

TELECOM CUSTOMER CHURN ANALYSIS

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OVERVIEW

- IN THE TELECOM INDUSTRY, CUSTOMER CHURN (WHEN CUSTOMERS SWITCH PROVIDERS) IS A MAJOR ISSUE, COSTING COMPANIES MILLIONS IN LOST REVENUE.
- THIS PRESENTATION SHARES INSIGHTS FROM ANALYZING 3,333 CUSTOMER RECORDS TO HELP REDUCE CHURN AND BOOST LOYALTY. WE'LL FOCUS ON SIMPLE, ACTIONABLE FINDINGS FROM DATA PATTERNS.



BUSINESS AND DATA UNDERSTANDING

OUR GOAL: UNDERSTAND WHY CUSTOMERS LEAVE AND HOW TO KEEP THEM.

KEY QUESTIONS:

- HOW DO ADD-ON SERVICES LIKE INTERNATIONAL OR VOICE MAIL PLANS AFFECT LOYALTY?
- WHICH REGIONS HAVE THE HIGHEST CHURN, AND WHY?
- WHEN DO CUSTOMER SERVICE CALLS SIGNAL A RISK OF LEAVING?



[CONT]

- THE DATA INCLUDES CUSTOMER DETAILS (E.G., STATE, PLANS), USAGE (MINUTES, CHARGES), AND INTERACTIONS (SERVICE CALLS). ABOUT 14.5% OF CUSTOMERS CHURNED.

KEY INSIGHTS:

