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Goodyear: Pivot, Expand, or Downsize

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Williams Honors College
Honors Project



Goodyear: Pivot, Expand, or Downsize

Team Triple A + J

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Project Scope and Statement

In light of everything going on in the world today, Goodyear has started to question the next steps of their company. COVID-19 has made a huge impact on what we now perceive as “normal,” and it has affected our work and personal lives. Since the initial outbreak back in March, more and more people across the country have adapted to staying in, meaning they are not leaving their house as frequently. This also means they are not utilizing their vehicles as much, and this is something that Goodyear has taken notice of. Since people are not leaving their homes and, subsequently, driving their vehicles less, they are putting less wear and tear on their vehicles. In turn, this leads to not having to keep up on the maintenance of their vehicles. Through this, Goodyear has concerns that this outcome will affect their business in the sense that some of their services that they provide—such as fixing / installing transmission and brakes, completing tire alignments and state inspections, checking batteries and fluids, and oil changes—will not be needed as much. One of their biggest worries is that customers will not be wearing their tires down as much, so the tires they currently have on their vehicles will last longer. Seeing as tires are what Goodyear is most well known for, the fact that consumers will not have the need to purchase new tires as frequently is quite distressing for the company. Goodyear has asked us to look into what their company should do with all of these factors affecting them. Should they pivot their focus to a different industry to make up for the lost sales and revenue? Should they expand on the products and services they already produce and offer, but make changes to allow them to adapt to the new “normal” of today’s society? Should they downsize their company to make up for the decrease in sales due to COVID-19? These are questions we have been asked to explore and report back to Goodyear on what we believe is the best option for their company based on the research we conduct.

Background of Firm

Goodyear Tire and Rubber Company is an American multinational tire manufacturing company founded in 1839 and started by Frank Seilberling. Headquartered in Akron, Ohio, Goodyear competes amongst top competitors worldwide, including: Continental, Michelin, Pirelli, and Bridgestone. Since the beginning, Goodyear's mission has been to never stop moving. They are a company dedicated to the relentless pursuit of forward motion. Goodyear is one of the world's largest operations of commercial truck services and tire retreading centers. Goodyear manufactures and sells tread rubber and other tire retreading materials, and also manufactures chemicals used in the rubber industry. They are widely known for the manufacturing of tires for motorcycles, automobiles, commercial trucks, SUVs, airplanes, and farm equipment, just to name a few. They operate approximately 1,100 tire and auto service center outlets, where they offer products for retail sale and offer automotive repair and services (Tires: Goodyear Tires). Goodyear employs 64,000 and has annual sales greater than \$15 billion. Furthermore, Goodyear has 47 facilities in 21 countries (NTDA Market Outlook, 2020). With one of the most identifiable brand names in the industry, Goodyear is growing into the world's largest tire company.

Before COVID-19

The effects of COVID-19 on the U.S economy have been deeply noticed across all industries in the country and even worldwide. Even before COVID-19 hit the United States, Goodyear was starting to see a slight decline in their finances. Their fourth quarter sales for 2019 were \$3.7 billion, which is a 4% decrease from the previous year. Goodyear believes this decline

was caused by the industry as a whole having a lower volume than normal and unfavorable foreign currency rates. The quantity of tire units was at 39.6 billion, a 2% decrease from 2018. Original equipment was produced 10% less than the year before, which was impacted by a lower level of global vehicle productions. On the other hand, replacement tire shipments did slightly increase. A drastic difference from the previous year's net income of \$110 million, Goodyear had a net loss of \$392 million for the fourth quarter. This decrease was caused by a tax adjustment of \$380 million in the fourth quarter. Their 2019 fourth quarter adjusted net income was only \$45 million, compared to \$120 million in 2018. They reported an operating income of \$242 million for 2019's fourth quarter, which was a decrease from the prior year of \$307 million. This decline was reflected by a tax settlement in Brazil that lowered factory utilization and production (*Goodyear Reports Fourth Quarter, Full Year 2019 Results*, 2020).

After COVID-19

With COVID-19 hitting the United States hard in early March of 2020, the economy started to see the financial burden of this virus leading into the second quarter of the year. Goodyear began to see a decline in finances even before COVID-19, so it could be determined they were impacted even more than some other companies. To offset the negative impact of COVID-19 on their company, Goodyear took steps to hopefully promote success in the long run. On the operational side, they temporarily suspended production at the majority of their manufacturing facilities and altered operation hours at their retail stores and warehouses. They made changes to their payroll through a combination of furloughs and salary deferrals / reductions. On the financial side, they refinanced \$2 billion of their revolving credit facility, expediting the maturity to 2025. Lowering their capital spending plans and reducing their

discretionary spending on marketing and advertising were among the steps they took to mitigate the financial distress caused by the pandemic. Likewise, they temporarily suspended their quarterly dividends and started to leverage the payroll tax deferral option offered under the CARES Act—also known as the Coronavirus Aid, Relief, and Security Act (*First Quarter 2020 Conference Call*, 5). Goodyear was not only concerned about the financial state of their company as they also took action to ensure the safety of their customers and employees. By adapting how they work, Goodyear was able to offer zero-contact services at their auto service locations and allowed associates from all over the globe to work remotely to maintain their business. To support their customers, they offered discounted or free tire services to essential workers, donated personal protective equipment, and provided financial support to local health care systems. Plants in Luxembourg utilized 3-D printers to produce face shield parts for customers and employees. Goodyear used interactive learning and activities through social media for those who were staying at home to keep them engaged (*First Quarter 2020 Conference Call*, 4).

The third quarter of 2020—from July to September—was the most recent quarter to be completed this year. Throughout this time, Goodyear’s sales were \$3.5 billion, a 9% decrease from last year. COVID-19 has had a considerably negative effect on Goodyear’s finances, and this was reflected in the decrease of the level of tire units that were produced this year. There were 36.6 million tires produced in the third quarter, also a 9% decrease from last year. The industry demand overall was greatly affected by economic disruption resulting from COVID-19. Reflected by lower demand and third party retail store closings, replacement tire shipments and orders also decreased by 9%. Their third quarter net loss was \$2 million. Although this was an improvement from their fourth quarter net loss in 2019. Adjusted net income was \$24 million compared to last year when it was \$105 million. Operating income was \$162 million, which is

down \$132 million from a year ago. This decline reflects a decrease in volume and factory utilization. They also had lower earnings from other tire-related businesses. Goodyear's sales for the first nine months of 2020 decreased by 21% compared to the same time period in 2019 (*Goodyear Reports Third Quarter 2020 Results*, 2020).

While their third quarter finances seemed to have increased from before the pandemic, they are still aggressively lower compared to where they were around this time last year. The pandemic has not necessarily helped Goodyear, but their downfall seems to have been rooted before the pandemic even hit the United States.

What is the Impact?

It is no secret COVID-19 has completely changed our lives and is something we all have had to adapt to. It has made impacts on individuals, families, companies, the economy, and so much more. Now that we have lived through almost an entire year of this uncertainty, not knowing what will happen next, we are beginning to understand what our new "normal" consists of. In the beginning, when the majority of nine-to-five employees had started working from home, we did not fathom there was a chance working from home could become a permanent aspect of our lives. With more and more Americans working from home, we have seen a decrease in traffic volume. The decrease in the need for individuals to utilize their vehicles has led to a decrease in the services that need to be performed on vehicles to keep them up and running. These services include, but are not limited to, transmission and brakes repairs, tire alignments, battery and oil changes, and state inspections. People leaving their homes less is a direct correlation to fewer people driving their vehicles. The tires on vehicles are not being worn down as fast and, in turn, leads to customers not having to buy new tires as frequently. Fewer

people driving their vehicles does, however, have a positive impact on air quality. A decrease in the amount of time individuals spend driving their vehicles directly affects the levels of pollutants that are being emitted into the atmosphere. Throughout the secondary process of our research, we have conducted qualitative and quantitative findings that will go along with these hypotheses, and we present these findings throughout the entirety of this research.

Industry Analysis

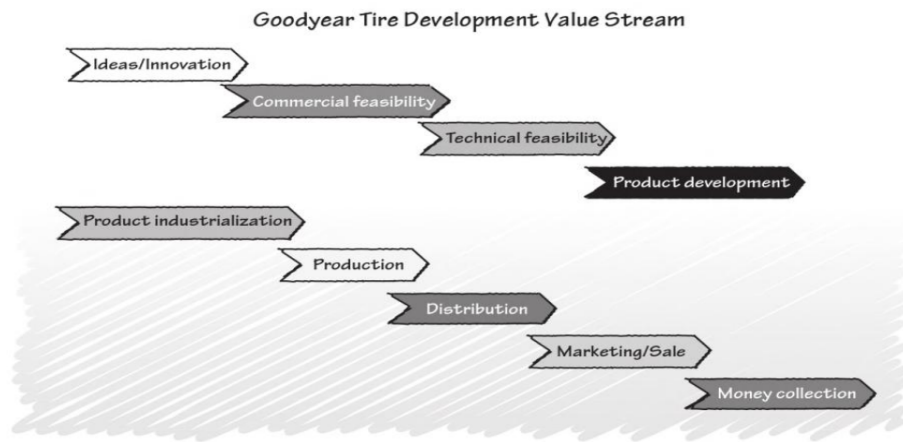
Strengths

Goodyear has been established for 122 years. It is understable that over this time, they have figured out what does and what does not work for their company. Being a well off tire company for this long, they have worked their way up in the industry and have made themselves a common household brand. Goodyear currently employs around 62,000 individuals and, as previously mentioned, manufactures products to 46 facilities in 21 countries (NTDA Market Outlook, 2020). Goodyear relies on their customers' high recognition in the tire industry, and they take many strides to ensure their customers are satisfied with their product. A system Goodyear uses to analyze their product is the Government Compliance and Product Performance—also known as GCPP. Their customers are able to report the conditions of the products and how well they functioned. This provides Goodyear with valuable information on where to make improvements and better the product (Muñoz, 18, 2017).

