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## Honors Research Project Goodyear Business Suggestion

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# **Final Honors Research Paper**

## **Team Tire'd**

Seth Gwartz, Isabel Hartzler, Drew Hodgson, Heather Kriston, and Savannah Novak

### **Background**

The purpose of this paper is to provide suggestions for Goodyear to maintain a legacy of success in a changing market. However, before we get too deep into the ideas we have found through secondary research, we would like to tell you a little bit about Goodyear and how they came to be. Goodyear was founded in 1898 by Frank Seiberling when they began producing tires for bicycles and carriages as well as pads for horseshoes (MarketLine, 2020). They grew very rapidly and early in the 1910s they began their international expansion to Canada and the UK (2020). “By 1916, Goodyear was the world’s largest tire company and by 1926, the world’s largest rubber company” (2020). Today they are a global company that is recognized for being the third largest tire manufacturer in the world as well as the largest tire manufacturer in the United States (IN, 2020).

### **Goods and Services**

Goodyear is a multifaceted company that offers a range of products services. To fully understand how each segment has been affected and identify opportunities to pivot, downsize, or expand, it is crucial to look at the company from all angles. This will allow for a clear understanding of the many elements of the Goodyear company.

Goodyear is understandably known for their tires. Goodyear manufactures a wide variety of consumer tires as well as specialty tires. These specialty tires are used for aviation, commercial trucking, government vehicles, off-road, racing, and RVs. They also operate around 1,100 tire and auto service centers. These include traditional Goodyear service centers as well as JustTires service centers (Goodyear Corporate, 2020). In 2018, Goodyear introduced Roll to select markets in Maryland as a tire service that allows consumers to order tires online to be installed right at their home. (Roll by Goodyear, 2020) This year, Goodyear unveiled their AndGo fleet service, a “ fully integrated, digital vehicle servicing platform combining predictive software with our trusted national service network to keep passenger fleets on the road and ready to go”. (Goodyear, n.d., 4) Goodyear also operates Goodyear Chemical which supplies chemicals used in a range of products from tires to chewing gum.

Analysis of the segments of the Goodyear company has provided clarity of which sectors should be addressed. It is clear that there are many components to the Goodyear company which can be focused on in terms of pivoting, downsizing, or expansion. These segments will be referenced in the subsequent sections.

## **SWOT Analysis**

Now let’s look at the overall strengths and weaknesses of Goodyear as well as the opportunities and threats they face within their market. The analysis in Figure 1 was retrieved from their 2020 MarketLine Company Profile and gives a high-level view of some areas that they do well and others that they could improve in. MarketLine does an annual report of Goodyear so we were able to compare the SWOT analysis from the last five years. When analyzing the data from the last five years it was found that Goodyear has been very steady and

consistent over that period of time. This can be both a positive and a negative. There are strengths and weaknesses which are internal and under Goodyear’s control. Then there are opportunities and threats that are external and are based more heavily on market conditions. Consistency in terms of strengths and opportunities is what all businesses desire, however; when it comes to weaknesses, which are in our control, then consistency becomes a problem. This SWOT from MarketLine has been paired with our own research in hopes to create a more complete view of where Goodyear stands. The discussion will start with strengths and work through each of the remaining sections.

<p><b>Strength</b></p> <p>Strong market position and brand image Well-spread operational network Strong research and development capabilities strengthen competitiveness</p>	<p><b>Weakness</b></p> <p>Liquidity position</p>
<p><b>Opportunity</b></p> <p>Positive outlook for tires and rubber market Strategic initiatives Global automotive industry</p>	<p><b>Threat</b></p> <p>Stringent regulations Competitive pressures Foreign currency risks</p>

*Goodyear Tire & Rubber Company MarketLine Company Profile*

**Figure 1**

The main strengths highlighted here are Goodyear’s brand, network, and R&D. These stayed consistent from 2016 to 2020 with extra emphasis on R&D and new products in 2016. Goodyear has stood the test of time and through the years they have created loyalty and a brand that is well-known. They are always at the top of the market and they have diversified their tires to cover “automobiles, trucks, buses, aircraft, motorcycles, earthmoving and mining equipment, commercial and military aviation, and industrial equipment” (2020). The long list of markets they occupy along with the long list of brands that they distribute under allows them to span a

large area and reach those customers that they maybe couldn't with the Goodyear name alone. They also span a great distance of land as they serve the Americas, Asia Pacific, and the Europe, Middle East, and Africa with their 47 manufacturing facilities in 21 different countries (2020). Last but not least, their R&D has been a strong factor for success as they put funds toward new and improved products in order to stay relevant.

Next up is weaknesses. Liquidity has been a problem for Goodyear for quite some time now. They fall behind their biggest competitors in this area and although high liquidity doesn't always equate to success, it is beneficial to have some extra cash lying around. We have seen this to be true in this time of coronavirus when sales quickly dissipated, and Goodyear was forced to make the hard decision to shut down some of their plants (Goodyear, 2020). To make matters worse, industry experts say that when plants can reopen they will likely be forced to sell their tires at lower prices if they want to maintain volume of sales as they wait for the automotive industry to pick up again (Staff et al., 2020). Since there were few weaknesses in the MarketLine report we spent more time here in our own personal research. As we look for solutions for Goodyear it is imperative that we understand their weaknesses and areas that are needing improvement. Based on some of the information provided for the project, we considered whether a lack of agility in the changing market was a weakness. As we discussed earlier, we saw this play out in recent months when Goodyear had an overabundance of inventory, but no demand due to coronavirus and had to shut down plants. But the story didn't end there. As the market picked back up, they were in a good position with lots of inventory to sell while many of their competitors were struggling to keep up. However, their inventory didn't last long and soon they were missing out on sales because they couldn't ramp up production soon enough to meet the demand. As with most large corporations, the sheer size of Goodyear and the large number of

products that they offer provide a challenge in responding quickly. As these weaknesses are studied there is a clear connection. Goodyear must find a way to more accurately predict and respond to the market, otherwise they will continue with this lack of agility and their income will continue its volatile course leading to further issues with liquidity.

As you can see in Figure 1 the opportunities listed are a positive outlook for the tire and rubber market, strategic initiatives, and the global automotive industry. This is where secondary research gets a little more difficult. It is unclear whether these opportunities that were listed in May will ever come to fruition. Before we understood that coronavirus would have such a lasting impact on our economy things were looking like they would turn upward. Growth was predicted in the tire and rubber industry as well as the automotive industry. They were also looking forward to utilizing a newly purchased tire shop in Indiana as well as improvements to a plant in North Carolina. The new shop in Indiana with its many locations in the Midwest was a move Goodyear made in order to improve their ability to serve fleets (Wilson, 2019). Only time will tell whether these were opportunities or not.

The last section we have is threats. The main points that MarketLine brought out here were stringent relations, competitive pressures, and foreign currency risks (2020). There is a fear that as regulations become stricter for testing and monitoring tires, that the costs to produce each tire will increase creating further strain on Goodyear's slim budget. As in every market they have to worry about competition as well. MarketLine says, "Goodyear operates in a highly competitive industry. The company competes on the basis of product design, performance, price and terms, reputation, warranty terms, customer service and consumer convenience" (2020). They do all this while competing on a worldwide scale against other companies with more money to compete. This shows just how complex Goodyear's business is and shows the many

facets of the company that must be taken into account when providing recommendations. Through further research we found that competitors like Bridgestone are moving fast toward recurrent revenue models (service-only, subscriptions) and connected business models (acquisition of TomTom telematics). These are models that help with supply chain forecasting and lower the company's sensitivity to business cycles. This may lead into looking at similar acquisitions and the adoption of other business models.

Maximizing our strengths, minimizing our weaknesses, and figuring out ways to take the opportunities and become the threat in the tire industry is what this project is all about. Maybe we need to ramp up R&D to create more customer interest and boost funds. Maybe we need to scale back R&D funding and make sure our basic functions are being taken care of efficiently. Maybe we need to figure out which region brings in the most profit and invest more of our resources there. Or maybe there's a whole new market and business philosophy we need to explore. The possibilities are endless.

In terms of impacting the bottom line for the betterment of Goodyear, which is the whole point of the project, this part of the project focuses on the financial statements of Goodyear and their competitors. This will give Team Tire'd insight to accurately project the future state of Goodyear as a company, yet it will also give Goodyear insight on how the state of today has impacted their competitors. Have their competitors already pivoted, expanded, or downsized? How has it affected them? This part of the research aims to answer these questions in order to provide Goodyear with the most accurate and up to date information possible, so that they may be able to make a well-informed decision to help the longevity of their company.

## **Financial Analysis**

The first aspect of this research is to analyze the sales of Goodyear over the last five years. Team Tire'd looks to see the general trend of the company overall before they analyse the impact of the last 6 months due to Coronavirus. Team Tire'd hoped to find whether Goodyear was already on a downward trend or if they were trending positively. This will help the team determine if COVID-19 will be the nail in the coffin for Goodyear, or if this is just a bad storm that is hitting them currently. Goodyear is worried that with more people working from home, there will be less cars on the road, thus less tires being bought. A look at their financial statements will be key to help determine whether the lack of tires being bought is truly a COVID-19 issue, or if Goodyear will have their *final* year.

Looking at the historical trends of Goodyear in terms of annual Net Income, Goodyear over the last 5 years has produced a bottom line that is actually pretty fair. In 2015, their Net Income was \$307M, in 2016 it was \$1,264M, in 2017 it was \$346, in 2018 it was \$693, and most recently in 2019, it was (\$311)M (Goodyear, 2020). So before COVID-19, Goodyear already had a really rough year being in the red by a little over \$300M. That is not pocket change by any means. In order to get a better look at how they were performing in each quarter, Drew took a look at their quarterly net income. He wanted to see how they were underperforming in each of these quarters, dating back to late 2018 and early 2019, in order to gain more insight as to what was happening in this company before the knock-out-punch of COVID-19 sets in.

From October of 2019 to Year end 2019, Goodyear somehow managed to have Net Income just under \$100M in each of the prior two quarters, to -\$392M in the final quarter of 2019. That is extremely alarming. Even more so, Goodyear is on track in 2020 to have a net income in the billions at year end in 2020; the billions negative that is. The end of quarter one in 2020, Goodyear was (\$619)M. The end of quarter two, Goodyear was (\$696)M. Surprisingly

enough, at the end of quarter 3, Goodyear was only (\$2)M for their third quarter ending 09/30/2020. A look into why this change from extreme loss to minimal loss in just three months could give Team Tire'd insight as to what Goodyear has already done, and to move forward even more with those adjustments in order to save 2020's bottom line as much as possible.

A question to Goodyear in correspondence to Team Tire'd lead to some interesting insight: Goodyear went from (\$619,000,000) and (\$696,000,000) in quarterly net income for the first two quarters of 2020 to only (\$2,000,000) for the third quarter which ended on 09/30/2020.