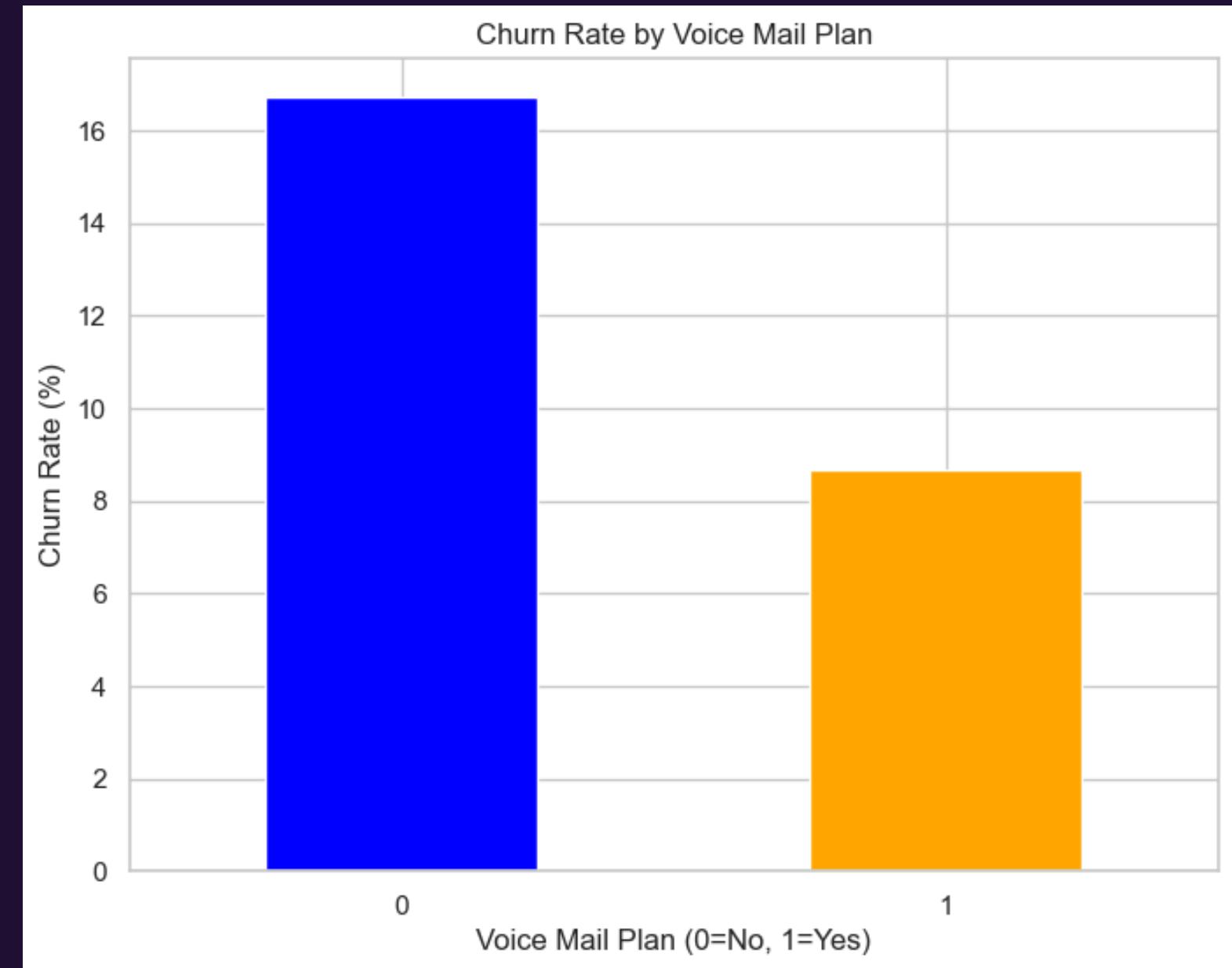
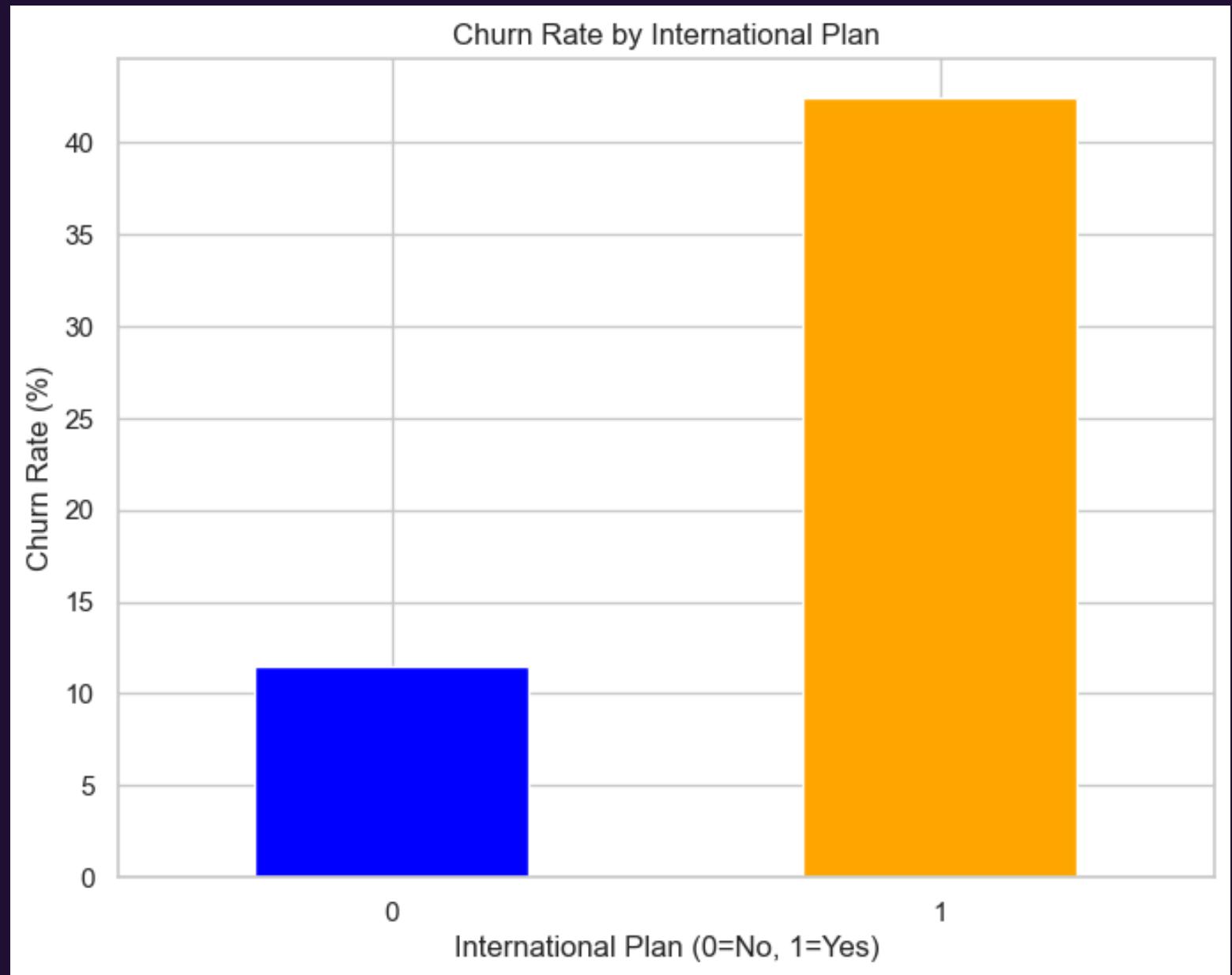
- INTERNATIONAL PLAN USERS CHURN AT 42% (VS. 11% WITHOUT)
- VOICE MAIL REDUCES CHURN TO 9% (VS. 17% WITHOUT)—IT ADDS VALUE.
- COMBINED: NO INTERNATIONAL + VOICE MAIL = LOWEST CHURN (5%).
- TOP CHURN STATES: CA, NJ, TX (25–26%)—HIGHER CHARGES MAY PLAY A ROLE.
- SERVICE CALLS: RISK JUMPS AT 4+ CALLS (46% CHURN).