Another important strength that Goodyear holds is their ability to adapt to the industry. They have made several financial decisions to merge and acquire up and coming companies who could have potentially posed as a competitor in the future. A few of these mergers and

acquisitions include Celeron Corporation in 1983, South Pacific Tyres in 2006, Nippon Giant Tire in 2012, VENTECH Systems GmbH in 2017, and Raben in 2019 (*Query Builder: Acquisitions*, 2020). The variety in the types of companies and the time in which they were merged / acquired shows that Goodyear is dedicated in ensuring their company continues to grow in every direction. These mergers and acquisitions have led Goodyear to increase their product development. Below, *Figure 1* shows Goodyear's process for product development.

Figure 1:



Retrieved from: Majerus, 2016

Through this process, Goodyear has been able to decrease the lead-time in tire development by more than 70%; increase on-time deliveries from 30% to 98%; cut their warranty costs and claims dramatically; and have tripled the number of project initiatives and learning cycles per year (Majerus, 2016).

These strengths have enabled Goodyear to get where they are today. Their rich history as a successful company allows them to continue to grow and gain more customers. Ensuring their customers are happy and satisfied with their goods and services is one of their top priorities. The improvements they have made with mergers, acquisitions, and product development have played important factors in the success of the company. These improvements benefit Goodyear

financially and make their products better and more reliable for their customers to reach the goal of increasing their sales and profits.

Weaknesses

Although Goodyear is thriving in some areas, there are still scopes for improvement in alternative areas. To begin, Goodyear is one of the leading toxic air polluters in the US. In a 2018 report conducted by the University of Massachusetts Amherst, Goodyear Tire and Rubber was ranked fiftieth in the *Toxic 100 Air Polluters Index* (*Toxic 100 Air Polluters Index*, 2018). This index ranked them higher than competitor Bridgestone. According to the Environmental Protection Agency, rubber tire manufacturing facilities are the major sources of hazardous indoor air pollutants. Many of these hazardous pollutants are comprised of toxins such as formaldehyde, styrene, hexane, and toluene, which are associated with adverse health effects ranging from acute to chronic issues (*Rubber Tire Manufacturing: National Emission Standards for Hazardous Air Pollutants* (NESHAP), 2020). Compliance with federal and state regulations on environmental laws could require an increase in capital expenditures, thus creating an adverse effect on Goodyear's annual earnings and competitive position. This would create an additional negative internal factor for the company.

Another area of concern is with Goodyear's overall net loss and decrease in market share. From the 2018 to 2019 fiscal year, Goodyear took a 5% decrease in net sales, a 2% decrease in tire unit sales, and a net loss of \$311 million, as opposed to a net income of \$693 million the previous year (*Goodyear Reports Fourth Quarter, Full Year 2019 Results*, 2020). Many factors have resulted in these significant losses, including unfavorable foreign currency translations, decrease in global vehicle production, and higher raw material costs. At the top of the following

page, *Figure 2* depicts the fourth quarter results and the full year financial results of Goodyear in the Americas. The company suffered severely with the decrease in favorable indirect tax settlements and a strike at a major original equipment customer.

Figure 2:

	Fourth Quarter		Twelve Months	
<i>(in millions)</i>	2019	2018	2019	2018
Tire Units	18.7	19.1	70.4	70.9
Net Sales	\$2,026	\$2,114	\$7,922	\$8,168
Segment Operating Income	152	179	550	654
Segment Operating Margin	7.5%	8.5%	6.9%	8.0%

Retrieved from: Goodyear Corporate, 2020

Now that these weak sentiments have been identified, Goodyear must use this to their competitive advantage by taking the corrective action. Goodyear is in control of making the necessary adjustments to decrease the amount of toxins emitted through their manufacturing. At the same time, they must be careful not to expand on their capital expenditures too much. They must look into alternative methods to avoid any more decreases in net sales and income.

Opportunities

There are a plethora of avenues Goodyear can take in order to capitalize on their strengths and address their weaknesses. With an evolving world, the market is constantly changing. As such, if a company does not take advantage of any opportunities presented to them, they will become obsolete. The same applies for Goodyear. We have several different routes that we believe are plausible opportunities for Goodyear to take part in.

With more and more individuals beginning to work from home more frequently, Goodyear has the opportunity to look into other markets or industries that will allow them to make up for the decrease in personal usage of vehicles. People are less likely to leave their homes, which then leads to a decrease in how much they are utilizing their vehicle. Goodyear has seen a decrease in sales and revenue, as talked about above, so an opportunity to allow them to increase these areas is very clearly present.

With an increase in online purchasing behavior, there is an opportunity for Goodyear to concentrate their focus on the manufacturing of tires for convenience and delivery service vehicles, in addition to consumer vehicle manufacturing. Amazon, Grubhub, and Instacart are just several of the developing services that many consumers have begun utilizing more often in the recent months. This will allow Goodyear to enter a new and evolving market in hopes of generating greater leads and higher profit margins.

According to Goodyear's chairman, chief executive officer, and president, "today's consumer's favor convenience, safety and advanced technologies and many are socially conscious, wanting the brand they buy to be a part of solving the environmental and social challenges of our time" (Kramer, 2019). It is no secret that many consumers are taking notice of the detrimental effects industrialization has had on our world's environment. Some have even refrained from buying certain brands because they do not align with their beliefs about protecting the environment. Goodyear can capitalize on this market by taking a look at their current practices and implementing procedures to have a greener thumb. In doing so, they would not only receive positive results in terms of sales to these eco-conscious individuals, but they would also receive positive media coverage.

Threats

As with any company, Goodyear is no stranger to having competitors in the industry that threaten their business. What is important to note, however, is if any said competitors hold a competitive advantage over Goodyear. One of Goodyear's top competitors is Michelin, a French tire manufacturer. They are also in competition with Continental AG, a German company, as well as Bridgestone Corporation, a Japanese manufacturer. As we have mentioned previously, Goodyear is ranked at number fifty in the Toxic 100 Air Polluters Index. Taking a look at the entire index, it can be seen that, while Continental AG—ranked at number thirty-five—is a worse polluter than Goodyear is, Bridgestone actually pollutes less than them—ranked at number fifty-nine (*Toxic 100 Air Polluters Index*, 2018). Notwithstanding that tire manufacturers tend to create more pollution, Michelin is not even on the index. This goes to show that Michelin is Goodyear's biggest threat in terms of competition.

Goodyear has recently received some criticism due to a diversity training presentation slide indicating acceptable versus unacceptable work attire at the company's Topeka, Kansas, branch. Listed under the "acceptable" column was "Black Lives Matter" and LGBT pride; and listed under the "unacceptable" column was "Blue Lives Matter," "All Lives Matter," "MAGA" attire, and political affiliation slogans or material (Kim & Wagner, 2020). In response to learning about the workplace ban on "Make America Great Again" and other political attire, President Donald Trump took to Twitter and called for a boycott of Goodyear tires.

Goodyear's CEO Rich Kramer came out and stated that the company has always had a rule in place to prevent employees from wearing attire affiliated with their political standing because it would disrupt the working environment that they are aiming for. He also stated that

the other parts, particularly having to do with the new social movements taking place in society today, were not run through corporate before being shown to the Topeka employees in their zero-tolerance diversity training (Kim & Wagner, 2020).

Pivot, Expand, or Downsize?

As a team, we have been tasked with finding evidence that supports whether Goodyear should pivot, expand, or downsize their business in response to the changes that have arisen due to the COVID-19 pandemic. After a bit of research, we have decided that the best course of action would be to pivot their focus into other areas of business. The following subsections expand upon the three opportunities we have previously discussed in the industry analysis: working from home, convenience services, and environmental effects.

