



# High Note Freemium Analysis

*Feb 21, 2021  
Group G*

# Agenda

1. Which model is better for our task logistic regression model or a decision tree? Why? Support and defend your answer.
2. Does looking at the changes result in a different conclusion than just using the CURRENT Period?
3. Which users should we target and what would do you think the results will be (specifically how many new subscribers will we get? What will our profits be?)

WIP







# Executive Summary

A woman with long brown hair tied back, wearing a white blazer and light blue jeans, is sitting cross-legged on a light-colored rug. She is using a laptop on a white coffee table. The room is modern and minimalist, with a brown sofa, a white lamp, and a vase of dried flowers. The text "Model Comparison" is overlaid in the center.

## Model Comparison

# Logistic Regression vs Decision Tree

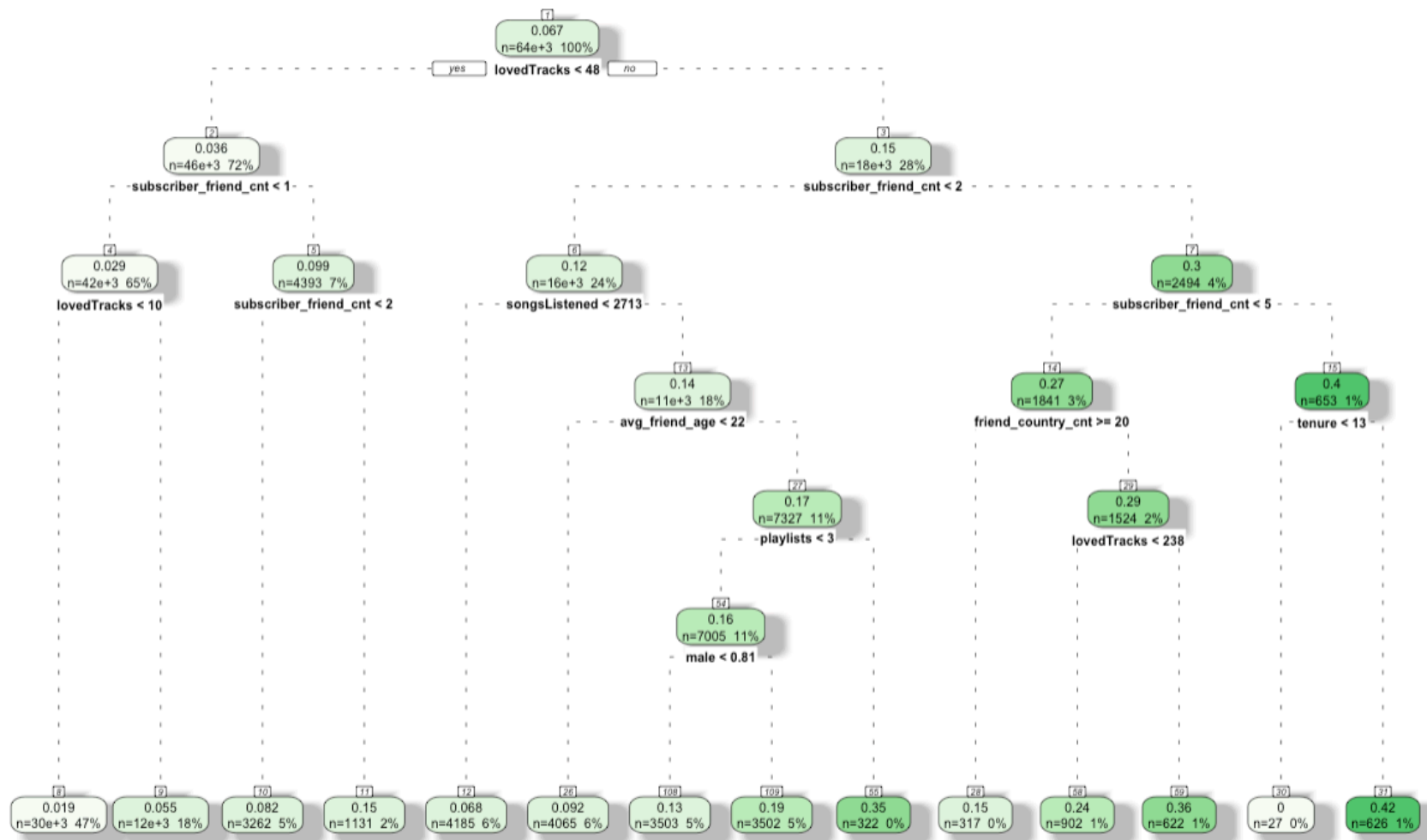
