

A Comparative Study: Application of Strategic Operations Management Decisions in Automotive Industry Pioneers

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Abstract

Automotive manufacturing is a highly profitable industry. To ensure production effectiveness and efficiency, the manufacturer must plan ten important operational management decisions. Generally, the plan will help to maintain a competitive advantage for respective companies. The sector has become increasingly competitive globally including the United States as new firms enter the market with more vehicle options and specialisation. General Motors and Ford are the two most successful automakers in the United States. GM has become a significant rival to Ford since it overtook Ford in 1929. Through the years until today, Ford is still unable to compete with GM in the USA market. Therefore, the paper is an effort to compare the strategies planned by GM and Ford in maintaining their competitive advantage in the automotive industry in the US. The study focused on strategic planning through only two critical decisions viz product design and quality management. A qualitative design was used to build a comprehensive theory, then supplemented with literature review findings. In addition, various strategies for achieving the mission were assessed, including research into how well, the already undertaken approaches are performing. This paper examines the new business strategy following more stringent rules and regulations for environmental protection, advanced technology, and customer preferences. These results will assist relevant stakeholders in gaining a deeper understanding of the dynamics in the automotive industry. They will uncover a meaningful difference between the two companies' approaches while attempting to ascertain the precise reasons for GM and Ford's rivalry in the US.

Keywords

Operation management, automotive industry, product design, quality management, manufacturing

1. Introduction

Operations management (OM) is the set of activities that creates value in goods and services by transforming inputs into outputs. The techniques of OM apply throughout the world to virtually all productive firms. Activities creating goods and services take place in all organisations. The ten strategic OM decisions are introduced. Successfully

addressing each of these decisions requires planning, organising, staffing, leading, and controlling (Heizer. et al., 2017).

The automotive industry is a significant component of economic growth in all industrialised countries. OM has been seen to be vital and valuable in any firm, and it is a widespread activity embracing all sectors of the economy. All firms must consider all the strategic OM decisions to maintain or create their competitive advantage (Heizer. et al., 2017). Product design and quality management are the first two critical decisions to consider in planning the strategy for OM.

Automotive manufacturing is one of the most profitable industries globally, with an estimated economic impact of 2.9 trillion US dollars, and employs 8 per cent of the economically active world population (Meyer, 2017a). Automotive manufacturers in the United States (US) are increasingly competing as new models are introduced, and more options are available (Research and Markets, 2019).

Only a few companies were eager to grow in the early days of the automotive industry. To put it another way, today, 14 large multinational corporations control more than 60 major automotive brands worldwide, which does not even include the small local firms in various countries (Top Speed, 2020). Even new competitors continue to enter the market, especially in the low-price vehicle segments, where sales are increasing rapidly. There is also a steady increase in demand for passenger cars and light commercial vehicles (Research and Markets, 2019).

Worldwide, the automotive industry is heavily influenced by economic and political conditions on a national and international level. Customers and businesses have the freedom to decide when and if to replace an existing vehicle because vehicles are durable goods. Slowing economic growth, geopolitical events, and other factors may influence vehicle purchase decisions. As a result, the number of cars, trucks, and SUVs sold annually varies widely. Moreover, the automotive industry is a highly competitive market with a growing number of manufacturers offering a wide range of products and services (Barclay Palmer, 2021; Ford Motor Company, 2021a; General Motors Company, 2021a).

General Motors Company (GM) and Ford Motor Company are the two pioneers in the automotive industry in the US. In the face of increasing competition in the global automotive industry, both have a generic strategy (Porter's model) (Meyer, 2017b). Ford has become a competitive rivalry towards GM since the early 1900s.

Generally, both firms design, manufacture, and sell trucks, crossovers, cars, and auto parts in many countries worldwide. GM marketed their product under the Baojun, Buick, Cadillac, Chevrolet, GMC, Holden, and Wuling brands (General Motors Company, 2021a). In contrast, Ford only marketed their brand and Lincoln luxury vehicles (Ford Motor Company, 2021a). Both firms provide auto financing services viz General Motors Financial Company, Inc. (GM Financial) and Ford Motor Credit Company LLC (Ford Credit).

