

**CAR SERVICE OPTIMIZATION THROUGH**

**DATA ANALYSIS**

**PROJECT REPORT**

***Submitted by***

**RCPL TEAM**

***in partial fulfillment for the award of the degree***

***of***

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**&**

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**BONAFIDE CERTIFICATE**

Certified that this project report **CAR SERVICE OPTIMIZATION THROUGH DATA ANALYSIS** is the bonafide work of **RCPL TEAM** who carried out the project work under my supervision.

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**TABLE OF CONTENTS**

**CHAPTER NO. TITLE PAGE NO.**

1. **INTRODUCTION**
   1. Background of the Project
   2. 1 Context and reasons for undertaking the

project.

* 1. Objectives

1.2.1 outline the specific goals of the Project.

* 1. Scope of the project

1.3.1 Boundaries and limitations of the project.

1.4 Methodology

1.4.1 Methods and approaches used.

**2 PROJECT OVERVIEW**

2.1 Main activities and milestones in each phase.

**3 MEETING MINUTES SUMMARY**

* 1. Minutes of meetings, include:
* Key discussion points
* Decisions made
* Actions items and responsible team members

**4 PHASE-WISE ANALYSIS AND FINDINGS**

4.1 Phase 1 to Phase 4

4.1.1 Objectives

4.1.2 Activities and processes involved

4.1.3 Key findings and Observations

4.1.4 Challenges and solutions

4.2 Phase 5

4.2.1 Supply chain management review

4.2.1 Recommendations for improvement

4.2.3 Steps to implement the improvement

**5 DATA ANALYSIS AND OBSERVATIONS**

5.1 Data collected in August

5.1.1 Overview of the Data

5.1.2 Key metrices and insights

5.1.3 Comparison between BS4 & BS6 Models.

5.1.4 Analyze data for each service type

5.1.5 Implications of the findings for the project.

5.2 Diagnostic tools

**6 TECHNICAL IMPLEMENTATIONS**

6.1 Development and implementation of OCR form

6.2 Measurement techniques used

6.3 Root cause analysis approach and its outcomes

6.4 Technical overview of the steps taken and tools used.

**7 CUSTOMER STATISFICATION ANALYSIS**

7.1 New questioning techniques used to gather Customer

Satisfaction Data.

7.2 Metrices developed to measure customer satisfaction.

7.3 Detail the Strategies

7.4 Summarize the Results and Key Takeaways.

**8 CHALLENGES AND SOLUTIONS**

8.1 Identify main challenges

8.2 Solutions Implemented

**9 CONCLUSIONS**

9.1 Summarize the main findings

9.2 Overall impact of the project

9.3 Evaluate the success

**10 RECOMMENDATIONS**

10.1 Suggestions for future projects

10.2 Strategies for sustaining and enhancing the project

Outcomes.

**11 APPENDICES**

11.1 Minutes of Meetings for references

11.2 Additional Data tables and charts used in analysis

11.3 Technical documentations related to OCR form

**12 REFRENCES**

12.1 All sources and references used throughout the report.

**EXECUTIVE SUMMARY**

**Background and Context:**

In the highly competitive automotive service industry, optimizing operations and enhancing customer satisfaction are critical for success. This project aimed to leverage data analysis techniques to identify areas of improvement and streamline processes at a leading car service center. By analyzing historical service data, the project sought to uncover insights that could drive operational efficiency, reduce time consumption, and ultimately provide a superior customer experience.

**Objectives:**

**The primary objectives of this project were:**

1. Identify the root causes of time consumption and delays in service delivery.

2. Analyze technician performance and workload distribution to optimize resource allocation.

3. Investigate the impact of service types and seasonal patterns on service times.

4. Develop data-driven recommendations to enhance operational efficiency and customer satisfaction.

**Key Findings:**

**Through an in-depth analysis of service center data, several key findings emerged:**

1. Service Type Analysis: Periodic Maintenance Service (PMS) and Body & Paint (BANDP) services accounted for a significant portion of the service center's workload and revenue. However, BANDP services exhibited higher variability in service times compared to PMS, indicating potential areas for improvement.

2. Technician Performance: Uneven workload distribution among technicians was identified as a contributing factor to delays in service delivery. Top-performing technicians were able to complete services more efficiently, highlighting the importance of resource allocation and training.

3. Time-Dependent Patterns: Service requests exhibited distinct weekly and seasonal patterns. PMS services peaked on Wednesdays and Saturdays, aligning with customer preferences for routine maintenance during non-working days. Seasonal trends also influenced service times, suggesting the need for proactive planning and resource management.

4. Service Time Variability: An in-depth analysis of BANDP service times revealed a significant dispersion compared to PMS services. This variability was attributed to factors such as service complexity, technician expertise, and the involvement of a single technician for all BANDP services.

**Conclusions and Recommendations:**

**Based on the key findings, the following conclusions and recommendations were made:**

1. Implement a fair distribution of service assignments among technicians to reduce workload disparities and enhance efficiency.

2. Invest in training and skill development programs for technicians, particularly in high-demand service areas like BANDP.

3. Optimize inventory management processes to ensure timely availability of spare parts and minimize delays.

4. Leverage predictive analytics to forecast service demand based on weekly and seasonal patterns, enabling proactive resource allocation and capacity planning.

5. Explore the implementation of advanced technologies, such as AI-assisted diagnostics and automation, to streamline processes and reduce service times.

**Overall Impact:**

By implementing the recommendations outlined in this project, the car service center can expect to realize significant improvements in operational efficiency, customer satisfaction, and ultimately, profitability. Streamlined processes, optimized resource allocation, and proactive demand forecasting will contribute to reduced service times, enhanced customer experiences, and a competitive edge in the marketplace.

This data-driven approach not only addresses current challenges but also lays the foundation for continuous improvement and adaptation to changing market dynamics. By embracing data-driven decision-making, the car service center can position itself as a leader in delivering exceptional service and fostering customer loyalty.