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Lowering global consumption of petroleum, while increasing profit: Tesla Motors ridesharing

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Lowering Global Consumption of Petroleum, While Increasing Profit:

Tesla Motors Ridesharing

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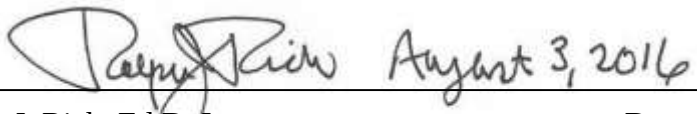
Approval Page

I approve the Capstone Research Product of Rodrigo Ayala:



Ralph J. Rich, Ed.D, Instructor Date

Abstract

Demonstrating profitability has been a major challenge for Tesla Motors. This research explored the creation of a rideshare service as a short-term and long-term instrument for growth. Information was gathered and analyzed from successful and unsuccessful businesses to determine viability and potential for success. The research question asked, what are the existing technologies, services, and or business models that can be implemented by Tesla Motors to both innovate and improve profitability? This study used a qualitative research approach to assess available published data and to evaluate possible options to answer the research question. The findings conclude that Tesla should enter the rideshare industry; it would be feasible and attractive in terms of ROI, and require minimal initial investment. Further suggestions outline disruption and encroachment into the multibillion dollar healthcare industry.

Keywords: Apple, Artificial Intelligence, Autopilot, Driverless Vehicles, Google, Ridesharing, Tesla Motors, UBER.

Executive Summary

This research study explored Tesla Motors, as well as the evolution and expansion of existing technologies and services, to create transformational innovation in the realm of automotive transportation. Existing research was used to compile individual and collective case studies that demonstrate findings and provide suggestions.

Investigation and research were also used to explore strengths, weaknesses, opportunities, and threats. Findings provide the situational backdrop that paves the way for innovation across several industries. Leadership styles and personalities were examined to provide a better understanding of transformational versus transactional leaders. Comparisons were made between UBER, Google, Apple, and other established innovators. The strategy, tactics, and decision making processes in implementing transformational change were also explored. Review of existing models and businesses were then examined to identify best practices and unsuccessful practices.

The conclusion illustrates a strategic two-phase model for Tesla Motors that in the first phase produces a rideshare program geared towards drivers that want to exclusively drive Tesla vehicles for Tesla's rideshare program. It provides a win-win-win scenario for the drivers, the environment, and the organization. Further exploration is discussed into possible expansion into the healthcare industry.

Phase two introduces complete automation, alleviating the business of costs associated with drivers, while providing improved services for customers. Together, both phases provide short and long-term value for customers, the biosphere, and Tesla Motors, versus inaction. The suggestions fit well with the organization's mission statement.

Mission Statement

Tesla Motors mission statement by Elon Musk, on November 18, 2013, reads as follows: "Our goal when we created Tesla a decade ago was the same as it is today: to accelerate the advent of sustainable transport by bringing compelling mass market electric cars to market as soon as possible." (Appendix A) The public facing mission statement shares this sentiment: "Tesla's mission is to accelerate the world's transition to sustainable energy." (About Tesla, n.d.). The research is aligned with this objective and seeks answers that further the goals of the organization.

Acknowledgment

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Chapter 1: Introduction

Overview of the Research Project

There is an opportunity to disrupt the rideshare, taxi, and transportation industries with Tesla Motors' all electric fleet. This could provide reduced dependence on oil consumption in the United States and globally, while offering affordable and accessible transportation. Tesla Motors could achieve this by displacing and replacing internal combustion vehicles with electric automobiles.

The company's Model 3, may hold the keys to improving the lives of drivers, passengers, and the environment. It can do this by making a profit as UBER has already demonstrated possible with its fleet of gasoline and diesel combusting vehicles.

Tesla would not be the first manufacturer to enter into this realm. Google, Ford, and Volvo, to name a few have already begun collaborating on strategic partnerships in the area of self-driving vehicles. They have formed lobbying groups to "work with lawmakers, regulators, and the public to realize the safety and societal benefits of self-driving vehicles" (Shepardson, 2016). The aim is to "legalize" driverless cars on public streets and roadways. This could literally transform the rideshare industry, providing services that would no longer require drivers, improving safety, convenience, and further eliminating cost.

Organizational and Environmental Profiles

In February, 2016, Tesla reported its 11th consecutive quarterly loss. (Ramsey, 2016). Tesla's net loss between 2008 and 2015 is conservatively reported to be $888.66 million. (Tesla's net loss 2008-2015: Statistic, n.d.). Much of the cost has been attributed to research,

development, and recurring quality issues on its luxury vehicles. In March, 2016, the company launched the Model 3. This vehicle is aimed at the general market, as opposed to the existing lineup. Here, is where I believe lies strategic opportunity.

In May 2015, UBER.com, a rideshare service, proposed a $50 billion valuation. (Meyers, 2015). The company is a mobile phone application based service that connects passengers needing a ride, with drivers willing to pick them up from the prescribed location for a fee. The fee is usually less expensive than alternative methods including taxi and car services. UBER collects 20% of every transaction, and provides no additional service beyond the application, and does not employ any of the drivers directly. Research will be conducted to determine the viability of a similar approach for Tesla.

Description of the Organization

Elon Musk, CEO and product architect, had a vision and in 2003, Tesla Motors was born. Musk wanted to validate the notion that electric automobiles were and are superior to cars that combust petroleum based products such as gasoline or diesel. Tesla's founding engineers believed that the internal combustion engine was an obsolete platform and that it was no longer sustainable. The vision was not only to prove this hypothesis, but to continuously improve both the vehicles and access to them by making them more affordable to a broader demographic. (About Tesla, n.d.). Today the industry and public classify Tesla as a luxury electric car maker. (Ramsey, 2016).

The company derived its name from Nikola Tesla, who patented the induction motor used in their earliest designs. In 2008, the company released its first automobile dubbed the Tesla Roadster; an all-electric sports car capable of 245-mile range before charging. The introduction of the Roadster proved to be a success. First, it demonstrated that it was possible to create a

reliable and sustainable vehicle that was not dependent upon gasoline or diesel. The company sold more than 2,400 Roadsters globally, proving that there was a market for these sustainable vehicles.

Tesla Motors operates in the automotive manufacturing industry. It is among the first manufacturers to produce and deliver electric vehicles to consumers globally. In the United States alone, approximately 8 million passenger vehicles are produced annually. (The Automotive Industry, n.d.). Other manufacturers are increasingly incorporating electric vehicles and hybrids into their offerings. No other major manufacturer offers electric cars exclusively.

Description of the Unit:

Research is conducted on innovation, and similar models for the proposal. There is currently no rideshare unit or division within Tesla Motors to analyze.