## Logistic Regression

Variable		Estimate	Std. Erros	z value	meandata	sddata	Importance
playlists	▲	2.15E-01	1.87E-02	11.49	0.53	6.14	2.75
subscriber_friend_cnt	▲	3.92E-01	3.31E-02	11.86	0.33	2.12	1.30
lovedTracks	▲	9.28E-04	5.75E-05	16.13	77.76	284.19	0.30
male	▲	4.50E-01	4.44E-02	10.12	0.62	0.39	0.19
songsListened	▲	6.87E-06	4.94E-07	13.93	12863.89	25193.67	0.19
age	▲	2.81E-02	3.17E-03	8.87	24.39	4.96	0.15
avg_friend_age	▲	2.20E-02	3.27E-03	6.74	2.46E+01	5.12E+00	0.12
friend_country_cnt	▲	1.84E-02	4.41E-03	4.17	2.79E+00	4.98E+00	0.10
good_country	▼	-2.50E-01	4.52E-02	-5.54	3.70E-01	3.80E-01	0.09
friend_cnt	▲	1.66E-03	7.97E-04	2.09	12.23	48.19	0.08



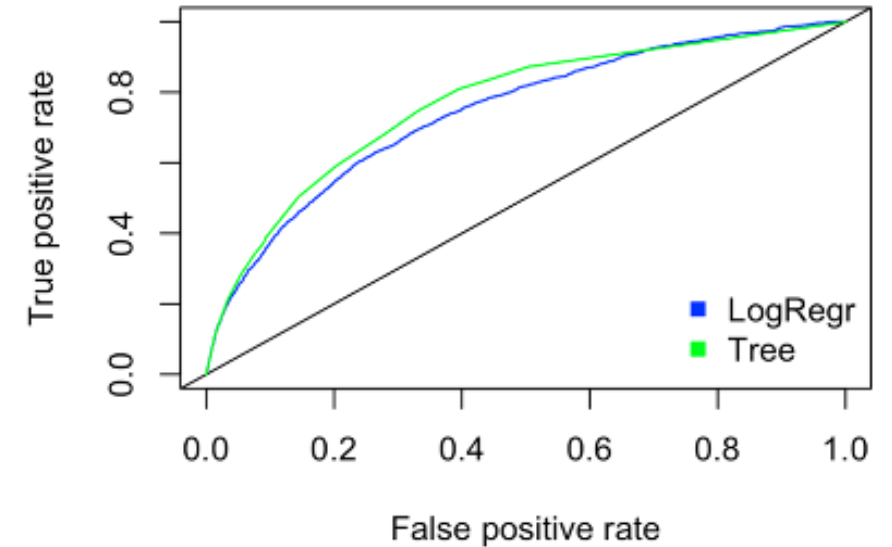
# Logistic Regression vs Decision Tree

## Decision Tree



# Logistic Regression vs Decision Tree

	Logistics Regression	Decision Tree
Accuracy	0.93	0.96
Precision	0.35	0.34
Recall	0.09	0.14
AUC	0.74	0.77