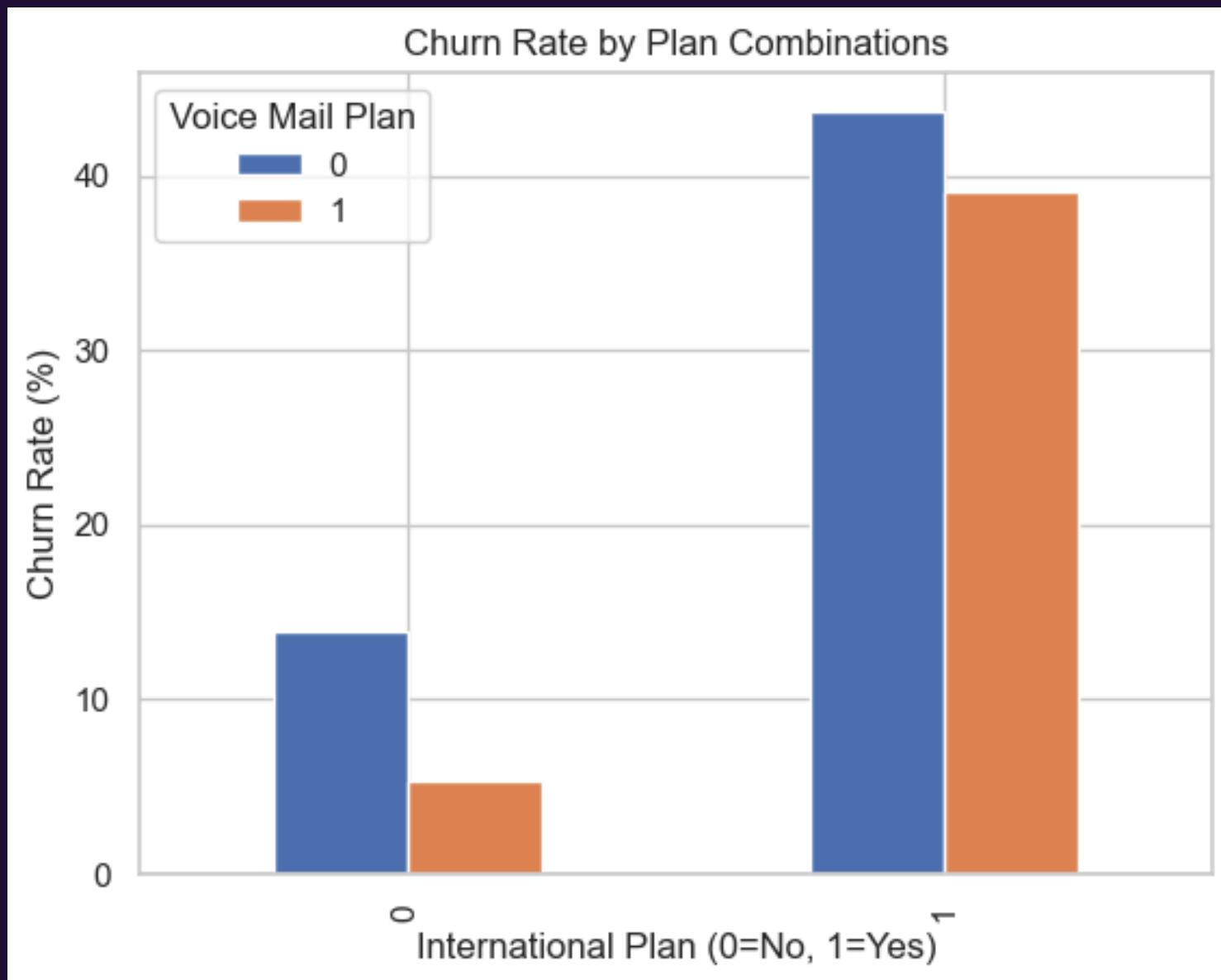
VISUALISATION