Research Goals and Objectives

Innovation empirically requires that something novel is brought to the table. It may take 10-15 years before it pays dividends. The proposed research instrument for this interrogation of Tesla Motors Corporation is centered on the premise of innovation. The topic itself prescribes analysis of qualitative data that is compiled from existing organizations that employ innovation as a strategic component that brings value to customers as well as the firm immediately in the short term, and in the long term.

Qualitative analysis is derived by a search for best practices from organizations and leaders that have made significant accomplishments in this domain. Case studies that highlight these accomplishments are constructed to illustrate where, how, and why the organizations or leaders were successful. This information is further utilized as a model that showcases practices that should be observed and emulated, as well as those that should be avoided.

Areas of importance in the creation of this instrument include, but are not limited to:

1. Creativity
2. Outside industry or discipline
3. Process(es) of assessment
4. Questions that will be asked about the organization based on material used for the analysis
    a. Discovery of material
    b. Gathering of material
    c. Assessment of material
5. Leadership and personality evaluations
    a. Transactional leaders
    b. Transformational leaders

Companies that have not been successful will also be part of the instrument to help identify and illustrate practices that have not created value in the short or long term for the organization or its customers.

An integral component of the instrument is in understanding leadership styles, and the personalities of said leaders. A transformational leader may have a vision that will revolutionize not only the organization, but how people live, work, and or play. In this simple statement, we literally see transformation. Transactional leaders maintain the status quo for the organization, and typically for their customers. One can easily postulate that industries, markets, and consumer needs are dynamic; further, one may infer from this that eventually a plateau may be reached in which the status quo is no longer relevant. Certain leaders are required for certain leadership roles. Studies indicate that where innovation is concerned, both styles are germane: “explorative

and exploitative collaborations require different managerial approaches when opening up for external knowledge" (Rosell, 2014).

Steve Jobs and Elon Musk may be considered transformational leaders. With an extensive list of innovative products and services that Steve Jobs brought to market, such as the iPhone, iPad, and Mac computers, one can quickly identify areas where he changed how people live, work, and play. The list of Elon Musk's accomplishments include Paypal, SpaceX, the Hyperloop, and Tesla Motors. He has also had a meaningful impact on many aspects of lives in regard to transformation.

Defining the best leaders was a task approached by an author to determine traits that were common amongst transformational leaders such as Steve Jobs and Elon Musk. Both leaders possess similar styles in that they could and can change their minds, or the direction of a project very quickly. This reflects a high level of adaptability, while still considered to be opinionated. This combination of personality traits results in the best transformational leaders (Figure 1).

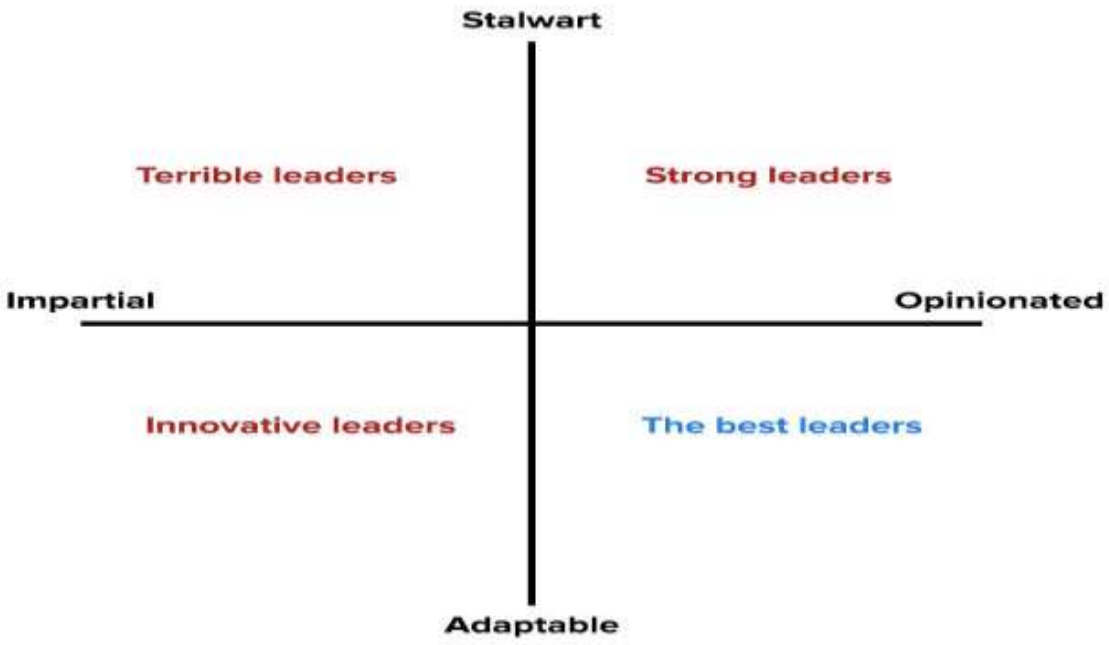

Figure 1. Leaders and their personality traits. (Snow, 2014).

The final component of the research instrument is the MBA candidate that collected, analyzed, and compiled the information for the purpose of creating a collective case study in which both best and worst, or good and bad, practices are identified and learned from in order to avoid repeating mistakes made by other organizations.

Background of the Business Problem

It has been said before that "The social, unique, and ill-defined nature of problems that require decisions indicates the importance of defining problems carefully and using a systematic procedure for solving them. The first phase is defining the problem" (Lay, 1995, p. 510).

Tesla has not been able to demonstrate profitability as an automotive manufacturer since its inception. Tesla Motors makes luxury cars and experiences a loss for each car manufactured and sold. UBER made an app for smartphones. UBER connects drivers with riders and has demonstrated exponential profitability.

Business Problem or Opportunity Statement.

As a manufacturer, Tesla is ideally poised to enter this market and capture share rapidly. The vehicles are environmentally friendly, and luxurious. They are the cars that empirical wisdom tells many want to drive or ride in because of the ecological benefits they afford, or simply the "cool" factor of the technology and luxury that goes into every model.

Scope and Limitations.

Research, findings, and suggestions should be applied in a staged format. Major U.S. markets in largely populated cities, such as New York, San Francisco, and Los Angeles should be tested first. An aggressive campaign for recruitment in these areas will determine interest, and viability. As new markets are captured, new territories should be simultaneously tested, expanding to Europe and Asia. The first stage of implementation would bolster Tesla Motors'

profits, and help pay for the addition research and development needed to implement phase two, or the driverless cars.

Conclusion

This chapter focused on Tesla Motors as an organization, while presenting some unique opportunities and challenges that it faces. Leadership style was also examined. Other businesses were compared to demonstrate the possibility of expansion. In the next chapter, existing research in these areas will be discussed in detail.

Chapter 2: Literature Review

Research and literature is clear, society is addicted to unsustainable fossil fuels, and have been for over two centuries. (Andelman, & Detscher, 2015). This has had an impact on the Earth's biosphere's balance, and it is estimated that a reduction in 90% of fossil fuel consumption must be realized to restore this balance. As more emerging markets continue to rise, this consumption is directly at odds with any decline in demand or usage of the global supply.

