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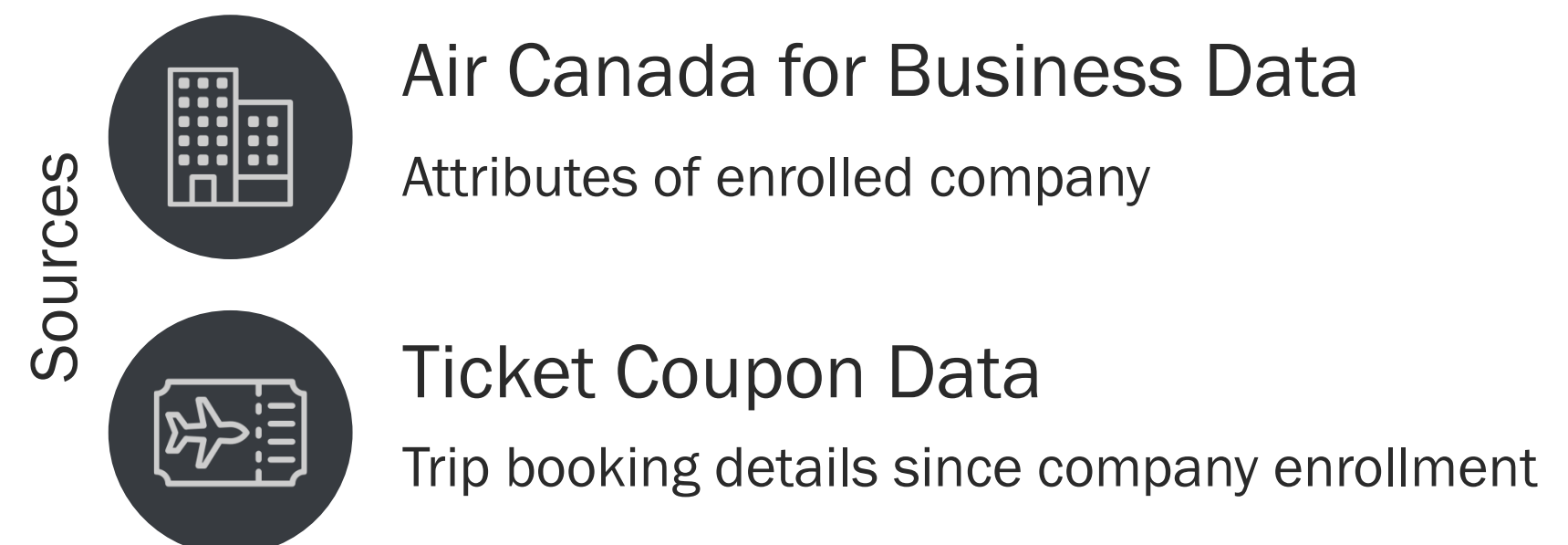
Introduction

Air Canada for Business (ACB) is a complimentary rewards program for small and medium-sized businesses offered by Air Canada. Since the loyalty program is aimed at retaining businesses as Air Canada customers, it is imperative to understand the factors that may lead companies to move away and predict churn before it occurs.

