

# **SYRIATEL TELECOMMUNICATIONS COMPANY**

**CUSTOMER CHURNING CLASSIFICATION**

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# BUSINESS PROBLEM

- SYRIATEL IS A TELECOMMUNICATIONS COMPANY FACING THE CHALLENGE OF CUSTOMER CHURN, WHICH REFERS TO CUSTOMERS DISCONTINUING THEIR SERVICES OR SWITCHING TO A COMPETITOR.
- THE BUSINESS PROBLEM AT HAND IS TO BUILD A CLASSIFIER CAPABLE OF PREDICTING WHETHER A CUSTOMER WILL "SOON" STOP DOING BUSINESS WITH SYRIATEL.

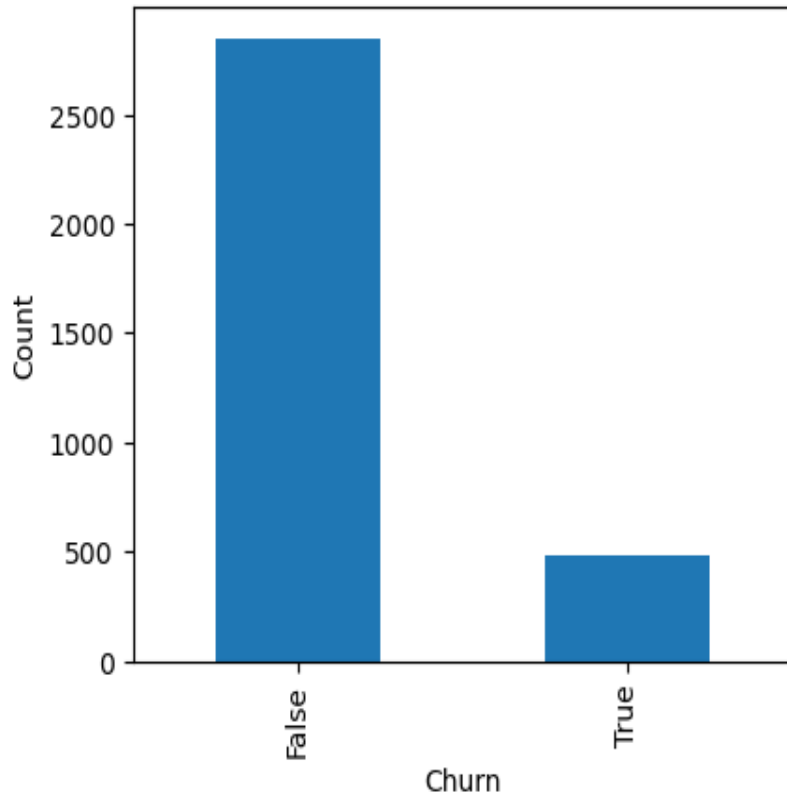


# OBJECTIVES

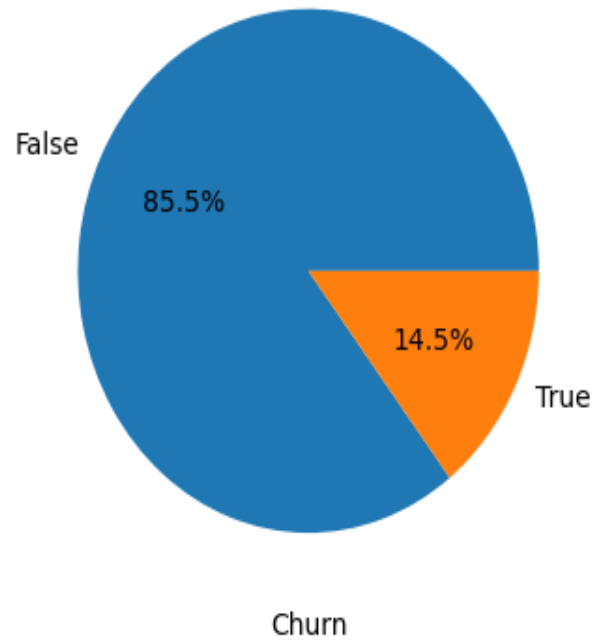
- TO DEVELOP A BINARY CLASSIFICATION MODEL TO PREDICT CUSTOMER CHURN FOR SYRIATEL.
- TO ACHIEVE HIGH ACCURACY IN PREDICTING WHETHER A CUSTOMER WILL CHURN OR NOT.
- TO USE FEATURE IMPORTANCE ANALYSIS TO DETERMINE THE FACTORS THAT HAVE THE MOST INFLUENCE ON CUSTOMER CHURN.
- TO EVALUATE DIFFERENT CLASSIFICATION ALGORITHMS AND REGULARIZATION TECHNIQUES TO IDENTIFY THE MOST EFFECTIVE APPROACH FOR PREDICTING CUSTOMER CHURN.
- TO IDENTIFY THE KEY FEATURES THAT CONTRIBUTE MOST SIGNIFICANTLY TO CUSTOMER CHURN AND PROVIDE ACTIONABLE INSIGHTS FOR MITIGATING CHURN.