To find out why Goodyear was performing in this way, Team Tire'd emailed the Goodyear team to get some answers:

To find more we asked questions in regards to whether they had any insight into why things improved. Furthermore, we wanted to be filled in on why these sprouting trends were coming into play. Did Goodyear do something, in particular, to improve the loss, or were consumers just buying tires again? Lastly, our team wanted to find out if this trend will continue in that direction.

The team at Goodyear responded swiftly. It seemed that most of it had to do with inventory. Goodyear had been accumulating up to \$3BB of tire inventory over the past few years, and had managed to ship it from their warehouses even though their plants stopped and demand kept up. This ultimately led to the greatest impact on their cash. The next point that was alluded to was that with high inventory, they were ready to serve some segments and markets that competition had zero inventory; therefore, Goodyear gained a momentaneous market share. Lastly, they had no expenses on travels worldwide. The Goodyear team thought it was worth mentioning that the yearly business cycles, when in Q1 traditionally with high raw materials stock, as in Q2, they do so with the finished product. To summarize, they stock up on

inventory in the first half of the year. This was all done to guarantee product supply in Q3 when historically there is a higher demand for tires worldwide (pre-winter in temperate climates and pre-monsoons in tropical regions). The lockdowns due to Covid-19 came when they were converting raw materials to finished products. Luckily, they were able to ship it plus excess inventory from the past years.

Evidently, Goodyear has been managing this crisis very well. Through regular experience and preparing for impact, Goodyear seems ready to handle what will be thrown their way in the next coming months. Team Tire'd is curious to find out what their net income will be at year end and going forward.

As part of Goodyear's response in Quarter 2 of 2020, they chose to reduce their salary expense by roughly \$65M (Goodyear Q2, 2020). This means layoffs for the company. Although it hurts the economy when people are laid off, this actually makes Goodyear more valuable in doing so. The extra capital saved by these layoffs instill more confidence in investors and raise stock prices. This is the ultimate goal. Although COVID-19 was in full force at this time, they were able to continue their manufacturing with no hiccups. Along with other steps needed to help take on the tidal wave that is COVID-19, they were able to refinance over \$2B in Credit, maturing notes. Through these actions, Goodyear was able to "dramatically reduce the financial impact of volume decline". In other words, they weathered the storm in Q2 by taking the necessary steps.

Next, the team has chosen to look at a similar presentation available to the public for their Quarter 3. This will give the group the insight on what adjustments Goodyear has made and analyze what has worked for them. As part of Goodyear's response in Quarter 3 of 2020, they looked to cost saving measures in the form of Cost of Goods Sold and accumulating raw

materials (Goodyear Q3, 2020). The biggest way they were able to get ahead, why by the plummeting prices of oil globally. Throughout the virus, oil prices have fallen to record lows, especially at the beginning. The reason this is so important to know is because Raw Materials make up 68% of Goodyears total Cost of Goods Sold, and oil is the key component in their Raw Materials. Their cost to produce directly follows the price of oil at a global level. With oil prices being so low, Goodyear was able to order more for less, stock a huge amount of inventory, and sell more of their inventory in a season with such high demand. These actions proved beneficial by absolutely clawing back to life their Net income from (\$696)M in Q2, to a mild (\$2)M in Q3 (Goodyear Q3, 2020). This trend points to nothing but a successful year end bottom line as they try to recoup some of their tremendous losses suffered from COVID-19.

The next part of this research has to do with Goodyear's competitors. Drew looked to analyze their performance in the years leading up to 2020. Also, he looked to see how the year 2020 has impacted them in a broad sense. Drew set out to research whether their quarterly earnings are as horrendous in 2020 as Goodyear, or if they have been able to weather the storm. Either way, he hopes to gain insight on what has been done within these companies that has led them to perform in that way. The competitors that are the main sources of this aspect are Goodyear's neighbor in Akron, Bridgestone, and secondly, Michelin. The reason for choosing these two companies is because we feel as though they have the next biggest presence in the tire industry behind Goodyear.

To start, Michelin has struggled in 2020 just as has Goodyear. In the first Quarter of 2020, Michelin saw a decline in sales by 8.3% (Michelin, 2020). To reiterate, this was only in Q1! This goes to show that it was not only Goodyear beginning to struggle, but the industry as a whole was certainly beginning to reel. Furthermore, in keeping with the theme of sales,

Michelin has seen a contestant decline of 15%; however, similar to Goodyear, their decline was a cool 5%, which points toward an upward trend in sales. As mentioned previously, this most likely has everything to do with the seasonality of sales in this industry. In a 9 month summary of COVID-19's impact on Michelin's tire industry, they showed the numbers through this graphic:

- **PASSENGER CAR AND LIGHT TRUCK TIRES**

<b>Nine months 2020/2019 (in number of tires)</b>	<b>EUROPE* INCLUDING CIS</b>	<b>EUROPE* EXCLUDING CIS</b>	<b>NORTH &amp; CENTRAL AMERICA</b>	<b>SOUTH AMERICA</b>	<b>ASIA (EXCLUDING INDIA)</b>	<b>AFRICA/ INDIA/ MIDDLE EAST</b>	<b>TOTAL</b>
Original Equipment	<b>-30%</b>	<b>-30%</b>	<b>-27%</b>	<b>-41%</b>	<b>-17%</b>	<b>-35%</b>	<b>-24%</b>
Replacement	<b>-15%</b>	<b>-15%</b>	<b>-13%</b>	<b>-25%</b>	<b>-13%</b>	<b>-17%</b>	<b>-15%</b>

<b>Third quarter 2020/2019 (in number of tires)</b>	<b>EUROPE* INCLUDING CIS</b>	<b>EUROPE* EXCLUDING CIS</b>	<b>NORTH &amp; CENTRAL AMERICA</b>	<b>SOUTH AMERICA</b>	<b>ASIA (EXCLUDING INDIA)</b>	<b>AFRICA/ INDIA/ MIDDLE EAST</b>	<b>TOTAL</b>
Original Equipment	<b>-11%</b>	<b>-10%</b>	<b>+0%</b>	<b>-22%</b>	<b>-3%</b>	<b>-18%</b>	<b>-6%</b>
Replacement	<b>-7%</b>	<b>-6%</b>	<b>+4%</b>	<b>-26%</b>	<b>-7%</b>	<b>-14%</b>	<b>-6%</b>

\* Including Turkey

**Figure 2**

It is clear that not every company has it all figured out yet. Goodyear has been the only company so far that seems to have braced quite hard for these impacts and are on the upward trend.

To see how Bridgestone has performed, Drew researched their yearly change in results of Q3 from 2019 to Q3 of 2020. Their Earnings Before Income Tax or EBIT is very low. The changes were so drastic that Bridgestone's EBIT in Quarter 3 of 2019 was over 200,000 Yen, which is roughly \$1,900, while Quarter 3 of 2020 was a meek 10,000 Yen, which is under \$100. After tax in 2019, Bridgestone was profitable (Bridgestone, 2020). That was not the case in

2020. There has not been much data on these other companies that have shown how they have braced for these challenges that COVID-19 has presented the tire industry. Luckily for Team Tire'd, they were able to be in communication with insiders at Goodyear so that they could gain better insight on the adjustments they've made in hopes to increase profits in the future.

It is evident that the tire industry has been hurt. Over the last nine months, these leading brands have been hit hard by this pandemic. We are not able to see exactly what exact adjustments these companies have made sitting here today; however, as researchers Team Tire'd is interested to find out in a year from now how these companies will perform.

### **Coronavirus Regulations**

The Coronavirus pandemic (COVID-19) has provided a vast amount of uncertainty globally. The landscape is constantly changing, forcing companies to adapt to government regulations and changes in consumer spending. State and local governments have each implemented their own cocktail of prevention protocols to stop the spread. Through analysis, it is evident that the contagious virus and widespread mandates have negatively impacted the tire industry.

The World Health Organization officially declared the COVID-19 outbreak a global pandemic on March 11, 2020 (Cucinotta & Vanelli, 2020). The United States had just approached 1,267 cases and 38 deaths due to the virus among 43 states (Rocha, 2020). Soon afterward, state and local governments began implementing safety guidelines. These ranged from social distancing measures to minimizing gatherings. In some states, schools closed, people were advised to work from home, and non-essential businesses were temporarily shut down. (Gupta et

al., 2020) These implementations all affected the mobility of consumers in the U.S. but perhaps most notably was the implementation of stay-at-home orders.

From the beginning of March to the end of May, 42 U.S. states and territories had implemented mandatory stay-at-home orders. (Moreland et al., 2020) These mandates ranged from affecting only certain counties or high-risk individuals to becoming mandatory for all. This had arguably the most significant impact on consumer mobility. A study conducted by the Centers for Disease Control and Prevention found that 97.6% of counties with mandatory stay-at-home orders had decreased median population movement after the implementation (Moreland et al., 2020). Some of this decrease in movement could also be attributed to factors such as increased media coverage as well or rising infection rates which Americans were experiencing at the time. However, of the concrete, quantifiable COVID-19 restrictions, the stay-at-home mandates were the most prevalent regarding consumer mobility.

It is quite clear that government restrictions have had a negative impact on consumer mobility. This reduction in mobility has affected how much time people spend driving and therefore their tire usage, something of great concern for Goodyear. This change in traffic is illustrated in Figure 2 with data collected from the US Department of Transportation Traffic Volume Reports (U.S. Department of Transportation Office of Highway Policy Information, 2020).

2020 Changes in Travel on all Roads and Streets in The U.S.		
Month	Percentage Decrease	Decrease in billion vehicle miles
March	-18.6%	-50.6
April	-39.8%	-112
May	-25.5%	-72.9
June	-13%	-36.5
July	-11.2%	-33.2
August	-12.3%	-35.3
September	-8.6%	-23.4

**Figure 3**

**U.S. Department of Transportation**

This data presented in Figure 3 compares averages in travel with data from the same month in 2019. This chart represents which months travel had increased or decreased and by how many billions of vehicle miles. Figures show that although overall mobility has decreased, it is in no correlation to the number of new Coronavirus cases in the United States. April of 2020 showed the most dramatic decrease representing 112 billion fewer vehicle miles traveled. The month of September recorded the most miles traveled within COVID-19’s pandemic status with only 233.4 billion fewer vehicles on the road (U.S. Department of Transportation Office of

Highway Policy Information, 2020). In the month of April, the United States had peaked at 34,699 new cases whereas the month of September's peak reported 47,568 new cases (The New York Times, 2020). This shows that while travel in the U.S. has decreased, it cannot be inferred that it is due to a rising number of cases. This difference in travel could refer to the government mandates discussed. In April, many states had implemented concrete stay-at-home mandates whereas, in September, guidelines and safety measures were only encouraged. Another factor may be the duration of the pandemic and thus the prolonged encouraged change of behavior.