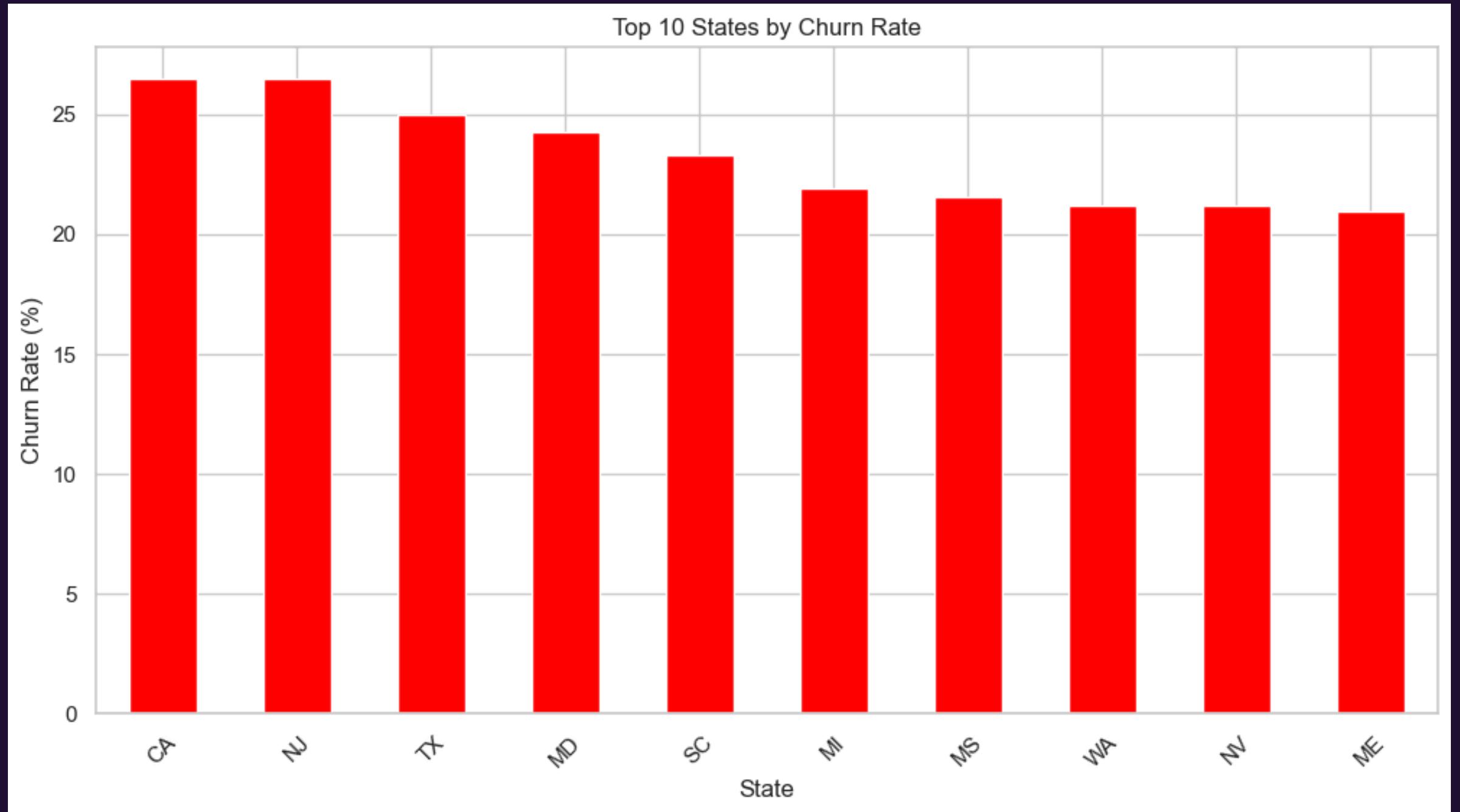
SERVICE ADOPTION AND CHURN



