

RUSCA NEWS

Rutgers University Supply Chain Association | December 2019

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RUTGERS UNIVERSITY BUSINESS SCHOOL

ABOUT THE RUSCA NEWSLETTER

We are a team of writers and editors who write content based on current news and events happening in the supply chain world.

To stay updated with release dates and information, visit (pg. 14) for our social media platforms and contact information. Feel free to leave us any feedback or suggestions as well.

For previous newsletter editions, visit
<http://rutgersrusca.weebly.com/newsletter.html>



UPCOMING EVENTS:

General Interest Meeting #1 -
January 27th

General Interest Meeting #2 -
February 10th

Amazon Tour - February

Apparel - Spring Semester



THE (LEAN)RNING CURVE OF FOOD INDUSTRY WASTE MANAGEMENT

BY ANTHONY LEUNG

Ask yourself the following questions: Do you truly know the source of where the food you eat is sourced? Are you aware of the ingredients labeled on the side of the box? Most consumer's answers are usually no, and that is a large-scale problem among the agricultural and food processing industries. As consumers are becoming more aware of their nutritional habits, companies must be more unambiguous in their sourcing strategies. Another essential consideration is the companies' customer relations management teams. With current trends heading towards environmentally friendly food options, more people will make their purchasing decisions based on these factors. If companies do not begin to transition towards sustainable sourcing, there will be significant backlash from customers who will take their business elsewhere. Innovations in the supply chain are continually occurring with companies like Mondelez. Sourcing within food companies' supply chains are changing as we speak to maintain customer satisfaction. Creative innovations in waste management benefit producers by lowering costs and reducing waste, and consumers by aligning with their values.

There is no question that consumers are the driving force in the market, and it is becoming increasingly important for consumers to buy products from ethically sourced places. Consumers are extremely interested in sustainable sourcing due to recent movements that raise awareness about environmental issues such as climate change. A survey conducted by a consulting firm AlixPartners proved: "About 60% of shoppers in the U.S., China and three major European markets

"It is becoming increasingly important for consumers to buy products from ethically sourced places"

said they place a strong emphasis on the source of ingredients when purchasing healthier products” (Maidenberg). Common trends include protests and backlash that center around the interests of the consumers, and what they believe in while making purchases. “Americans are concerned about the future and recognize that their finances are a vehicle to influence change” Consumers recognize they hold the power to inflict change through their purchases. Companies feel this pressure and take action accordingly in a multitude of ways. For example, Mondelez implements specific details of the locations of their food sources because products across the market are scrutinized by individuals every day. In the age of technology, customers can research more into companies they buy from and can decide whether to keep purchasing or find an environmentally friendly alternative.

Furthermore, with the environment becoming a cause for change, many people are now aware of the long term consequences of big companies who produce unsustainably. “We know that food systems as a whole are responsible for 25% of global greenhouse gas emissions, 70% of freshwater withdrawals, and 60%–70% of biodiversity loss” (Bora, Katz). These are issues that customers are prioritizing as it is essential to them, and as a result, companies need to prioritize it as well. This is all part of the customer relations part of the supply chain because following more sustainable practices leads to high customer satisfaction. “More consumers say they care about where their food comes from and how it is made, a trend connected to heightened expectations from shoppers about the healthfulness and environmental impact of what they eat” (Maidenberg). This combination will have positive results for both parties because consumers will be happy and recommend the product to others, and this drives business for the company so that sustainable practices can be continued in the future.

With this in mind, it is imperative that we look towards the future and how we can implement LEAN processing and recycling into business habits. Mondelez is leading the way in transforming their supply chains to become more efficient and environmentally favorable through their use of LEAN principles regarding waste management. They are currently in the process of launching innovative recycling programs geared towards food waste. Mondelez is figuring out ways of using the wasteful byproducts from facilitating goods to create other edible products, such as cacao fruit jerky. The method of converting certain raw supplies into the meals we eat today has useful byproducts. These programs help because they create value out of something previously wasteful, which is one of the goals that a company using LEAN principles strives to meet. “Mondelez, the maker of Cadbury and Toblerone chocolates, is testing snacks made from parts of the cacao plant that aren’t used to produce

“Mondelez is leading the way in transforming their supply chains to become more efficient and environmentally favorable through their use of LEAN principles regarding waste management”





chocolate.” (Haddon, Craymer). The result of these behaviors is positive reinforcement by consumers through consistent purchases, as they feel the company cares about their opinion. By practicing and creating habits that stress the importance of being mindful of waste, Mondelez evolves into a company that becomes a role model for others to follow.