Globally, GM and Ford have 12,358 and 10,717 dealerships, respectively, according to their 2020 Annual Reports. Ford and General Motors have become significant competitors in the United States. On the other hand, Ford has been unable to catch up to GM since GM overtook Ford's. There has not been any significant change in GM's market share in the United States since 1927 (Ford Motor Company, 2021a; General Motors Company, 2021a). Table 1 shows the market share held by both firms in the US, as GM remains the most significant market share of the automotive industry in the US.

Table 1: Market share GM and Ford in the US

Market Share	2018	2019	2020
GM	16.7% ^a	16.5% ^a	17.1% ^a
Ford	14.1% ^b	13.8% ^b	13.7% ^b

Source: (General Motors Company, 2021a)^a, (Ford Motor Company, 2021a)

Over the last few years, many governments have passed new laws and regulations to try to become more environmentally conscious, with the introduction of green chemistry, life cycle analysis, and product stewardship strategies all occurring at the national level as various governmental agencies have begun implementing these approaches in their missions to prohibit or restrict the use of harmful chemicals and find acceptable substitutes (General Motors Company, 2021a). On top of that, these rules increase the amount of work and money that it takes to

design a vehicle. Both firms require unequivocal support for efforts to reduce regulatory complexity (Walston, 2021; Ford Motor Company, 2021a; General Motors Company, 2021a)

Nevertheless, this paper aims to explore and recognise the differences between GM and Ford regarding the competitive advantage by implementing OM decisions. A comparative analysis between these two companies looked at OM's quality management and product design decisions. Decisions have been changed to make two different strategies for the same industry.

2. Literature Review

2.1 Mission and competitive advantage

For optimal operational management, having a mission and strategy are critical because they enable the operation to be clear about its goals and how to reach them. A mission, or a firm's purpose, and strategy are nearly the same, as a strategy is designed to be a roadmap toward the firm's mission. Heizer. et al. (2017) stated that the mission provides the firm with focus, outlines boundaries, and offers a framework for its existence, giving it a rallying point for the people who work there. A clear objective is critical to being able to establish a strong plan.

A mission, vision, and values can energise an entire organisation to pursue a future they share. To start, having a well-defined mission, vision, and values give companies extra energy and sets them apart from competitors (Kettunen, 2016). Competitive advantage means building a system that provides customers with unique benefits that no other company offers sustainably and efficiently (Heizer. et al., 2017).

2.1.1 GM: Luxury for the Masses

General Motors' essential competitive strategy is cost leadership. GM initially created their competitive advantage according to the attraction of low costs and corresponding low prices of products. According to Kissinger (2017b), GM has offered a lower price in the same car segment than other luxury manufacturers like Mercedes-Benz. Therefore, customers will attract more to the vis a vis lower price, making GM lead in their competitive advantage.

GM has constantly been a significant threat to Ford since the automaker rose to the top in the United States as the most prominent car manufacturer and surpassed Ford in 1927. In order to offer a more excellent selection of products, GM employs its generic strategy of comprehensive differentiation. Americans began to value style and design rather than just the lowest price. Americans also started earning higher wages, which increased their overall consumer lifestyle (Meyer, 2017b). The choice indicated that the manufacturer had strengthened its standing in the automobile industry by marketing a variety of brands.

With the rise of the competitors in the automotive industry, with the advance of technology and difference in customers preferences, GM has established new goals for in the automotive industry viz zero crashes, zero emissions and zero congestion. In January 2021, GM launched a new logo and slogan, 'Everybody In', as a metaphor for the firm's commitment towards transformation to Electric Vehicles (EV) by 2035 (ACT News, 2020; Kirsten Korosec, 2021).

In the constantly changing market, GM recognised the importance of having reliable guidelines to guide the work. The firm handled unforeseen issues and emerging chances effectively, leading to substantial results. Because of this, several strategies have been put into place to accomplish their objective (General Motors Company, 2019); GM's missions components are summarised in table 2.