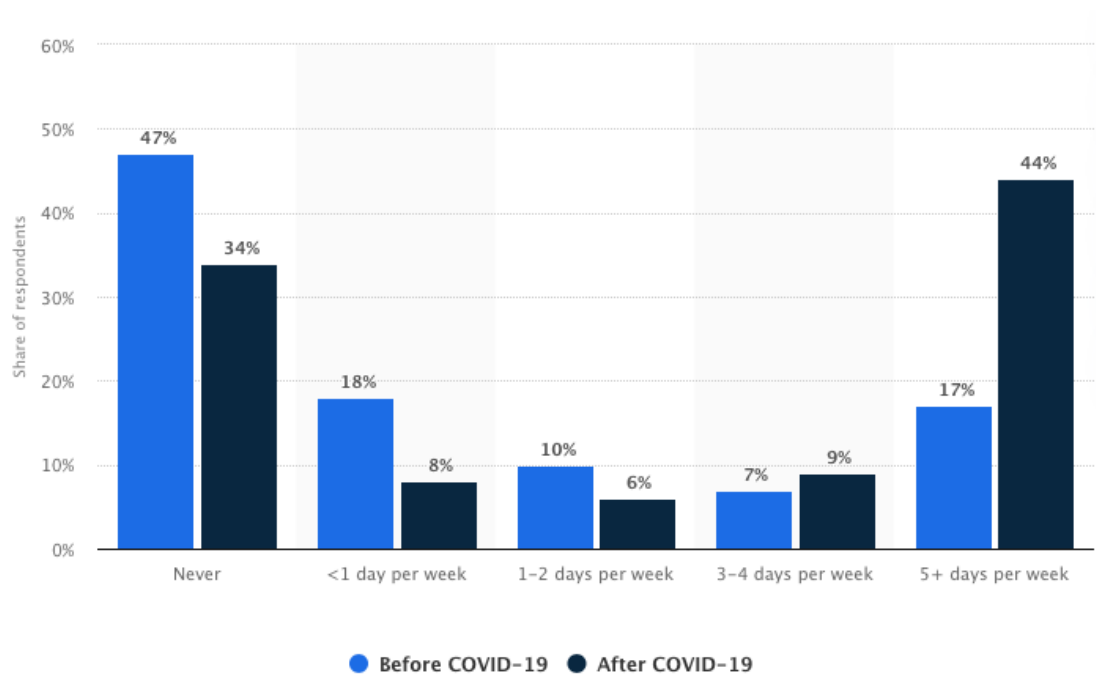
Working From Home

As a result of COVID-19, there has been a significant increase in the amount of people working from home. As of June 2020, approximately 42% of the U.S. labor workforce reported they were working from home full time (Bloom, 2020); this is equivalent to nearly half of the U.S. working population. This trend is expected to continue well past the Coronavirus pandemic and could permanently shift working patterns. If more people are working remotely, fewer people will be commuting, thus reducing the amount of time spent driving. These new trends could potentially create a barrier for many industries focused on the manufacturing of automotive goods and services, such as Goodyear. If people are driving less frequently, this will allow for fewer maintenance repairs, such as: transmission breaks, tire alignments, state inspections, batteries, oil changes, and the like. Furthermore, the demand for tire replacements

and other services will simultaneously decrease since the tires are not being worn out as fast due to the reduction in driving coming from previous commuters. This could potentially be detrimental to the economic success of many automotive industries, including Goodyear, whose focus is on the manufacturing of tire and rubber.

Below, *Figure 3* shows the change in remote work trends due to COVID-19 in the United States in April of 2020. Prior to the pandemic, 17% of US employees stated that they worked remotely at least five days a week; after COVID-19, a rising 44% of US employees stated that they now work remotely at least five days per week. This drastic change in percentage of people now working remotely has been proven to have a significant effect on the transportation sector. However, this work-from-home option is not applicable to laborers in the fields of manufacturing, healthcare, delivery services, and the like.

Figure 3:



Retrieved from: Statista, 2020

As a result of fewer people leaving their homes due to COVID-19 precautions, the tire manufacturing industries have taken a hard fall. *Figure 4* depicts the projected tire shipment forecasts for passenger vehicles and commercial trucking by the end of 2020. Total tire shipments have been expected to decrease by 34.4 million units within the year. Although this number is extremely high, this forecast represents a significant improvement of approximately 19 million units from the previously projected forecast conducted in July (U.S. Tire Manufacturers Association, 2020).

Figure 4:

USTMA 2020 Projected Tire Shipments (November Forecast)

	2019	2020 Forecast	% Change	Units +/-
Original Equipment Tires				
Passenger	46.3	36.8	-20.4	-9.5
Light Truck	5.9	4.8	-18.0	-1.1
Truck	6.5	4.6	-29.0	-1.9
Replacement Tires				
Passenger	222.6	201.5	-9.5	-21.0
Light Truck	32.5	32.0	-1.8	-0.6
Truck	18.9	18.5	-2.1	-0.4
Total Shipments	332.7	298.3	-10.3	-34.4

Note: All shipments in millions. Figures are rounded.

Retrieved from: (US Tire Manufacturers, 2020)

These staggering numbers are mainly due to the decrease in passenger replacement tires; approximately 61% of the total shipment loss is contributed to the decrease in passenger replacement tires. With many individuals working from home, shopping online, and being restricted from leaving their homes, travel has significantly decreased, thus creating a lower need for tire replacements.

Furthermore, tire shipments for commercial trucking have also been projected to decrease, but not at the same measures as passenger vehicle tires. The percent change has been the least drastic for light truck tire shipments. We believe this is because of the increase and / or stability in delivery services. Although everyday consumers and remote workers are hitting the road less frequently, goods and services are still being delivered, and some at an even higher rate than ever before. Thus, Goodyear has the potential to gain market share in an already existing sector: commercial trucking towards convenience services.

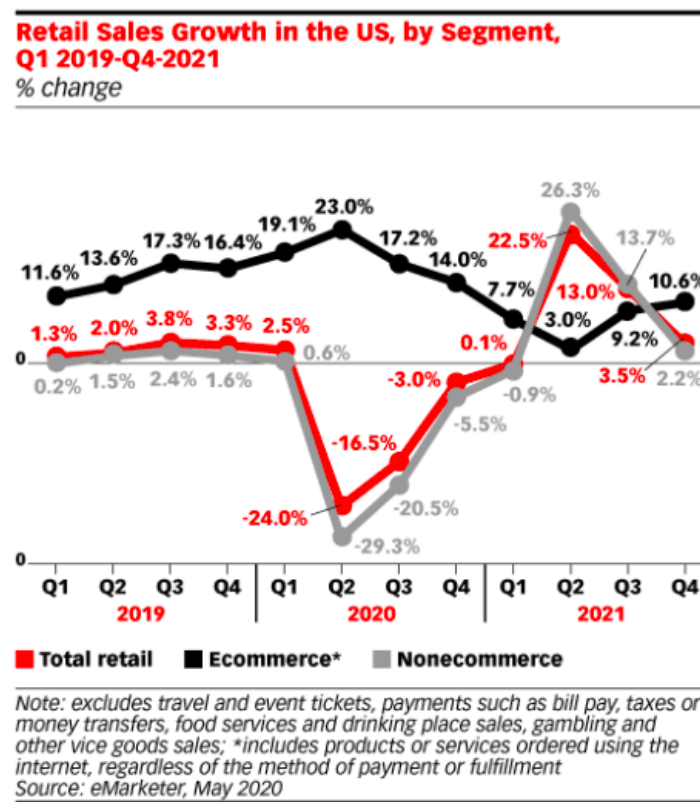
Convenience Services

Prior to the Coronavirus pandemic, rapid growth trends had been detected amongst many convenience services, including: e-commerce, grocery delivery services, and food and beverage delivery services. The shift in how consumers live their everyday lives has been driven by a variety of factors, some of which are market dependent and others in response to major worldwide changes. As a result of COVID-19 and the state mandated lockdown orders, these rapidly growing convenience services have seen immense spikes in demand. As an example, Instacart, a popular food and grocery delivery service, has reported a year over year increase of 500% in April 2020 (CNBC, 2020). If people had not been utilizing these services prior to the pandemic, they most certainly are now.

As depicted at the top of page 17, in *Figure 5*, non-e-commerce hit an all time low in the second quarter of 2020—as would be predicted under the circumstances of a global lockdown. This has a correlation to a decrease in transportation trends, as people were leaving their homes less frequently as a result of nowhere to go. Furthermore, it is depicted that e-commerce hit an all time high of 23% in the second quarter, but is projected to decrease as soon as people feel more

comfortable leaving their homes again. It has also been projected that the top ten e-commerce retail businesses will grow at above-average rates of 21.8%; Amazon will gain top e-commerce market share, followed by Walmart (Samet, 2020). This could potentially be an opportunity for Goodyear to market their resources toward automotive manufacturers for Amazon trucking since there will be a projected increase in e-commerce trends.

Figure 5:



Retrieved from: (eMarketer, 2020)

In an ever-changing environment, one thing that has remained stagnant throughout the decades is the value of convenience in the eyes of consumers. The e-commerce market has experienced significant growth over the years as consumers shift online. Alongside retail e-commerce, online food delivery services have also made a rise into the worldwide market; an increase in delivery services means an increase in tire services for those vehicles. At the top of

the following page, *Figure 6* portrays the revenue of the online food delivery segment in major countries. The online food delivery services are prevalent worldwide, but nowhere are they more evident than in China. Furthermore, the strongest growth of e-commerce over the past couple of years has been in China, representing 54% of the global e-commerce market; this is nearly twice the market share of the five highest countries combined (Li et al., 2020, 2).