The transition to sustainable sourcing marks the beginning of technology’s continuous advancement to improve present applications. LEAN strategies are essential to the reduction of waste in the food industry. With Mondelez as an industry leader, more companies will follow sustainable practices in the hope of truncating malnourishment in areas of poor economic standing.

Works Cited:

Bora, Saswati, and Joshua Katz. “Where Does Our Food Come from? Here’s Why We Need to Know.” World Economic Forum, 23 Jan. 2019

Butler, Adam. “Do Customers Really Care About Your Environmental Impact?” Forbes, Forbes Magazine, 21 Nov. 2018

Haddon, Heather, and Lucy Craymer. “The Food Industry Looks to Turn Garbage Into Gold.” The Wall Street Journal, Dow Jones & Company, 9 Oct. 2019

Maidenberg, Micah. “Food Companies Put Supply Chains Under a Microscope.” The Wall Street Journal, Dow Jones & Company, 9 Oct. 2019



PRODUCE, PURCHASES AND PACKAGING: A STORY ABOUT MANGOES

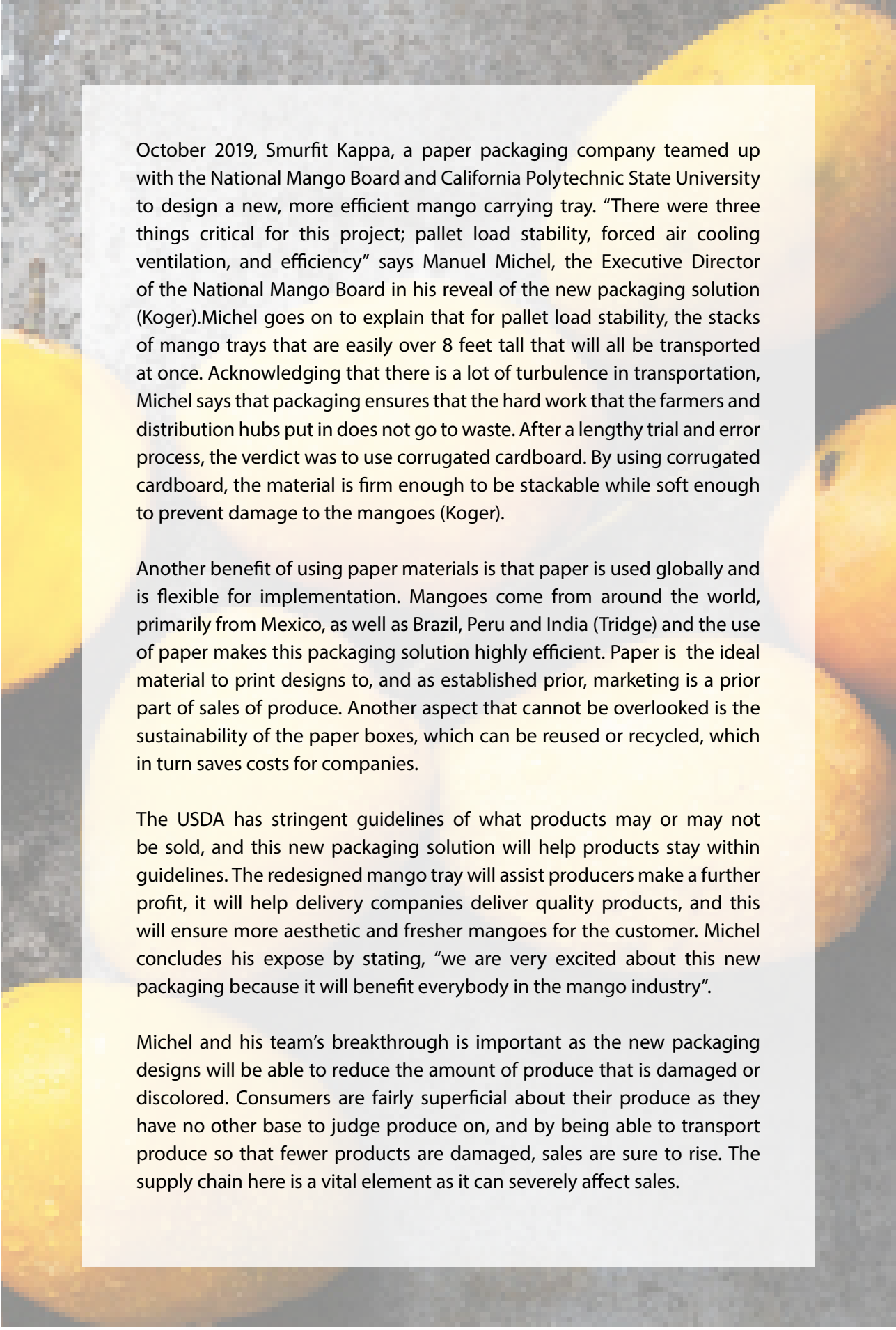
By Daniel Lee

In an appearance-based world, fruits and vegetables have an especially rough life in America. Products that have blemishes or bruises are unlikely to be bought by customers. According to data by the USDA, the United States Department of Agriculture, 25 billion pounds of produce was thrown away in 2010 (Barclay). Much of the produce is thrown away at the grocery store and supermarket level, where discolored or dented produce are unwanted and leftover. Leonard Pallara, a farming consultant, offers an explanation in an interview with NPR: "The only thing a customer can know about a piece of produce bought from a supermarket is what they can see. If they're really being thoughtful, they may smell it—but most supermarket produce has been refrigerated, which kills the aroma. So the single greatest determinant factor that a person has for picking a piece is appearance" (Bilow). This means that produce must be handled and shipped in a way that preserves the exterior. Focusing on appearance poses a challenge for produce companies and the Supply Chains of packaging and shipping the goods as the quality of the products may not be impacted in any way.

Considerations that go into the sale of products include the longevity of the fruit, harvesting, how to package and deliver products without damage; there are a lot of details that the average consumer might not think of. Looking at the Supply Chain of mangoes, there are new developments in this fairly esoteric field.

Mangoes are a very popular snack and for good reason. They are a delicious tropical fruit, that offer a healthy serving of Vitamin C which boosts the immune system and Vitamin A which is important for the skin and the eyes, also contain potassium which is important for blood pressure. A low fat, sodium-free fruit that is a good source of fiber, mangoes are very versatile and can be eaten by itself or can be used to spice up a salad or can be added to smoothies or salsas. As of October 2019, mangoes are America's 8th highest imported fruit, constituting for 4.2% of all US-imported fruits and is worth over \$637 million dollars (Workman).