Table 2: GM's Mission Components

Component	Details
Board	As GM's most significant opportunity, GM should continue to reduce emissions stemming from our products, as this affects 75% of emissions that GM wants to address.
Transformative	Since the automotive industry started over a century ago, it has been undergoing the most significant technological transformation ever seen; new goals must be equally transformational.

Inclusive	Our success is primarily driven by individual ownership and accountability, so every member of the GM team must do his or her part to further the goals that have been
Far-sighted	GM has its eye on long-term viability, including green design and eco-friendly materials that address long-term resource issues.

Source: (General Motors Company, 2019, 2021b)

2.1.2 Ford: Cost Leadership at The Heart

Ford has used a low-cost approach in the early 1900s to secure a larger market share and maintain profit levels in the US automotive industry. Using this plan, their output increased enormously (Powell et al., 2014). Ford must take on a mission to become competitive in the automotive industry now because the demand has increased, and advancements in technology have allowed the company to expand its segment of competitive advantage. Nevertheless, the central concept of competitive pricing through low costs is still a decisive factor (Powell et al., 2014).

Since Ford's primary objective has been to emphasise competitive advantages through differentiation, the company has implemented a generic strategy to gain a competitive advantage in 1927 by focusing on specialisation. Even though it has lost ground on some fronts, Ford has not shifted its core cost leadership strategy. To face off against firms like GM and Toyota, the company is gradually adopting the generic approach to diversification. In short, Ford must push to be better than its competitors through product innovation (Meyer, 2017b).

Ford introduced The Plan in October 2020, which restated and expanded its corporate purpose with initiatives aimed at turning the company around. The mission is to improve society, where everyone has the ability to prosper. Ford firmly believes that everyone has the ability to build a world with fewer limitations and difficulties so that they can have the freedom to pursue their dreams. In their 2020 Sustainability Report (Ford Motor Company, 2021c), the missions components are stated in Table 3.

Table 3: Ford's Mission Components

Component	Details
Earn Trust	Ford earned the trust of its consumers through hard work and continuous, conscientious efforts. The most significant asset is trust built with global stakeholders.
Drive Progress To	Increasing access to mobility and human rights, protecting people's health and safety, preserving society's general welfare, and growing society's economic prosperity
Make Positive Impacts More	Ford want to make a positive contribution to society and the environment, which goes beyond simply reducing the harmful effects of their activities. The cars will use less fuel and release fewer emissions. However, the long-term perspective of intelligent vehicles communicating with one another and their surroundings is likely to transform people's lives for the better, allowing them to move freely and pursue their dreams.

Source: (Ford Motor Company, 2021c)

3. Methodology

This study aims to examine and compare the strategic plans of GM and Ford in the US in order to increase its competitive advantage. The paper focuses on two critical strategic decisions from OM: product design and quality management. Therefore, an appropriate research method is vital in achieving the purpose of this paper. The literature review will be performed to analyse the comparative of GM and Ford in developing their OM strategy, mission and competitive advantage of GM and Ford. Secondly is to identify the strategy planned by GM in achieving the mission. Finally, the strategic planning of Ford in maintaining their competitive advantage and to compete with their rival, GM.

This report findings are based on various frameworks, which were combined to yield relevant data for the paper's focus. It is essential to mention that the paper's findings were determined by first using primary data sources and then

by using secondary data sources. To learn about OM, the study gathered primary information from various sources. In contrast, investigation about the firms uses previously published documents and annual reports and other online publications.

Certain limitations limited the findings detailed in this report. The research had two significant limitations: time and money. Both issues arose from macroenvironmental regulations, which were outside the researcher's control when the study was conducted. It is also because of the privacy of each firm.

4. Discussion

The details of the study will be discussed in the two subsections focusing on the strategic planning of each firm in maintaining their competitive advantage in the market, and thus to envision towards conquering the market share of the automotive industry in the US.