Project Objective

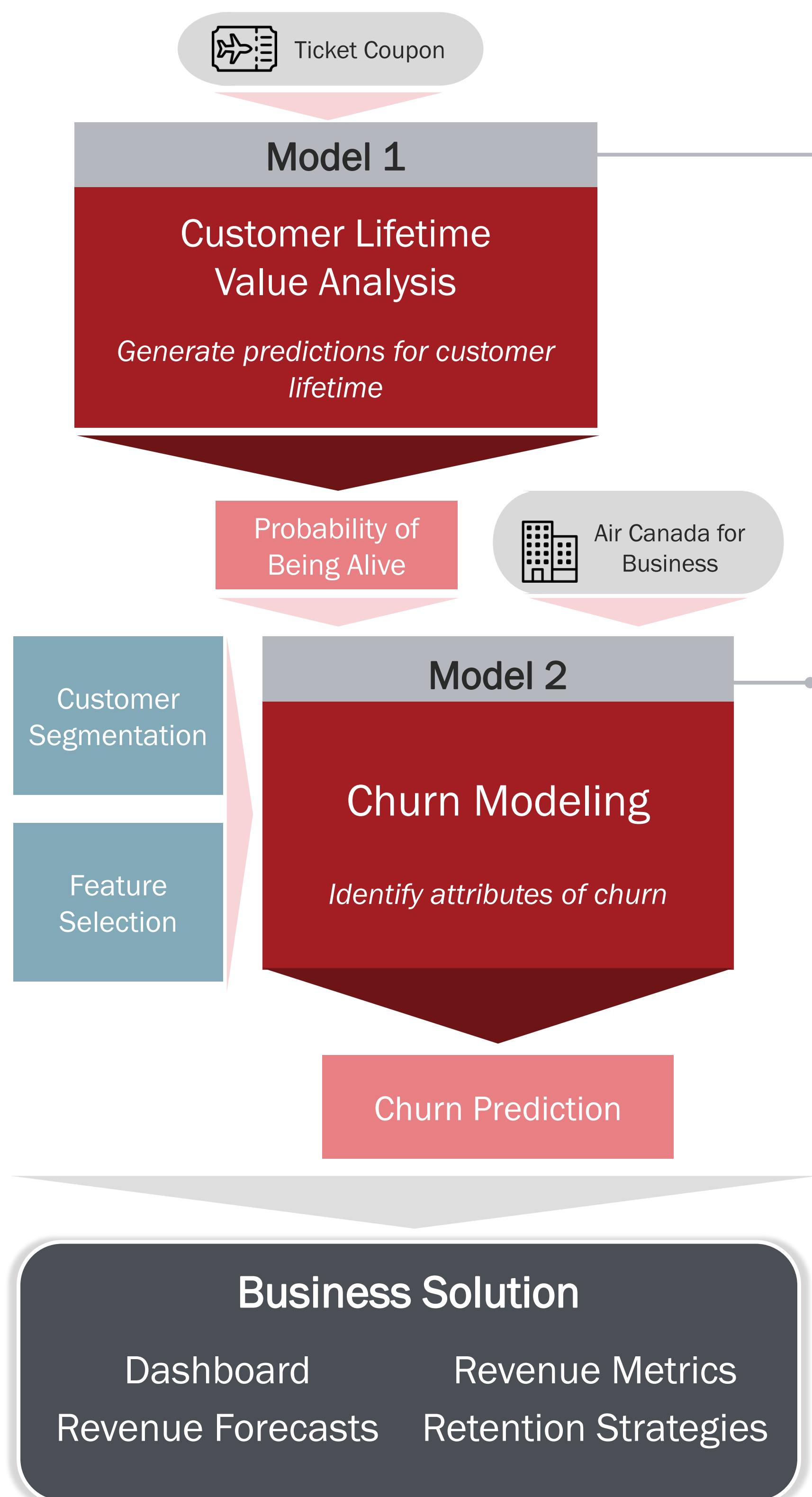
To understand the factors that lead to business churn for the Air Canada for Business program and develop a model with the right variables for Air Canada that identifies which members have the tendency to churn

Data & Challenges



- Diverse company profiles and booking behavior
- No definition or criteria for determining churn

Methodology



Churn Discovery

How is churn defined for the Air Canada for Business program?

We conducted Customer Lifetime Value analysis using a Pareto/NBD (negative binomial distribution) model to determine the probability that a company has not churned (is alive) at a given moment in time. The model is based on historical bookings for each company from the ticket coupon dataset.

Metric	Score
Accuracy	0.816
AUC ROC	0.863
AUC Precision-Recall	0.813

Model Validation: Prediction of churn based on probability of being alive on December 31, 2017 <0.01 compared to actual revenue observed in 2018