As more and more internal combustion powered vehicles are produced and purchased, the demand for petroleum based fuels will logically grow exponentially. Electric vehicles do not directly produce emissions, earning them the classification of "zero emission vehicles." One direct approach to curtailing dependence on fossil fuels would be to eliminate and replace vehicles that require such fuels. Tesla Motors is the industry exclusive manufacturer of all electric vehicles in its product offering.

Replacing every car gas, diesel, or bio-diesel car on the road today presents itself as enormous of a task as does a reduction in fuel consumption by 90%. However, empirical wisdom shows that this is not as insurmountable a task as it may appear to be on the surface. One need look no further than a pocket or hand, to see a profound example of this. It is the "smartphone." It may be an iPhone or Android device, but the change has been widespread and rapid. In an article discussing the demise of the cell phone back in 2008, here is what we can learn from this one-year window between 2007-2008, "In the United States alone, sales of smartphones—usually defined as mobile devices running on an open operating system for which third-party applications can be written—will nearly double this year, to 14.6 million devices from 7.4 million units sold in 2007, according to Mark Donovan, senior VP at research firm M: Metrics." (Cell Phones Face Extinction as Smartphones Take Over, n.d.).

While the doubling rate of change is impressive, it is easy to understand how this is possible. A better technology emerges, and as economics make it more accessible, the adoption rates climb. A simple word that captures the essence of this process is innovation.

What does research tell us about innovation in business? In order for a business to remain relevant, innovation is the key. (Bereznoi, 2014). For many, a smartphone is capable of performing many tasks that would historically not be possible with a single device. It offers abilities that may improve productivity, enjoyment, or accessibility above and beyond the constraints of a cell phone or a computer. These qualities could be said to add or even create value.

Where else has innovation had significant impact? The smartphone in one's pocket can provide yet another example. Companies such as UBER, AirBnB, and ZipCar have given rise to what is called the "sharing economy" (Cusumano, 2015). Instead of trying to hail a taxi, one can simply summon a driver who will come to the customer, and will do so faster, and less expensively than a cab or car service. That is what UBER does, and how it has been successful in disrupting the commercial car service industry. Studies have shown that pairing personal service with on-demand availability is a win-win scenario and business model (Walker, 2016).

Tesla Motors has the unique ability to disrupt the disruptor in this space. Innovation has propelled the organization to the status of not only the only all electric automotive manufacturer, but to the only luxury all electric automotive manufacturer in the industry. Researchers have stated that "Tesla has shown that a startup can enter and disrupt the status quo in one of the most established industries" (Stringham, Miller, & Clark, 2015). The strategy proposed for embarking upon a Tesla Motors rideshare platform will face competition from existing market leaders, but has proven the ability to capture share and hold ground. They have succeeded in conquering

many hurdles that other manufacturers are still trying to catch up with, including autonomous driving.

Tesla Motors not only claims, but produces and markets vehicles that are capable of semi-autonomous driving with the ultimate decision making responsibility still left to the driver. This feature is called Autopilot. The application and hardware allows the car to steer itself, apply brakes, avoid collisions, change lanes and take exits using radar and other technologies (Russ, 2015). It also is able to park itself automatically in a garage or on the street (Model S Software Version 7.0, n.d.).

Tesla is ushering in a new era of personal transportation, and doing so with innovation. This uncharted territory brings with it moral, ethical, and legal questions that have never had to be asked before. Luckily, research has already begun to delve into these areas. What happens during a crash, does the programming protect the vehicle and its occupants, or does it produce the least damage for the unprotected such as pedestrians? (Kirkpatrick, 2015).

Conclusion

Tesla Motors now faces competition from not only the automotive industry from other manufacturers, but also faces threats from technology giants such as Apple and Google who are not only rumored to, but are actively developing autonomous vehicles. The ability to enter into a market and claim a stake is something that Tesla has proven itself capable of. Long-term, the questions that are starting to get asked will determine if autonomous rideshare within the next five to ten years will be viable.

Chapter 3: Method

Statement of Purpose

Introduction

Approaching the topic of innovation presents a set of unique opportunities and challenges. Organizations that demonstrate success through proven products and or services lay a foundation for research. Companies that have enjoyed successful innovation include Apple, Google, UBER, and United Technologies. Innovation and disruption appear to go hand in hand. Understanding what it means to innovate is both simple and daunting. Demonstrating success varies by and with definition. A simple recipe pairs innovation with acceptance, adoption, and its impact on people, the planet, and profit. Tesla Motors has proven to be an innovator in the automobile industry, though is still struggling to be profitable. While the benefits of their products to people and the planet are easily recognized, one ingredient is still missing in its recipe.

Research Question

Are there existing technologies, services, and or business models that can be implemented by Tesla Motors to both innovate and improve profitability? This is the fundamental question that will be examined based on existing research. Additional topics will be evaluated as well. How can short-term value be created for customers, the organization, and the environment? Are there any emerging technologies that can be cultivated to also usher in long-term value for customers, the organization, and the environment? Finally, what makes rideshare a plausible consideration?

Methods

Qualitative analysis will be the proposed primary method of research used in the analysis

of Tesla Motors for the purpose of completing this project. Innovation and the organizations that have conducted the endeavor with success will be researched through quality sources, theoretical concepts, and experience. These will include the identification of best practices, study analysis, and possibly mathematical models.

The introduction of both product and service as innovation will be profoundly disruptive, and it will be examined in the context of the Technology Acceptance Model, or TAM. This will be reviewed thoroughly with particular focus on regulatory, functional, and environmental impacts.

Internal and External

The information was gathered primarily using the internet. Additionally, resources available through university libraries will also be obtained. Much of the information germane to this analysis can be found online. The qualitative analysis and interpretation prescribes that best practices from existing innovators be used as the gold standard for this research. Companies such as UBER and it's rideshare application, and Apple with products like the iPod, iPhone, and iPad, have proven track records.

Apple and UBER have been studied and researched extensively because of their respective successes, and many scholarly articles are available. Additionally, the organization financial statements can be easily accessed as needed.

Student conducted research, such as surveys or interviews have not been obtained given the nature and scope of the project. However, analysis is performed based on the availability of any such materials during the process.

A complete environmental awareness and comparison are performed in order to assess the current performance of Tesla, and its main targeted competitor, UBER. Ecological aspects of

the current rideshare practices are also compared against electric only vehicles that would displace conventional internal combustion vehicles.

Alternatives

Solutions will be considered as follows:

1. Implement short-term, while continuing to cultivate long-term strategy implementation.
2. Incorporate a partial solution that may create short-term value.
3. Do nothing at all, and maintain the status quo.

The first solution involves implementation of short-term strategy and will be discussed with examples of additional markets including the medical transportation industry. This will demonstrate potential opportunity where only the rideshare component is implemented. Existing models will be used to illustrate possible outcomes.

