AUTOMOBILE MNC



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ABSTRACT

This project focuses on the analysis of an after-direct sales dataset to gain insights into various aspects of the sales process. The dataset consists of information related to after-direct sales, including, vehicles service, repair, insurance of the vehicles, inventory and parts changed, and more. The analysis is conducted using Python programming language and popular data analysis libraries such as Pyspark, Pandas, NumPy, and Matplotlib.

The project begins with importing the dataset using the Pyspark and performing initial data exploration to understand its structure and content. The main objective is to analyze the "Reasons" for customers not coming to the company's service centers, and hence, steps are taken to clean and pre-process the relevant data.

Throughout the project, various data visualization techniques are applied using Matplotlib to present the findings effectively. Visualizations such as bar charts, line plots, and pie charts are utilized to represent sales distribution, percentage of actual sales, and time durations.

The results of this analysis can provide valuable insights into business problems, including reasons why customers avoid the company's service centers, choose third parties for repairing, taking insurance from other sources, and more. By leveraging the power of data analysis, this project contributes to informed decision-making and strategic planning in the industry.

BUSINESS OBJECTIVE

The objective of this project is to analyze an after-direct sales dataset and gain valuable insights into the sales process. The project aims to achieve the following specific objectives:

- 1. **Standard services period limited:** Most of the customers do their vehicle services up to warranty periods.
- 2. **High Pricing:** Customers fear the high price of the company's services.
- 3. **Taking insurance from a third party:** Now, lots of other sources provide easy and offered insurance policies.
- 4. **Purchasing repair parts from the local market:** Due to insufficient knowledge of quality parts, they prefer cheap parts of the market.
- 5. **Insufficient inventory in service centers:** Customers do not wait too long for service or spare parts if not available in service centers.
- 6. **Continuous launched new version:** Continuously changes in model and design of the vehicles short the spare parts of the service centers.
- 7. **Vehicle Location:** Spares parts requirements depend on the geographical region where vehicles are driving.
- 8. **Improper monitoring of vehicle reports:** Not continuously monitored vehicle reports are also lost the requirements of the customers.
- 9. **Failed to predict customers' needs:** If we continuously monitored and tracked vehicles then we must know the requirements of the spare parts and already arranged in nearby service centers before customer reached.
- 10. **Customers Feedback:** After the repair or services of the vehicles, we need to call the customers for getting feedback and also provide minor services for free if still they raised the issue.

By accomplishing these objectives, this project aims to provide a comprehensive understanding of an after-direct sales process, identify key performance indicators, and offer insights to drive informed decision-making and strategic planning in the automobile MNC.

1. COMPANY REVIEW

This is the Automobiles MNC which I analysed the business problems. They assembles the vehicles and sales in the market directly. Automobiles MNC is a global automotive company with headquarters in the Germany. The company was founded in 1916 and has since grown to become one of the leading automotive manufacturers in the world. Automobiles MNC produces a wide range of vehicles, including cars, trucks, buses, and motorcycles. The company's products are sold in over 100 countries around the world.

Automobiles MNC has a strong commitment to innovation and has been at the forefront of developing new automotive technologies. The company has invested heavily in research and development, and its products are known for their advanced features and performance. Automobiles MNC is also committed to sustainability and has set ambitious goals to reduce its environmental impact.

The company employs over 100,000 people worldwide and has manufacturing facilities in over 20 countries. Automobiles MNC is a major contributor to the global economy and is a key player in the automotive industry.

Furthermore, the COVID-19 pandemic has had a profound impact on the automobile MNC. Lockdowns and social distancing measures forced to stay in home. This impact not running vehicles on the road. Due to which most of the vehicles just stand in garage and parking. This is reduced the requirements of services of the vehicles.

Overall, the Automobiles MNC is undergoing a profound transformation driven by technological advancements, changing consumer expectations, and market dynamics. To stay competitive and thrive in this evolving landscape, customers must embrace innovation, leverage data-driven insights, and continuously adapt their strategies to meet the ever-changing demands of customers.

2. Company's Business Problem

Firstly, I am explaining the business problem what would be get achieved in this report.

The Automobile MNC has been directly sales the finished vehicles to the customer and collect 70% of the total revenue. After direct sales, it expected value is up to remaining 30% of the revenue.

But, the problem is it earned only approx. 21% of the revenue. It lost approx. 9% of the revenue.

Direct Sales Revenue Ratio	After Sales Revenue Ratio			
Achieved	Expected	Achieved	Lost	
70%	30%	21%	9%	

We are focussed on this 9% lost to achieve a maximum of this 9%. We analyze the situation and data of the customers, find the various insights and key factors that why we have lost this 9%.

3. Proposed Solution to the Problem

The proposed solution aims to analyze an after-direct sales dataset to gain insights into various aspects of the sales process. Now, I am explaining each insight and key factor in detail with problem and solution one by one.