# CHURN

Churn Distribution

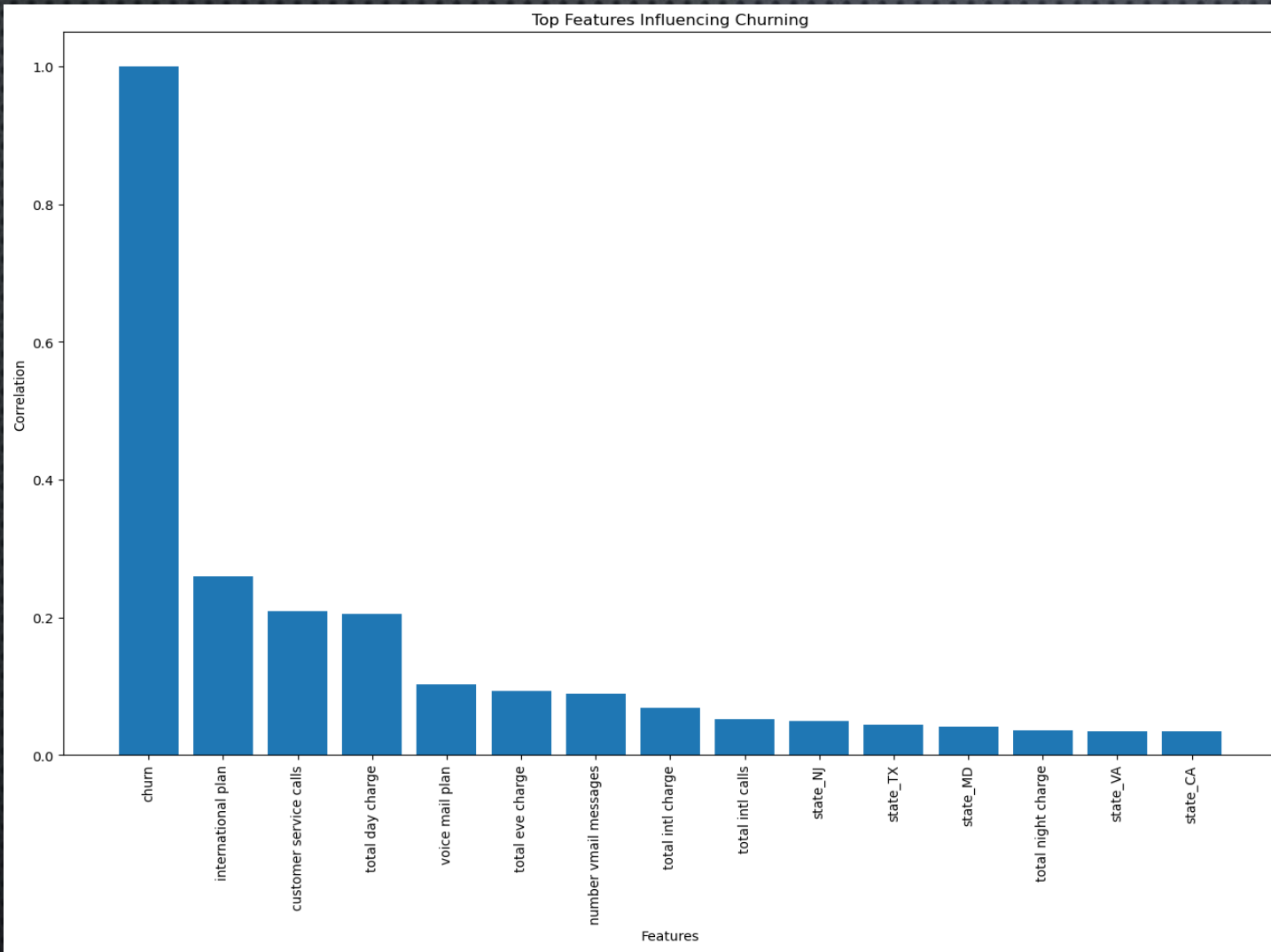


Churn Proportion



THE CHURN FEATURE SHOWS THAT ABOUT 85% OF THE CUSTOMERS DO NOT CHURN WHILE 15% CHURN.





THE FEATURES THAT MOSTLY INFLUENCE CUSTOMER CHURN ARE:

INTERNATIONAL PLAN — THIS DEPENDS ON WHETHER THE CUSTOMER HAS AN INTERNATIONAL PLAN OR NOT.

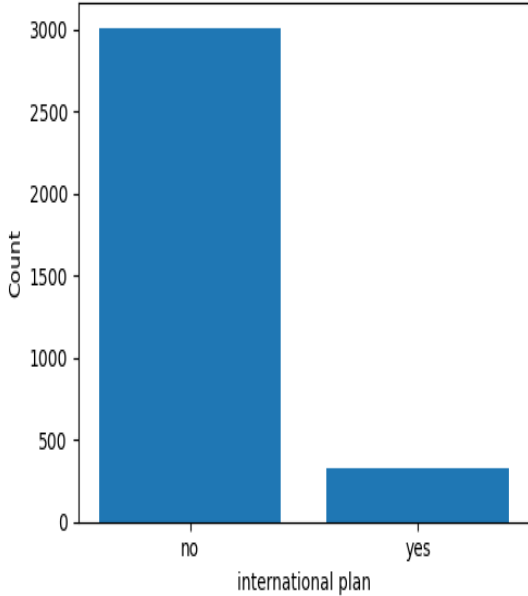