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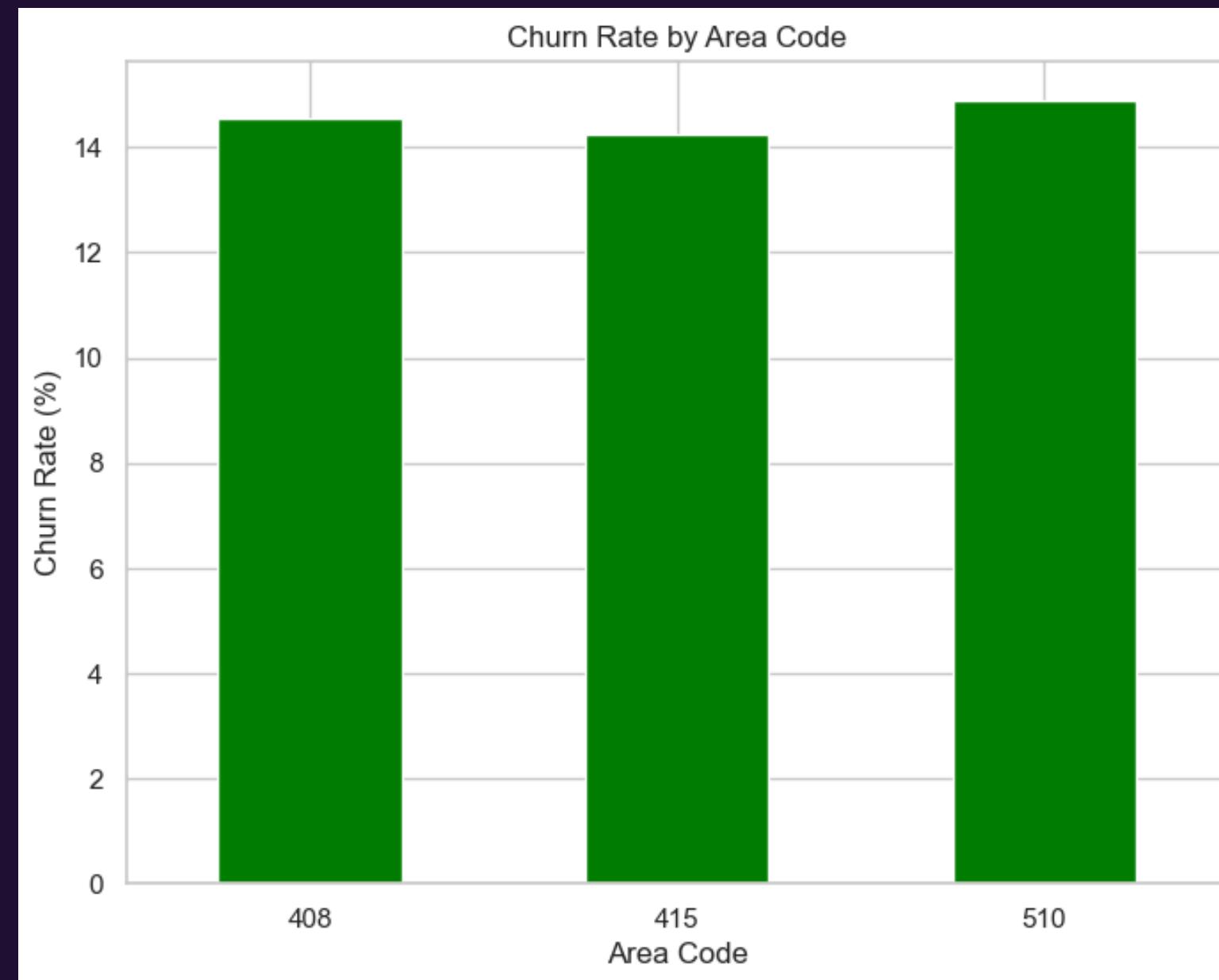