4.1 GM: A mission towards Electric Vehicle (EV)

GM focuses on innovation with electric vehicles, as new investments are allocated towards reducing emissions and improving fuel economy. These expenses cover the development of new models, autonomous vehicles, vehicle control systems, and driver and passenger safety. In the fiscal year 2020, research and development expenses reached \$6.2 billion (General Motors Company, 2021a).

4.1.1 Product Design

Future scenarios of zero crashes, zero emissions, and zero congestion are forecasted due to autonomous technology. To make autonomous vehicles a reality as soon as possible, GM has decided to construct electric vehicles with self-driving capabilities already built-in rather than through upgrades (General Motors Company, 2021a).

GM has pledged to go completely electric and is funding multiple technological advances emphasising reducing fossil fuel use and greenhouse gas (GHG) emissions and zero-emission battery electric vehicles as part of their long-term strategy (General Motors Company, 2021a). Right now, the Bolt EV is offered by GM, and they have plans to invest \$27 billion over the next five years in developing self-driving and electric vehicle technologies and will introduce 30 new electric vehicle models in the same period (Chuck Walston, 2021; General Motors Company, 2019).

To do this, GM is working on different vehicle types and options that work for different lifestyles and price points. Another goal is to eliminate tailpipe emissions to become carbon neutral in products and operations by 2040 and to achieve that goal for all light-duty vehicles by 2035. (General Motors Company, 2021c).

GM strives to help grow electric vehicle sales by ensuring that customers will have access to reliable charging stations. Personal vehicles require tackling charging issues in the home, workplace, and public locations. This means providing them with turnkey charging and related energy management services for vehicles in the fleet. GM works with several charge network operators, including collaborative research to access real-time data of charge station health in the myChevrolet app by using the operators' networks. This is available to the Chevrolet Bolt EV drivers, who can now get the Energy Assist feature (General Motors Company, 2021a).

In January 2021, GM released a new product called BrightDrop, with the mission of helping delivery and logistics companies deliver goods faster and more efficiently by creating an electric ecosystem that includes electrical first-to-last mile products, software, and services. Additionally, GM will spend \$1 billion to update the CAMI plant in Ingersoll, Ontario, turning it into a BrightDrop EV600 electric cargo van manufacturing facility (General Motors Company, 2021a).

The Cruise Origin is the first truly integrated autonomous vehicle with no driver. The vehicle was unveiled in January 2020 by Cruise in collaboration with GM, Cruise, and Honda. A completely new electric drivetrain architecture will be at the heart of the Cruise Origin; it has based on the Ultium battery system (General Motors Company, 2019, 2021a)

GM was delighted when Microsoft announced it would be investing \$2.2 billion in Cruise alongside other investors, with the deal to go live in January 2021. If GM is quick about it, Cruise might find additional funding for this mission in 2021. For the good of the community, the current endeavour of Cruise is to deliver its self-driving services with safety as the primary concern, which may also include saving people's lives and shaping urban and rural communities (General Motors Company, 2021a).

Using alternative fuels offers vast possibilities to reduce petroleum use and emissions caused by transport. GM is able to continue the global operation research in support of both ethanol and natural gas use because of the experience and knowledge developed around these technologies. GM will continue developing FlexFuel vehicles that can utilise ethanol-gasoline blend fuels and technologies to support compressed natural gas and liquefied petroleum gas (General Motors Company, 2021a).

The firm also revealed its dedication to Hydrotec hydrogen fuel cell technology in its annual report (2021a). Additional benefits come from shorter refuelling time, more extended range, and the ability to carry heavier payloads, which will suit customers' fleet refuelling needs. GM and Honda, through their long-term strategic alliance, to collaborate in research and advanced engineering efforts on fuel cell systems, are developing and commercialising fuel cell systems. Agreement to supply Hydrotec fuel cell power cubes to Navistar in its production model fuel cell electric vehicle. (General Motors Company, 2021a).