CUSTOMER SERVICE CALLS — THIS SHOWS THAT THE NUMBER OF CUSTOMER SERVICE CALLS MADE TO THE COMPANY INFLUENCES CUSTOMER CHURN A LOT.

TOTAL DAY CHARGE — THIS MEANS THAT THE TOTAL DAY CHARGE TO CUSTOMERS IMPACTS ON WHETHER THE CUSTOMER STAYS OR NOT.

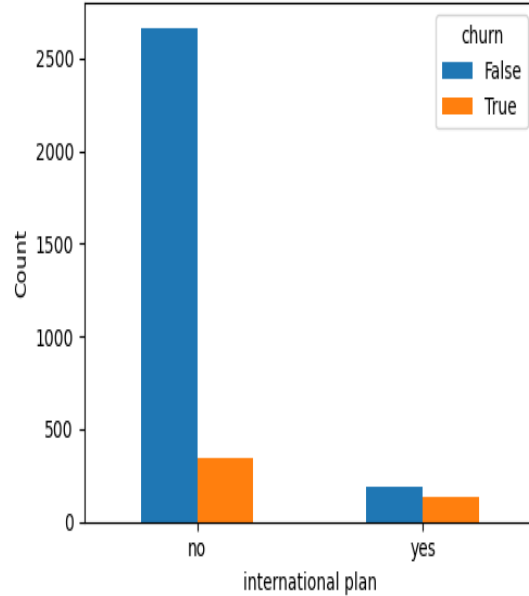
VOICE MAIL PLAN - JUST LIKE INTERNATIONAL PLAN, WHETHER A CUSTOMER HAS THIS PLAN OR NOT ALSO HAS AN IMPACT ON THE CHURN.