Figure 6:

Country	Forecast Revenue in 2020 (in million US\$)	Annual Growth Rate (CAGR 2020–2024)	Market's Largest Delivery Segment	Volume of Market's Largest Delivery Segment in 2020 (in million US\$)	Leading Platforms
China	51,514	7.0%	Platform-to-Consumer	37,708	Meituan, Eleme
US	26,527	5.1%	Restaurant-to-Consumer	15,631	Grubhub, Uber Eats, Doordash
India	10,196	9.5%	Restaurant-to-Consumer	5401	Foodpanda, Swiggy, Zomato, Uber Eats
UK	5988	6.5%	Restaurant-to-Consumer	4115	Just Eat, Food Hub, Deliveroo, Hungry House
Brazil	3300	9.5%	Restaurant-to-Consumer	2033	iFood, HelloFood

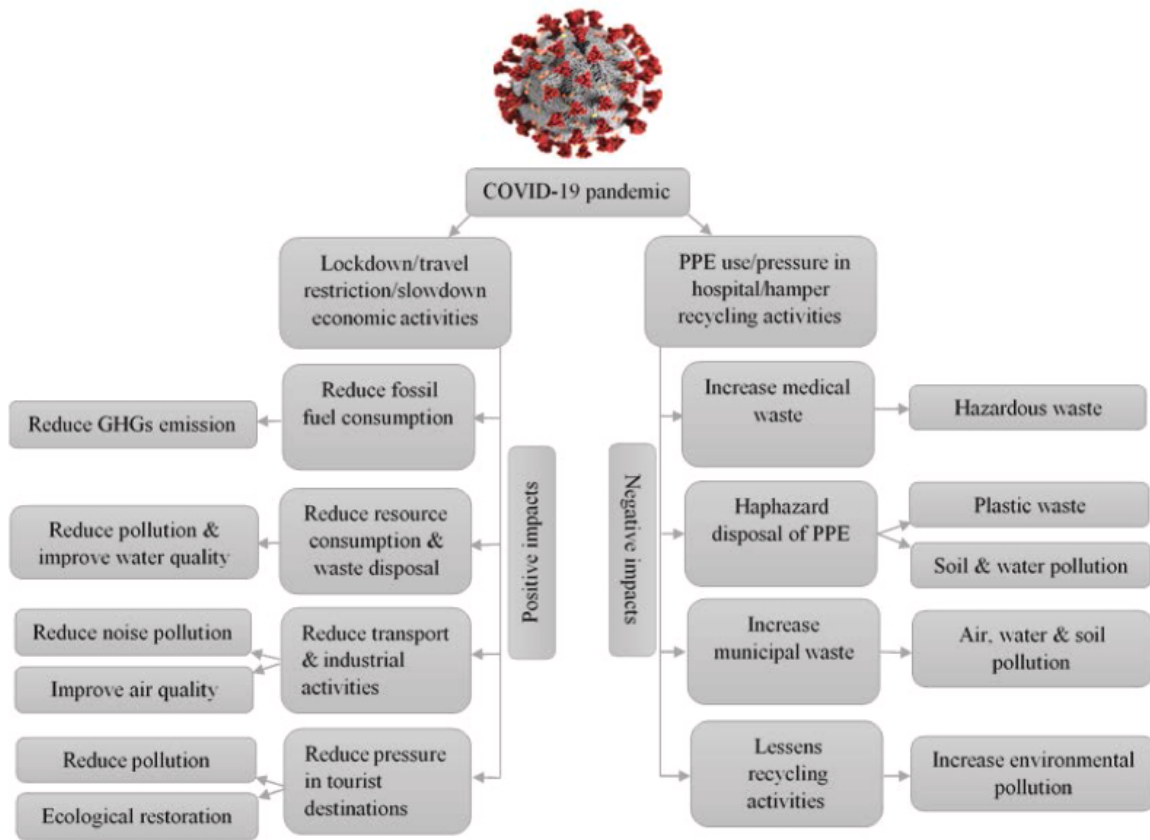
Retrieved from: (Li et al., 2020, 5)

The social, economic, and environmental impacts of e-commerce and online food delivery services are endless. Given the current situation with COVID-19, it is evident that these services have become lifelines to many individuals quarantined at home, and those who are too comfortable to make the drive out to the stores. At the same time, the environmental impacts of food delivery services have raised concerns. Regarding the transportation element, the food delivery service industry has begun exploring new, eco-friendly approaches to deliver food, those of which include: the use of bicycles, electric bicycles, and even drones where applicable. As convenience services continue to rise, Goodyear must be proactive by detecting new trends in consumer behavior to ensure they are targeting the correct market segment.

Environmental Effects

As we have repeatedly mentioned, COVID-19 has had a huge impact on various aspects in the world. Because so many individuals are working from home to avoid unnecessary contact with others in an effort to flatten the upward-trending curve of COVID-19 cases, there are fewer harmful emissions being released into the environment. Many people have noticed the positive changes to the environment, but there are also some negative changes associated with it. The flowchart depicted in *Figure 7* on the next page, provided by the U.S. National Library of Medicine, does a good job of depicting both the positive effects due to lockdown, travel restrictions, and slowed economic activities as well as the negative effects due to improper disposal of personal protection equipment like masks and gloves, an increase in hospital waste, and a reduction in recycling:

Figure 7:



Retrieved from: (Rume & Islam, 2020)

As shown above in *Figure 7*, there are almost as many negative consequences as there are positive. Increased medical waste leads to hazardous waste; improper disposal of masks and gloves leads to plastic waste as well as soil and water pollution; increased public waste leads to soil, water, and air pollution; and decreased recycling leads to overall environmental pollution. It is apparent that all of the aforementioned things are not good for the environment. But there are also good things that come from the world's current situation that help to somewhat curb those negative effects: a decrease in fossil fuel consumption, like gas, reduces greenhouse gas emissions; reductions in resource consumption and waste disposal reduces pollution and improves water quality; a reduction in transportation, one of our main focuses for this report,

reduces noise pollution and improves air quality; and, finally, a reduction of pressure in tourist destinations has reduced pollution and allowed the ecosystems there to recuperate somewhat.

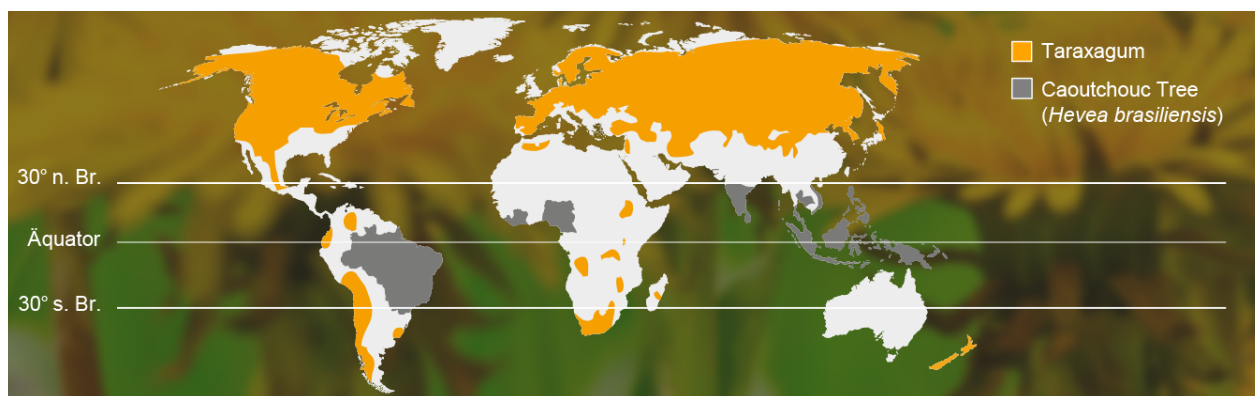
One course of action that Goodyear can take in regards to positively contributing to the environment is finding more sustainably sourced raw materials. By definition, sustainability means “to create and maintain conditions under which humans and nature can exist in productive harmony” (*Learn About Sustainability*, 2020). This, in layperson’s terms, means that materials need to be procured in a way that does not harm the environment because, if the environment is damaged beyond repair, humans will be unable to produce all of the goods that they currently do. According to Goodyear’s corporate website, they have, in fact, taken necessary steps to ethically source their materials and even have a Natural Rubber Procurement Policy that outlines how they go about doing so (*Natural Rubber Sourcing*, n.d.). However, just because they source their natural rubber in a way that can be deemed sustainable, does not necessarily mean that all of their raw materials that go into making a tire receive the same treatment.

Goodyear uses a type of latex acquired from rubber trees to produce the natural rubber required for their tires (*Natural Rubber Sourcing*, n.d.). Like any tree, it takes a relatively long time for it to grow. That being said, it is actually one of the faster maturing trees out there. The latex can start to be harvested when the tree is approximately six years old , but it does not actually reach full maturity until it is about thirteen years old (*Rubber Tree Facts*, n.d.). We believe that one such route Goodyear can take in pivoting its focus is finding an alternative source to produce its natural rubber. There are two plants in particular that have been considered as possible choices, the Mexican shrub guayule—*Parthenium argentatum* Gray—and the Russian dandelion—*Taraxacum kok-saghyz* (van Beilen & Poirier, n.d.).

Guayule is a desert shrub that, in the past, has been used as a rubber alternative in cases of emergency. This was the case when Japan had stopped supplying the United States during World War II, but the efforts of using it did not last very long once the crisis was averted (Tullo, 2015). The only issues that can harm the growth of a guayule shrub are cold temperatures and root diseases caused by overwatering or standing water (Nolte, n.d.). Goodyear can possibly take advantage of unutilized desert areas in the United States to grow guayule and then use the natural rubber it produces to manufacture its tires.