GEOGRAPHIC REGION AND CHURN



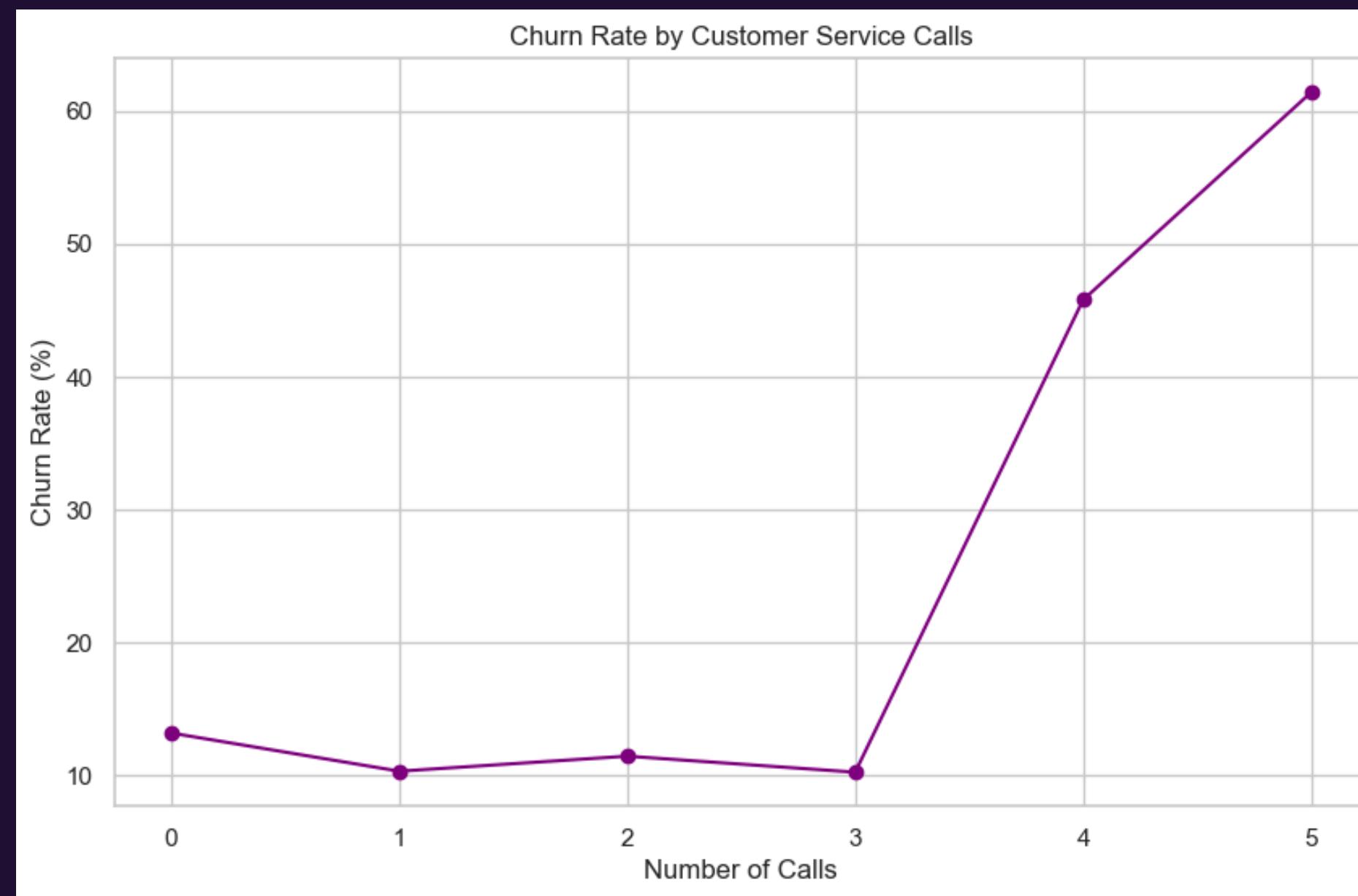
GEOGRAPHIC REGION AND CHURN

- PRESENTATIONS ARE COMMUNICATION TOOLS THAT CAN BE USED AS LECTURES, SPEECHES, REPORTS, AND MORE. MOST OF THE TIME, THEY'RE PRESENTED BEFORE AN AUDIENCE.



CUSTOMER SERVICE CALLS AND CHURN

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EVALUATION

THE MODELS WERE TESTED ON UNSEEN DATA TO ENSURE RELIABILITY.

IN PLAIN TERMS:

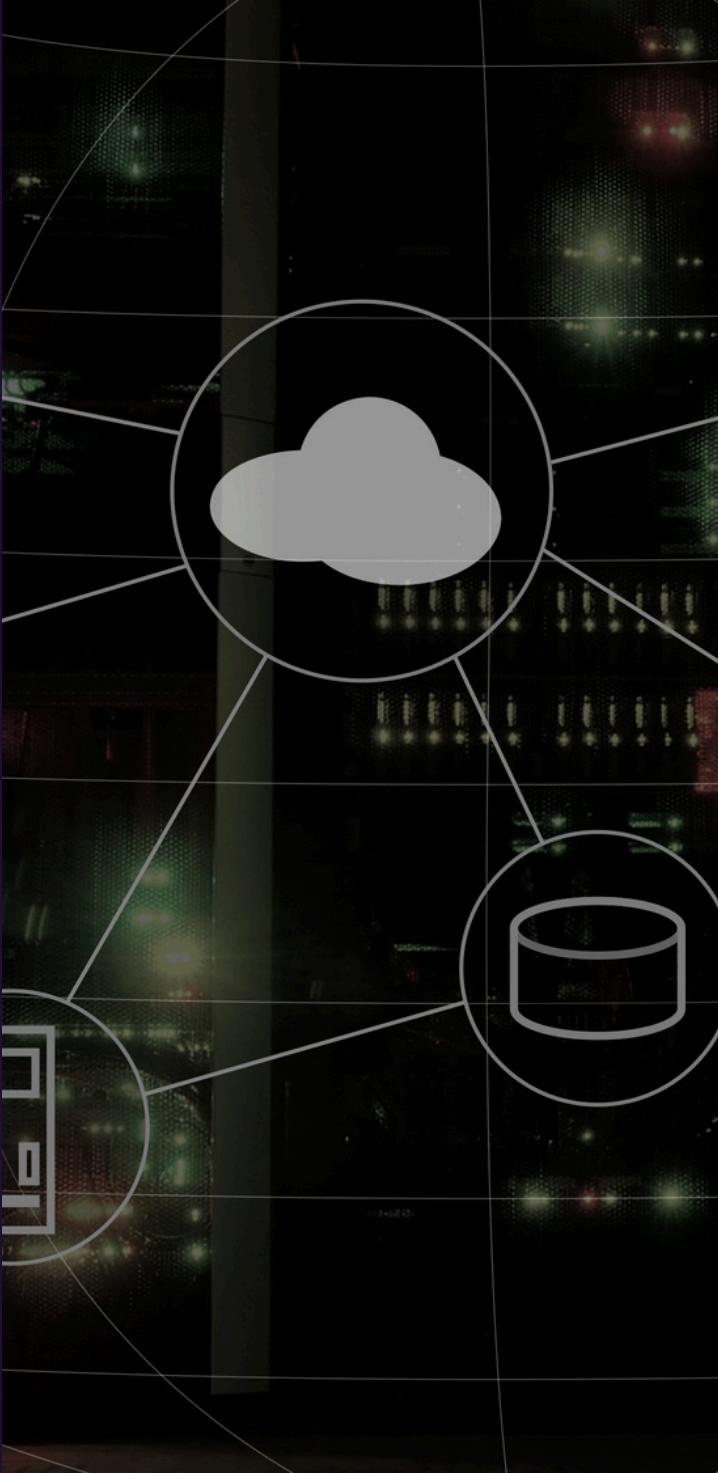
- ACCURACY: HOW OFTEN THE PREDICTION IS RIGHT OVERALL.
- RECALL FOR CHURN: HOW MANY ACTUAL LEAVERS WE CATCH (KEY FOR RETENTION).



EVALUATION

- RANDOM FOREST: 91% CONFIDENCE (ROC-AUC 0.908), CATCHES 79% OF CHURNERS, 96% ACCURATE.
- DECISION TREE: 87% CONFIDENCE, CATCHES 78% OF CHURNERS, 97% ACCURATE.
- LOGISTIC: 80% CONFIDENCE, CATCHES 69% OF CHURNERS, 75% ACCURATE.

THIS MEANS THAT RANDOM FOREST IS THE MOST RELIABLE FOR SPOTTING RISKS WITHOUT FALSE ALARMS



RECOMMENDATIONS

BASED ON THE DATA:

- BUNDLE SERVICES: OFFER VOICE MAIL FREE WITH INTERNATIONAL PLANS WHICH COULD HALF THE CHURN
- TARGET REGIONS: FOCUS PROMOTIONS IN CA, NJ, TX BY CHARGING DISCOUNTS.
- PROACTIVE SUPPORT: FLAG CUSTOMERS WITH MORE THAN 4 SERVICE CALLS FOR IMMEDIATE OUTREACH (FOR EXAMPLE, CREDITS)
- TOP DRIVERS: HIGH CHARGES AND CALLS. REVIEW PRICING AND IMPROVE FIRST-CALL RESOLUTION.
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