# INTERNATIONAL PLAN

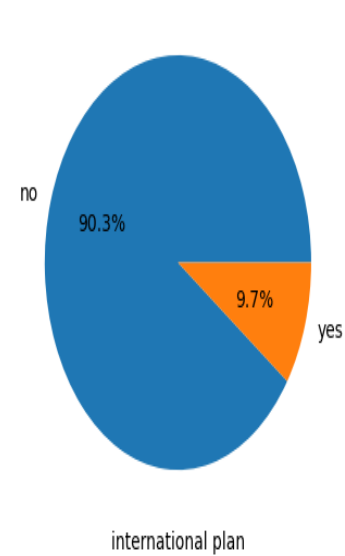
Distribution of international plan



Churn Distribution by international plan



Proportion of Customers by international plan



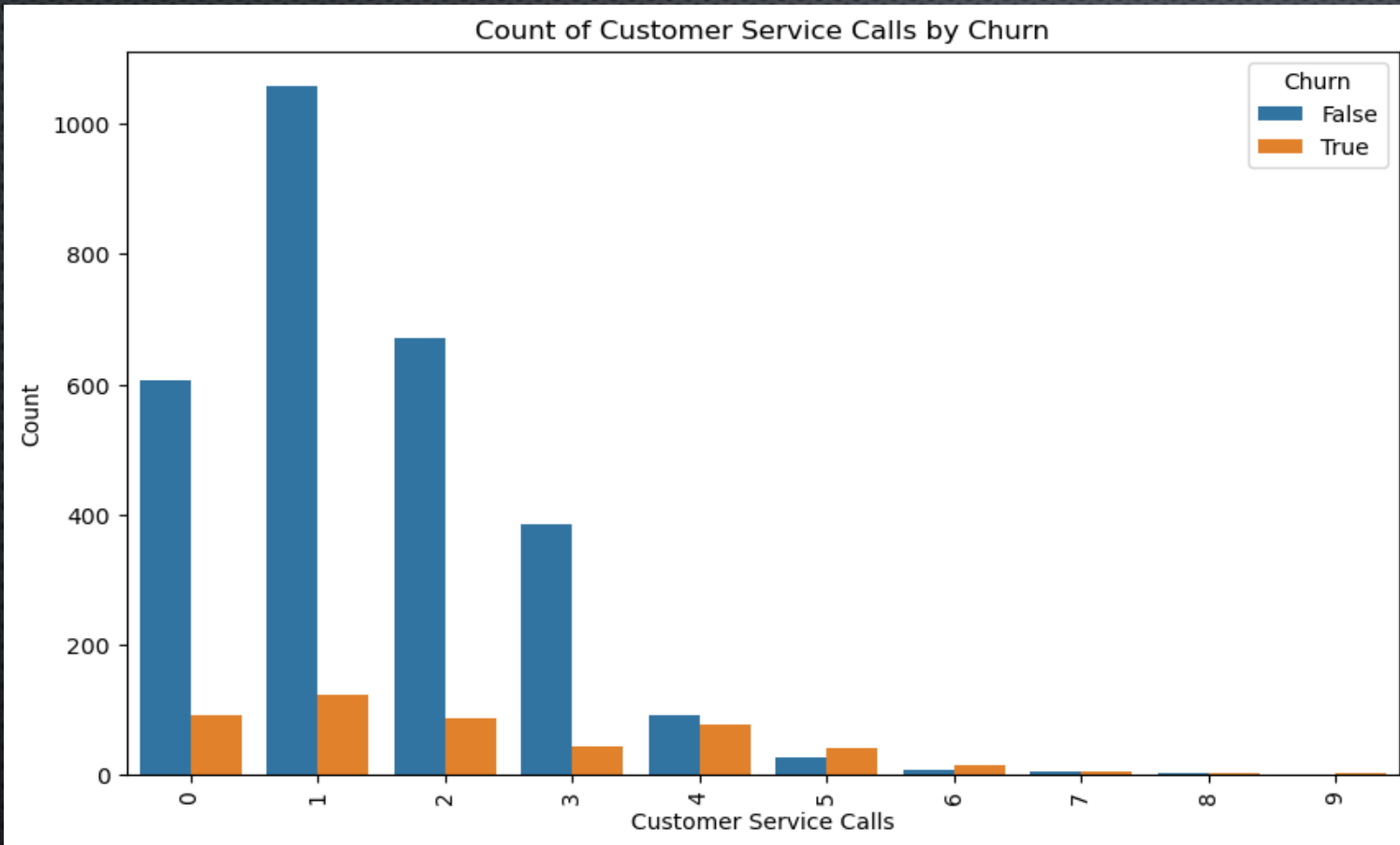
THIS IS A VISUAL ANALYSIS OF THE INTERNATIONAL PLAN FEATURE USED BY CUSTOMERS IN SYRIATEL.

