased carbon offsets to help mitigate the emissions from their flights and improve energy efficiency in their facilities where it is possible. To help address these risks, Delta has incorporated their expected carbon costs into their planning process for acquiring aircraft, their fuel-efficiency commitments and their purchasing strategies. Delta's Senior Vice President of Corporate Safety, Security, and Compliance is in charge of setting standards and direction for Delta's environmental performance and chairs the Executive Environment Leadership Council. This council meets as necessary to authorize or disapprove strategies for the emissions-related annual goals with senior-level executives. This council provides advice and recommendations to Delta's CEO and corporate leadership teams on related issues related to sustainable development.

Another sustainability practice Delta has adopted is determining before the plane ever takes off, the optimal amount of fuel for the flight to reach its destination gate. So that the airplane does not carry additional weight for the duration of the flight. While waiting to take off, pilots are encouraged to use a single engine taxi to limit the aircraft's fuel usage. While in the air, the planes have specific flight paths that help improve efficiency, and pilots work closely with Air Traffic Control to optimize their

descent to use less fuel. These are a few examples of strategies Delta has initiated for the short-term, but the company is committed to continuing and evolving their sustainability practices (Kang, 2015).

Delta Airline's Biofuel Project

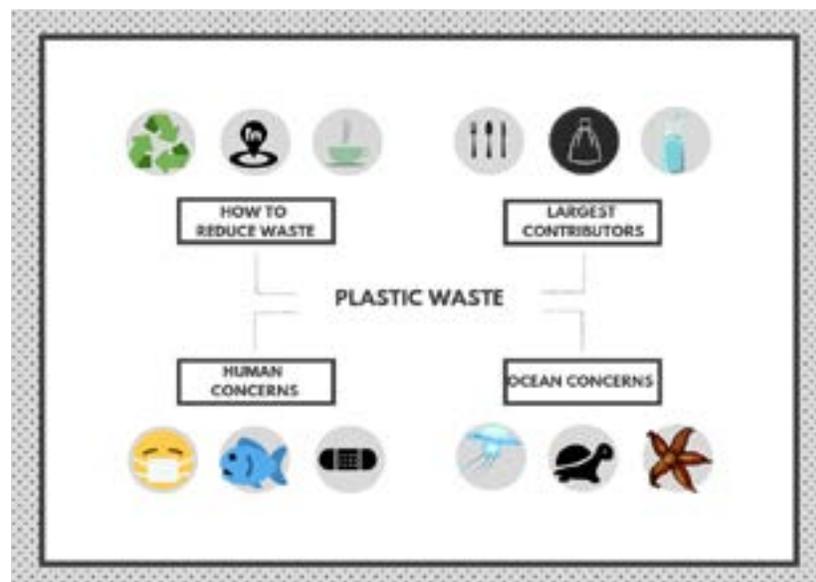
Delta Airlines, realizing that fuel efficiency and carbon-neutral growth alone are insufficient to address climate change, created long term goals in line with IATA's guidelines, and their Carbon Emissions Policy also aligns with the International Civil Aviation Organization and the IATA objectives. Jet fuel from regional aircrafts accounts for 98.8 percent of Delta's total emissions so, Delta partnered with the University of Georgia in 2017 to manage ongoing life-cycle analyses of new biofuels. An example of this is Camelina oil which was evaluated from start to finish, including, cultivation, and harvesting it into bio jet fuel. The company observed transport and combustion of the Camelina oil which demonstrated significant reduction of carbon emissions compared to petroleum-based fuels. While researchers continue to explore alternative fuel sources, Delta has developed a set of biofuel principles that will help guide their decision-making process about where to invest their resources in order to improve their sustainability efforts (Delta Air Lines, Inc, 2019).

The Dilemma: Environmental Sustainability challenges facing the Delta Airlines

Within the hospitality and airline industries, it is very difficult to do away with single-use items. Cups for beverages, silverware for meal-time, and packaging for the food, are just a few of the items used on every flight. With no dishwashers available in flight, it is very difficult to use anything other than plastic, but there are other options to using

Figure 1

Contributors to Reduce Waste



Infographic created by the authors (Pooley, 2019)

single-use plastics, including utilizing bamboo tableware, paper cups, and recycled silverware. These small changes in flight can result in significantly reducing the negative impact of single-use plastic. Admittedly, it is hard in today's society to eradicate plastic use as a whole, but small daily initiatives made by individuals and companies can minimize the damage single-use plastics have on the ocean and other ecosystems.

Single-use plastic is a hot topic in current sustainability discussions in general, and it is a real issue in the hospitality industry. Single use plastic items are a convenience to modern life that is constantly on the go. Single-use plastics provide a convenient, portable way to carry food and beverages. Mass developed in the 1950's, single-use plastic was considered safe and convenient, but we are now seeing its effects and know this is not the case. The question remains, though, about how to eliminate a tool that is so ingrained in our culture.