Second, the deployment of a full solution will be examined where both driver and driverless rideshare concepts are implemented. This will be in parallel with the first proposed phase with the assumption that it will be funded in whole or in part by the new revenue generated during the first three years of deployment.

The last option presents the scenario in which the company continues to operate as is, with no implementation of the strategic innovation initiatives examined. It serves as a control or baseline for the research. Comparison will be made to another business that has elected the path of rejecting adaptation.

Conclusion

The research and methods are primarily employed to establish expertise in the subject matter. Examining the performances and failures of innovators, and the subsequent research

performed on the strategies are vital components used for this purpose in chapter 2 of the Capstone Project. The methods described are used for the discovery, analysis, validation, and verification of the recommendations or solutions for Tesla Motors. This information is an integral part to every chapter of this analysis.

Chapter 4: Results and Analysis

Findings

According to independent analysis, in 2014 alone, UBER owned 48% of the market in the rideshare industry, with very little indication of losing ground. (Olson, & Kemp, 2015) See table 1 below. UBER was valued at $40 billion in 2014, with a projected value of $50 billion in 2015, and currently valued at $66 billion USD. (Spiegel, 2016). Tesla Motors that currently has an established loss of $888.66 million USD. (Tesla's net loss 2008-2015 | Statistic, n.d.).

Table 1

Ridesharing Industry 2014

	($ billion)	% Share
UBER	2.50	48.08
Lyft	0.50	9.62
Other	2.20	42.31

Note. (Source: Olson, & Kemp, 2015).

Research and financial performance show that Tesla Motors is at the threshold of the "holy grail" approach, which would be a solution that benefits people, planet, and profit. Reports also suggest that by the year 2100, atmospheric CO_2 concentration will be double that of any in the past 800,000 years, and that recent increases are directly related to emissions caused by human origin. (Andelman, & Deutscher, 2015).

Petroleum, and/or fossil fuel based transportation is at the epicenter. Tesla produces vehicles that shed this dependence. Entering the rideshare industry could greatly benefit both the organization and planet by potentially displacing and replacing additional internal combustion vehicles. In 2015, it was reported that UBER, with its 48% market share, had one million drivers

worldwide. (Lazo, 2015). If Tesla captured 5% of this market alone, it could remove 50,000 petroleum dependent vehicles from the roads of the world.

Each car that burns fossil fuel creates an average of 20 pounds of CO_2 a day, or 6,000 tons annually. This would result in the reduction of thirty million tons of CO_2 reduced in the first year alone. Such a feat clearly would demonstrate the value that this proposal brings to the planet, and the people that inhabit it. It is also an objective supported by the organization's mission statement. Independent S.W.O.T. analysis of UBER, also gives valuable information and insight on the opportunities that Tesla Motors can use to its disruptive advantage.

Mostly all of UBER's can be directly transposed and adopted into strategic plans for Tesla Motors. It literally presents targets while providing insights that show directions where the organization can already compete, as well as where there is potential to win. One such category is in the realm of autonomous vehicles. Continued research and development of driverless automobiles is among UBER's greatest threats. Any company that provides both autonomous vehicles coupled with a rideshare platform is poised to pose a significant threat to the current UBER model.

Using this analysis as a template, Tesla Motors has a starting point and roadmap. Weakness number one states that anyone can enter and compete. This weakness is compounded by threat number one that states autonomous vehicles will eliminate the need for UBER. Lastly, an opportunity identified was that cheaper electric vehicles can be used to reduce cost and increase driver profit margins. These are the main three targets that Tesla can and should lead an charge with into the rideshare market. Brand recognition, customer service, and satisfaction are areas that the company is already recognized for and should maintain with minimal effort.

"Strengths

- Has an unlimited fleet of vehicles. Regular Taxi service regulations are not applicable to Uber.
- Operational cost is quite low. As it relies on customer-to-driver interaction, a dispatcher is not needed.
- As a cashless payment system is used.
- Uber can track and choose highly rated drivers. It has many other features like getting a car easily and having record of the spending.
- The system is convenient for the drivers. They can work flexible hours and even choose to be a part-time employee. Drivers can also reject unwanted clients.
- The prices are lower compared to traditional taxi operators.

Weaknesses

- The idea can be easily imitated. Nothing will prevent competition from presenting the same product.
- The relationship between Uber and the drivers is ethically questionable. It lacks the real connection. So, it is expected that loyalty between Uber and its drivers is quite low.
- Also, company and its customers have no bonding. Incentive to remain with Uber is low.
- Costs of operating vehicles are very high. But, the drivers do not earn so much.
- Very Unpredictable business model.

Opportunities

- Customers are often dissatisfied with traditional cab companies because of high prices and long waiting time.
- Cheaper electric cars can be used. It will reduce the cost and increase the driver's profit margin.
- It can exploit new and big markets in countries like India where taxi services are inconvenient and expensive.
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Threats

- Self-driving cars, e.g. Google Cars, will eliminate the need for Uber.
- Increasing competition will ultimately decrease prices. This will discourage drivers from joining the startup in new markets. This will result in loss of customers. Uber's revenues will decline.
- Drivers aren't happy with the low-profit margins. This might lead to bad publicity. This can in turn discourage the new drivers from joining Uber.
- Some new legal regulations in countries like Germany will ban Uber from operating."

Figure 2. UBER S.W.O.T. Analysis. (Bush, 2015).

Review and analysis have also provided valuable insights and information that can help Tesla pursue entry into the rideshare industry. Porter's five forces, and PESTEL are used in this research to gain environmental awareness.

Porter's Five Forces Analysis

The threat of new entry. The general threat of new entry into the all-electric luxury vehicle category is relatively low for Tesla Motors. There are, however, some companies already collaborating with Tesla Motors, while developing their own technology. One of the greatest threats is realized from existing automotive companies. Companies that produce hybrid, electric, and alternative fuel sources such as hydrogen also compete in this arena. Another major threat with the potential to be most disruptive would be from technology companies such as Google, or Apple, who are currently developing their own autonomous vehicles. Yet another threat comes in the form of existing ride share organizations such as UBER or Lyft, where any driver with a Tesla can sign up and drive for these competitors. Lastly, unexpected threats from companies that may emerge offering 'conversion' packages that would allow consumers to exchange their internal combustion engines for an all-electric power plant at significant savings compared to purchasing a brand new vehicle.

Bargaining power of buyers. TESLA is dependent on partnerships with Daimler and Toyota, according to Tesla's Annual Report in 2013 (Tesla Motors—External Analysis Using PESTLE & Porter's 5 Analysis., 2016). This reliance creates distinct challenges and opportunities for all involved. Buyers have low bargaining power. Tax credits and government allowances to individual consumers incentivize deals further, while potentially increasing the demand for electric vehicles.