Packaging: a seemingly banal and almost trivial aspect of Supply Chain is actually a field with a lot of experimentation and trial and error. In



October 2019, Smurfit Kappa, a paper packaging company teamed up with the National Mango Board and California Polytechnic State University to design a new, more efficient mango carrying tray. "There were three things critical for this project; pallet load stability, forced air cooling ventilation, and efficiency" says Manuel Michel, the Executive Director of the National Mango Board in his reveal of the new packaging solution (Koger). Michel goes on to explain that for pallet load stability, the stacks of mango trays that are easily over 8 feet tall that will all be transported at once. Acknowledging that there is a lot of turbulence in transportation, Michel says that packaging ensures that the hard work that the farmers and distribution hubs put in does not go to waste. After a lengthy trial and error process, the verdict was to use corrugated cardboard. By using corrugated cardboard, the material is firm enough to be stackable while soft enough to prevent damage to the mangoes (Koger).

Another benefit of using paper materials is that paper is used globally and is flexible for implementation. Mangoes come from around the world, primarily from Mexico, as well as Brazil, Peru and India (Tridge) and the use of paper makes this packaging solution highly efficient. Paper is the ideal material to print designs to, and as established prior, marketing is a prior part of sales of produce. Another aspect that cannot be overlooked is the sustainability of the paper boxes, which can be reused or recycled, which in turn saves costs for companies.

The USDA has stringent guidelines of what products may or may not be sold, and this new packaging solution will help products stay within guidelines. The redesigned mango tray will assist producers make a further profit, it will help delivery companies deliver quality products, and this will ensure more aesthetic and fresher mangoes for the customer. Michel concludes his expose by stating, "we are very excited about this new packaging because it will benefit everybody in the mango industry".

Michel and his team's breakthrough is important as the new packaging designs will be able to reduce the amount of produce that is damaged or discolored. Consumers are fairly superficial about their produce as they have no other base to judge produce on, and by being able to transport produce so that fewer products are damaged, sales are sure to rise. The supply chain here is a vital element as it can severely affect sales.