Psychologists have studied the cognitive effects of this change of daily behavior and what many have termed "pandemic fatigue". As the pandemic has persisted, some government and health officials have encouraged staying at home, wearing masks, and distancing themselves from individuals outside the household. This combination of change of behavior in addition to prolonged length has contributed to widespread "pandemic fatigue". The British Medical Association published, "The concept of fatigue has been used to describe a presumed tendency for people naturally to become tired of the rules and guidance they should follow to prevent the spread of COVID-19." (Michie et al., 2020) This fatigue likely contributes to the increased likelihood of a consumer to stop limiting their travel. Consumers have been eager to travel, but with restrictions in place, this was not a reality.

The restrictions kept many American's from travelling, leaving many eager to travel once mandates were removed. Mintel's report on the effects of COVID-19 on the travel industry reported that 35% of survey respondents were ready to travel as soon as shelter-in-place restrictions were lifted. In addition, "a total two thirds [were] ready to travel by car before a vaccine is available." (Gallinari, 2020, 38) This data reinforces that consumers are considerably

influenced by government restrictions but are not significantly opposed to traveling during the pandemic in the comfort of their own car.

However, although stay-at-home mandates have proven to be effective in limiting travel, and the discussion of pandemic fatigue and eagerness to travel encouraged the notion of consumers ready to travel, it is essential to consider the overall shift in the movement of consumers. Figure 3 illustrated that consumers limited their movement without the use of government restrictions and before it was estimated that the population was experiencing effects of pandemic fatigue. While there have been significant decreases in mobility connected to stay-at-home orders, it is apparent that overall mobility has also decreased significantly since March. This illustrates that even with limited government regulations, consumers are choosing to travel less (Gupta et al. 2020). This will have a significant impact on the tire industry and thus Goodyear as well.

### **Tire Usage**

Through the examination of government regulations and behaviors of consumers, it is evident that the COVID-19 pandemic has negatively affected the tire industry. The monthly decrease in billions of miles traveled illustrated how direct this impact is. The revenue of the tire industry is estimated to see a 10% decrease in revenue for 2020 and demand for passenger tires is expected to decrease dramatically (Crompton, 2020). This decrease in travel as a result of the COVID-19 pandemic has had a significant impact on the tire industry as a whole. This is important to analyze and attempt to quantify while addressing Goodyear's response.

Tire usage has dramatically decreased by billions of vehicle miles since March. In Mintel's 2019 US Report on Tires, Keshishian reports:

“Intel data found that 72% of consumers have made their most recent tire purchase within the past three years. Generally speaking, tires last anywhere from 30,000- 40,000 miles and according to the US Department of Transportation Federal Highway Administration, consumers drive 13,746 miles per year”. (Keshishian, 2019, 24)

According to these statistics, tires would need to be replaced on a three-year basis. This is especially relevant to the discussion of consumers driving fewer miles. The Department of Transportation has estimated a decrease by billions of miles for the year 2020. Because people are traveling less, 3% of drivers have completely stopped using one of the vehicles in their household (Timmons, 2020). With the estimate of 279.6 million vehicles on the road at the end of 2019 (Miller, 2020), roughly 8.4 million vehicles have been garaged due to decreased driving. Not only are vehicles in usage experiencing less wear, but millions of vehicles are not being used and neither are their tires. When considering that consumers typically purchase tires based on the age or wear of their tires (Kalsher et al., 2005), this is particularly significant.

Upon review, it is clear the tire industry has been negatively impacted by the COVID-19 pandemic. As consumer tire usage has dramatically decreased, and consumers have completely removed some of their tires from the roads, this pandemic will have lasting effects on the tire industry. This drop in tire usage will also affect how consumers are purchasing tires.

### **Buyer Behavior in the Consumer Tire Market Pre-Pandemic**

The dramatic shift in the driving habits of consumers will have lasting effects on their tire buying behavior. Consumer tires need to be replaced regularly to maintain efficacy and safety but sometimes their lifespan's are over exaggerated (Kalsher et al., 2005). This inconsistency between consumer beliefs and tire recommendations will be analyzed in relation to driving

habits. This will gauge the long-term effects limited driving will have on consumer's purchasing decisions.

Tires are rarely at the forefront of the consumers' mindset, even while driving. In fact, only 25% of drivers reported thinking about their tires without an issue being present (Bartlett, 2019). There are deviations in consumer's motivation to purchase tires. In a survey conducted by Consumer Reports, 48% of respondents concluded that age was their primary motivation for buying tires while 46% concluded that tire wear was the most important factor (Bartlett, 2019). Both of these factors show tire purchasing is based upon necessity. Consumers may be more likely to choose which tires they will purchase based upon incentives, but the purchasing decision of the product itself is need-based. These factors are crucial in determining how consumers purchase tires.

It is estimated that the average driver needs to replace their tires every three years based upon driving estimates recommended by the US Department of Transportation Federal Highway Administration (Keshishian, 2019, 24). However, some consumers have overestimated their tire's lifespan by as much as seven years (Kalsher et al., 2005). This suggests that there is a disconnect in the perceived and actual product life. Although data shows that knowledge of tires increases with age (Keishishian, 2019, 25), a considerable amount of consumers do not have an accurate perception of when they need to buy tires.

Tire buying motivation is often need based but the purchasing decision can be influenced from factors such as trust, brand equity, price incentives. Approximately 40% of consumers do not know what brand of tire is on the car they most frequently drive (Keshishian, 2019, 24) but that does not make them any less involved in the purchasing decision. In fact, 88% of consumers

research tires before making their purchase decision (Bartlett, 2019). This includes conducting their own research online or consulting those they consider experts such as mechanics or dealers. This dependency on experts for product recommendations, encourages consumers to purchase tires in-person at a retailer they trust. This resulted in 64% of drivers buying tires at retail locations known for selling tires and citing “trusted the retailer” as the reason for purchasing tires from that retailer (Keshishian, 2019, 26, 30). Although trust is a major factor in tire purchasing, there is little distinction among which tire retailers are considered more trustworthy and these consumers do not stay loyal to the brand.

Consumers also build trust in tire brands. Mintel’s 2019 report on the tires explains, “Roughly two thirds of consumers believe that not all tire brands are equal.” (Keshishian, 2019). Findings also suggest that younger consumers are less likely to believe that brands make a difference. However, this statistic suggests that brand equity is important within the industry. Consumers are more likely to purchase tires from brands in which they are familiar and those they trust.

Tire purchases are also influenced by price incentives. Over two-thirds of consumers agree that price incentives would influence their purchasing decision. (Keshishian, 2019, 32). Although consumers place an emphasis on the brand of tire, the influence of price incentives shows room for movement between tire brands. This offers opportunities for brands to expand their current customer base.

Discussion of the need-based motivation behind tire purchases and the factors that can influence the purchasing decision allowed for a uniform understanding of how processes occur. This examination of the buyer behavior process in the consumer tire segment before the

pandemic will allow for comparisons to be drawn as changes in consumer shopping and driving habits are explored. The goal of this section was to create an accurate baseline as following research suggests ways in which these processes have or have been predicted to change.

### **Consumer Data**

The coronavirus (COVID-19) has certainly impacted nearly every aspect of life. This has caused a change in most people's habits and routines; some people have felt a larger change to their habits than others. A large number of people are not leaving the house as often as they did before the pandemic. This has affected driving habits and transportation trends as a whole.

The pandemic has affected where people have traveled in 2020. Analysis of data from Google Maps (2020) show workplace travel is down an average of 29.4% overall this year. April and May saw the largest decline of workplace travel at a decrease of 46.17% and 36.77% respectively. This makes sense as a lot of businesses and schools had to respond to the requirements set forth by local, state, and national governments at the beginning of the pandemic. This includes guidance that only essential workers continue working in person. Everyone that was able to move to working remotely was highly encouraged to do so. This is why there is a sharp decrease from March to April as this is when many shelter in place orders were instated. There has been an increase in workplace travel since April, but it is still down overall by a significant amount. Travel to recreational and retail sectors is down an overall average of 18.6% in 2020 with a peak decline of 41.43% in April and 27.13% in May. Again, this follows in line with the point that nonessential businesses were shut down. This includes places such as gyms, movie theaters, and stores that did not sell essential goods (such as apparel retail stores).

Due to risks of contracting or spreading the coronavirus, consumers have started to shift how they shop during the pandemic. McKinsey found many stores have seen a significant increase in their online sales activity as consumers are less willing to travel to as many places physically (Charm, et al 2020). Just like the medium of shopping is changing during COVID-19, the amounts customers spend has also changed. While online sales have seen an increase, overall store sales has decreased as people are spending less money overall. This is a reflection of the current economic recession. Digital sales are expected to be higher than they were before COVID-19 due to the shift in consumer behaviour. Levels may fall once the immediate threat of COVID-19 is gone, but there is overall growth expected. The online shopping demographic is not spread evenly. The two groups that show the largest switch to online shopping are millennials and those who have an income of over \$100,000. These two areas show the most overall growth. This, however, is not to say that other groups are not also experiencing growth of online shopping. Gen X has seen some increase across many categories, but not nearly as to the degree of the millennials. Similarly, Gen Z has seen an increase in online sales, but their spikes are not across every category. The online shopping categories which have increased the most for Gen Z include food delivery, at-home entertainment, footwear, and apparel.

The food delivery services in particular are interesting. Third-party delivery services have been around for a few years and have slowly been growing. The pandemic has made them quickly gain popularity among the general public. According to the article *Online Grocery Sales up 90%* between the week of March 2<sup>nd</sup> and May 1<sup>st</sup>, “online grocery sales have increased by 90% while overall food delivery sales have increased by 51%” (Edison, 2020 para . 1). The increase was seen immediately after the national emergency was declared as delivery and pick up for groceries doubled from the previous week. Two of the biggest third party food delivery

services are DoorDash and Instacart. DoorDash is generally for food delivery from restaurants and fast food, but have recently added some convenience and grocery stores. According to *U.S. On-Demand Food Delivery Sales Report* their sales have increased and so has their market share. In 2020, DoorDash has a market share of 45% (Edison Trends, 2020). With many restaurants forced to stop or limit dining in options, companies have turned to third party delivery apps such as DoorDash to help drive more business. Instacart is generally for delivery from grocery and other retail stores. In April of 2020, Instacart had its first month of profit, which was \$10 million (Curry, 2020). This pushed the company past its goals for 2022. There are more people using services like these during the pandemic and could keep up the growth after the pandemic.

### **Freight Trucking Industry**

As the team began brainstorming ideas for ways that Goodyear could pivot its current business style, the question about who their main customers were came to mind. Goodyear is in its current situation due to less people driving. This results in less tires being purchased. But these consumers are your everyday person. They drive cars to do chores, go to work, or pick up the kids. What if there was another major industry that relies on driving every day? This is what led us to pursue research within the trucking industry.

The thought is that instead of focusing on selling car tires to an everyday person, Goodyear could shift its focus towards selling to truckers who drive for a living. The following research will shed light on the freight trucking industries and provide insight on whether it would be a good idea for Goodyear to focus their business on this industry.