The threat of alternative modes of transportation. Substitutes in the electric vehicle industry and threats they pose increase daily. The threat of substitution for an autonomous production ready vehicle is also growing but is considerably low within the next 3 years. There are innovative products emerging such as "hover boards," electric bicycles and motorcycles, and even simple modes of transportation such as walking or normal bicycle riding that can act as substitutes (Tesla Motors—External Analysis Using PESTLE & Porter's 5 Analysis, 2016). Although mass transportation may be identified as a substitution, this is limited to urban areas, or cities with reliable value-adding services that would lure potential buyers away from affordable and accessible private or semi-private transportation modes.

The bargaining power of suppliers. TESLA builds strong partnerships with its primary suppliers, working closely together to develop technologies that results in its suppliers becoming the single source of components used in Tesla Motors cars (Tesla Motors—External Analysis Using PESTLE & Porter's 5 Analysis, 2016). This situation is most favorable for suppliers because TESLA relies heavily on them. It is estimated that Tesla purchases components from over 200 suppliers globally. This makes the bargaining power of suppliers very high. Because of the limited number of suppliers with cost-effective new technology alternatives, Tesla is at the mercy of current viable supply options.

Industrial rivalry. Rivalry in the electric and autonomous vehicle industry, both independently and collectively, are becoming highly competitive. The climate is escalating with players from the technology sector nipping at the heels of automotive manufacturers. Toyota, Ford, General Motors, Volvo, BMW, Volkswagen, and Audi have brought plug-in models to market (Tesla Motors—External Analysis Using PESTLE & Porter's 5 Analysis, 2016). Hydrogen fuel, hybrid, and even biodiesel vehicles also compete in this space.

PESTEL Analysis

It is important to understand the landscape that Tesla occupies, both internally and externally. This PESTEL analysis will examine six aspects of the industry which include Political, Economic, Social, Technological, Environmental and Legal factors in relation to Tesla Motors.

Political. Tesla Motors sells cars in 17 countries globally, including North America, Western Europe and Asia (Tesla Motors—External Analysis Using PESTLE & Porter's 5 Analysis, 2016). Each region has distinct approaches to doing business both politically and professionally. Environmental Protection laws that require automobile manufacturers to make cars meet strict emission levels are definitely a positive factor for Tesla. The U.S. government offers energy grants and loans for developing and researching new car technologies (Tesla Motors—External Analysis Using PESTLE & Porter's 5 Analysis, 2016).

Economic. Fluctuation and rising demand for fuel from emerging countries affects fuel prices (Tesla Motors—External Analysis Using PESTLE & Porter's 5 Analysis, 2016). Fuel prices in turn affect the demand for vehicles that consume little to no petroleum based products such as gasoline or diesel. As the supply of oil increases globally, the cost to operate and maintain these vehicles will rise. Demand for automobiles that are not dependent on these fuels will proportionately rise.

Social. Tesla builds exclusive cars. The Model S, and Model X are unquestionable in terms of status symbol value. In today's terms, social status and social awareness share a common vein. Tesla brings not only exclusivity to the table with its vehicles, but environmental awareness. Owning a luxury all-electric vehicle may improve the perception of status.

Technological. The technological landscape is evolving rapidly. Daily advancements and improvements have contributed to significant leaps. Tesla Motors leads the industry from an innovation standpoint with its Autopilot autonomous driving hardware and application offering. There are several companies inside and outside of the automotive industry that have limited functionality in regards to autonomous vehicle technology, and Tesla leads the industry with all-electric range. As technology continues to improve, this gap will diminish.

Environmental. TESLA cars produce zero emissions. In other words, 6,000 tons of CO_2 a year are removed from our delicate biosphere each year that a TESLA vehicle is on the road that replaces and displaces a traditional non-electric car. Tesla's free, solar powered recharging stations across the United States also reinforce the beneficial impacts to the environment that the organization provides through not only the vehicles, but through infrastructure to power them without oil or coal dependence.

Legal. TESLA faces multiple hurdles in the legal department. Recent examples incidents and fatalities caused by improper or even proper use of the Autopilot feature, state and federal regulation of autonomous vehicles legally and independently operating on roads, and franchise restrictions in the United States.

There are and will also be moral and ethical hurdles that will undoubtedly have legal implications as well. Autonomous vehicle navigation capability relies on AI, or artificial intelligence. This creates many questions and concerns. (Dietterich & Horvitz, 2015). Studies postulate that "auto manufacturers that are pressing ahead with driverless cars are unlikely to wait for ethical issues to be fully resolved" (Kirkpatrick, 2015).

Resource Based View Analysis

Tesla's internal environment for the years 2012 and 2013, examined through Resource Based View and Value Chain analysis. These two approached add supplemental perspectives to the overall organizational analysis.

Table 2

Financial Ratios

Expressed as Percentages				
Period Ending:	12/31/2015	12/31/2014	12/31/2013	12/31/2012
Liquidity Ratios				
Current Ratio	99%	151%	188%	97%
Quick Ratio	54%	106%	137%	48%
Cash Ratio	43%	91%	126%	41%
Profitability Ratios				
Gross Margin	23%	28%	23%	7%
Operating Margin	18%	6%	3%	95%
Pre-Tax Margin	22%	9%	4%	96%
Profit Margin	22%	9%	4%	96%
Pre-Tax ROE	80%	31%	11%	318%
After Tax ROE	82%	32%	11%	318%

Table 2 Financial Ratios between 2012 to 2015. (TSLA Key Financial Ratios, n.d.)

Tangible resources. Evaluating Tesla's Financial Ratios gives key insight into the overall performance of the organization. While liquidity ratios and gross margin appear to be trending well, profitability ratios indicate that the company is not performing well in this area and has not been for some time. A deeper investigation is needed to understand more specifics.

In Table 2, the quarterly statements for September 30, 2013 versus September 30, 2012 are prepared for comparison. These results show how marginal the company's operations have been in the early development stage and without wide market sales acceptance, even though preorders seem most optimistic for the company.

Table 3

Quarterly Statements - Part I

Income Statement, Quarterly, September 30, 2013 vs. September 30 2012		
Period Ending	30-Sep-13	30-Sep-12
Income Statement (000 USD)		
Net Sales or Revenue	$431,346	$50,104
Cost of Goods Sold Including Depreciation	$328,478	$58,865
Cost of Goods Sold Excluding Depreciation	$300,028	$51,343
Depreciation, Depletion and Amortization	$28,450	$7,522
Gross Income	$102,868	($8,761)
Selling, General, and Administrative Expenses	$133,422	$99,699
Research and Development	$56,351	$61,901
Other Selling, General, and Administrative Expenses	$77,071	$37,798
Operating Income	($30,554)	($108,460)

Table 3 shows Tesla's growth from the first years of meaningful sales. As a new enterprise, the investment spending is shown in their losses for these 2 years, however, with a more promising trend. The results show that from an operating income perspective, the company is moving in the right direction, but positive gross incomes are currently not sufficient to cover fixed costs and interest payments. The scalability of the organization's business model suggests that revenues are growing at a faster rate than gross income, suggesting inefficiencies in the production process from having additional staff with poor utilization rates. In addition, the

general overhead costs seem to have less instability, suggesting that administrative costs are being leveraged well. It does appear that selling expenses are well developed to handle increased sales with greater efficiencies. Perhaps the most troubling measure is the decrease in research and development expenses, potentially indicating that less focus is on the next generation of new products, something potentially a major vulnerability. However, the most challenging costs for the company will emerge when long-term debt for expansion will dramatically increase interest expenses that are currently surprisingly low, as shown in Table 4.