Identifying Areas of Risk

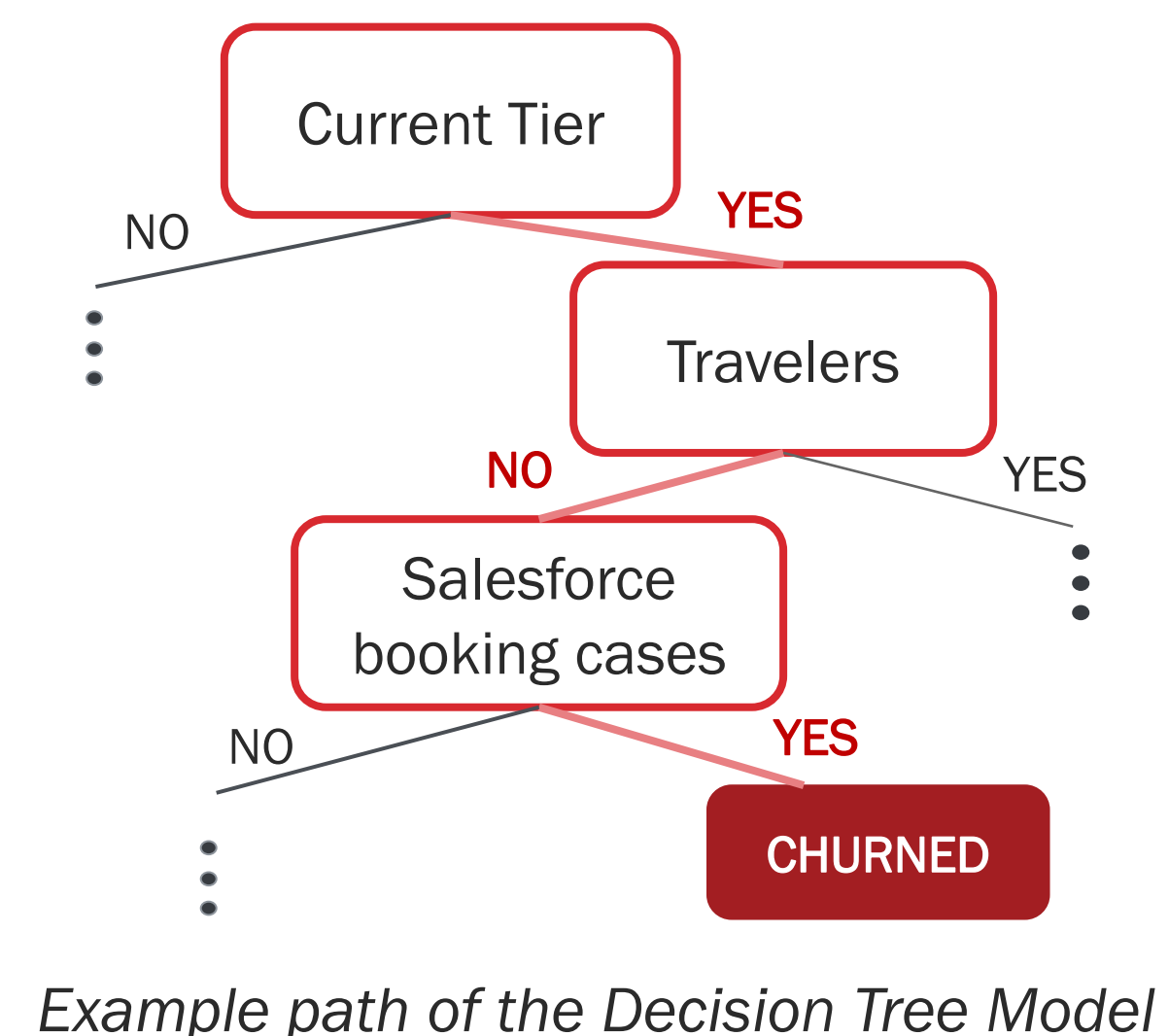
What attributes are most correlated with increased likelihood of churn?

The probability of being alive derived from the previous model was used as the binary label for classification (<0.01 being churned). We chose to use a Decision Tree model due to its interpretable nature and relatively high performance metrics.

Selected Features

- Current Tier
- Number of Travelers
- Tier History
- Air Travel Spend
- Number of Salesforce Cases
- Business Type

Metric	Score
Accuracy	0.862
AUC ROC	0.926
AUC Precision-Recall	0.903



Impact

Model 1: Customer Lifetime Value Analysis - generate predicted probabilities of companies being alive and allow Air Canada to

- Examine **revenue loss metrics** through our dashboard
- Identify companies that are **at risk** of churn
- Implement **preemptive marketing strategies** to retain customers

Model 2: Decision Tree Model - For existing companies:

- Generate **profiles** of companies that have churned
- Understand the **features** that may lead to churn
- Create **targeted retention strategies**
- Apply model to **new companies** that do not have extensive booking history
- Characterize **likelihood of churn** based on features rather than spending

Using our insights, Air Canada can intervene earlier in a customer's lifetime and target efforts specifically for each company, increasing retention rates while dedicating fewer resources than more generic proactive methods.

Next Steps

Following our work, Air Canada will continue the project and aims to put the models in production. The business team and AI Center of Expertise will:

- Further investigate creation of retention strategies using our models' insights
- Productionize our pipeline with appropriate data ingestion
- Perform A/B testing on different members to track their responses to the treatment strategies
- Identify the average treatment effect
- Assess the performance of the retention measures