The freight trucking industry consists of the use of road transportation, by light trucks or semi-trailers, to move goods across overland routes. (Mazareanu, E. 2020) These shipments can

include many things such as electronics, food, machinery, or building materials. If anything in the United States needs to be moved to a secondary location, it is typically done through the freight trucking industry.

The freight trucking industry will be separated into two separate categories. The first of which being local freight trucking in the U.S. Local freight trucking typically consists of general trucking services over short distances. They handle many different commodities, which are typically transported in trailers or containers. This type of trucking is mainly done in cities or towns. The typical trip can be done within a day. (Local, Cook, 2020)

The local freight trucking industry is quite large. It has a revenue of about \$42.3 billion, with a profit of about \$1.9 billion. This industry has taken a slight hit in the past 5 years. It has a 1.6% annual growth decrease in revenue between 2015 and 2020. The profit has also had a decrease of 9.4% between 2015 and 2020. With that being said, the industry's revenue is expected to grow by 3.4% between 2020 and 2025. (Local, Cook, 2020)

The second part of the freight industry is the long-distance freight trucking in the U.S. This varies from local by both the distance of travel, as well as what is being shipped. These shipments carry various things and are typically packed for efficiency. These trips span across many different states and regions in the U.S. They can take days to complete the entire trip. (Long-Distance, Cook, 2020)

This industry is much larger than the local freight trucking. It has a revenue of about \$181.5 billion and a profit of about \$10.2 billion. It has had a decrease of 1.4% in revenue between 2015 and 2020. It has also had a decrease of 0.3% in profit between 2015 and 2020. Revenue is expected to grow by 4.0% in the next five years. (Long-Distance, Cook, 2020)

Now that the financial statistics have been looked at, it is time to look at external factors that will have an impact on these industries. The freight transportation services index keeps track of the annual output from the transportation and warehousing sector. It is said that when the economy grows, consumers spend more, and commercial activities increase, the demand for good transportation will also increase. However, the index is expected to decline in 2020. This prediction is for both local and long-distance. (Local, Cook, 2020)

There is also another huge factor that has taken over the world. This factor is coronavirus (COVID-19). Coronavirus is impacting the freight trucking industry in many ways. The first is the impact on the industrial production index. Industrial production is expected to decline due to COVID-19. This in turn results in less demand for the trucking industry. Along with the decline in industrial production, COVID-19 is also impacting consumer spending. An increase in consumer spending increases the demand for trucking. Consumer spending is expected to fall and is causing a threat to the freight trucking industry. (Local, Cook, 2020)

The last question that must be asked is what does the long-term outcome look like for this industry? The answer is mainly positive. Despite all the research previously stated, the freight trucking industry is expected to keep going and even grow. The economy is expected to bounce back from the impacts of COVID-19. This will result in more manufacturing activity and more retail spending. This will lead to higher freight volumes around the U.S. (Local, Cook, 2020)

The freight trucking industry could have a lot of potential. Goodyear at its core sells tires. The freight trucking industry relies on tires. It was estimated that there were more than 3.5 million truckers in the U.S. in 2017. (Bureau, 2019) This makes it one of the largest occupations in the U.S. It is estimated that there are about 2 million semi-trucks in use in the U.S. (Truck

Stats) There are typically 10 tires on an actual semi, and 8 tires on a typical trailer. This leads to 18 tires needed in total. (Semi-Trailer) This means that there are about 36 million tires being used in the freight trucking industry. It may be a possible option for Goodyear to focus their tires sales towards the freight trucking industry.

### **Remote Jobs and Unemployment**

There were many recommendations put in place due to the coronavirus pandemic in order to try to slow the spread of the virus. Two main recommendations were to wear face coverings and to stay at least six feet away from people. In March and April, many states put shelter-in-place orders into effect, which meant that people were not supposed to leave their house except for either necessary activities, such as going to the grocery store or to the hospital, or a job that was deemed essential. Due to the new guidelines and the shelter-in-place orders, many businesses were affected. This meant they had to change procedures, scale back operations, close in person activity where possible, and sometimes close completely. Because of this, many people lost their jobs. Some were temporary losses while others were permanent. Of those who did not lose their jobs, many were forced to work remotely.

In April, 52% of the working population was working somewhere with very few to no employees working on site. As the pandemic has progressed, it has decreased to 32% of the population in September working somewhere with very few to no employees on site (Brenan, 2020). While this number is not as large as it was at the beginning of the pandemic, it is still a significant portion of the population. It means approximately 1 in every 3 people is not going to their place of work.

The Bureau of Labor Statistics recorded April’s unemployment rate at 14.7%. This is significant because this is not only the highest unemployment rate ever recorded in the history of the data, which goes back to January of 1948, but it is also the largest increase in one month. (U.S. Bureau of Labor Statistics, 2020). The Bureau of Labor Statistics also published datasets on unemployment and remote work for the months of May 2020 through October 2020. The datasets break the unemployment and remote work down by various categories some of which are age, industry, and occupation. As mentioned above, there was a significant number of people who were unemployed towards the beginning of the pandemic peaking at 14.7% in April. The data in Figure 4 show that the unemployment rate steadily decreased over the 6 month time period, starting in May. A large number of the unemployment appears to just be temporary. This makes sense because many states and cities started to relax their COVID-19 related restrictions and “open” back up.

(Numbers Shown in Thousands)						
	May	June	July	August	September	October
Number of People Unemployed	20,514	18,072	16,882	13,742	12,277	10,620
Unemployment Rate	13.3%	11.1%	10.2%	8.4%	7.9%	6.9%

**Figure 4**

Similarly, the number of people working remotely at the beginning of the pandemic was high and decreased over time. In May, there were 137,466,000 people who were reported to be employed in America who were aged 16 or older (U.S. Bureau of Labor Statistics, 2020). Of those who were employed, 48,703,000 (35.4% of the employed population) were reported to be working remotely specifically due to the pandemic. In October, the last month in the dataset, the number of people who were reported to be employed increased to 150,433,000. The number of

those working remotely specifically because of the pandemic was 31,954,000, or 21.2% of the employed population. These particular percentages differ from the numbers from Brennan because those numbers were everyone working remotely or with few people on site, whether related to COVID-19 or not while the Bureau of Labor Statistics reported only remote work specifically due to coronavirus.

The datasets from the Bureau of Labor Statistics had five main categories of occupations: management, professional, and related occupations; service occupations; sales and office occupations; natural resources, construction, and maintenance occupations; and production, transportation, and material moving occupations (U.S. Bureau of Labor Statistics, 2020). Of these five main categories, only the management, professional, and related occupations and the sales and office occupations jobs showed a large increase in remote work. Management, professional, and related occupations had the largest number of people working remotely with 57.4% (35,786,000 people) in May and 38.1% (24,132,000 people) in October. Sales and office occupations had 35.2% (9,487,000 people) working remotely in May and 19.8% (6,044,000 people) working remotely in October. The other three main categories are not as conducive to remote working as these two are.

There were around 13 categories for industry. The four categories which consistently showed the largest percentage of people working remotely were education, information, financial activities, and professional and business industries. Education had a large percentage of people working remotely in May due to many schools across the country going virtual in a rush. Schools were some of the first places to be shut down physically in mass. At the peak in May, 76.3% of education workers, 61.0% of information workers, 60.1% of financial activities workers, and 50.9% of professional and business workers were remote. In October, the percentages were

38.2% for education, 41.7% for information, 42.3% for financial activities, and 36.3% for professional and business. Education saw the greatest decrease out of these four presumably due to schools trying to have school in person and putting precautions in place. The agricultural, construction, and leisure and hospitality categories saw the smallest percentage of people working remotely while wholesale and retail and transportation and utilities also saw a small percentage of people working remotely. This makes sense as it is very hard to operate remotely in these industries.

### **Primary Research Introduction**

After reviewing all of the secondary research, it is important to take those results and dive deeper into them. This is done through primary research. Primary research is any research that we do by ourselves. This allows us to get research that is focused directly on the information we need. This becomes extremely valuable because we are able to answer questions we had, learn more about the target market, and allow us to make informed decisions on recommendations.

### **Primary Research**

Our primary research is going to be conducted in two different ways. A survey and in-depth interviews. These ways of research both have their own benefits. Surveys allow us to focus directly on a target market. They also allow us to get many results in a short period of time. Surveys primarily consist of questions that get a straightforward response. This allows the data to be easily analysed. In-depth interviews are a bit different. They are only used for a small amount of people. The main importance of in-depth interviews is that it allows for a discussion where you can talk about more details of the questions. Both of these primary research methods are

valuable in their own way. These methods will be able to provide us with the information needed to provide valuable recommendations.

## **Survey**

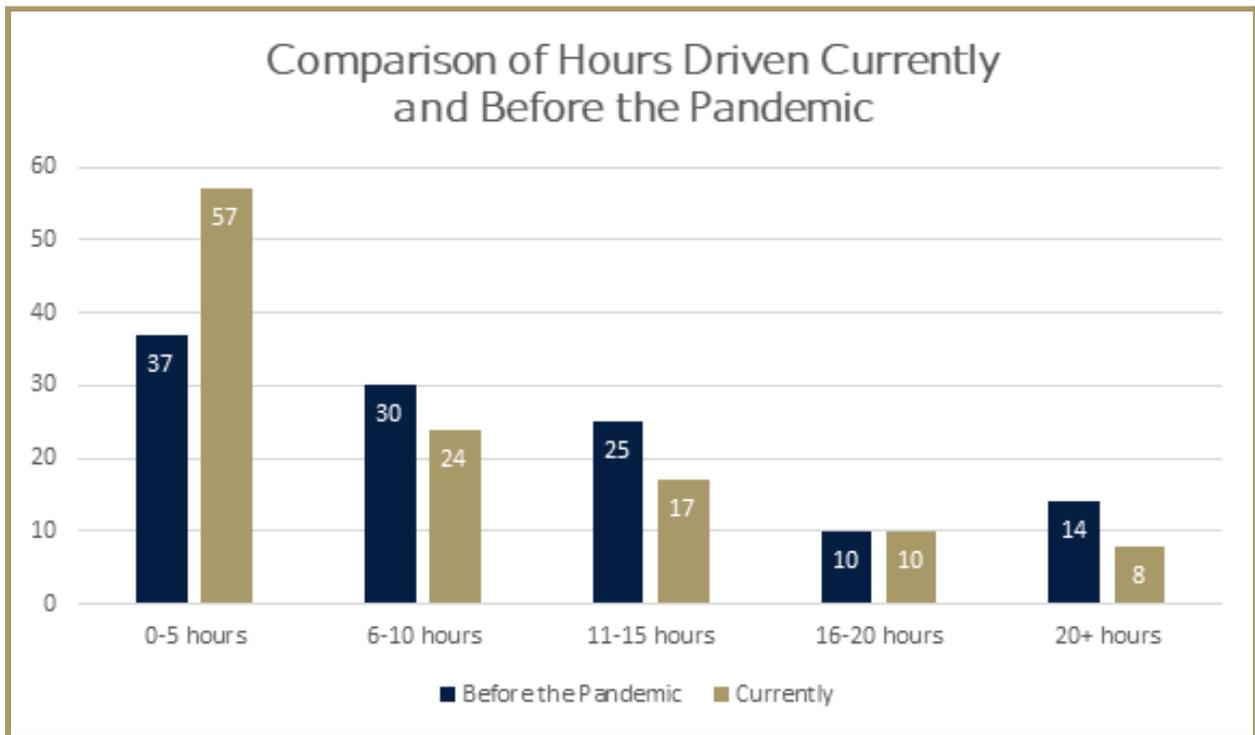
### ***Introduction and Target Audience***

The first step to our primary research was to survey the general public to get a sense of their thoughts. While there may have been published data on this topic already, we felt it was important to take our own sample. This is because the situation regarding COVID-19 changes so quickly that data quickly becomes less relevant. We also took our sample during a time where many people were able to start getting a COVID-19 vaccine, so we felt that data taken previously might not fully represent what was currently happening. We wanted to ask the public about their habits regarding four key areas: driving behavior, work behavior, purchasing behavior, and tire purchasing. We used our secondary research to help us choose areas to focus our survey on. We took into account the results from this to help us make recommendations. The target demographic for this survey was adults between the ages of 25 and 55 who are employed and living in the United States. We chose this group of people because we felt they would most likely be commuters who are in the market for tires. Our goal was to choose people in the target market for Goodyear. We chose age 25 to 55 because that is the group of people who are in the prime working age group. We also focused on those living in America because our target was to focus on the domestic market. We had 116 responses from our survey that we analyzed.