GM continues to work to raise the percentage of renewable energy being used, boost energy efficiency, and promote and increase renewables' growth. The firm had initially planned to power its operations in locations worldwide with renewable energy by 2035, which is five years later than the original plan. To ensure the firm is carbon neutral by 2040, GM has also decided to back their goals with science-based targets. Apart from the carbon targets, the firm established a goal of removing all tailpipe emissions from new light-duty vehicles by 2035 with assistance from the Environmental Defence Fund. By December 31, 2020, GM has made commitments to renewable energy development and signed contracts globally that will enable GM to have a gigawatt of renewable energy capacity by 2023. This amount represents 60% of the electricity used in the United States and 40% of the electricity used by GM globally. (General Motors Company, 2021a).

4.1.2 Quality Management

In ensuring that customers' satisfaction with their products and services, GM placed consistent, reliable products on top of their list of priorities, which included quality management as one of the most significant concerns (General Motors Company, 2019). Assurance of Quality ISO 9000 certification; a standardised approach to managing and assuring quality is obtained for all manufacturing operations.

Additionally, GM changed to the ISO 9001:2015 standard, which syncs with the most recent trends. In addition, they utilise the Global Manufacturing System (GMS), which provides information for all business operations and is more comprehensive than any outside standards.

"Initial quality," a phrase that denotes the many faults' customers find in their cars' performance and appearance in the first few months of ownership. For example, component failures have become a distant memory regarding top concerns about initial vehicle quality. Through a critical metric such as this, GM monitors the performance. Incidents per thousand vehicles in the preceding 12 months (General Motors Company, 2019).

Other than that, managing quality also involves understanding how customers feel and considering their interests by listening to their suggestions and concerns. When a customer enters a car, it is impossible to avoid hearing and feeling many things, such as the sound of the engine starting or the transmission shifting. One of the most significant obstacles in the automotive design industry is quantifying human interaction, which is exceptionally subjective. To overcome this, GM has developed Human Vehicle Integration (HVI). This comprehensive software goes through each level of the design process and examines the customer's needs to turn them into quantifiable specifications for the vehicle (General Motors Company, 2021c).

Improved tools and programmes have aided employees of GM around the world, and as a result, they can respond better and faster to customers' wants. Black Belt Design for Six Sigma status must be attained within a given time frame by the Global Product Development organisation to join the company. The study concluded that GM had the highest score of all automakers surveyed in 2020's first round of the JD Power Initial Quality Study (IQS). The IQS measures faulty components and unpleasant features (General Motors Company, 2019).

The company always puts its customers first and performs a Dealer Quality Program to ensure that customers receive the best possible experience at dealerships. The fact that GM has chosen to use two different methods of quality

management in order to ensure consistency in their performance is engaging. The Standards for Excellence (SFE) serves to evaluate the performance of dealers in sales and service. In addition, the Essential Brand Elements (EBE) ensures that dealers are committed to delivering top-level customer service. The success of the programme hinges on achieving a certain level of performance. Ultimately, GM always put priority on their customers. Therefore, GM also conducts a Dealer Quality Program to ensure the customers feel the best experience when visiting dealerships (General Motors Company, 2019).

4.2 Ford: Rose of iconic trucks and EV

'The Plan' is a broad set of investments in passenger cars announced by Ford in October 2020. Ford has been working to further refine and elaborate on its mission. Strategy is being implemented rapidly to reverse its car operations and turn things around by increasing quality, decreasing costs, and increasing the speed of restructuring operations with underperforming business units. The paper only focuses on reviewing the strategy of Ford in product design and quality management in their effort to achieve a competitive advantage. The strategy is based on the ten critical decisions, and the paper has only looked at reviewing this strategy.

4.2.1 Products Design

Allan Mullay became Ford's President and CEO in 2006, after which the company underwent an extensive change, becoming one of the leading automotive manufacturers. Decisions that are considered strategic have improved operation management. Mulally attempted to turn Ford into a global company with the "One Ford" concept running through its veins. This shows that unprofitable brands, such as Chrysler, were eliminated, as shown in Table 4. Significant global brands on the market include Ford and Lincoln (Powell et al., 2014). Ford's view is that it can become more efficient and innovative by cutting down on the number of brands and vehicle platforms on which numerous models are based (Barclay Palmer, 2021).