Table 4

Quarterly Statements - Part II

Income Statement, Quarterly, September 30, 2013 vs. September 30 2012		
Period Ending	30-Sep-13	30-Sep-12
Income Statement (000 USD)		
Unusual Income (Expense)- Net	($740)	($2,188)
Interest Expense	$6,492	$78
Interest Expense on Debt	$6,892	$2,178
Pretax Income	$37,718	($110,688)
Income Taxes	$778	$116
Consolidated Net Income	($38,496)	($110,804)
Net Income before Extraordinary Items	($38,496)	($110,804)
Net Income	($38,496)	($110,804)

As shown in Table 4, the company's net loss decreased by over 60%, although net revenues increased by 860%, suggesting that the organization is burning through much of investors initial investments. In other words, the company will need to attract more shareholders or acquire even more debt than they currently have to sustain operations, something that could delay positive earnings for at least 2-3 more years. As such, 2016 fiscal year will be a critical

turning point for them as preorders could justify additional debt leveraging to obtain working capital for producing booked orders. The overall negative returns to shareholders are shown in the share reports illustrated in Table 5, suggesting that it will be another 3 years before recovering from investor prior-year losses.

Table 5

Quarterly Statements - Part III

Income Statement, Quarterly, September 30, 2013 vs. September 30 2012		
Period Ending	30-Sep-13	30-Sep-12
Share Measures (USD)		
EPS (Operational)	($0.32)	($1.05)
Earnings per Share (Basic)	($0.32)	($1.05)
Earnings per Share (Diluted)	($0.32)	($1.05)
Earnings per Share - As reported	($0.32)	($1.05)
Earnings per Share (Fully Diluted)	($0.32)	($1.05)
EPS (Fiscal Year)	($0.32)	($1.05)
Earnings per Share from Continuing Operations - Fiscal	($0.32)	($1.05)
Earnings per Share - Security	($0.32)	($1.05)
Earnings per Share After Extraordinary Items	($0.32)	($1.05)
Shares Used to Calculate Basic Earnings per Share	121,862,490	105,556,163
Shares Used to Calculate Diluted Earnings per Share	121,862,490	105,556,163
Common Shares Used to Calculate EPS - Basic	121,862,490	105,556,163
Dilution Adjustment		
Closing Price- End of Fiscal Period	$193.37	$29.28
Common Shares Outstanding Security	122,566,090	105,772,431
Diluted EPS- Percentage Change Before Extraordinaries	$69.52	($66.67)

Table 6

Quarterly Statements - Part IV

Income Statement, Quarterly, September 30, 2013 vs. September 30 2012		
Period Ending	30-Sep-13	30-Sep-12
Income Statement (000 USD)		
Gross Income Before Interest Charges	($32,004)	($110,726)
Operating Income After Unusual Items	($30,554)	($108,460)
Operational Income Before Depreciation and Amortization	($2,104)	($100,938)
Income Before Extraordinary Items - Available fore	($38,496)	($110,804)
Net Income Available to Common - Basic - After Extraordinaries	($38,496)	($110,804)
Net Income Available to Common - Fully Diluted	($38,496)	($110,804)
Net Income Available to Common - Fully Diluted - After Extraordinaries	($38,496)	($110,804)
Net Income Before Extraordinary Items/Preferred Dividends	($38,496)	($110,804)
Earnings Before Interest, Taxes, Depreciation, and Amortization (EBITDA)	($2,104)	($100,938)
Earnings Before Interest, Taxes and Unusual Expense	($2,776)	($103,088)
EBITDA from Cash Flow	($2,776)	($103,088)
EBITDA IB	($2,104)	($100,938)
Total Operating Expense	$461,900	$158,564
Operating Expenses	$300,028	$51,343
Non-Operating Expense	($672)	($2,150)
Other Interest Expense	$7,292	$4,278

Because all stocks ae in common shares, the income allocations shown in Table 6 are trending well. However, it appears that 2020 will be the year that shareholders will achieve book value parity and actually break even against initial investments and at least having the potential to anticipate some dividend returns.

An image of a company that is quite literally bleeding cash emerges. Tesla's reported quarterly financials were not doing well; TESLA lost around $38.5 million USD in the last quarter of 2012. Then in 2013, the organization grew sales considerably**.** Net Income remains negative for the company, though trends better in 2013.

There are also indications that the losses are expected in the short term in exchange for long term gains. An example of this can be seen in that Tesla Motors invested $76.55 million in capital expenditures, while financial and operating activities covered the investment, which eventually generated a net cash increase of $49.06 million.

Physical Facilities

Tesla's equipment, property, and plant were valued at $562 million in 2012. The company was ramping up for production on the Model X, and the creation of a supercharger network across the US where owners could plug in and recharge, free of charge. This network enables travel from coast to coast without paying for fuel, and as these stations use solar energy, a nearly carbon neutral footprint. There were also plans to bring these superchargers to Europe for the same purpose. As the network of superchargers grows, these assets increase proportionally.

Chapter 5: Conclusion

Tesla Motors is a manufacturer of luxury all-electric vehicles. UBER provides a service in the form of an application that connects passengers needing or wanting a ride, with drivers willing to pick them up and deliver them to their destination for a fee. Tesla Motors has not demonstrated healthy performance in regard to profitability since inception. UBER has been profitable. A decision made now to enter into the ride share market by Tesla Motors, given its brand recognition, is poised to capture share of the multi-billion-dollar industry and become profitable within the next 3 years. There is a two-phase approach for implementation should maximize both short-term and long-term profitability for the organization.

Based on the analysis, an exclusive ride sharing app along with targeted incentives primarily geared towards Tesla owners and drivers that aspire to become owners, as well as UBER riders should be developed and tested immediately, with full implementation and deployment over the next 6 to 12 months. Ideally the launch should coincide with the release of the anticipated and more affordable Model 3. This is the first phase.

The second phase involves automation. Although it begins in parallel with the first phase, the requirement is to continue research and development into advancement of the Autopilot feature. Autopilot is still in beta phase, meaning that an operator must still maintain awareness and control of the vehicle at all times. The feature does allow the vehicle to change lanes, apply brakes, and follow GPS coordinates to a destination where it will even park itself.