To get more accurate result



Decision Tree

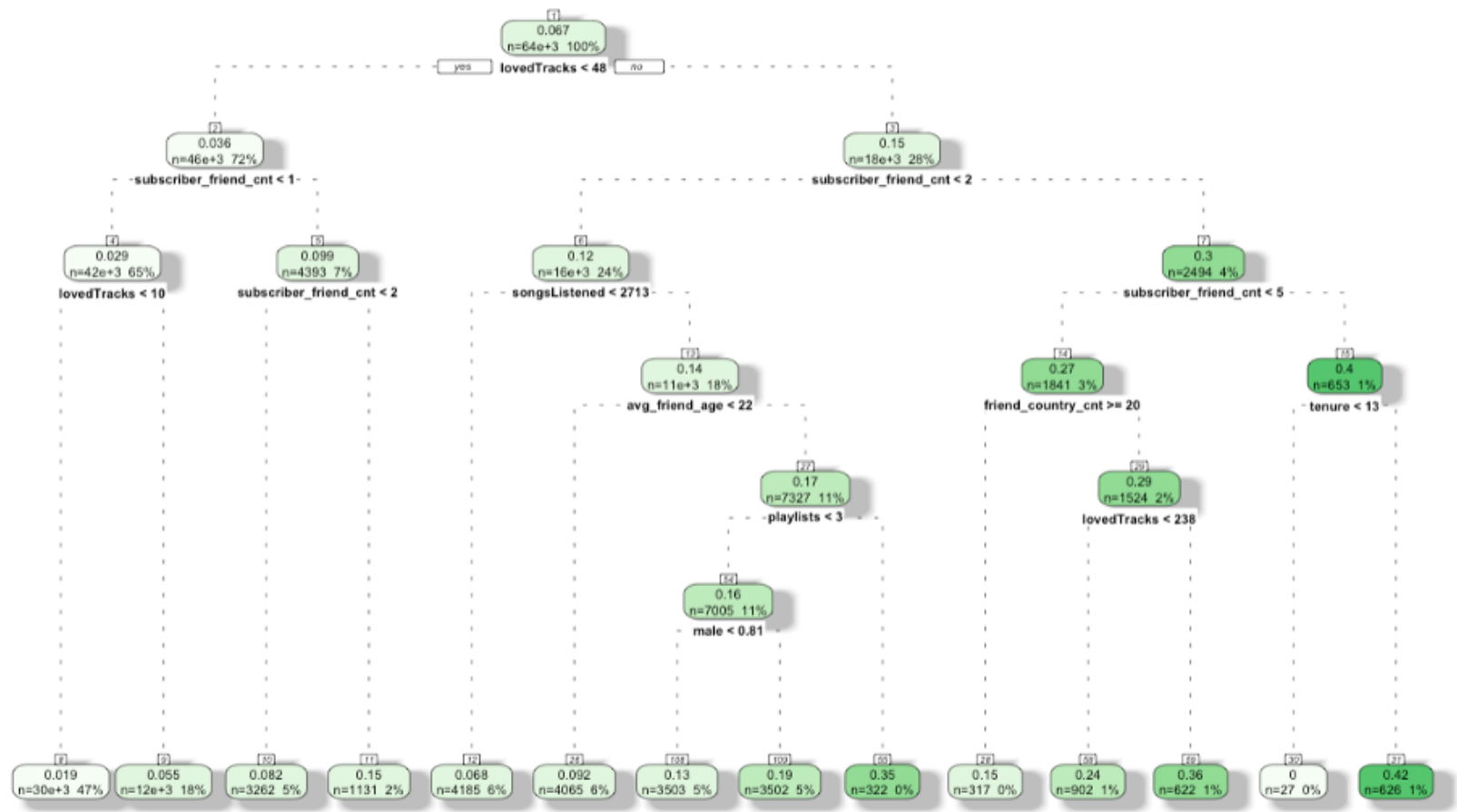
A woman with brown hair tied back, wearing a white lab coat and light blue pants, is sitting on a white cushion on a light-colored rug. She is looking at a laptop on a low, white, rounded coffee table. Her hands are on the keyboard. On the table, there is also a white mug, a small vase with dried flowers, and some papers. In the background, there is a grey sofa, a side table with a lamp, and a large potted plant. The room is bright and modern.