Table 4: Divestitures or discontinuations of Ford brands

Brand	Year	Remarks
Aston Martin	2007	Divestitures
Jaguar Land Rover	2008	Divestitures
Volvo	2010	Divestitures
Mazda	2010	Divestitures
Mercury	2011	Discontinuations

Source: (Barclay Palmer, 2021)

Ford has moved away from making cars and has instead emphasised the production of iconic trucks, sport utility vehicles (SUV), and EVs, which better serves their customers. Ford found this indication strongest after the December 2019 launch of the F-150, Bronco Sport, and Mustang Mach-E; retail sales went up 5.3 per cent (Ford Motor Company, 2020). Ford is dedicating around \$30 billion to developing electric vehicles and battery technology over the next five years (Chuck Walston, 2021).

Ford wants to create a unique appearance for all of its vehicles, including distinctively Ford designs like the hood's slope. The company made a recent change in a further attempt to carry out the "One Ford" concept. (Powell et al., 2014). Ford has released a new product cycle plan that aims to improve fuel economy in the company's petroleum-powered vehicles and give customers more propulsion choices like electrified vehicles while reducing GHG emissions.

It was developing electric vehicles with Volkswagen in Europe and using the VW platform to cut Ford's structural costs by scaling the benefit of EVs. Independently, Ford and Volkswagen both partnered with Argo AI to build autonomous vehicles based on Argo AI's cutting-edge self-driving technology. The two firms will utilise Argo AI's new partnership with Ford and Volkswagen to move ahead in their autonomous vehicle projects. It will be better for

the brand in the long run because these collaborations have improved the overall customer experience and given Ford more advantages, like lower costs, more scale, and increased reach.(Ford Motor Company, 2021a, 2021b).

For the EU type-approval process or United Nations Economic Commission for Europe (UN-ECE), regulations that have been incorporated into the European General Safety Regulation (GSR) have been established. The new rules will require a series of safety features, including cybersecurity standards for all cars by 2022 and 2024, respectively. EU regulators also focus on active safety features like lanes start warning systems, electronic stability monitoring and automatic braking assistance. Therefore, Ford continues to support regulations to streamline the design of cars better to make them safer (Ford Motor Company, 2021a, 2021b).

'The Plan' states that Ford must accelerate the restructuring of underperforming businesses and improve both quality and cost-efficiency to revive its automotive operations. They are bringing around the electrifying world of vehicles in many shapes and sizes for fans to rejoice in, like the Transit, F-Series, Mustang Mach-E, SUVs, and Lincoln (Ford Motor Company, 2021c).

According to the report (Ford Motor Company, 2021c), as a part of the continuation of the plan, Ford is now looking forward to exploring new models for their business. Ford will be expanding by developing battery electric vehicles (BEVs), which will be in the market around 2022. Other than that, Ford plan to go deeper on connected software, parts and services, charging and connected service plans, as well as new "customer-facing" businesses based on the self-driving vehicle platform of Argo AI, in which Ford has invested (Lambert, 2018)

In reducing CO₂ emissions in line with the Paris Climate Agreement and collaborating with California to design more efficient vehicles, Ford is the only US automaker with a full product line committed to the project. Additionally, Ford plans to invest upwards of \$22 billion in electrified and connected vehicles by 2025. Ford also has targets of zero net emissions by 2050 centred on our new emissions reduction strategy (Ford Motor Company, 2021c).

Ford has partnered with Google to use its AI, ML, and world-class data analytics skills on its cloud using a secure, trusted system. This technology will unlock the ability to offer personalised customer experiences and accelerate the strategy to modernise Ford business by electrifying, connecting, and automating the products (Ford Motor Company, 2021c).

4.1.2 Quality Management

Ford has invested in various production and quality control methods to guarantee consistent high product quality. The organisation uses Six Sigma for their quality control measurements. A control measure that the Company utilises is Six Sigma, which is focused on improving quality while incorporating continual training and assessment (Miah et al., 2015).