1. Standard services period limited:

We can see always, customers prefer their vehicle services until a given period of free services by the company. After that, they go to a third party for vehicle services. This is the company's loss. The problem is that they have a lack of knowledge of quality services with the best quality spare parts provided by the company's center. Also, not understand the terms and conditions issued by the company. So, companies need to share all these problems and knowledge with the customer from they don't preferred go to a third party.

2. **High Pricing:**

Pricing is a big factor for the customers. Parts from the company's service center are often more expensive than parts from independent retailers. This is because the company has to recoup the cost of research and development, as well as the cost of providing a warranty on the parts. They preferred a third party for purchasing spare parts and minor services due to less cost. So, the company's duty is to aware the customers of the company's quality spare parts and how it is important for vehicles. I think they provide the handbook where it explains with compare the qualities and need of the original spare parts. So, customers take it seriously and avoid the third party. Offer competitive prices on parts. This will help to offset the cost of research and development, and it will make the parts more affordable for customers.

3. Taking insurance from a third party:

Nowadays, We can see there are lots of other apps or sources which provide insurance for the vehicle with offers. When customers listen about offers they immediately get them. It is a big problem in providing vehicle insurance from the showrooms. So, we need to make some strategy that defeats the third source of the vehicle insurance provider. The executive should provide useful information and benefits of the company's vehicle insurance. If possible then also provides some offers to the customers. I hope it works.

4. Purchasing repair parts from the local market:

Customers lack the knowledge they purchased repair parts from markets other than the company's service centers. Because in the market, the repair parts are available at low cost but don't know about the quality and importance of the repair parts. They give priority to the pricing of the repair parts. So, the company must provide information about the difference between the company's repair parts and market local repair parts. How is it harmful to their vehicles? It may reduce the age of the vehicles. In conclusion, there are several reasons why customers might not purchase repair parts from the company's service centers of the vehicles. These reasons include price, convenience, trust, and warranty.

5. Insufficient inventory in service centers:

Sometimes the inventories are not present at the current location where it needs. The vehicle is to be assembled from more than a lac of major and minor parts. So, this is not necessary for every part present at all the company's service centers. Due to this sometimes need to give time to the customers for service. This problem also lost customers. I think this problem may be solved by properly predicting or monitoring the vehicles. I will explain it in detail in the upcoming factors.

6. Continuous launched new version:

We have seen that each company continuously launched an updated version of every vehicle after some time. There is each vehicle assembled from lacs of major and minor parts. The new version needs some of the new spare parts for services and repair. So, it is not possible to present each spare part in every company's service centers. So, proper monitoring and predicting the customer's vehicle and what spare parts will be required.

7. Vehicles location:

Where vehicle driving by customers helps in predicting the need for spare parts will require in nearby service centers. We know the geographical region which helps the what will spare parts are damaged in that region.

8. Improper monitoring vehicles reports:

Deficiency of spare parts in nearby service centers due to improper monitoring of vehicle reports. So, the company's executive is continuously in touch with the customers and informed about services on time.

9. Failed to predict customers' needs:

This is a very crucial factor for achieving 9% lost revenue. If we see most of the factors depend on this one factor. To predict upcoming needs and requirements help arranged the spare parts in nearby service centers before the customer will reach them. This happens if we continuously analyze the data, tracking and monitoring customers' vehicles. This factor solved half of the customer's problems on time. I think this factor might be achieved in most of the 9% loss of revenue.

10. Provide same-day or next-day delivery

This will help to reduce the time it takes to get the car repaired, which will make customers more likely to purchase parts from the company's service center.

11. Trust Issue:

Some customers may not trust the company's service center to repair correctly. They may have had a bad experience in the past, or they may have heard negative reviews from other customers. This will give customers peace of mind knowing that they are covered if the part fails.

12. Customers Feedback:

The company's customer supports continuously touches customers for their vehicle service and asks questions about any issues they have faced still. If after service, still having issues then take action immediately and resolve it.

4. CONCLUSION

In conclusion, the insights gathered from the project provide valuable information about various aspects of the business, including standard services time period limited, high pricing, taking insurance from third party, purchasing repair parts from local market, insufficient inventory in service centres, continuous launched new version, vehicles location, improper monitoring vehicles reports, filed to predict customers need, provide same-day or next-day delivery, customers trust, and customers feedback analysis.

If company properly considers all the insights and factors then company's most of the lost easily recovered. All the insights and factors are very crucial for the customer's trust.

Overall, the insights obtained from the project provide valuable information for decision-making and identifying areas for improvement in the business. By addressing the identified challenges and leveraging successful strategies, the business can enhance its sales performance and overall success.

5. LIMITATIONS

The data of the company is very big and highly confidential that's why doesn't share with the team. So, this report is completely theoretical based on personal knowledge and market research.

It is important to consider these limitations when interpreting the results of the project and to exercise caution when making business decisions based solely on the findings. Further research, data collection, and analysis may be required to address these limitations and gain a more comprehensive understanding of sales performance and customer interactions.

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