As a shrub, the Russian dandelion has an extremely short maturity cycle, especially when compared to the rubber tree that Goodyear is currently using to make their tires. While the rubber tree takes at least six or seven years before the natural rubber can be extracted, the Russian dandelion takes just one year to grow. Not only that, but the shrub is considerably less sensitive to changes in weather condition, making it harder and more dependable (*Continental constructing tires from dandelions*, n.d.). *Figure 8*, on the next page, depicts the differences in where the Russian dandelion can be grown and where the rubber tree can be grown. *Taraxagum* is the term, derived from the botanical name *Taraxacum*, for the natural rubber polymers extracted from the dandelion.

Figure 8:



Retrieved from: (Continental constructing tires from dandelions, n.d.)

As shown, the rubber tree, or Caoutchouc tree, can only be grown in warm climates surrounding the equator, whereas the Russian dandelion can be grown locally in the United States. It is also important to note that Goodyear is slightly behind the times in this regard seeing as Continental AG, one of their top competitors, has already successfully produced tires made from this plant four years ago in 2016 (*Continental constructing tires from dandelions*, n.d.).

Hypothesis

After conducting our secondary research, we believe it is in Goodyear's best interest to pivot their business to align with the current demands of the economy. If Goodyear is to pivot, then they can take on a competitive advantage to ensure their continued prosperity. With our primary research, we aim to collect sufficient data that supports our hypothesis. We will do this by surveying individuals from our community on our three areas of focus: working from home, convenience services, and environmental effects. Although we have presented three different opportunities, we plan to narrow our research down to the most beneficial option to ensure Goodyear continues to strive in the manufacturing and service industry.

Primary Research Methodology

Our secondary research provided us with useful information to determine the best route for Goodyear to take under the current COVID-19 circumstances. However, we aimed to collect further research in order to provide Goodyear with the most accurate and useful information to support their main goals and objectives. From our secondary research, it was hypothesized that

Goodyear should aim to pivot their industry focus based on three key factors: an increase in working from home trends, convenience services, and awareness of environmental sustainability. As a way to test our scholarly secondary research, we conducted primary research, as well. Our primary research was intended to drive more in depth insights to either verify or challenge what was concluded from our previous research.

Our primary research was conducted through two main methods of data collection: an online survey, and several in-depth interviews. The online survey was created and distributed to a broad sample through Qualtrics. We wanted to collect information from the general population in order to draw correlations between demographics and specific interests and behaviors during this pandemic. After extensive research, we found that CloudResearch was an effective and appropriate data gathering tool. Therefore, we used this tool in conjunction with Qualtrics to acquire 127 survey responses within a couple of days. We asked questions related to individuals and their working habits, transportation habits, and overall pre and post COVID-19 behaviors. After an analysis of our survey results, we determined it was best to further our research and conduct in-depth interviews to gauge the deeper feelings and opinions of individuals.

We conducted eight in-depth interviews with interviewees from the local Akron area. The setup of this interview was formed to attain a deeper understanding of tire purchasing behavior within the past year. From our secondary research and online survey, we acquired adequate information to understand consumer lifestyle changes. However, we wanted to apply what was learned and relate it to Goodyear and how they can position their industry. This interview asked questions pertaining to tire purchasing behavior, and transportation trends within the past year. Interviewees mainly consisted of Gen X's and Gen Z's, as we wanted to attain information from different generations of people and try to draw correlations.

Survey Key Findings

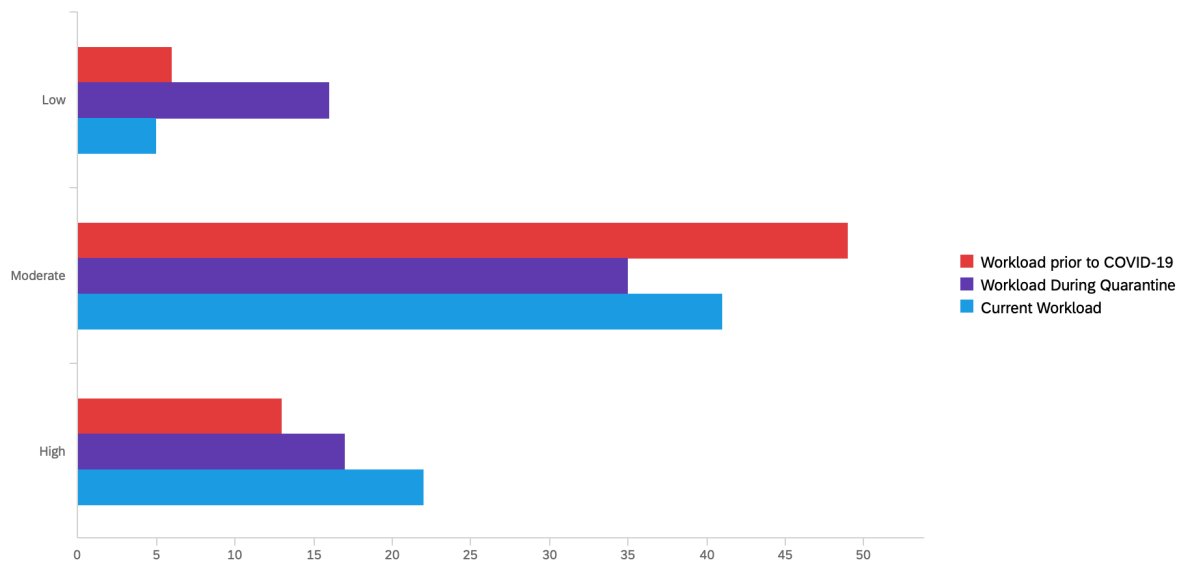
As stated above, our first method of primary data collection was through our online survey. Throughout this survey, we focused on 3 areas in which we researched during our secondary research: working from home, convenience services, and environmental effects. We were able to receive data from a wide range of individuals from all over the United States and ages ranging from 18 and under to over 70 years old. Below, we will share with you our key findings from our survey, and then later on, elaborate on how these findings aided us in making recommendations for whether or not Goodyear should expand, pivot, or downsize.

Working From Home

As a team, we decided to have a focus on working from home in hopes to gain more insight on the effects it had on individuals' vehicle usage, and how COVID-19 had a direct impact on individuals leaving their homes less often, and therefore, using their vehicles less. Of the 127 responses we received, 53% are currently employed. Those who were employed at the time they answered the survey were then asked more questions directly related to their work in relation to COVID-19. Of the 53%, 45 individuals (66%) worked from home at some point as a result of COVID-19. From our survey, we also realized most employees were not offered to work from home before COVID-19. 31% of those who worked from home at some point, are still currently working from home. From this section of the results, we were able to infer that even though peak quarintimes are over, and the world is slowly getting back to a new “normal”, employees are still either having the option or required to work from home. This idea then leads us to ask more questions about if this is still affecting individuals' use of the vehicle and

willingness to leave the house. 48% stated they have the option to work from home, while for the other 51%, it is required. As seen below in *Figure 9*, during peak quarantine times, there was a large increase in the number of individuals who ranked their workload as low. From personal experiences, we were able to also bring in the fact that during this time, most states had a version of what we called a Stay at Home Order. In Ohio, Govern Mike DeWine, all non-essential activity was ceased and individuals were recommended to not leave their homes, unless for essential activities, i.e. for health and safety, for necessary supplies and services, and for essential workers (Ohio Issues "Stay at Home" Order, 2020).

Figure 9:



Retrieved from: Akron Qualtrics

With individuals' workload being low, and restrictions being placed on household members, that places limits that had a direct impact on them using their vehicles. It is clear to see individuals had abnormally less reasons to leave their house, and therefore were not putting as much wear and tear on their vehicles throughout quarantine. 49% of those who are currently

employed strongly agree or agree that working from home has impacted the use of their vehicle; 54% strongly agree or agree that they are less likely to utilize their vehicle now. We also saw a decrease in the amount of time employees spent commuting to and from work from before COVID-19 to now. These findings correlate with our initial thought that since individuals are now working from home, they are driving their car less frequently.