### ***Driving Behavior***

The first section of our survey contained five questions that had to do with driving behavior. This included questions about whether driving habits had changed due to COVID-19,

how many hours they drove before and during COVID-19 and how they predict those hours will change in the future. We wanted to get a general sense of whether each person felt their driving had changed and to what extent. In our first question, we found that 43% agreed their driving habits had changed since the start of the pandemic. In our second and third question we asked the survey respondents to quantify the number of hours they drove in a typical week before the pandemic, and then how many hours they were driving during the pandemic. Before the pandemic our data shows that 68% of our sample drove six or more hours during the week. Due to COVID-19 that number dropped by 17% and 20 more people joined the group that was driving 0-5 hours. As you can see in Figure (5), there was a clear decrease in hours driven. Each of the higher categories dropped, and our lowest category of 0-5 hours grew.

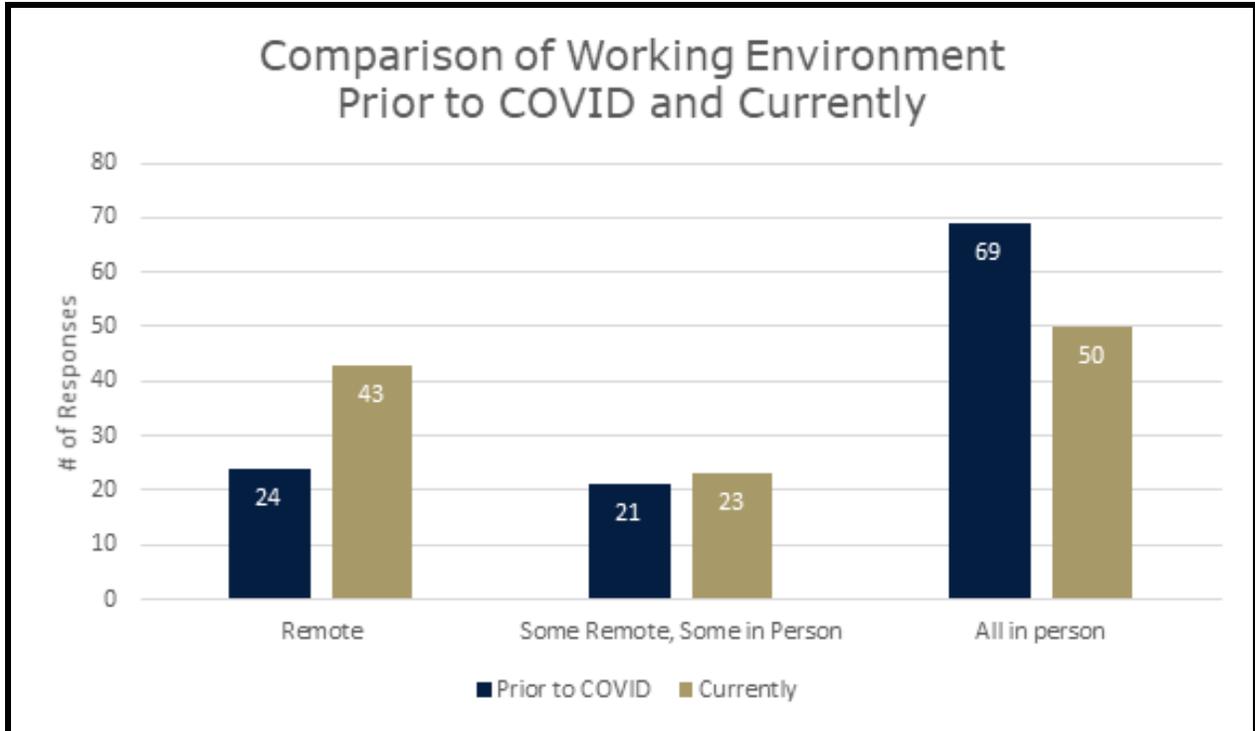


**Figure 5**

In our next question we asked the respondents to agree or disagree with the statement, “I am likely to increase the hours I drive in the next 12 months”. 42% somewhat agreed or strongly agreed with the statement while 35% were unsure and didn’t agree or disagree with the statement. This was an interesting result when paired with our last question in which we asked, “how many additional hours do you predict you will drive in a typical week in the next 12 months”. While we had only 42% agree that their driving would increase in the next 12 months, 50% of respondents predicted that their driving in the next 12 months would increase by at least six additional hours. This gave us hope that the tire market would begin to pick up again as people were predicting more driving in the future.

### ***Work Behavior***

The next section of our survey concerned topics related to work behaviour. The questions included on the survey asked the respondents about their current work environment. The goal was to get a sense of whether people were working in person or remote. There were three questions related to this section. The data regarding the first two questions are shown in Figure 6.

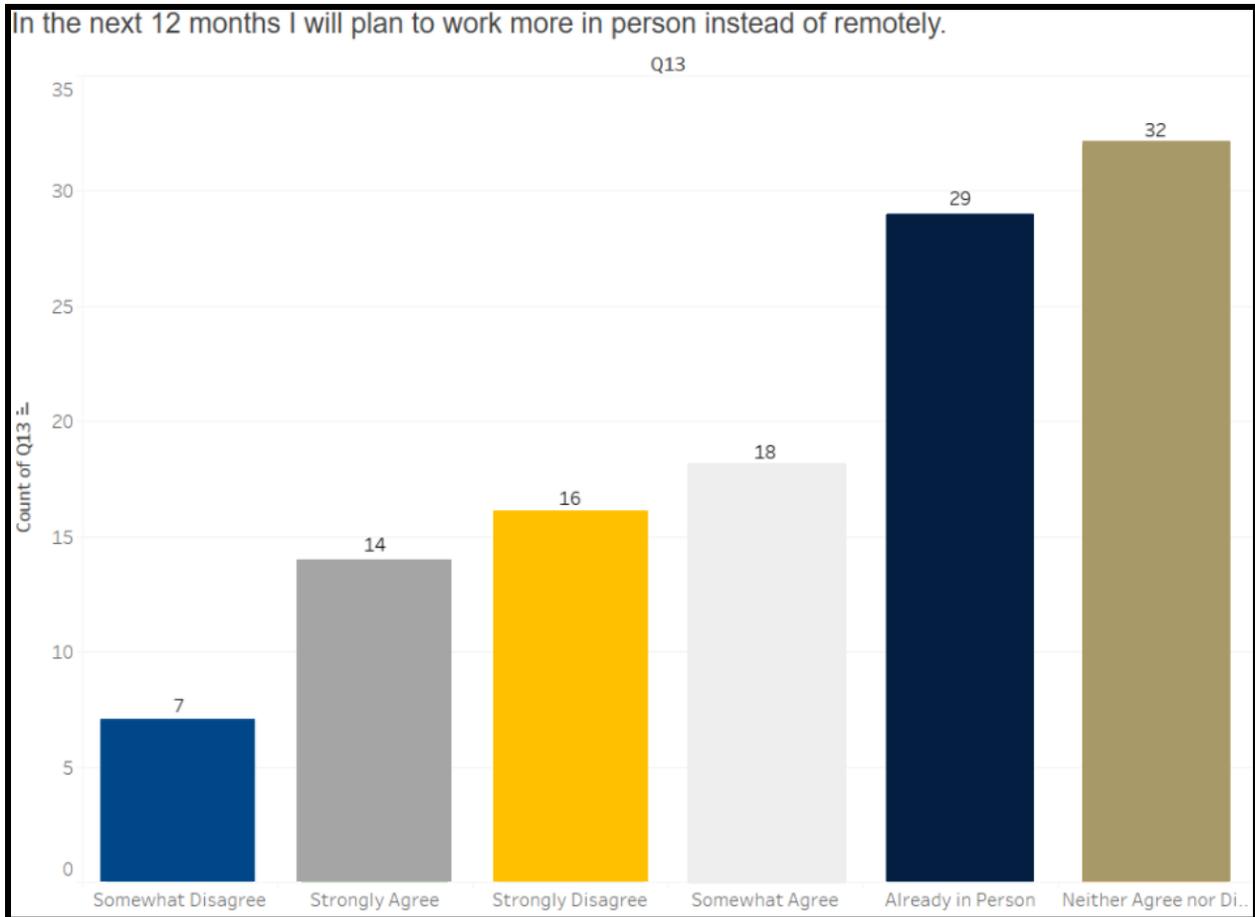


**Figure 6**

The first question asked the respondents about whether they worked in person, remote, or hybrid before COVID-19. Before COVID-19, 69 people said they were working fully in person. This is 61% of the sample. We had 24 people say they worked fully remote, which was 21% of the sample. There were 21 respondents who said they were working partially in person and partially remote, which made up the final 18% of the sample. The next question asked the respondents about their current work environment- whether it was in person, remote, or hybrid. Out of the sample, 50 said they were working fully in person, which is 43% of the sample size. This is down a significant percent from pre-COVID-19, but it is up from the percent who were working in person in April 2020. In contrast, the number of remote workers has increased as there were 43 people who responded saying they were fully remote. This is 37% of the population. The final 23 people said they were hybrid, which is 20% of the sample. Remote and

hybrid work environments are higher in 2021 than they were in 2020, but there has been a trend towards going back in person. This can be seen through the next question.