## Current vs. Historical trend



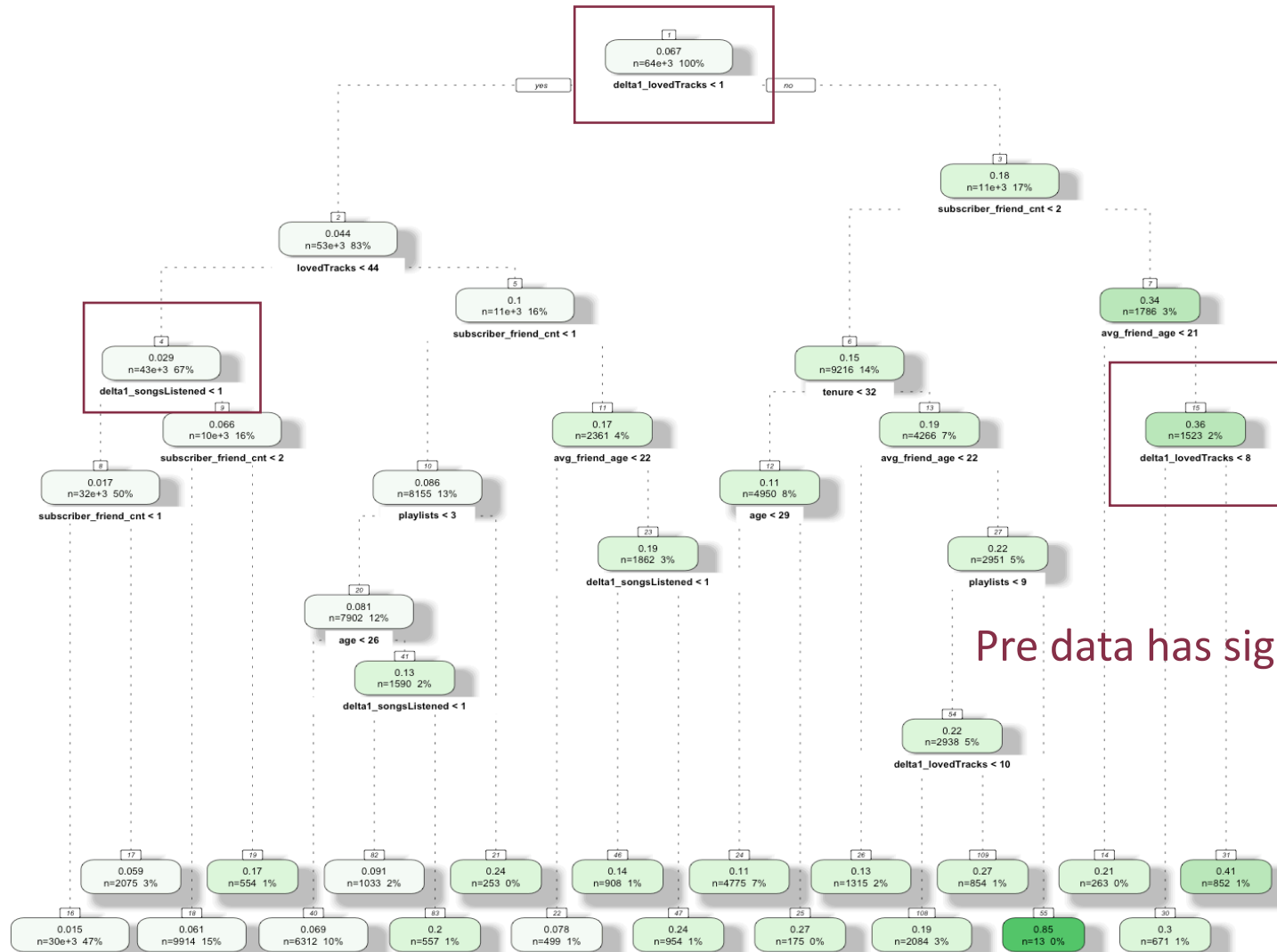
# Current Data vs Pre + Current Data

## Tree model of Current Data



## Current Data vs Pre + Current Data

## Tree model of Pre + Current Data



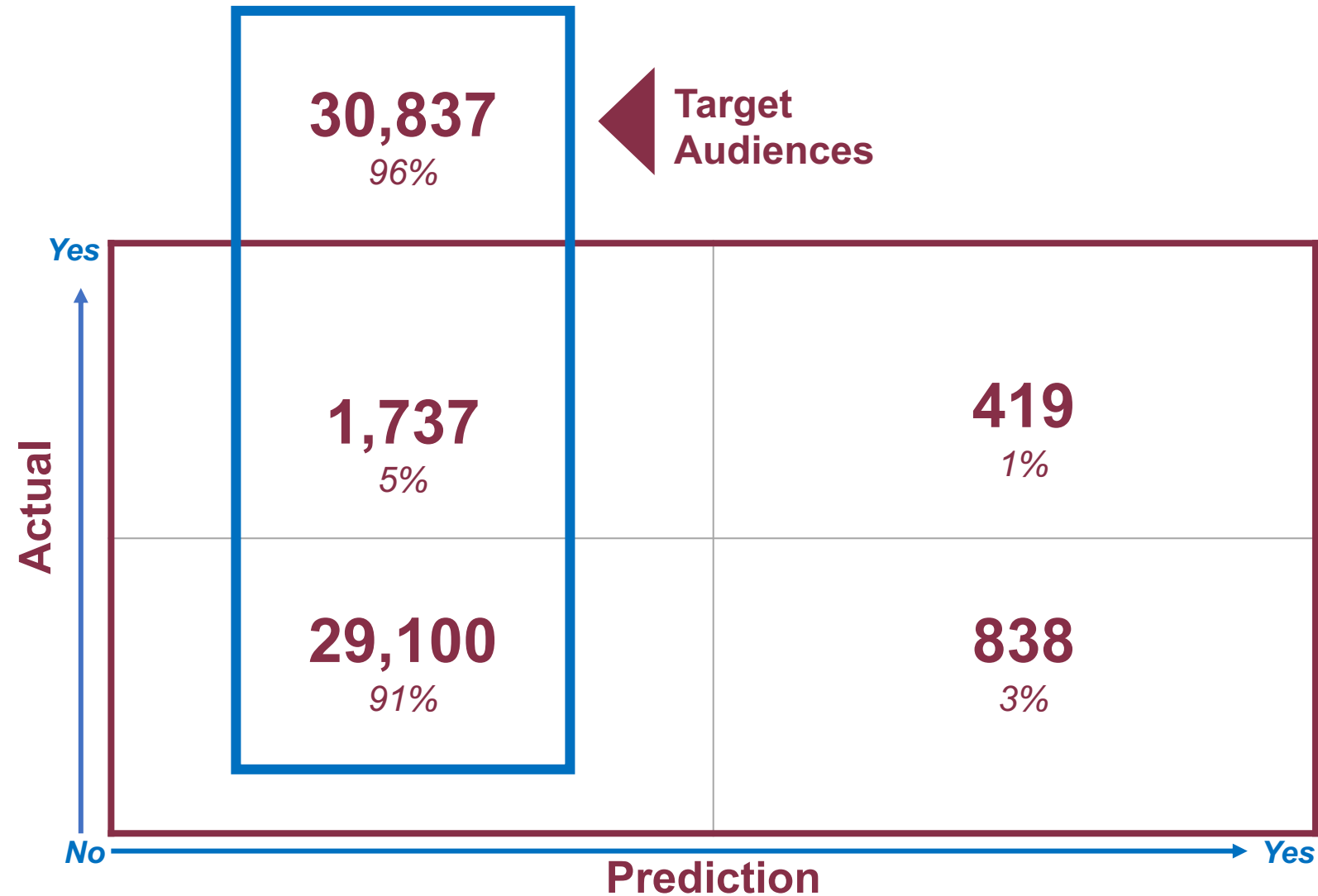
## Pre data has significant impact on the result

A woman with long brown hair tied back, wearing a white blazer and light blue jeans, is sitting cross-legged on a light-colored rug. She is using a laptop on a white coffee table. The room is modern and minimalist, with a grey sofa, a white lamp, and a vase of dried flowers. The text "Target Audiences" is overlaid in a dark red font on a white rectangular background.