Ford designed Six Sigma projects to help resolve their customers' primary complaints. Ford has a three-part test for the projects it takes on, based on its ability to increase customer satisfaction, the potential for the company to decrease production costs by 70%, and the capability to save \$250,000. Ford utilises these measures to figure out quality control problems and cut costs (Powell et al., 2014).

Ford employs standard quality assurance practices, and the company tests its products for quality control. Customer demands are crucial for determining the product's quality; market research uncovers consumers' desires (Daniel Kissinger, 2017a).

Despite minor setbacks, Ford's Six Sigma programme enabled them to remove nearly \$2.2 billion in waste over the last 15 years. Applying Lean Six Sigma strategies, such as problem-solving strategies based on data to resolve waste issues (Six Sigma, 2017). The global billion-dollar savings that motor manufacturers gain via their customer-focused Six Sigma strategy is remarkable. The additional percentage of the company's success rate comes from increased customer satisfaction. Overcoming the longstanding issues of poor resource usage, low production, environmental irresponsibility, and low customer satisfaction was possible with Ford (Henry Harvin, 2021; Six Sigma, 2017).

5. Conclusion and Recommendations

Even though both companies have similar EV-focused plans, GM has made it clear that they are dedicating more to their plans, even though both companies are putting much effort into them. Ford is always just a step behind GM. It is not just about how the portion of their sales goes to electric vehicles, but also how they approach the business differently. Additionally, Ford is trailing GM in its attempts to build a battery in-house. Conversely, Ford is using third parties for its supply chain development to maintain a competitive advantage over GM.

As GM is moving much more rapidly in their shift to electric vehicle manufacturing, Ford is moving to an all-truck/SUV portfolio to capitalise on truck market demand. Although Ford is transitioning to a new EV strategy, they have not stopped producing conventional cars entirely. The improvements made to cars in the future should ensure higher standards concerning the environment and safety for the customer, without sacrificing the quality of the cars. There is growing concern over the environment in general and the significant consideration of a 'green car'. Both need to look at the issue as a whole and how this applies to customers. A key component is the plan to lower production costs to stay competitive while also improving the likelihood of retaining customers.

In addition to their advertising methods, these two companies differ in the number of brands they have under their control. GM is better situated than Ford because of its diverse range of brands, which allows them to compete better in the American automotive industry. With changes to the market, Ford may get back in the game. However, Ford should take on more risks in the race with GM. Differences in predictions of future growth create a deep divide between the firms. GM also has a competitive advantage in the vast network in their dealership. They also implement quality management in handling their dealership. GM has a high number of dealerships worldwide compared to Ford, which has helped the increase of demand and production.

This paper provides insight into the strategic planning of GM and Ford in the automotive industry of the US, which enables them to maintain their competitive advantage. The differing strengths of the firms are in ensuring mission completion. This research is both pertinent and current because it examines the strategy used by Ford to challenge GM, which has seldom been examined academically. This paper offers a comprehensive examination of the new scenario (technological innovation and stricter regulation) and the business strategies designed to engage in it. Additionally, the paper could aid in giving relevant stakeholders a broad, overall perspective to understand how product design and quality management strategy are interlinked. The use of OM strategies has assisted the firms with their overall planning.

Despite this, the events of 2020 demonstrated the necessity of modernisation to maintain a viable business. As a result of social distancing practices and widespread lockdowns brought on by the Coronavirus disease (COVID-19) pandemic, there has been an unavoidable increase in the use of digital technologies. Therefore, further research on the agility of each firm in ramping up their technology infrastructure to account for the surge is crucial, given that consumers expect more safety and convenience from automakers. The results may help give a comprehensive overview of the rivalry of these two pioneers in the digitalisation of the automotive industry in the US. In a nutshell, the future of the automobile industry will increasingly be found outside of the vehicle's doors as the needs of automobile consumers change. People will increasingly demand that more of the car-buying process, from research to purchase to delivery, can be done online. A focus on solutions that take advantage of the strengths of both local dealers and the scale of the manufacturers is not just good business but is essential for the company's future.

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