The last alternative is to do nothing. This would be an active decision to reject both phases as outlined above.

Discussion

Why rideshare? This is the fundamental question posed, and the answer comes from

research, “In the Uber-All economy, the relationship between consumers and producers or retailers changes from ‘go to’ to ‘come to.’ Heretofore, consumers have had to go to producers or retailers to initiate and complete transactions” (Smith, 2016). This model supports expansion and inclusion of new markets and new consumers in markets that do not require sales, but will still result in significant revenue streams for Tesla Motors. The organization transforms from a “go to” retailer, to a “come to” retailer and service provider. It creates the formula for sustained profitability, benefits the environment, and creates value for customers.

Expert findings support that adoption of one or both phases of this approach can be successful in expanding Tesla’s market: “instead of selling products outright, companies can expand their potential markets by renting access to products that people used to buy” and it goes on to state, “offering transportation as a service instead of selling automobiles” (Cusumano, 2015). That said, the suggestion is not to eliminate the sales of automobiles, but to incorporate a rideshare business model that compliments sales and leasing.

Potential buyers reluctant to spend $35,000 USD on the new model could see this type of arrangement as a way for the purchase to pay for itself in part, or in whole. This would result in penetration of a new segment, and could result in the added benefit of increased sales for Tesla Motors. Additionally, revenue can be generated by the successful model employed by UBER where a percentage, about 20% is kept by Tesla for every ride.

As a manufacturer, Tesla Motors has unique advantages. Every strength identified for UBER can and should be closely emulated by Tesla. Every opportunity listed for UBER, can be applied to Tesla. Every threat and weakness listed for UBER, can be targeted and also used as an advantage by Tesla. This is particularly important in regard to autonomous vehicles.

Tesla vehicles are currently the most advanced autonomous driving capable fleet in

production within the automotive industry. Once the operator requirements and regulations are lifted, and the vehicles become fully autonomous, the second phase should begin deployment. Without drivers, Tesla would no longer capture only 20% of fares, but the whole 100% of every ride in autonomous circulation.

Adoption of only the first phase could result in significant improvements in profitability over the next 3 years. This alone could help produce the significant reductions in CO_2 emissions globally as outlined previously. Targeting new markets within and outside of the rideshare industry could also disrupt, and improve profitability.

Currently, UBER is expanding services beyond rideshare by offering services such as package delivery and UBEREats, a food delivery service that utilizes its existing driver force. Customers log in to the app from a mobile device and place orders from restaurants in or outside of the immediate area, and a driver picks up their order and delivers it to their doorstep. Tesla could offer similar services, with the added differentiator that no fuel was combusted in the delivery of food or packages to its customers.

An untapped market exists in healthcare. It has been reported that in the state of New Jersey, Medicare paid ambulance companies nearly $200, plus an additional $6.00 per mile, for each one-way ride a non-emergency patients had taken both to and from treatment, or medical office visits (Ornstein, 2014). Ambulance companies collected $890 million from Medicare in transportation costs for the population of hemodialysis patients alone in 2011 (Ornstein, 2014).

This service could be provided to many other patient populations at a significantly lower cost to patients themselves, Medicare, and insurance providers that partner with Tesla's Rideshare. Passengers who have routine medical appointments, could use the regular rideshare service.

An additional dedicated medical rideshare division can be established that utilizes skilled healthcare drivers with basic and specialized training. The medical rideshare program could consist of a pool of drivers that complete courses in BLS (Basic Life Support, or CPR) and ACLS (Advanced Cardiac Life Support) or other specific training that would be needed for specific types of patient transport. This prospect may be a fit for off-duty EMT, Firefighters, or other skilled healthcare workers looking to supplement their income while providing a meaningful service.

Payments for drivers that are certified and requested for specialized transport should be compensated at the rates that Medicare and insurance companies currently authorize for medical transport. Tesla would retain the customary 20% for this service as well. In New Jersey, that could mean that the driver would earn $200, plus $6 for every mile, for a one-way transport, minus 20% that Tesla pockets. Alternatively, it is suggested that Tesla charge half the approved rate making it $100, plus $3 for every mile, for a roundtrip or one-way trip.

This could pave partnerships with insurance companies, force prices for the service in the medical transport industry to drop, and alleviate some of the costs that plague the healthcare industry. It would also improve patient access to care. Current transport services require patients to schedule roundtrip pickup and drop-offs days or weeks in advance. Tesla's medical rideshare service would be an on-demand service, alleviating stress for patients who won't have to plan or schedule transportation in addition to medical visits.

Adopting the second phase in addition to the first phase would establish Tesla firmly as not only an innovative manufacturer, but also an innovative service provider. Although implemented, this phase may or may not be deployed as it is completely dependent upon technological advancements and government regulation. However, continued development

would be possible in parallel with the first phase.

The third scenario, is to reject the proposed suggestions entirely. Rejecting the proposals would continue Tesla Motors on the path of current trends of performance regarding profit. Historical evidence shows that failure to adapt or expand into new markets can lead to the failure of an organization. Research indicates that "Tesla must achieve continual cost reduction so that it can continue to encroach down-market if it strives to grow sales volume" Rhee, Schmidt, &Van Orden, 2012). In the case of the Model 3, targeted at a $35,000 base price, it is a step in the right direction. However, there is no guarantee that encroachment alone into the existing markets will be sufficient to boost profitability, and continued cost reduction strategies are not sustainable.

There are many examples of companies with unsuccessful practices that have caused significant losses. One such organization is Eastman Kodak (KODK). Once a prominent film manufacturer, the organization refused to adapt to a changing market, and rapidly expanding improvements to the digital camera and film technologies. The company suffered heavy losses, has and is not expected to ever fully recover.

It paints the financial portrait of a legacy of failure caused by reluctance to adapt, and how it manifests as an unsuccessful practice that can be seen in Table 7. It is critical to understand this as it demonstrates the possible results of inaction as Kodak chose, versus innovation during their strategic decision making process surrounding innovation and expansion. These lessons learned about the inability of technology to remain a competitive advantage that is continually sustainable, suggests how important profound change that is disruptive to the research of the industry is required to support significant long-term volumes as additional competitors eagerly enter the market as the category continues to show positive gains and significant growth potential.