The final question regarding work behaviour asked how likely the respondents felt they would be working in person over the next 12 months. The results are in Figure (7). There were 29 people who responded that they were already in person, which was 25% of the sample. A number of people felt they would be working in person over the next 12 months. Out of the sample, 32 said they felt they would likely return to work in person, which is 27.5% of the sample. On the other hand, there were also a number of people who did not feel they would return to in person work. There were 23 people who felt this way, which makes up 20% of the sample. Finally, there were people who were not sure whether they would return to work in person or not. There were 32 people who fall into this category, which makes up 27.5%. Overall, it seems people are either in person or feel like they might return soon.



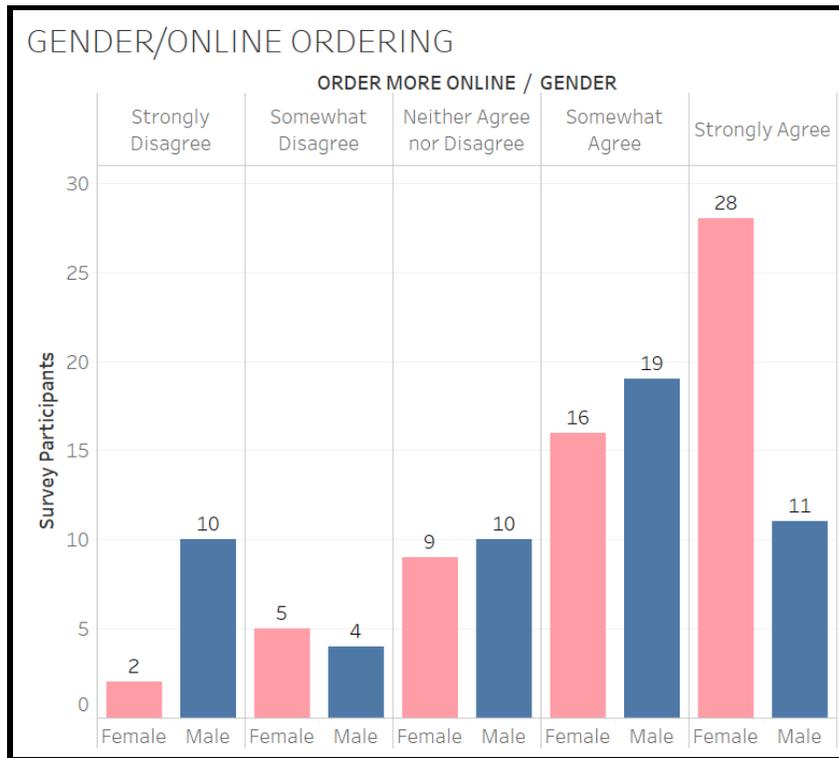
**Figure 7**

***Purchasing Behavior***

It was also important that our survey look at general, consumer purchasing behavior. This section of our survey primarily focused on online purchasing habits of consumers and if consumers felt their current shopping habits were to remain consistent after the pandemic. This aimed to provide insight on how consumers were currently shopping and if they were likely to continue. Much of our secondary research found an increase in online shopping since the pandemic (Charm, et al 2020). As our secondary research had suggested, our survey also found an increase in online purchasing. Of our total sample, 65% respondents agreed that since the

pandemic, they have ordered more online. To look for trends in purchasing behavior, this data was then analyzed by participant demographics.

Our demographic findings found that 73% of women reported ordering more online (somewhat or strongly agreed to ordering more online) in comparison to 56% of men Figure (8). This analysis also found that 42% of women believed they would continue their current shopping habits and only 25% believed that it wouldn't (33% neither agree nor disagree that it would continue). With a distinct majority agreeing their habits will continue, and a distinct minority disagreeing, we believe this is a trend in which recommendations could be based.



**Figure 8**

Analysis of the demographics also presented findings within age brackets. This was a challenge because our data was skewed towards younger demographics with the youngest age

group receiving as much as five times as many responses as the eldest. However, we were still able to find a trend within our sample. Referring to (9), our findings showed a trend that as age increased, consumers were more likely to order more online. This contrasted our secondary research findings that Gen Z and Millennial age groups were more likely to shop online (Charm, et al 2020). These demographic analyses gave insight into potentially targeting markets currently being missed by the Goodyear Tire Company.

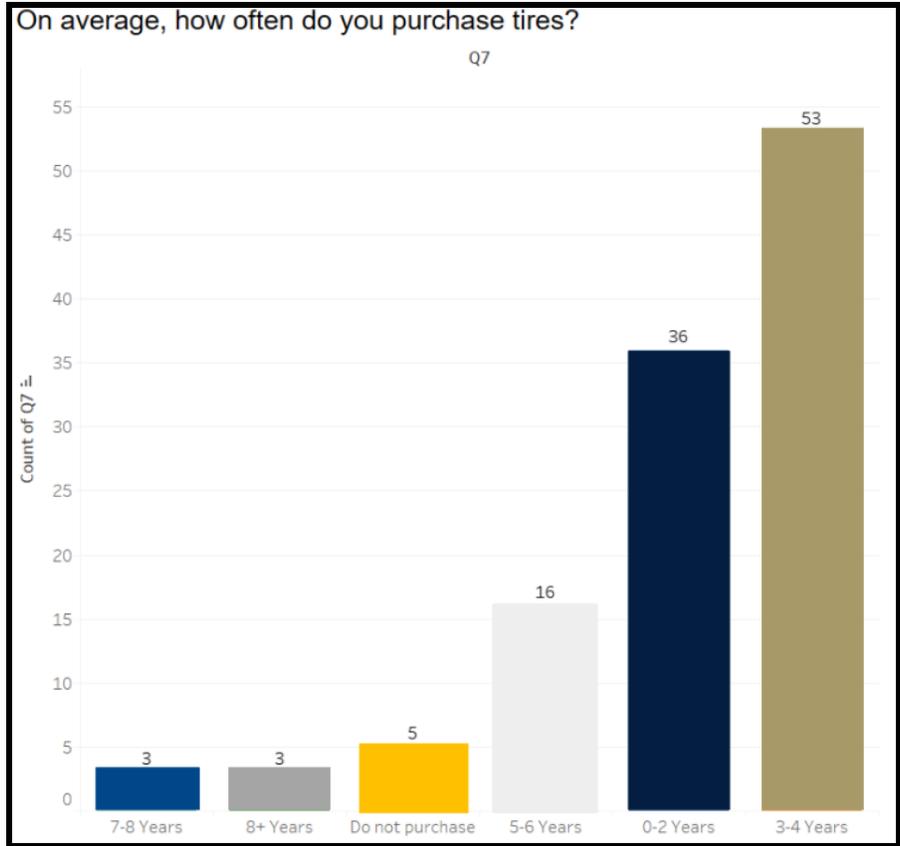
<b>Ordering More Online by Age</b>		
<b>Age</b>	<b>Number of Responses</b>	<b>Likelihood of Ordering More Online</b>
25-34	45	60%
35-44	38	63%
45-54	25	68%
55+	8	87.5%

**Figure 9**

***Tire Purchasing***

Finally, we wanted to see what our target market’s tire purchasing behavior looked like. We also wanted to see if COVID-19 has affected their tire purchasing. This would provide us with some general knowledge that may be important when making recommendations.

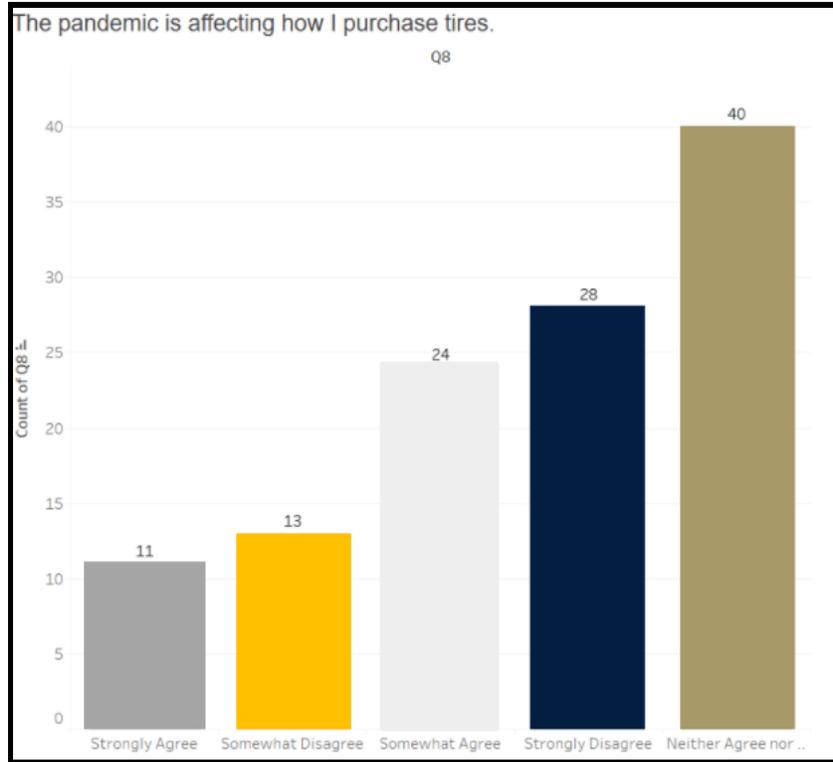
The first questions we asked was, “On average, how often do you purchase tires?” The results are shown in Figure (10) below.



**Figure 10**

The results show that tires have a long purchasing cycle. People are not buying tires every year. A large majority of participants purchase new tires every 3-4 years. This is important information because Goodyear has a 3-4 year wait time between each of their consumers' purchases. Since consumers are not purchasing often, it is important for Goodyear to have as many consumers as possible to consistently sell tires.