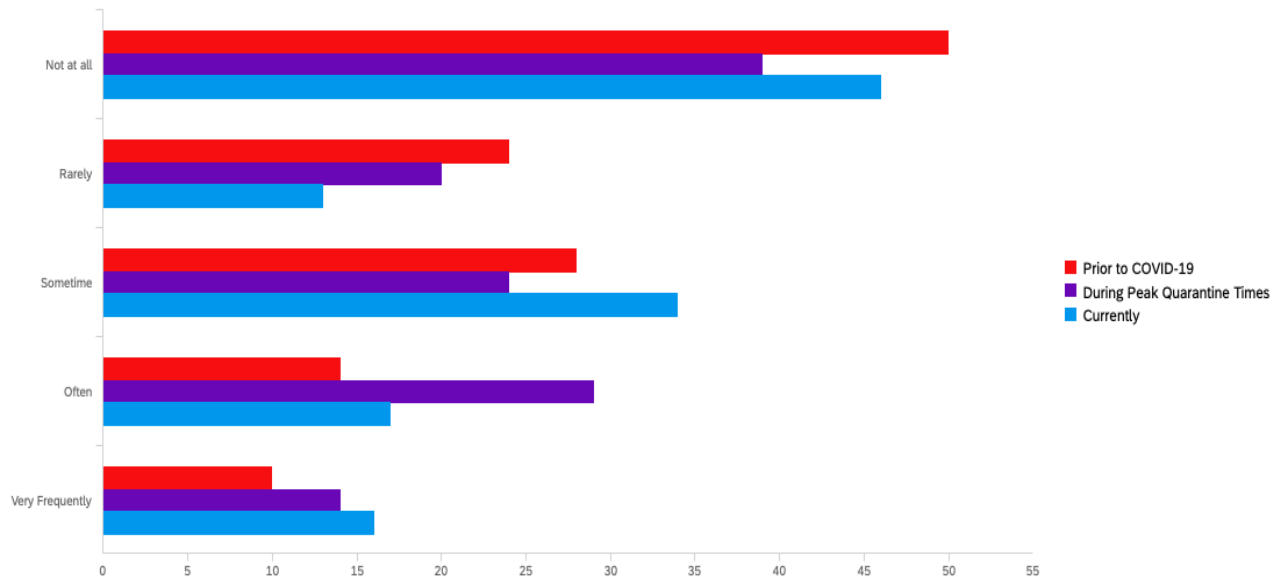
Working from home has had a large impact on individuals and the amount of time they spend utilizing their vehicle. With being in the convenience of their own home, individuals are less motivated to leave their house for errands they would usually complete on their commute to or from work, such as grocery shopping or getting food, whether that be from a fast food restaurant or even going to a sit-down restaurant. Individuals began to find services that were offered that allowed these errands to be done for them, and then simply dropped off right at their front door.

Convenience Services

The idea of convenience services was something we as a team thought would be interesting to discover more research on and wanted to look into the possibility of Goodyear potentially expanding to work within this industry in some capacity. Below in *Figure 10*, we can see there was an increase in the number of individuals who used convenience services from before COVID-19 to during peak quarantine time. We can also see that the number also drops to where we are now, but it is not as low as it was before COVID-19. It can be inferred that the reason for this can be because the individuals who are now continuing to use convenience services did not usually use these services before COVID-19, but have now gotten used to the convenience of not having to complete the errand themselves and still chose to use the services,

even when the restrictions or conditions that were in place during peak quarantine times that prohibited them from leaving their homes are no longer in place.

Figure 10:



Retrieved from: Akron Qualtrics

Based on our survey results, we found that Amazon and DoorDash are the top 2 convenience service providers that individuals are currently using. 69% of users answered “yes” or “maybe” to the question of if they felt as if COVID-19 affected their use of convenience services. Online shopping also plays a role in the idea of convenience services in the way that individuals are again able to make purchases from the comfort of their home, and the items will arrive straight to them. 44% of responders believed that COVID-19 had an effect on their decision to shop online versus in-store. 55% said they very often or oftenly shop online rather than in-store.

The convenience of these services is allowing individuals to, yet again, leave their house less frequently, and as a result, are utilizing their vehicles less. COVID-19 had an impact from individuals working from home and thus created an environment where convenience services were able to thrive. With individuals utilizing their vehicles less, it poses an interesting thought of what are the environmental effects this is causing, which then leads our team to ask ourselves: how do customers view a company's environmental effects and does that affect their purchasing decision?

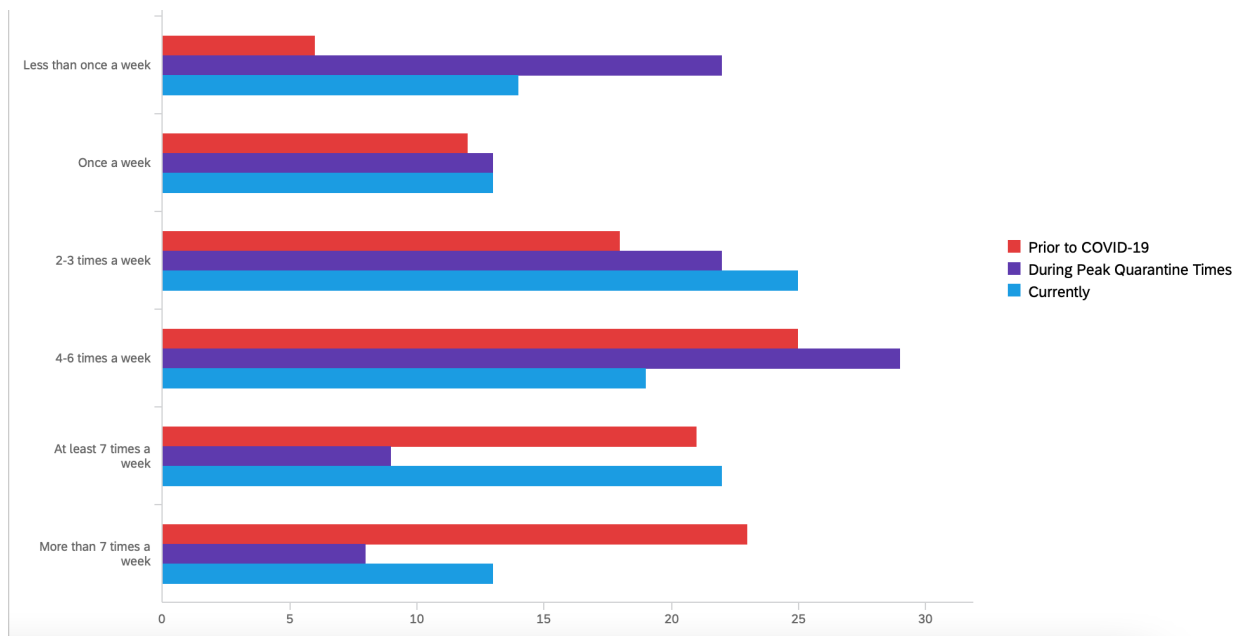
Environmental Effects

When it comes to environmental effects, we wanted to take a deeper look into the thought process of what a customer goes through when weighting the pros and cons of a company with or without environmental sustainability policies or procedures. 59% of individuals who responded to our survey believe that, generally speaking, environmental sustainability is extremely important or important to them. 55% research a company's sustainability practices before making a purchase. Furthermore, 47% strongly agree or agree that a company's "green thumb" or lack thereof makes them less or more likely to purchase from in the long run.

We also wanted to look into the environmental effects that come with individuals driving their vehicles less. Below in *Figure 11*, we can see that there was an effect on the amount of times individuals were driving their vehicles as a result of COVID-19. Before COVID-19, there were fewer instances of people reporting they drove their vehicles less than once a week and only once a week, while during peak quarantine times the level of responses for only driving their vehicles once a week and less than once a week was noticeably higher. The number of individuals who indicated they currently drive their vehicle less than one week decreased

compared to during peak quarantine times, but did not get as low as to what it was before COVID-19. These results are consistent with our findings mentioned above that individuals are currently utilizing their vehicles less frequently than they were before COVID-19.

Figure 11:



Retrieved from: Akron Qualtrics

Interview Key Findings

After our team received and reviewed our results from our initial primary research method, the survey, we came to the conclusion that we would like to have more in-depth interviews with a select group of individuals. As mentioned earlier on, we wanted to gain data from different generations to help provide recommendations to Goodyear. Across our team members, we were able to conduct 8 personal interviews. Of those participants, four view

environmental sustainability as an important aspect when purchasing a new product, and five participants said environmental sustainability is moderately important or important to them. Seven participants saw a decrease in the amount of time they spent driving their vehicles from before COVID-19 to now. On average, participants said they replace their tires once every three years, and five participants noticed a difference in their tire wear over the past year. When looking to purchase new tires, participants looked at: prices, tests/reviews, and convenience.

On the topic of purchasing tires and if they have noticed a difference in the wear of their tires over the past year, once participant responded with, “Around this time of year I would typically be replacing my tires, but I don’t necessarily feel the need to because I haven’t driven much; especially now that I am working remotely.” (T.J. Age 56). Another participant stated, “A company’s view on environmental sustainability is very important to me because the way the world is treated now will have a massive impact on what kind of world we live in years from now.” (J.F. Age 22), when asked about a company’s environmental sustainability, and if whether or not a company’s policies and procedures related to that would sway them one way or another to buy from them.

Once we were able to compare our data from our survey to our in-depth interviews, we were able to see there were similar trends in the responses. From both research methods, it was consistent that individuals are leaving their homes less often, and in the end utilizing their vehicles less frequently. This has an effect on Goodyear in the sense that their main product, tires are not being used as much, which then causes customers to not have the need to purchase from their company as often. COVID-19 has caused a trickle down effect, and Goodyear has begun to face those consequences. From both the survey and in-depth interviews, we got results that indicated customers hold a high importance on environmental sustainability, and are conscious of

the environment effects in our world today. These findings are important to relay back to Goodyear so they are 1) able to be aware of these situations, and 2) able to correlate these to our recommendations, next steps, and implementations we will continue to talk about throughout the report.