Works Cited:

Barclay, Eliza. "U.S. Lets 141 Trillion Calories Of Food Go To Waste Each Year". NPR. 27 Feb 2014

Bilow, Rochelle. "Are the Beauty Standards for Fruits & Vegetables Unfair?". Bon Appetit. 29 July 2014

Koger, Chris. "Smurfit Kappa Debuts Paper-Based Packaging for Mangoes at PMA". The Packer, Farm Journal. 18 Oct. 2019.

Preble, Anne. "Farmers Markets See An Uptick In Closures". Grocery Dive, Industry Dive. 19 Mar. 2019.

Workman, Daniel. "Top Imported Fruits Most Loved by Americans". World's Top Exports. 23 Oct 2019

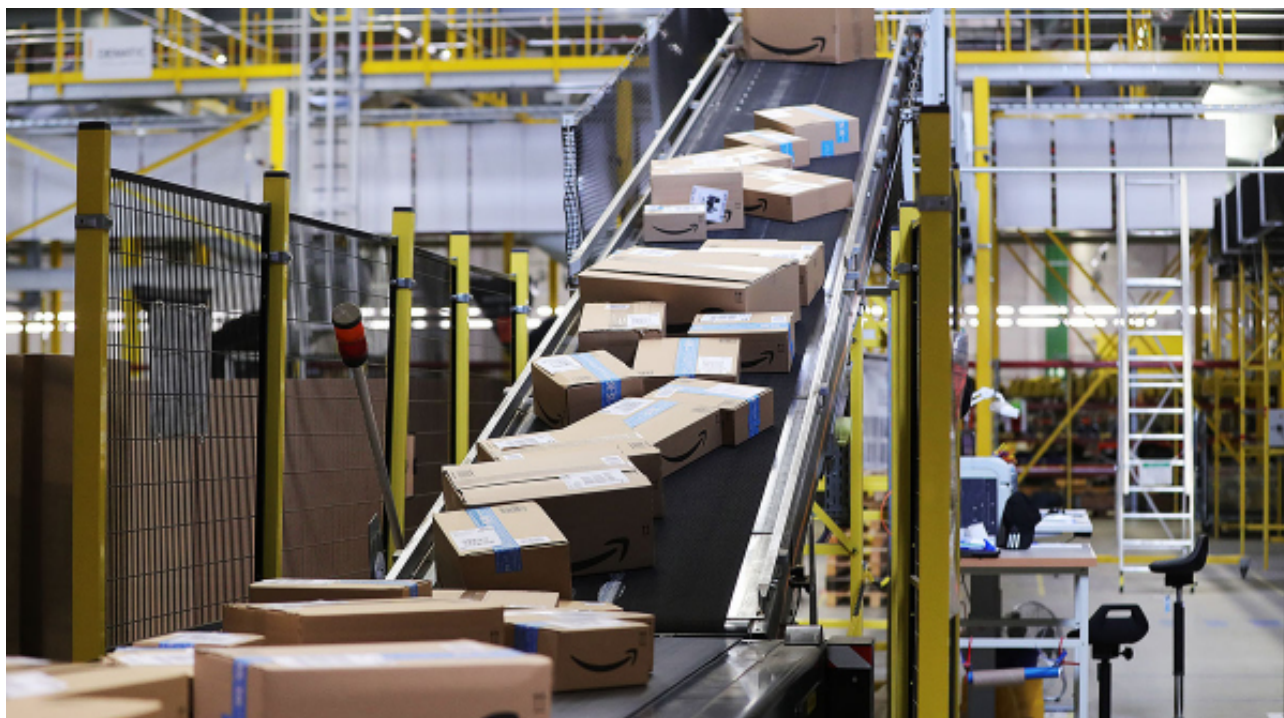
SUPPLY CHAIN ETHICS: AMAZON

By Emily Hsiao

Over the last several years, corporations have expanded their supply chain initiatives past reaching financial goals and driving efficiency. What do 83% of today's supply chain experts consider essential to their operations? (Aschendbrand, Proctor) Ethics. Large companies faced with scrutiny from the public, advocacy groups, and even lawmakers are reshaping their supply chains to become more sustainable and socially responsible. One such company is Amazon. Abe Eshkenazi, CEO of ASCM (the association for supply chain management) explains that the two main issues in supply chain ethics are sustainability and environmental consciousness. Correspondingly, Amazon's initiatives are related to labor rights and climate change.