The reality is, however, that plastic has nowhere to go. Plastics can take centuries to decompose, and they are filling landfills to the brim. Much plastic never makes it to a landfill, resulting in oceans and waterways being flooded with plastic items that devastate our ecosystems. According to Plastic Oceans International, over 40% of all seabirds have ingested plastic in their systems. One case even found a 90-day old seabird chick had ingested the equivalent of 15% of its body mass in plastic. The issue is not just with seabirds but with other animals as well. Turtles mistake plastic for jellyfish and think it is a tasty

meal, and whales consume massive amounts of water to eat the krill that sustains them, often taking in a lot of plastic with each swallow. This is just the beginning of a long list of creatures that are affected by plastic. More effects as well as contributors and ways to reduce waste are illustrated in the infographic (Figure 1).

The issue comes full circle, back to humans who carelessly discarded plastic. Not only is pollution an issue, but the toxins and chemicals in plastic are attaching themselves to fish and other ocean animals. The toxins are then being consumed by humans when the fish are eaten. These toxins are believed to contribute to devastating diseases in humans such as cancer, cognitive issues, and infertility (Plastic Oceans International, 2018).

Knowledge of the toxic cycle of plastics has many people and companies altering their habits and adopting sustainable practices. From reusable cups to cloth grocery bags, there are many changes one can make to reduce their plastic use. Everyday choices, such as replacing a plastic straw for a paper one, go a long way in the effort to reduce waste.

Delta Airlines Continues Efforts to Become Sustainable

Across the country, companies are taking initiatives to reduce the use of single-use plastic items; however, the practice is not as simple as it may seem. For example, a store that generates a large portion of their profits from to-go beverages might find it difficult and costly to

Table 1

Delta Air Line's Sustainable Practices

EMISSIONS SOURCES	2005	2015*	2016	2017
SCOPE 1 — DIRECT EMISSIONS FROM OWNED OR CONTROLLED SOURCES				
Jet fuel from mainline operations and wholly owned subsidiaries such as Delta Private Jets	41,741,619	34,888,066	35,257,525	35,591,053
Fuel used in ground support equipment	133,194	98,580	98,505	106,286
Natural gas (stationary combustion)	55,593	68,809	75,505	78,632
Chemicals	3,469	1,190	1,386	1,913
Refrigerants	10,513	3,304	3,800	4,343
Emergency generators, fire pumps	834	168	135	219
SCOPE 2 — INDIRECT EMISSIONS FROM PURCHASED ELECTRICITY				
Electricity from directly billed owned facilities	227,169	186,383	175,024	146,239
Electricity from leased facilities	193,249	106,071	111,824	117,367
SCOPE 3 — INDIRECT EMISSIONS IN VALUE CHAIN				
Jet fuel from regional partners	3,808,637	4,392,668	4,291,817	4,129,530
Total	169,277	39,745,239	40,015,521	40,175,582
Offsets	—	2,059,745	2,361,921	2,522,752
OUR NET EMISSIONS	46,173,685	37,685,493	37,685,493	37,685,493

Source: Delta Airlines, Inc. (2019)

reduce plastic use, especially with straws and to-go lids. As a result, broader adjustments need to be made such as developing biodegradable paper cups and straws.

Delta Airlines continues to implement initiatives to reduce their carbon footprint. Their 2017 partnership with the University of Georgia allows the company to oversee the ongoing life-cycle analysis of new biofuels. The airline continues to engage producers to evaluate problems with fuel usage and make improvements (Delta, 2019). Conscientious and aware of the fact that fuel emissions are a significant factor in reducing the ozone layer, Delta takes responsibility for making improvements and leading change for sustainability practices in the airline industry, and these improvements have significantly reduced carbon emissions as summarized in the following table (Table 1).

Delta Airlines has also found upcycling be important. Many employees participate in uniform swaps to reduce the number needed to be made. "They are also encouraged by Delta Airlines to give their unwanted clothes to new employees when they retire," said Barbara Pooley, a Delta Airlines flight attendant. In addition, the company is always looking for ways to reuse plane materials, such as diverting the leather from seats to other sources. (Delta, 2019). Other initiatives from Delta include reducing plastic wrapping from amenity kits and reducing Styrofoam in cafeterias at their headquarters.

Discussion Questions

- How does one fix the problem of waste when 'to-go' options are so prevalent in our eating culture?
- How can hotels reduce plastic usage with single use shampoos?
- How do coffee shops ensure there will be no waste from there to-go cups?
- The solutions come from educating the masses about the devastating effects of what plastic does to our Earth as well as solutions on how to fix them.

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