CHECKING THE DISTRIBUTION, ABOUT 90% OF THE CUSTOMERS ARE NOT IN THE INTERNATIONAL PLAN, ONLY 10% ARE.

VIEWING THE CHURNING DISTRIBUTION, THE CUSTOMERS NOT IN THIS PLAN TEND TO CHURN MORE COMPARED TO THE ONES IN THE PLAN THOUGH THEY ALSO CHURN.

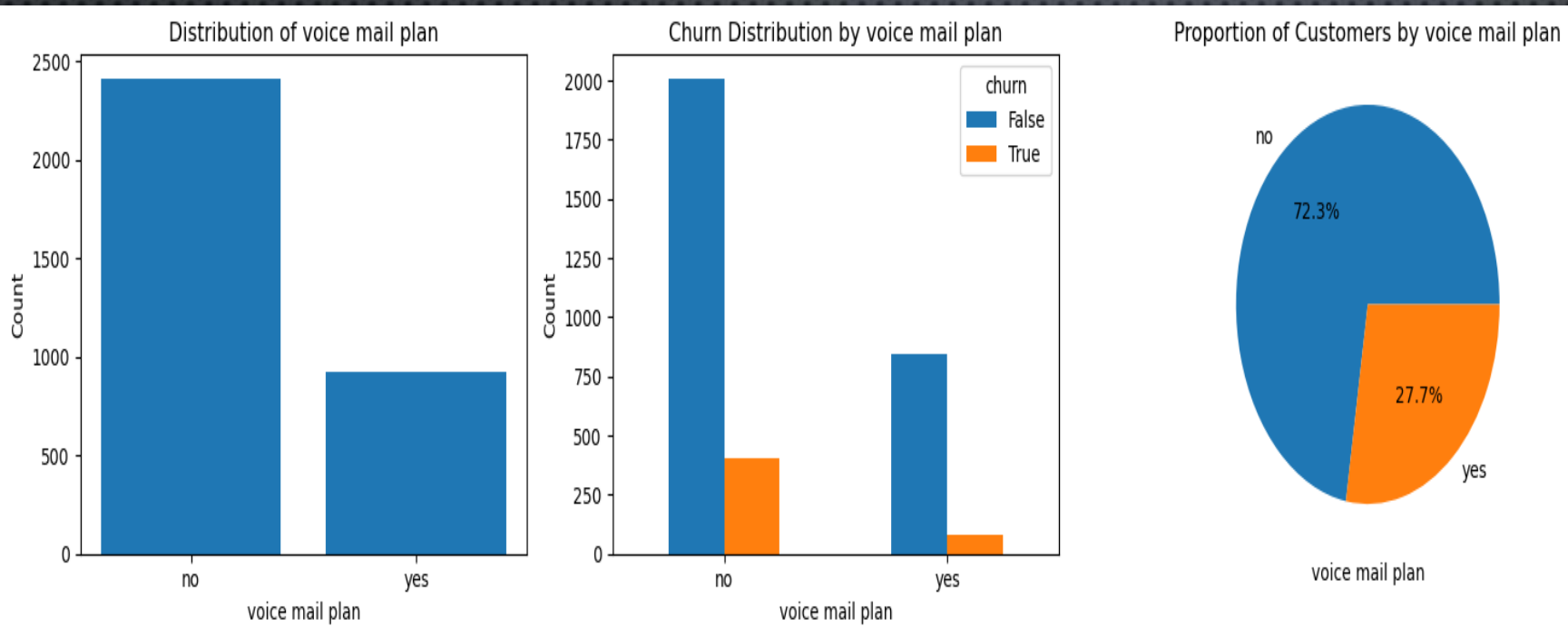


# CUSTOMER SERVICE CALLS



CUSTOMERS WHO MADE FEWER SERVICE CALLS, PARTICULARLY 1 CALL, HAD A HIGHER LIKELIHOOD OF CHURNING COMPARED TO THOSE WHO MADE MORE CALLS.

# VOICE MAIL PLAN



CUSTOMERS WHO DO NOT HAVE A VOICE MAIL PLAN HAVE A HIGHER COUNT OF CHURNED CUSTOMERS COMPARED TO THOSE WHO HAVE A VOICE MAIL PLAN.



# CONCLUSION

- IN CONCLUSION, VARIOUS MACHINE LEARNING MODELS AND TECHNIQUES TO PREDICT CUSTOMER CHURN AND EVALUATE THEIR PERFORMANCE WERE USED.
- THE RANDOM FOREST MODEL WITH REGULARIZATION ACHIEVED AN ACCURACY OF 90% ON THE TESTING SET.

# RECOMMENDATION

BASED ON THE PROVIDED OBSERVATIONS FROM THE DATASET, THE FOLLOWING RECOMMENDATIONS CAN BE MADE:

## 1. **PROMOTE THE INTERNATIONAL PLAN:**

- SINCE CUSTOMERS WITHOUT THE INTERNATIONAL PLAN HAVE A HIGHER CHURN RATE, THE COMPANY SHOULD FOCUS ON PROMOTING THE BENEFITS OF THE INTERNATIONAL PLAN TO ITS CUSTOMER BASE.
- HIGHLIGHT FEATURES SUCH AS DISCOUNTED INTERNATIONAL CALLING RATES, EXPANDED COVERAGE, AND EXCLUSIVE INTERNATIONAL OFFERS.

## 2. **IMPROVE VOICE MAIL PLAN ADOPTION:**

- WITH A LOW SUBSCRIPTION RATE FOR THE VOICE MAIL PLAN, THERE IS AN OPPORTUNITY TO INCREASE ITS ADOPTION AMONG CUSTOMERS.

## 3. **ADDRESS CUSTOMER SERVICE CONCERNS:**

- CUSTOMERS WITH A HIGHER NUMBER OF CUSTOMER SERVICE CALLS TEND TO HAVE A LOWER CHURN RATE SUGGESTS THAT ADDRESSING CUSTOMER CONCERNS EFFECTIVELY CAN STOP CHURN.
- THE COMPANY SHOULD INVEST IN CUSTOMER SERVICE TRAINING PROGRAMS TO IMPROVE THE QUALITY OF INTERACTIONS AND PROBLEM RESOLUTION.
- ENCOURAGE CUSTOMER FEEDBACK TO IDENTIFY PAIN POINTS AND TAKE MEASURES TO ADDRESS THEM.