## Target Audiences



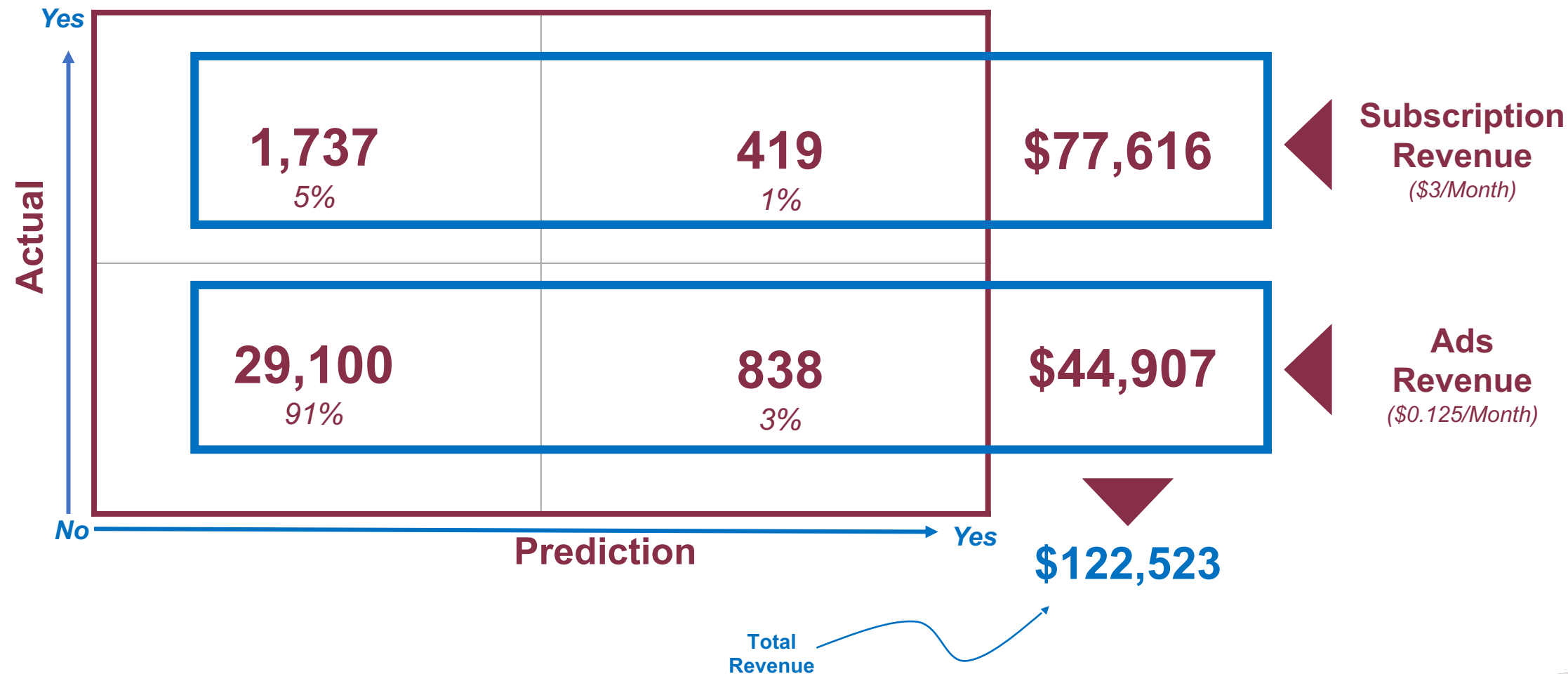
High Note should consider giving promotional offers to those who the model predicts that would not subscribe.



A woman with long brown hair tied back, wearing a white button-down shirt and light blue jeans, is sitting cross-legged on a light-colored rug. She is looking at a laptop on a white coffee table. The room is bright and modern, with a grey sofa, a white lamp, and a vase of dried flowers. A semi-transparent white box with the text "Revenue Projection" is overlaid on the image.

# Revenue Projection

Baseline: Current annual revenue is \$122,523.





**What is the minimum conversion rate we need to achieve in order to maintain current revenue?**

With the promotional offer, High Note needs to convert at least 4% of Free Users in order to maintain the current revenue.

Offer Promotional Offer				
	Segment One	Segment Two	Segment Three	Segment Four
	N=419	N=838	N=1,737	N=29,100
Prediction	Yes	Yes	No	No
Actual	Yes	No	Yes	No
	Revenue: 12-month subscription fee \$15,084	Revenue: 12-month ads fee \$1,257	Revenue: 9-month subscription fee \$46,899  Opportunity Cost: 3-month subscription fee \$15,633	<ul style="list-style-type: none"><li>Need additional \$59,283 from this segment</li><li>This means that we need to convert 4% from free to premium.</li><li>\$27,700 from subscription and \$31,583 from ads</li></ul> Opportunity Cost: 3-month ads fee \$10,528

# Is 4% feasible? Yes!

Case Study Conversion Optimization Inspiration

## Case Study: How Spotify achieves astonishing 46% conversion rate from free to paid

Jun 24, 2019

In 2015, The Fader reported that out of Spotify's 75 million monthly users, 20 million are paying customers.

A 26.6% conversion rate is staggering on freemium products.

2019 Q1 data: 217 million active users, 100 million subscribers. That's 46% conversion rate. [\[Source\]](#)

If 26.6% was staggering then how should we call 46%? Eye-popping? Astounding? Stupefying?



# Benchmarking the competitor, the projected revenue is \$442,340.