Table 7

Eastman Kodak Co. Income Statement

EASTMAN KODAK CO (KODK) CashFlowFlag INCOME STATEMENT						
Fiscal year ends in December. USD in millions except per share data.	2010-12	2011-12	2012-12	2014-12	2015-12	TTM
Revenue	7187	6022	4162	2102	1798	1749
Cost of revenue	5236	5135	3571	1646	1417	1365
Gross profit	1951	887	591	456	381	384
Operating expenses						
Research and development	321	274	207	94	61	57
Sales, General and administrative	1277	1159	824	310	226	214
Restructuring, merger and acquisition	70	121	228	59	38	25
Other operating expenses	619	-67	-95	9	2	13
Total operating expenses	2287	1487	1164	472	327	309
Operating income	-336	-600	-573	-16	54	75
Interest Expense	149	156	158	62	63	64
Other income (expense)	-76	-2	-829	-34	-26	-12
Income before taxes	-561	-758	-1560	-112	-35	-1
Provision for income taxes	114	9	-257	10	32	33
Net income from continuing operations	-675	-767	-1303	-122	-67	-34
Net income from discontinuing ops	-12	3	-76	4	-8	-2
Other				-5	-5	-4
Net income	-687	-764	-1379	-123	-80	-40
Net income available to common shareholders	-687	-764	-1379	-123	-80	-40
Earnings per share						
Basic	-2.56	-2.84	-5.07	-2.95	-1.91	-0.95
Diluted	-2.56	-2.84	-5.07	-2.95	-1.91	-0.95
Weighted average shares outstanding						
Basic	268	269	272	42	42	42
Diluted	268	269	272	42	42	42
EBITDA	-34	-308	-1160	149	173	200

Note. (Eastman Kodak Co., n.d.).

Recommendations

The primary recommendation is immediate initiation the two phased approach as outlined earlier. Additionally, Tesla Motors should also plan and pursue this expansion globally as an

optional third phase of deployment. Autonomous vehicles should meet certain requirements beyond and in addition to all legal requirements.

1. Passenger safety must be prioritized, and vehicles must comply with local regulations.
2. Vehicles must be able to determine optimal routes.
3. Vehicles must be aware of available range before accepting passengers.
4. Vehicles must be able to return to a charging station at a predetermined depletion point, or to a service center if any abnormal conditions occur in the vehicle or its components.
5. Charging stations should be staffed by attendants, or equipped with a mechanism for charges to occur. This would be an ideal application for Tesla's prototype device referred to by Elon Musk as the "solid metal snake" (Miller, 2015), as shown in Figure 3. It is specialized equipment that automatically detects, connects, and recharges Tesla vehicles.

Figure 3. Tesla's "Solid Metal Snake" automated charging station prototype. (Tesla, 2015).

An optional suggestion would include reevaluation and revitalization the battery pack swap technology that Tesla invented for customers to exchange batteries in about 90 seconds, compared to waiting hours to recharge. Although the program was launched in California in

2015, it has been underutilized by customers reluctant to pay for the service. According to Musk, "People don't care about pack swap. The superchargers are fast enough. Based on what we're seeing here, it's unlikely to be something that's worth expanding in the future unless something changes" (Korosec, 2015).

The rideshare program would be the something that changes. Drivers for the service could be back on the road, transporting passengers within minutes during Phase 1. In Phase 2, this technology becomes even more relevant to recharge and dispatch autonomous vehicles quickly.

ROI comparison between UBER and Tesla must be observed. What has each company done within a period of seven years? Based on the numbers, an initial investment of $200,000 USD in 2009, was all that was needed to seed and grow UBER to its current $66 billion USD valuation in just 7 years (Spiegel, 2016). It presents the attractive potential of significant ROI for Tesla Motors that currently has an established loss of $888.66 million in just 7 (seven) years. (Tesla's net loss 2008-2015: Statistic, n.d.).

Limitations

Limitations exist in research as there are no all electric vehicle manufacturers operating a ride share service in the industry today. There are no comparisons, examples, or numbers to analyze as these data simply do not exist. It is not possible to model best and unsuccessful practices from such a business, as it does not currently operate. Regulations for autonomous vehicles may present challenges in the near future. Consumer acceptance of driverless vehicles may also pose barriers, thorough acceptance testing has not been conducted and further research is needed in this area. Full automation has also not been realized for true autonomy. Innovation at this stage requires additional investigation and research.

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Appendix A

The Mission of Tesla

Elon Musk, Chairman, Product Architect & CEO • November 18, 2013

Our goal when we created Tesla a decade ago was the same as it is today: to accelerate the advent of sustainable transport by bringing compelling mass market electric cars to market as soon as possible. If we could have done that with our first product, we would have, but that was simply impossible to achieve for a startup company that had never built a car and that had one technology iteration and no economies of scale. Our first product was going to be expensive no matter what it looked like, so we decided to build a sports car, as that seemed like it had the best chance of being competitive with its gasoline alternatives.

I suspected that this could be misinterpreted as Tesla believing that there was a shortage of sports cars for rich people, so I described the three step "master plan" for getting to compelling and affordable electric vehicles in my first blog piece about our company. This was unfortunately almost entirely ignored.

In order to get to that end goal, big leaps in technology are required, which naturally invites a high level of scrutiny. That is fair, as new technology should be held to a higher standard than what has come before. However, there should also be some reasonable limit to how high such a standard should be, and we believe that this has been vastly exceeded in recent media coverage.

(Musk, 2013)

Appendix B

IRB Approval Coversheet

Approval Page

Cardinal Stritch University
College of Business and Management (CBM)
Research Advisory Committee (RAC) Of the Institutional Review Board

Research Proposal Form

Documentation of Protection of Human Participants
Course Instructor sends this form to the office of the regional Research Director

No data are to be collected prior to approval of the proposed topic.

Student Researcher: Name Rodrigo Ayala **Phone:** 414 779-1229
Student I.D. 272643 **E-Mail Address** rayala1@wolfmail.stritch.edu
Region II **Group** MBAS32H **MBA** ✓ **MSM** _____ **MBA-H** _____
Date Research Proposal Submitted: 7/5/2016 **Expected Graduation Date:** 08/2016

Assurance: I have read the CBM-RAC Statement for Protection of Human Participants in Research and understand my obligations and responsibilities regarding use of participant names, obtaining informed consent, and other required research procedures for protecting human participants and I agree to comply.

Student Signature: _____ **Date:** 7/5/2016

Human Research Protocol (Faculty/ Research Advisor **check one and sign below**):

X **Exempt:** No human participants (data are from secondary, non- human sources, existing demographics, financial, market forecasts, statistical abstracts, etc.) & no external funding.

___ **Exempt:** Human participants from non-protected population, minimal risk & no external funding. This research requires **one copy of** HPRP I with a description of sampling methods for recruitment of a population of human participants and a copy of all surveys tools (questionnaires, interview questions, focus group questions) to ensure that the research involves neither deception nor sensitive questions. Minimal risk means that human participants are not from a protected population and there is documentation of informed consent

___ **Requires Review by CBM-RAC:** This research involves one or more of the research factors that require HPRP I and HPRP II to document protection of human participants, e.g. protected population, sensitive questions, external funding, etc. In addition to a description of sampling methods and a copy of all surveys, HPRP I and HPRP II must accompany this proposal. **Note**: The CBM-RAC will determine whether the Proposal requires full review by the Cardinal Stritch University Institutional Review Board (IRB).

Signed _____ Date: 7/8/2016
(Course Instructor)

CBM 1/2002