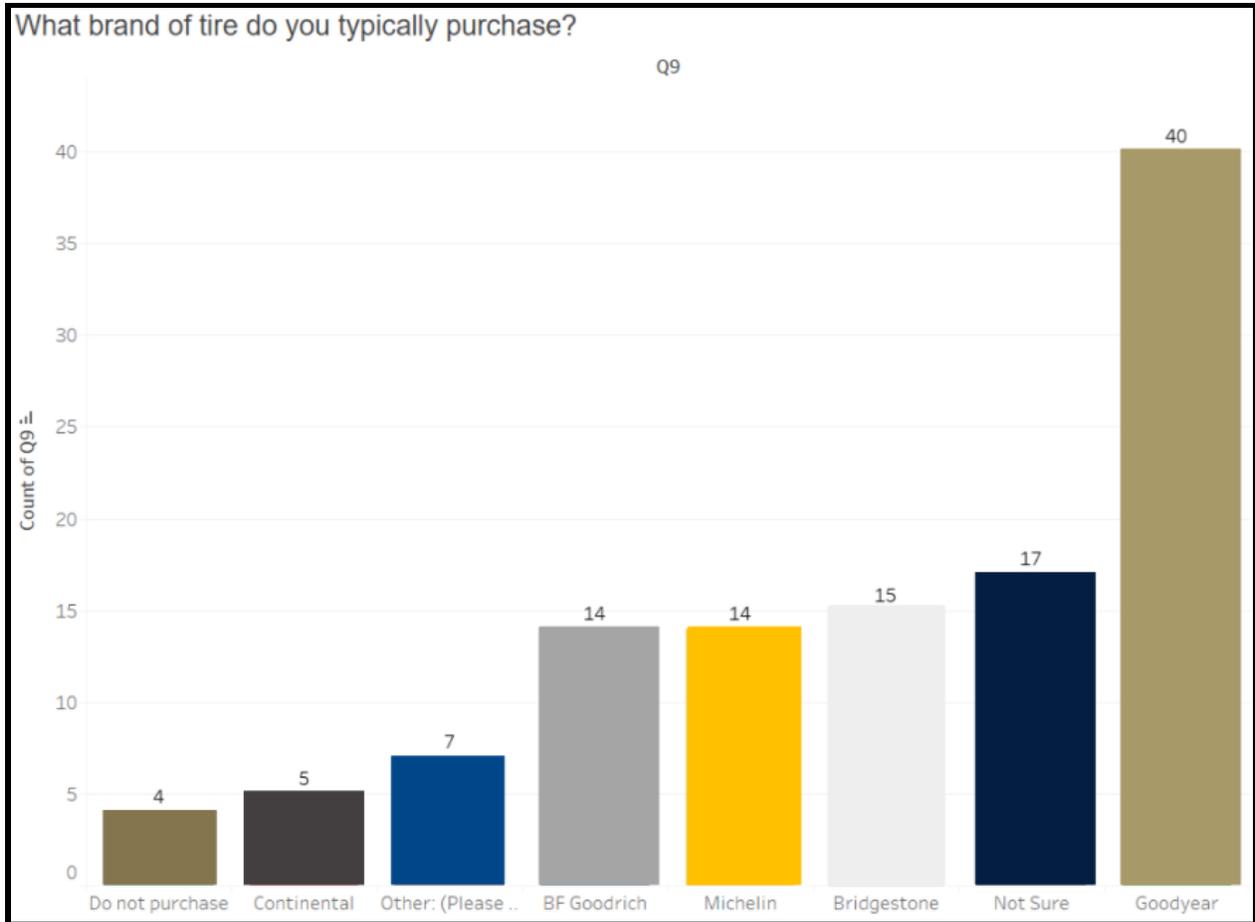
Next we provided the statement, "The pandemic is affecting how I purchase tires." The results are shown below.



**Figure 11**

The results show that many people do not have an opinion on this. Since the typical consumer buys tires every 3-4 years, this one year period of COVID-19 may not be a long enough time to have an effect on tire purchasing. Despite the large number of people that do not have an opinion, about 25% of participants strongly disagree with the statement. These results show us that COVID-19 has not had a huge impact on tire purchasing.

Finally, we wanted to see which brand of tires consumers were purchasing. We wanted this information to see if Goodyear was the market leader for our participants.



**Figure 12**

These results show us that Goodyear does in fact have a large amount of the market. Another important thing to note is that 17 people were not sure of what tires they purchased. This could be due to multiple factors. Price can be an important factor in tire purchasing and these people may just buy based off of that and pay no attention to the brand. Another factor may be that people bring their tires to an auto shop, and have the shop do the tire purchasing. No matter what the factor, these 17 people are open to the market and Goodyear may have an opportunity to influence them.

## **Interviews**

While we wanted to analyze how normal consumers and commuting workers were affected by COVID-19 through our survey, we found it necessary to also interview business owners and executives to see how they were planning on running their businesses moving forward. We did this by choosing different people in our lives who have a say in what goes on in their respective offices in terms of attendance, policies, etc., in relation to the COVID-19 pandemic.

First, we asked about their initial business reaction. Amongst all owners, there was a lot of uncertainty. How long will this last? Is my industry affected? These were just a couple of questions and concerns. There were many more aspects of this that still needed to be answered. Through time, businesses found out what industries were essential and the owners adapted from there. New waves of technology and at-home meeting services started to blossom and people adjusted accordingly. This started a new era of what working from home would be like, and the subjects of the interview were forced to adjust on the fly.

Employees of the businesses transitioned home for what was supposed to be two weeks. This turned into a month long nightmare where business owners still had payments to make on offices and other equipment/materials that were being unused. Although every person and every business had been impacted in the same way due to COVID-19, it was not a business-destroying event.

The changes for their workers came in line with State, Federal, and CDC guidelines. Some business owners allowed the option to come into work, or continue to work remotely. For those workers who felt uncomfortable with the risks of COVID-19, they were allowed to stay at

home, or wear masks and distance where they felt appropriate. Customers were also given the freedom to adjust in anyway they deemed necessary. This made businesses adapt to the customers yet again to provide a safe and effective operation.

The Current Condition of offices are somewhat of a toss up. There are many office spaces where there are no restrictions. There are also businesses where remote work has been enforced since this all happened in early 2020. From our interviews, we found it to be a similar situation. There has been a mix from total in office operations, to total work from home, to a hybrid of the two. Many people we know have contracted COVID-19 and with that, comes a certain amount of immunity, leading those in charge to become more comfortable returning to a prior state of normalcy.

One important addition to working conditions has been the recent surge of vaccinations in Ohio and around the country. This will be important moving forward with working condition decisions made by these executives, and how current employees will respond to the high number of vaccinations.

The plan going forward for most firms ranges. It seems that the firms who are completely remote have had a more strict view on COVID-19 in general, and unless given the okay by the federal government to open back up, they will continue their operations as so. However, there were interviewees who wanted things returned to normal sooner than later. There are important aspects of office and work life being missed due to the lack of people in the office. There is a lack of rapport with work colleagues, missed social queues, and lack of bonding at after work activities. Those have been the points being made by those owners who are currently back working in the office, and they wish for other employers to follow suit.

Lastly, we predict that as more and more people get vaccinated, then the CDC and state governments will begin lifting their regulations on businesses and a state of normalcy will be achieved soon moving forward.

## **Recommendations**

The final recommendations for Goodyear has been a thoughtful process for our group. As the first semester of this project was wrapping up, we felt that our recommendation was leaning towards expanding operations. We knew that there was potential in the automotive industry, the tire and rubber market, the trucking industry, and many others that Goodyear already played a part in, but we needed to do some more research to determine exactly what area to dive into. To our surprise, Goodyear chose to expand at the beginning of 2021 with the headlining purchase of Cooper Tires. We were able to build more recommendations off of their current buy-out strategy and to see how our results fit in real time during this transition.

## ***Supply Chain***

Goodyear is expecting, “approximately \$165 million in run-rate cost synergies” (Acquire, Goodyear, 2021) from the Cooper Tire buyout and we believe supply chain will play the biggest role in realizing those synergies. This has led us to recommend that Goodyear spend time, money, and effort in their supply chain as they expand. As we evaluated our results in light of the addition of Cooper Tire it was clear to us that Goodyear’s supply chain would be a main area of concern going forward. The market was becoming stable once again and Goodyear was taking a leap that would put even more strain on their agility as a company. As we discussed earlier in our SWOT section, agility is an area that Goodyear could work on improving. Much of that agility comes from the fluidity of the supply chain, and with Cooper Tire joining the forces

they will have to work together to make supply chain preparations for the upcoming rise in demand.

We believe that over the last year during the pandemic, every company was exposed to the lackings in their supply chains and other operations. We would recommend that both Goodyear and Cooper Tire take this time to perform an analysis and brainstorming on how their supply chain performed under stress (Supply, 2021). Goodyear should use this process to identify weak points as well as points of strength in their supply chain that they can either work to improve, possibly with gained assets from Cooper Tire, or replicate across the rest of the company. This will be a beneficial way to determine how each company can be best utilized and improved as they move forward as one entity.

### ***Mobile Tire Install***

Analysis of purchasing behavior, provided findings of an increase in overall online purchasing behavior consistent with secondary findings. This provided the foundation for our next recommendation. In 2020, Goodyear launched Mobile Install in new U.S. markets (Goodyear Corporate, 2021). This service allows customers to have tires installed at their convenience without having to visit a shop. The purchase is done completely online with minimal customer interaction required the day of installation. This expansion followed the implementation of social distancing and other COVID safety measures used commercially. However, we recommend that this channel stay prevalent even after COVID regulations are no longer of concern.

Results from the tire purchasing portion of our survey found that Goodyear's largest market was males 25-34 years old (Figure 13). Our general purchasing analysis indicated that

other demographics were more likely to order online. With these results, we believe that the online processes of mobile tire install, will target demographics not currently sought by Goodyear. However, because of its novelty, the use of a careful customer onboarding strategy is required.

		AGE			
TIRE BRAND	GENDER	25-34	35-44	45-54	55+
Goodyear	Female	8	9	4	3
	Male	12	4		
BF Goodrich	Female	1	2	2	1
	Male	3	3	1	1
Bridgestone	Female	4	1		1
	Male	4	4	1	
Continental	Female		1	1	
	Male	1	2		
Michelin	Female	2	2	3	
	Male	2	4	1	
Not Sure	Female	3	3	2	1
	Male	2		6	
Do not purchase	Female	1		1	
	Male	1		1	
Other: (Please Specify)	Female		1	2	1
	Male	1	2		

**Figure 13**

The existing customer onboarding process is effective explaining what to expect and the three steps of a mobile tire install and includes a chat feature. However, we recommend adding videos to the existing information pages. A customer onboarding process includes providing clear instructions to get customers comfortable with a new product (Perricone, 2020). Instructional videos further highlighting how easy and worry-free the process is. This also connects to our secondary research findings that trust is a major factor in the tire buying process and that consumers are not informed about the tire buying process (Keshishian, 2019, 32). Because consumers may feel even greater uncertainty with a new tire buying process, it is crucial

to make the customer onboarding process as welcoming as possible. The addition of a video that illustrates both the information from the “how it works” and “what to expect” tabs of the mobile tire install page on the Goodyear website will effectively relieve any uncertainty about where to park their car, what readings to provide before their appointment, and what to expect after the appointment.

To encourage new customers, we recommend offering a price incentive for customers trying mobile tire install. Tire customers can be encouraged by price incentives (Keshishian, 2019, 32) and we think it would be an easy way to encourage someone looking for tires to try the new service. With data suggesting consumers will be ready to travel (Gallanari, 2020,) this incentive could also be advertised as a necessary safety measure before a long trip.

### ***Trucking***

The final part of our recommendation is to expand the trucking industry. The trucking industry is huge. Referring back to the secondary research conducted, it is a 223.8 billion dollar industry. The industry also uses a ton of tires. There are about 2 million semi-trucks in use in the U.S. This means that there are about 36 million tires, both truck and trailer, being used. Also, these are tires that are being used every single day. They are getting a lot of time on the road. The huge amount of tires being used in the trucking industry is an important factor into expanding business into this industry.

Another important factor is that this industry grows with the economy. As more people buy things, as more people produce things, as the economy grows, the trucking industry grows with it. Things cannot move without this industry. So the more product that is being made and

needs to be transported, the more tires that get put to use. This is important to note because the economy is beginning to grow. This means that the trucking industry is also beginning to grow.