Conclusion

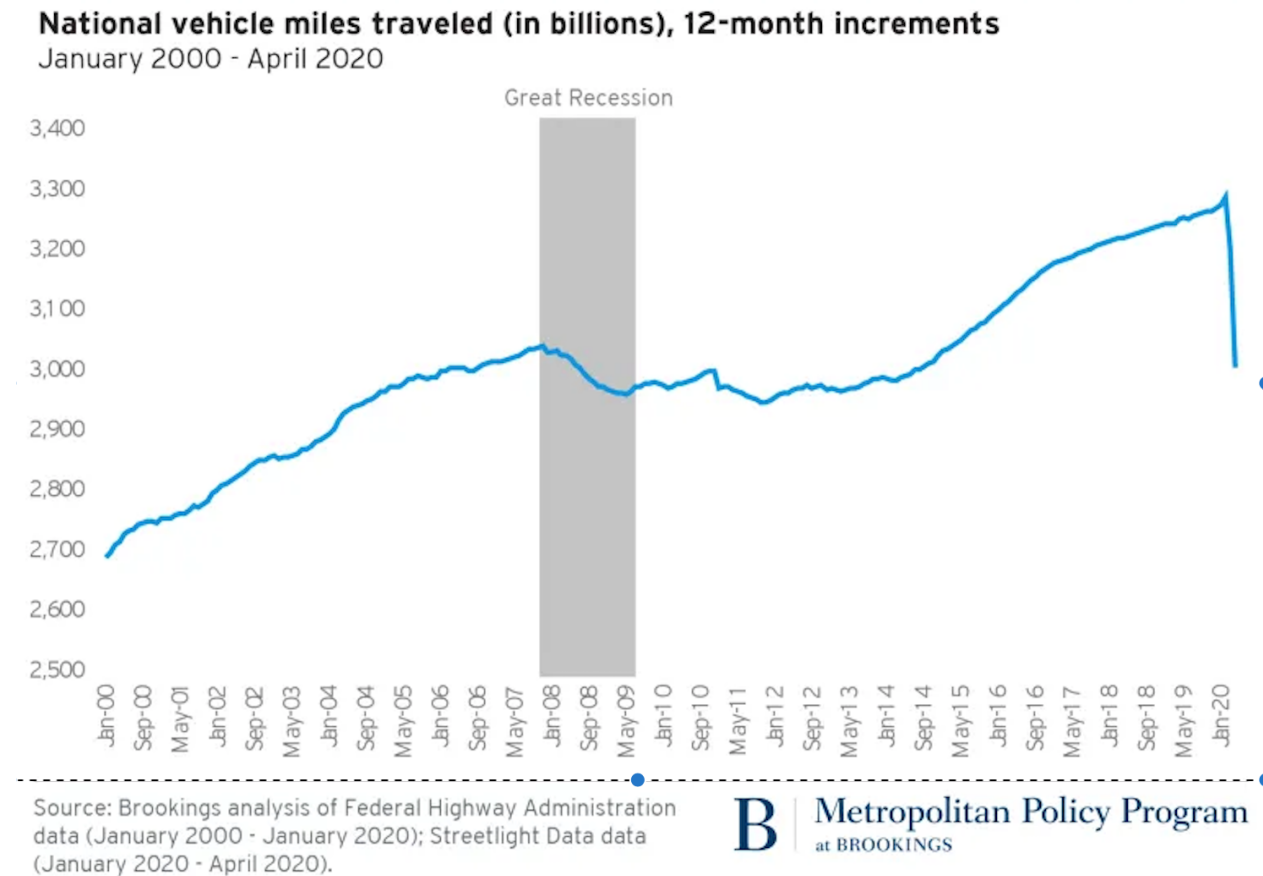
Last March the entire world was turned upside down due to the COVID-19 pandemic. Thousands of people were falling ill to a deadly virus at a historic rate. This pandemic affected nearly everyone. Students and educators had to adapt to classes being online. Millions of people worldwide had to work from their homes. The health care system was overwhelmed and nearly in shambles. Lastly, the business world was attacked in every way imaginable. The public had to learn and adjust on the fly.

The stock market crashed nearly immediately after the news of Americans testing positive for the virus. Many investors were very hesitant to invest their money into the market. In fact, many people pulled their money out of the stock market. There is one thing the stock market does not like and it is uncertainty. All different types of businesses had to adapt to these uncertain times. Restaurants had to execute takeout orders only for a handful of months. While, essential businesses like auto repair shops and child care services did not see as much business. Goodyear is considered an essential business due to the fact they have hundreds of auto repair shops all across the country.

Our team was tasked with determining whether an essential business like Goodyear should expand, pivot, or downsize their company due to the effects of a worldwide pandemic. My team members and I came to the conclusion that Goodyear should pivot and target convenience services. We conducted a survey that was intended to target employed individuals

who were affected by the deadly virus. Furthermore, we conducted 8 interviews with individuals from different locations and ages in an attempt to collect more data for our research.

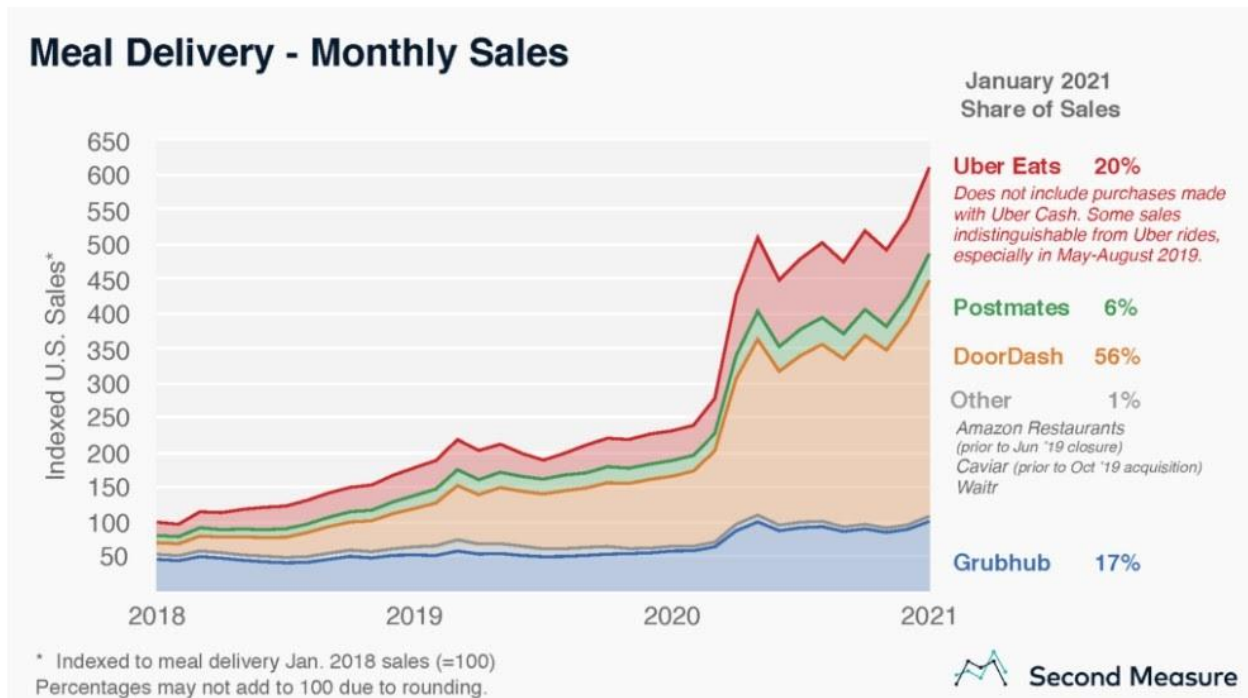
Based on the results from our survey and interviews, it was concluded that it would be in the best interest of Goodyear to pivot. When we analyzed and interpreted the data from the survey and interviews, it was very clear to us that millions of Americans did not drive their vehicles as much. A major factor was millions of Americans could attend school online. Furthermore, nearly everyone began working from home unless you were considered a frontline employee. This was clearly a major disadvantage to Goodyear for the obvious reasons. People no longer put as many miles on their vehicles. This resulted in fewer wear and tear on everyone's tires. There was very little demand for car repairs and routine maintenance like new tires.

Figure 12:

Retrieved from: Tomer, 2020

There are two sides to every coin. The average American may have reduced the amount of miles they put on their car. However, delivery and convenience services like Amazon, Uber Eats, and Doordash all gained serious traction. Many people are willing to pay a premium to have their clothing, groceries, and food delivered to their doors. We saw this as an opportunity for Goodyear to target this sector of the economy. Delivery service employees will require service on their vehicles much more often than the average American.

Figure 13:



Retrieved from: Philbrook, 2021

We are aware when the pandemic slowly dies down millions of people will return to driving their vehicles much more often. Resulting in an increase in the amount of services needed on vehicles. However, we believe that targeting delivery service companies would be an effective way to increase sales.

Recommendations

We have two recommendations that we would like Goodyear to consider. First, Goodyear may want to look into the possible benefits of targeting commercial and convenience service vehicles due to the influx of online purchasing behavior that has been a direct result of the COVID-19 pandemic. Secondly, Goodyear should entertain the idea of utilizing a more

environmentally friendly renewable resource for its tires because of the increase in environmental sustainability awareness.

Commercial & Convenience Services

What started out as a relatively small online book store has now turned into one of the largest, and arguably the most influential, e commerce and technology companies in the world (Brandt, 2012, 1). Amazon has gotten so large that it has been using its own trucks for delivery rather than relying on common postal services like UPS. It's gotten so large, in fact, that it hires individuals as independent contractors at times, who then use their personal vehicles to deliver packages.