According to Aruna Kashyap, senior women's rights council





at the HRW (Human Rights Watch), “Brands that don’t publicly disclose their supply chains may not know where their products are made, making it harder to determine whether they are acting responsibly” (Leonard). Amazon heard this message when they received an open letter from a coalition of human rights, labor rights, and global unions in 2018. The coalition asked the e-commerce company to sign onto the transparency pledge, a document meant to establish a standard for supply chain disclosures in the garment industry. Its supporters hope that the pledge will derail inhumane labor practices by requiring companies to publish details of their manufacturing phase (Human Rights Watch). With this information, customers can make an informed decision about which vendors they want to support. Amazon released the details of nearly 1,500 suppliers on November 15th of this year (Amazon). Disclosing information to the public is a major step towards eliminating products produced in unethical conditions.

Amazon has faced internal pressure to be more sustainable from Amazon Employees for Climate Justice, a group that proposed a shareholder resolution and even planned the first-ever walkout at Amazon’s Headquarters on September 20th, 2019. On September 19th, just one day before the walkout, Bezos announced that his company had signed onto a Climate Pledge - which has the lofty goal of achieving the Paris Climate Agreement’s objectives 10 years early. In addition to other measures, like adding 100,000 electric delivery cars, Amazon continues to make its supply chain greener by taking a similar approach to the transparency pledge- requiring that its vendors follow carbon standards and verifying their adherence with a third party. Then, the results should be released to the public for consumers to see.

“Amazon continues to make its supply chain greener by...requiring that its vendors follow carbon standards and verifying their adherence with a third party”



Introducing a standard method would encourage manufacturers to invest in cleaner tech, both to keep selling on Amazon's platform and to appeal to environmentally conscious customers (Dolsak, Prakesh).

In the past, techniques like these have worked. After textile companies like Nike and Adidas faced public condemnation for hiring contractors that paid meager wages and created unsafe living conditions, they set new standards enforced by inspectors that significantly improved the sweatshop-like conditions in Asia (Dolsak, Prakesh). Amazon should be applauded for these new pledges because if it stands by them, their supply chain ethics could be significantly improved. As consumers values change, it's likely that other companies will follow suit with ethical improvements.

"Large companies faced with scrutiny from the public, advocacy groups, and even lawmakers are reshaping their supply chains to become more sustainable and socially responsible - one such company is Amazon"

Works Cited:

"Amazon Takes Transparency Step."
Human Rights Watch, 20 Nov. 2019

Dolsak, Nives, and Aseem Prakesh.
"Amazon's Climate Pledge:
Greenwashing Or A Game-Changer?"
Forbes, Forbes Magazine, 21 Sept. 2019

"GP." Amazon, Goettsche Partners, 2011

Leonard, Matt. "Amazon Publishes List
of More than 1K Private Label Suppliers."
Supply Chain Dive, 21 Nov. 2019

Aschendbrand, Judd, et al. "In This Issue
of SCMR: The Ethical Supply Chain."
Recently Filed RSS, 20 Nov. 2018



IMPROVING AMERICAN RECYCLING THROUGH LOGISTICS AND BIG DATA

By Zijun Xu

Since 2017, the recycling industry has been in a state of major reshape as China halted the import of scrap materials with its Nation Sword Policy. China enacted the National Sword Policy to reduce the importation of low-quality materials and focus on improving its domestic waste management system. Banning scrap imports places a temporary squeeze on the recyclability of paper and plastics because China was the largest buyer of recycled materials. In the first half of 2019, plastic scrap exports are down by 47% compared to 2018, with the top three importers being Canada, India, and Hong Kong (Staub). For paper scrap, exports fell by only 4%, with the top three importers being China, India, and Mexico (Staub).

Recycling falls towards the end of the reverse logistics cycle, the process of taking products back from an end-consumer. In the manufacturing environment, recyclable materials come from transportation packaging and scrap from various methods. Recycled material is categorized, baled, stored in trailers, and then transported to a material recovery facility (MRF) or directly to a fiber mill or packaging manufacturer. The transportation process is efficient due to large volumes of single types of materials, such as boxes, plastic film, or wood pallets. On the consumer end, quality is a challenge as the process of material type is inconsistent and uncontrollable.

