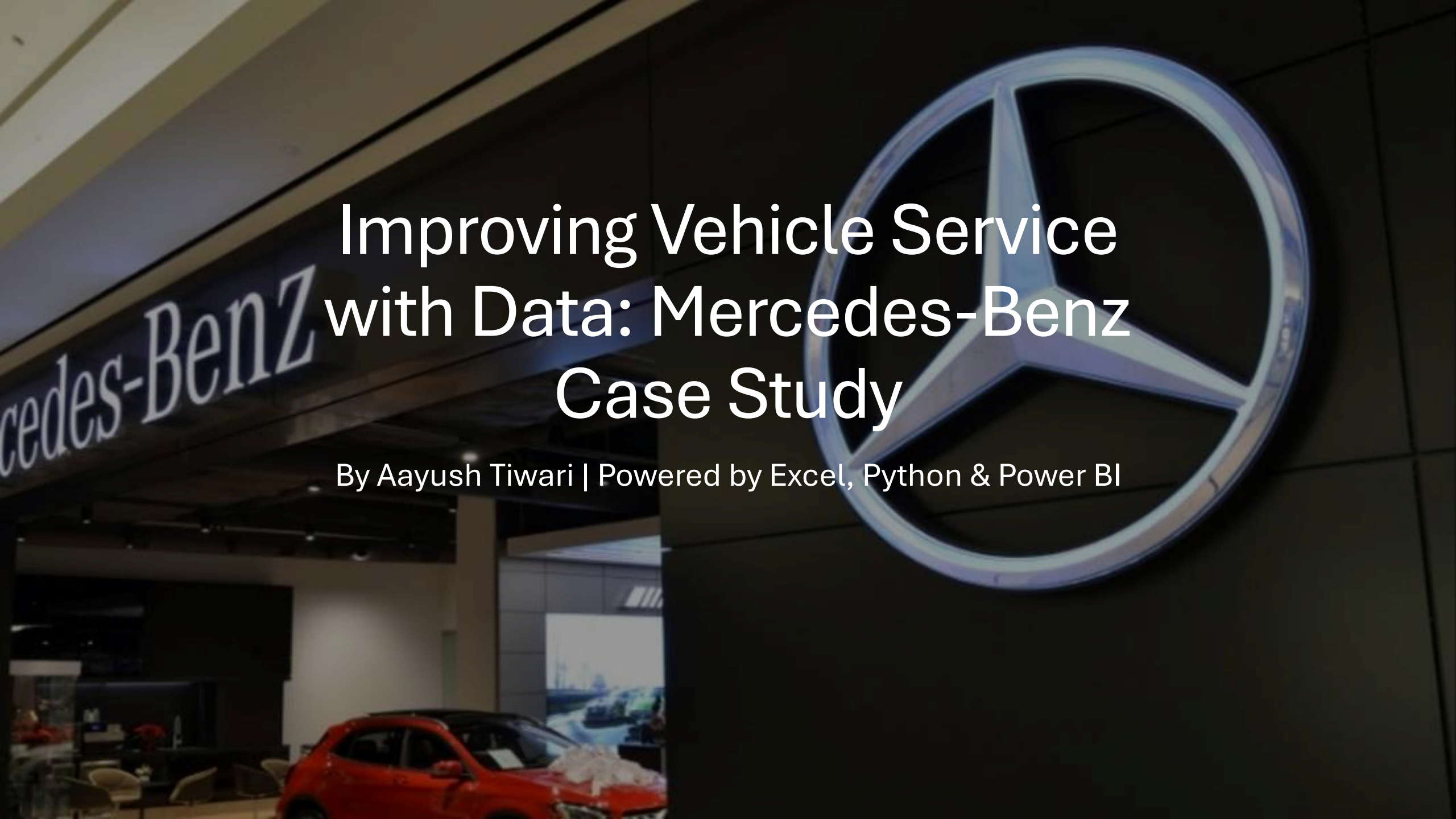


Improving Vehicle Service with Data: Mercedes-Benz Case Study

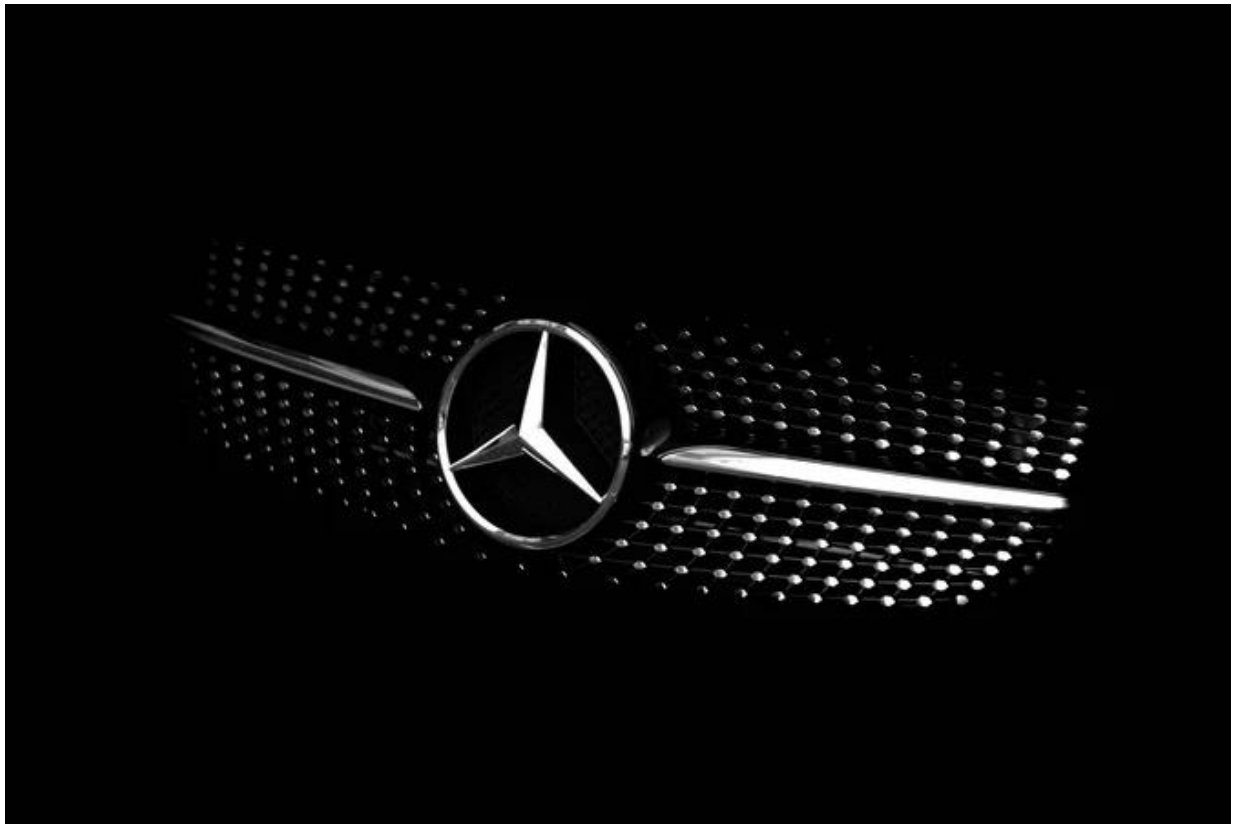
By Aayush Tiwari | Powered by Excel, Python & Power BI

Business Problem

- In today's automotive industry, customer experience and proactive service are key to maintaining brand loyalty, especially for premium brands like Mercedes-Benz.
- This project was initiated to understand the hidden patterns behind these warning signs, identify which vehicles are at risk, and recommend data-driven actions to improve customer satisfaction and reduce potential losses.
- Our goal is not only to detect issues but also to segment vehicles intelligently, enabling tailored service strategies that match the vehicle's condition, usage pattern, and risk profile — ultimately enhancing operational efficiency and customer trust.

Where Did the Data Come From?

- Data was entered for 25 Mercedes vehicles, including:
- Type of Vehicle
- Age, Mileage, Engine Size
- Customer Service Visits
- Complaints Reported



What We Did

- We used a 3-step approach:
- **Excel**: Cleaned and created scores for risk, performance, and efficiency
- **Python**: Predicted which vehicles might need urgent attention
- **Power BI**: Built dashboards to visualize everything easily

Predicting Churn

- Some vehicles are more likely to be 'churned'—meaning customers may stop servicing or complain more.
- We built a smart system that looks at patterns like high mileage, low performance, and many complaints.
- 🟢 Result: The model was able to correctly identify 8 out of 10 such vehicles.

Grouping Vehicles into Segments

- Instead of treating all vehicles the same, we grouped them by behavior.
- Group 1: High-Risk, High-Age
- Group 2: Mid-Age, Good Performance
- Group 3: New Vehicles, Efficient
- ➡️ This helps Mercedes focus support where it’s needed most.

Dashboard View (Power BI)

- Decision-makers can now view a live dashboard showing:
- Average Risk Score
- Which vehicle types have the most complaints
- Which segments are likely to churn
- Filters to explore by Fuel Type, Segment, etc.

Key Takeaways for Mercedes

- High-risk vehicles need early attention.
- Fuel Type and Vehicle Age matter.
- Customer complaints are strong churn signals.
- Segmentation helps customize service plans.

What’s Next

- Expand to more vehicle types
- Use real-time data from service centers
- Explore fuel efficiency and engine reliability

Thank You

Thanks for your time. I'd love to discuss how we can turn this into a real-time solution for your teams.

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