Figure 14:



Retrieved from: (Kim & Su, 2019)

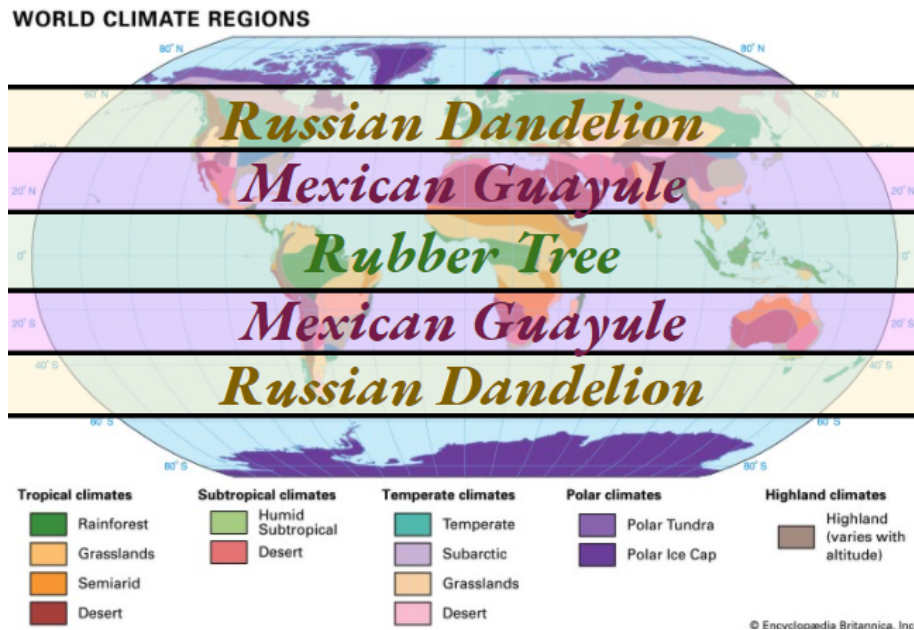
As *Figure 14* above shows, Amazon has been rapidly growing even before the pandemic struck. In just under ten years, Amazon has been able to garner eight times the revenue it earned

in 2010 (Kim & Su, 2019). It would certainly be beneficial for Goodyear if it were to team up with Amazon. One route that should be explored is signing a contract to be the sole company to perform maintenance on and provide tires for Amazon's trucks, both for delivery and transporting. If it does, it might possibly experience some of the growth in revenue.

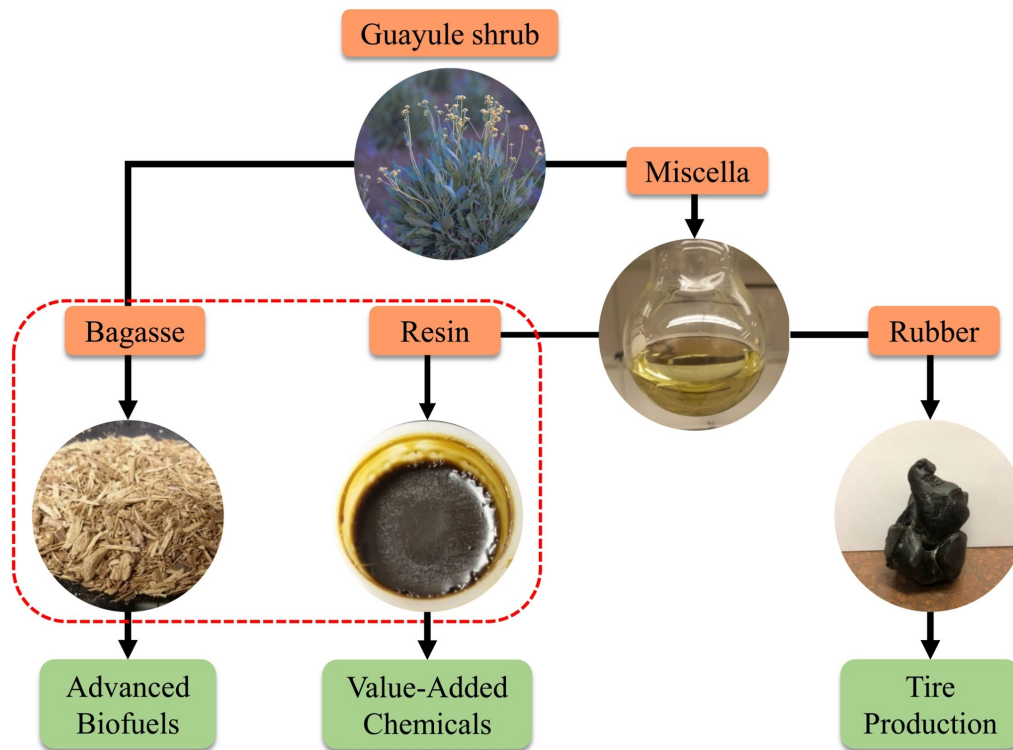
On a similar note, convenience services like Instacart, GrubHub, UberEats, and DoorDash also hire independent contractors to provide their services. Although, Goodyear may not need to sign a contract directly with these companies like it should with Amazon because none of them have a tangible inventory of cars or trucks. The independent contractors that they hire are responsible for providing their own means of transportation. That being said, Goodyear could provide some sort of discount—either on tires or on vehicle maintenance—to those independent contractors working for these companies to entice them to purchase from Goodyear as opposed to whichever other company they may have used in the past.

Renewable Resources

As stated on the Goodyear website, its tires are made of natural rubber derived from the rubber tree and, as we have previously mentioned, rubber trees take six to seven years before they can be harvested. That being said, it may be in Goodyear's best interest to look into using one of the alternative sources of natural rubber, the Mexican Guayule or the Russian Dandelion.

Figure 15:

Arguably the most beneficial feature of these two shrubs is that both of them can be grown in the United States. *Figure 15* above shows a rough estimate of where each type of rubber-bearing plant can be grown. The rubber tree can only be grown in tropical environments near the equator. The Mexican Guayule can be grown in the desert areas in the South and West of the United States, and the Russian dandelion can be grown in the North of the United States. This offers three advantages to Goodyear. First, there will be no import taxes on the natural rubber because it will be grown and produced in the United States. Likewise, Goodyear will not have to rely on Southeastern countries for its supply of natural rubber and will, in the event of rubber tree latex supplies being cut off, be completely unaffected. Last, but not least, many Americans are conscientious of what companies are producing products domestically rather than internationally. Goodyear will be able to advertise that the main ingredient of its tires are grown in the United States.

Figure 16:

Retrieved from: (Cheng et al., 2020)

Pictured in *Figure 16* above is a quick peek into how the Mexican Guayule is processed. Miscella is extracted from the plant and synthesized into the natural rubber that can be used in tire production. The two main byproducts of the extraction process are a resin that is considered a valuable chemical and bagasse that can be used to create advanced biofuels (Cheng et al., 2020). So not only will the Guayule save money for Goodyear in the long run, it will also provide useful byproducts that can be further processed or sold to other companies for a profit.

Although we cannot offer an exact estimate of how large of an investment must be made in order to fully convert from using the rubber tree to using one of these other alternatives, we believe the long term savings will make it worth it. Of course, further research can be done to ensure neither of these two plants are an invasive species that would eventually cause harm to the current environment. If that is not the case, they may be vital resources for Goodyear in the

future. We recommend that Goodyear direct its research and development department to begin investigating the plausibility in converting its source of natural rubber.

Implementations and Next Steps

As discussed earlier in the report, there has been an increase in the number of people who used convenience services from before COVID-19 to during peak quarantine time. Some people began purchasing items from Amazon, while others had dinner brought to their doors through delivery services like Doordash and Uber Eats. The Coronavirus pandemic has been difficult on everyone, however, it has created rare opportunities for people. Some invested in the stock market while stocks were at all time lows. In this situation, there is a major opportunity for Goodyear to take advantage of.

Goodyear should contact all delivery service providers like UberEats, and Doordash for example. They should provide their employees and the companies a small discount on products or services. For example, if you work for Doordash, you will receive 10% off a tire change or an oil change. This will encourage employees of delivery service companies to have their vehicles serviced by Goodyear. Attracting customers that need their vehicles serviced more often than the average person would be a major advantage. This would create foot traffic in a Goodyear store, which would make it more likely for someone to buy windshield wipers or fluids for their vehicles from Goodyear while waiting for their vehicles to be serviced.

Goodyear should target commercial trucking services, such as UPS and Amazon as well. Providing high quality tires and servicing all those trucks would generate a large amount of revenue. E-commerce is putting malls and stores out of business. Many people prefer shopping in the comfort of their homes, as opposed to driving to the store. With the increasing amount of

E-commerce purchases, there will be an increase in deliveries, thus resulting in more delivery trucks on the road. Goodyear should strongly consider reaching out to delivery service providers regarding an agreement to service all their vehicles. If Goodyear were to incorporate our top recommendations of targeting commercial and convenience services, and utilizing environmentally friendly renewable resources for their manufacturing, they will be well on their way to a competitive advantage in the market.

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