In nine of the ten largest US cities, except for New York, recycling is collected in a single-stream (Seldman) form where all containers,

“Recycling falls towards the end of the reverse logistics cycle, the process of taking products back from an end-consumer”



paper, and boxes on placed in the same bin. Then, the mixed recyclables go to a MRF that separates items dimension (2D vs. 3D), size, and physical properties using an array of machines such as screens, electromagnetic currents, and optical scanners. While single-stream recycling makes the collection more efficient and convenient, it tends to lead to higher contamination levels. Containers with liquids or food residue make clean paper unable to be resold or recycled. Flexible plastics are mistaken for paper and therefore incorrectly sorted. Improperly separated or low-quality materials reduce their ability to be used as feedstock in manufacturing. This challenge can hinder the reverse logistics cycle because collected materials cannot always find end-markets.

On the other hand, advances in both logistics processes and AI in combination with strategies such as standardized signs, waste characterization, and cart audits can drive up recycling rates while also improving material quality.

With affordable shipping costs and capacity as a manufacturing giant, China was the ideal fit to export materials. Some companies began shipping containers of baled materials by rail to domestic customers, reducing the costs of overland shipping. Some companies like Pratt Industries use a vertical integration approach to reduce market volatility. Pratt Industries acquired suppliers like recycling plants and buyers like corrugators and converters. President Trump's tariffs could have a positive effect on American recyclers as he hopes to bring more manufacturing back to the US. Mr. Trump recently visited and applauded Pratt's opening of a new paper mill in Ohio (President Trump Visits Pratt Industries in Wapakoneta). Sims Municipal Recycling, which services New York City, takes the additional steps of refining and pelletizing mixed plastics to attract more buyers. In the realm of AI, AMP Robotics developed a machine that can identify up to 100 materials and make 80 picks per minute (Staub). AI technology could potentially be applied to controlling the speed of conveyor belts to enable more detailed picking when needed. These AI robots will reduce labor cuts of separating mixed recycled materials while maintaining quality standards.





Standardized signs, ones made by Recycle-Across-America, provide clear and concise images and words about what can be recycled. Many airports, schools, and entertainment complexes currently have these signs. They have been proven to reduce contamination by up to 90% (Toto). Waste characterizations determine the amount of each material there is in the trash and recycling bins. Through characterizing content by type, one can learn how effective a recycling program is and where to strategically place recycling bins to reduce contamination and increase the capture rate. The percent of recyclable materials can also vary by type of facility, which is why auditing with pictures or physically sorting and measuring helps optimize waste diversion programs. Rubicon Global, a cloud-based waste and recycling company, is already using waste stream composition data to help businesses and commercial establishments recycle better. A cart audit is an inspection process to determine the quality of recyclables in a collection container, cart, or dumpster. A tag is placed on the cart to remind residents about which mistakes they made: Deerfield Beach, FL “reduced contamination to under 20 percent” with cart auditing (Segundo). As a result of cart auditing, contamination rates decreased significantly, as seen in Florida. Cart audits enable haulers to reject curbside recycling carts that have a high amount of trash, preventing a single cart from contaminating an entire load of clean material. This process would, in turn, generate higher value bales of post-consumer materials and assist people in correcting bad recycling habits.

America can revive and accelerate its progress in recycling progress through a combination of data-driven solutions, standardized signs, and expansion of domestic end markets. With a better and more cost-effective recycling system, as a whole, the US can move closer to a sustainable future.

Works Cited:

Seldman, Neil. “The Wrong - and Right - Way to Recycle.” *Governing*, 20 Mar. 2019

“President Trump Visits Pratt Industries in Wapakoneta.” *WHIO*, 21 Sept. 2019

Toto, DeAnne. “Recycle Across America Receives Bank of America Grant.” *Recycling Today*, 29 Mar. 2019

Segundo, Marissa, et al. “Innovation Amid the Unrest.” *Resource Recycling News*, 15 July 2019

Staub, Colin. “Scrap Plastic Exports Plummet 43% This Year, Paper Stable.” *Resource Recycling News*, *Resource Recycling*, 6 Aug. 2019



ABOUT RUSCA:

We are a student organization dedicated to inspiring our RBS students to learn more about Supply Chain Management and its opportunities, as well as to serve as an intermediary organization on behalf of the RBS student and support the student in the pursuit of a successful internship, co-op, or full time offer, especially for our Supply Chain majors.

Lori Lai | Editor
Ameer Ali | Editor
Formatted by: Lori Lai

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