All of the research gathered has driven us to these recommendations. The main recommendation is to expand. People are getting back to driving and things are slowly getting back to normal. Along with that may be a boom in the economy. The hard times seem to have passed and the future looks bright. Goodyear should look at the future and not at the recent past. It is time for them to grow even more by expanding. Buy-outs, mobile tire installation, and getting more involved in the trucking industry, all being backed by focusing and improving their supply chain, are the ways that Goodyear can start this expansion.

## References

- 3rd quarter and 9 months sales. (2020, October 23). Retrieved December 07, 2020, from <https://www.michelin.com/en/finance/results-and-presentations/3rd-quarter-and-9-months-sales/>
- Associates, G. (n.d.). Meet Google Drive – One place for all your files. Retrieved December 07, 2020, from <https://drive.google.com/file/d/17A2Z7MNEy26vxcoMjFeBpgf1UzvUEQ3m/view?ts=5fb7c603>
- Bartlett, J. S. (2019, July 22). *The Driving Forces Behind Tire Purchases Revealed*. Consumer Reports. <https://www.consumerreports.org/tire-buying-maintenance/driving-forces-behind-tire-purchases-revealed-survey/>
- Bridgestone Corporation. (2020, September 30). Consolidated Financial Statements or the First Three Quarters of the Fiscal Year Ending December 31, 2020. Retrieved from [https://www.bridgestone.com/ir/library/result/pdf/e\\_R2\\_4\\_3\\_results.pdf](https://www.bridgestone.com/ir/library/result/pdf/e_R2_4_3_results.pdf)
- Behavior Is Changing.” McKinsey & Company, McKinsey & Company, 16 Sept. 2020, [www.mckinsey.com/business-functions/marketing-and-sales/our-insights/the-great-consumer-shift-ten-charts-that-show-how-us-shopping-behavior-is-changing](http://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/the-great-consumer-shift-ten-charts-that-show-how-us-shopping-behavior-is-changing).
- Brenan, Megan. “COVID-19 and Remote Work: An Update.” *Gallup.com*, Gallup, 3 Nov. 2020, [news.gallup.com/poll/321800/covid-remote-work-update.aspx](https://news.gallup.com/poll/321800/covid-remote-work-update.aspx).
- Bureau, U. (2019, June 06). America Keeps on Truckin'. Retrieved November 13, 2020, from <https://www.census.gov/library/stories/2019/06/america-keeps-on-trucking.html>
- Charm, Tamara, et al. “The Great Consumer Shift: Ten Charts That Show How US Shopping

Cook, D. (2020, October). Local Freight Trucking in the US. Retrieved November 13, 2020, from <https://my-ibisworld-com.ezproxy.uakron.edu:2443/us/en/industry/48411/about>

Cook, D. (2020). Long-Distance Freight Trucking in the US. Retrieved November 13, 2020, from <https://my-ibisworld-com.ezproxy.uakron.edu:2443/us/en/industry/48412/about>

Cucinotta, D., & Vanelli, M. (2020). WHO Declares COVID-19 a Pandemic. *Acta bio-medica : Atenei Parmensis*, 91(1), 157–160. <https://doi.org/10.23750/abm.v91i1.9397>

Curry, David. “Instacart Revenue and Usage Statistics (2020).” *Business of Apps*, 30 Oct. 2020, [www.businessofapps.com/data/instacart-statistics/](http://www.businessofapps.com/data/instacart-statistics/).

Crompton, T. (2020, October). *Tire Manufacturing in The US*. IBIS World. <https://my-ibisworld-com.ezproxy.uakron.edu:2443/us/en/industry/32621/industry-at-a-glance>

Edison Trends, . “2020 Edison Trends U.S. On-Demand Food Delivery Sales Report.” *2020 Edison Trends U.S. On-Demand Food Delivery Sales Report*, 19 May 2020, [trends.edison.tech/research/on-demand-food-delivery-sales-2020.html](https://trends.edison.tech/research/on-demand-food-delivery-sales-2020.html).

Edison Trends, . “Online Grocery Sales Up 90% & Food Delivery Sales Up 51% Since March 2.” *Online Grocery Sales Up 90% & Food Delivery Sales Up 51% Since March 2*, 1 May 2020, [trends.edison.tech/research/covid-19-online-food-services.html](https://trends.edison.tech/research/covid-19-online-food-services.html).

Gallinari, M. (2020). The Impact of Covid-19 on Travel US, August 2020. *Mintel*, 38. <https://reports-mintel-com.ezproxy.uakron.edu:2443/display/987296/#>

Goodyear. (n.d.). *Goodyear 2019 Annual Report*. Goodyear Tire and Rubber Company.

Goodyear Corporate. (2020). *Brands and Products*. Goodyear Corporate. <https://corporate.goodyear.com/en-US/about/our-brand-and-products.html>

Goodyear Corporate. (2021, April 12). *Notice of 2021 Annual Meeting of Shareholders and Proxy Statement*. Corporate Goodyear.

<https://corporate.goodyear.com/documents/annualreports/2021-proxy-statement.pdf>

Goodyear Extends Tire Production Shutdown 'Until Further Notice'. (2020, April 02). Retrieved from

<https://www.moderntiredealer.com/articles/11681-goodyear-extends-tire-production-shut-down-until-further-notice>

Goodyear Tire & Rubber Net Income 2006-2020: GT. (n.d.). Retrieved November 13, 2020,

from <https://www.macrotrends.net/stocks/charts/GT/goodyear-tire-rubber/net-income>

Goodyear to Acquire Cooper, Creating Stronger U.S.-Based Leader in Global Tire Industry.

(2021.). Retrieved from

<https://corporate.goodyear.com/en-US/media/news/goodyear-to-acquire-cooper-creating-stronger-us-based-leader-in-global-tire-industry.html>

Google Maps, "COVID-19 Community Mobility Reports." USA, 2020.

Gupta, S., Nguyen, T. D., Rojas, F. L., Raman, S., Lee, B., Bento, A., ... & Wing, C. (2020).

*Tracking public and private response to the covid-19 epidemic: Evidence from state and local government actions* (No. w27027). National Bureau of Economic Research.

Kalsher, M. J., Wogalter, M. S., Lim, R. W., & Laughery, K. R. (2005). Consumer Knowledge of

Tire Maintenance and Aging Hazard. *Proceedings of the Human Factors and*

*Ergonomics Society 49th Annual Meeting*.

<http://safetyhumanfactors.org/wp-content/uploads/2020/07/PAO30%29Kalsher%2CWogalter%2CLimetal%282005%29.pdf>

- Keshishian, H. (2019). Tires US, November 2019. *Mintel*.  
<https://reports-mintel-com.ezproxy.uakron.edu:2443/display/919246/?fromSearch=%3Ffr eetext%3Dtire#>
- MarketLine Company Profile: The Goodyear Tire & Rubber Company. (2020). In Goodyear Tire & Rubber Company MarketLine Company Profile (pp. 1–36).
- Mazareanu, E. (n.d.). Topic: Trucking industry in the U.S. Retrieved November 13, 2020, from <https://www.statista.com/topics/4912/trucking-industry-in-the-us/>
- Menegaux, F. (2020, June 09). The Michelin Group: Finance: Net Sales. Retrieved November 13, 2020, from <https://www.michelin.com/en/finance/results-and-presentations/1st-quarter-sales/>
- Michie, S., West, R., & Harvey, N. (2020, November 2). The concept of "fatigue in tackling covid-19. *BMJ*, 371. <https://www.bmj.com/content/bmj/371/bmj.m4171.full.pdf>
- Miller, M. (2020). *Experian Automotive Quarterly Briefing*. Experian.  
<https://www.experian.com/content/dam/marketing/na/automotive/quarterly-webinars/market-trends/q4-2019-experian-quarterly-briefing-final.pdf>
- Moreland, A., Herlihy, C., Tynan, M. A., Sunshine, G., McCord, R. F., Hilton, C., ... & Gundlapalli, A. V. (2020). Timing of state and territorial COVID-19 stay-at-home orders and changes in population movement—United States, March 1–May 31, 2020. *Morbidity and Mortality Weekly Report*, 69(35), 1198.
- Perricone, C. (2020, September 21). *The Ultimate Guide to Customer Onboarding*. Hubspot.  
<https://blog.hubspot.com/service/customer-onboarding>
- Roll by Goodyear. (2020). *Learn About a Simple Way to Buy Tires*. Roll by Goodyear.  
<https://www.rollbygoodyear.com/about-us>

Rocha, V. (2020, March 12). *March 11 Coronavirus News*. CNN World News.

<https://www.cnn.com/world/live-news/coronavirus-outbreak-03-11-20-intl-hnk/index.htm>

1

Second Quarter Conference Call. (2020, July 31). Retrieved from

<https://corporate.goodyear.com/documents/events-presentations/q2-2020-goodyear-earnings-presentation.pdf>

Semi-trailer truck. (2020, November 06). Retrieved November 13, 2020, from

[https://en.wikipedia.org/wiki/Semi-trailer\\_truck](https://en.wikipedia.org/wiki/Semi-trailer_truck)

Staff, B. R., Winer, B., DellaValle, B., & Sickels, B. (2020, March 30). *Coronavirus & the Tire*

*Industry: What Does the Future Hold?* Retrieved from

<https://www.tirereview.com/coronavirus-tire-industry-what-to-expect/>

Supplychaingamechanger@gmail.com, A. (2021, February 22). *Where Should Supply Chain*

*Time Be Spent After the Pandemic?* Retrieved from

<https://supplychaingamechanger.com/where-should-supply-chain-time-be-spent-after-the-pandemic/>

The Goodyear Tire & Rubber Comp (GT) Income Statement. (2020, November 13). Retrieved

November 13, 2020, from <https://finance.yahoo.com/quote/GT/financials/?guccounter=1>

The New York Times. (2020, December 10). *Coronavirus in the U.S.: Latest Map and Case*

*Count*. The New York Times.

<https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html?auth=login-google>

Timmons, M. (2020, August 26). *About 61 Million Americans Have Stopped Commuting Due to*

*COVID-19*. PR Newswire.

<https://www.prnewswire.com/news-releases/61-million-americans-have-stopped-commuting-due-to-covid-19-301118993.html>

Truck Stats. (n.d.). Retrieved November 13, 2020, from

<https://www.truckinfo.net/trucking/stats.htm>

U.S. Bureau of Labor Statistics (November, 2020). *Labor Force Statistics from the Current Population Survey - All 10 tables*

<https://www.bls.gov/cps/effects-of-the-coronavirus-covid-19-pandemic.htm#data>

U.S. Department of Transportation Office of Highway Policy Information. (2020, October 16).

*Traffic Volume Trends*. Office of Highway Policy Information.

Wilson, M. (2019, December 17). Evansville company Raben Tire bought by Goodyear.

Retrieved from

<https://www.courierpress.com/story/news/local/2019/12/17/goodyear-has-bought-evansville-based-company-raben-tire/2676883001/>