**Advanced Business Report: Customer Churn Analysis & Strategic Recommendations**

**Executive Summary**

Customer churn is a significant challenge in the telecom industry, impacting revenue and customer lifetime value. This analysis evaluates the factors contributing to churn, applies predictive modelling, and offers data-driven recommendations to improve customer retention.

* The overall churn rate is approximately 26%.
* High-risk segments include customers with month-to-month contracts, electronic check payments, and short tenure.
* The Random Forest model achieved 84.2% accuracy, making it the most effective churn prediction model.
* Implementing the recommended retention strategies can significantly reduce churn and increase long-term revenue.

**Key Insights from Data Analysis**

Customer Churn Trends

* Contract Type Influence: Customers on month-to-month contracts exhibit the highest churn rates, whereas those with one-year or two-year contracts show significantly lower churn rates.
* Payment Method Impact: Customers using electronic check payments tend to churn more frequently, suggesting dissatisfaction with the payment process.
* Tenure & Monthly Charges:
  + Customers with less than 12 months of tenure are more likely to churn compared to long-term customers.
  + Customers with monthly charges above $80 show a slightly higher tendency to churn.

Feature Importance from Machine Learning Models

The top predictors of churn include:

* Contract Type – Customers with short-term contracts are at a higher risk of leaving.
* Tenure – Customers with a short tenure are more likely to churn.
* Payment Method – Electronic check users tend to have higher churn rates.
* Tech Support Availability – Customers without tech support show higher churn tendencies.
* These insights highlight key areas for targeted retention strategies.

**Business Recommendations & Action Plan**

**Customer Retention Strategies**

* Introduce discounted long-term contracts to encourage commitment.
* Offer free months or additional perks for customers who renew contracts beyond their first year.
* Encourage automatic payments via credit cards or bank transfers to reduce involuntary churn.
* Provide discount incentives for customers switching from electronic check payments.
* Identify customers who do not have tech support and offer tailored support packages.
* Enhance customer education on self-service options to improve engagement and satisfaction.

Data-Driven Churn Prevention

* Deploy predictive churn models to identify high-risk customers in real time.
* Integrate churn prediction insights into customer relationship management (CRM) systems for proactive intervention.
* Develop a customer loyalty program with personalized incentives for high-value customers.
* Offer special retention deals for customers identified as churn risks.
* Implement a customer engagement dashboard to monitor churn trends and track the effectiveness of retention strategies.

**Conclusion**

By implementing data-driven retention strategies, the company can significantly reduce churn rates, enhance customer satisfaction, and improve revenue growth.

**Final Strategic Recommendations:**

* Automate churn prediction models to proactively address at-risk customers.
* Deploy a retention campaign targeting high-risk groups with personalized offers.
* Continuously monitor churn trends and refine intervention strategies using real-time analytics.

These measures will contribute to a stronger, more loyal customer base and a reduction in revenue losses due to churn.

Further Steps to Analyse :

* **Deploy the final model** into a **real-time churn prediction system**.
* **Integrate predictions into SQL Server & CRM** for proactive retention strategies.
* **Build a Tableau dashboard** to visualize churn trends and at-risk customers.