



Trips Analytics & Data-Driven Growth Strategy



PREPARED BY

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EXECUTIVE SUMMARY

Project objectives, key insights and strategic recommendation

Aim

To understand how annual members and casual riders use Cyclistic bikes differently, in order to inform the design of targeted, data-driven conversion strategies for casual riders.

Objectives

1. Compare trip volume patterns across user types and time periods
2. Assess differences in trip duration between casual riders and annual members
3. Identify temporal usage patterns (monthly, daily, and hourly) that differentiate the two user groups
4. Highlight opportunities for membership conversion based on observed usage patterns

Key insights

General trend

Increase in overall trips by both users in 2020

User comparison

Both casual riders and annual members use Cyclistic services differently

Duration

Casual riders travel 7X longer than annual members

Strategic recommendation

Incentivise Long-Duration casual Riders

Flexible membership option

Sustain casual riders inflow funnel

Expand data collection to facilitate membership growth prediction

DATA SCOPE & METHODS

Collection, cleaning and analysis

Data Types & Sources



Source

Motivate International Inc.



Trip records

Ride ID, Start/End time, User Type



Period

2019 & 2020
Quarter 1: Jan - Mar

STEPS



PREPROCESSING

- Remove trips < 1 mins (False start)
- Handled missing data



TRANSFORMATION

- Extract Hour, Day and Month
- Recoded Usertypes
- Factorisation and vectorisation of data
- Conversion into long format dataset



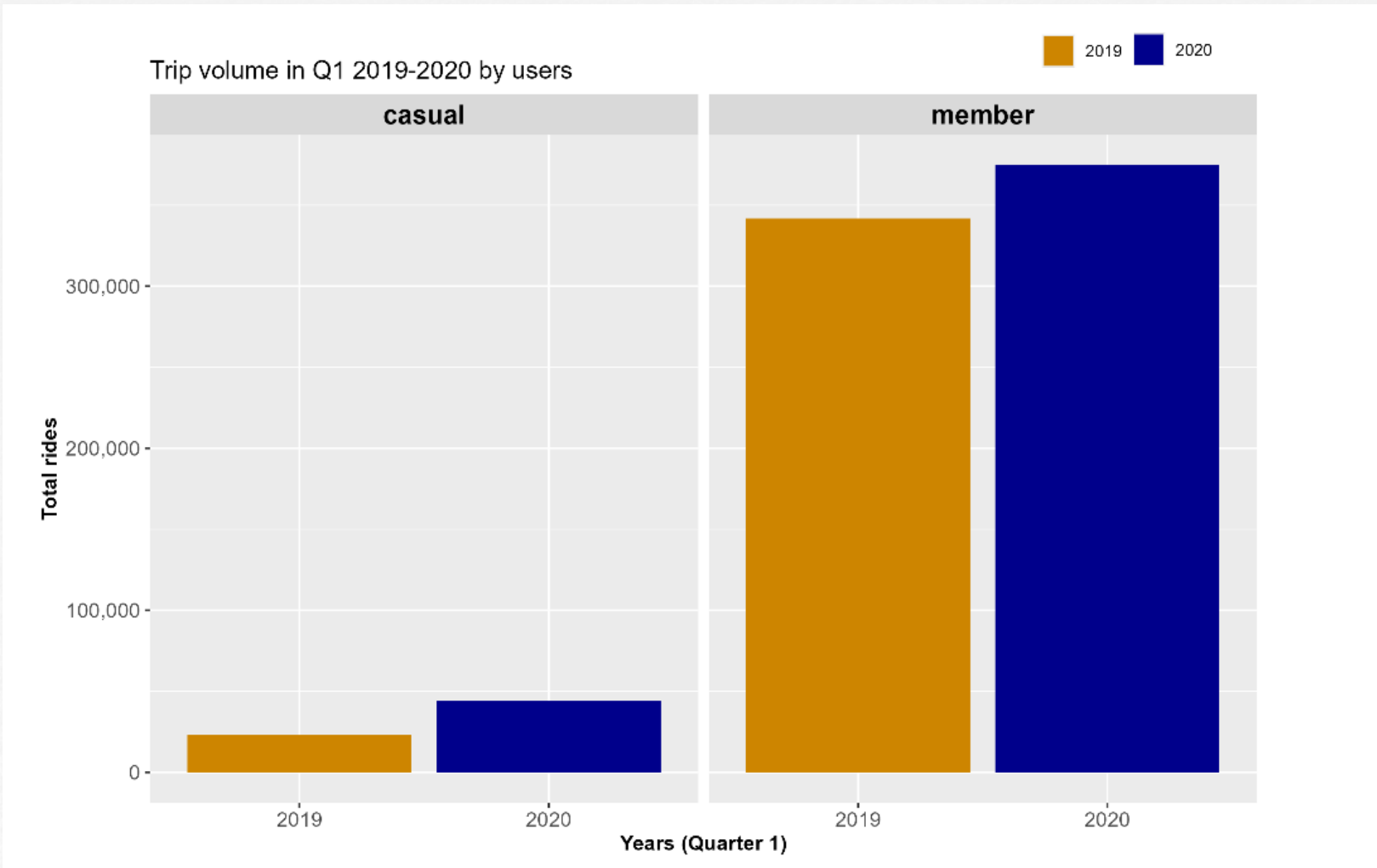
ANALYSIS

- Descriptive analysis (count, mean and median)
- Inferential analysis (chi-square and student t-test)
- Result visualisation

TRIP VOLUME ANALYSIS

Analysis period: Q1, 2019 -2020

Total trip volume in quarter 1(Q1) 2019 and 2020



Trip volume Q1 combined

783,020 trips

↑ by 61,818 trips in 2020 (~8%)

Member (annual subscribers)

91%

↑ by 4% in 2020

Casual (casual riders)

9%

↑ by 32% in 2020

Insight

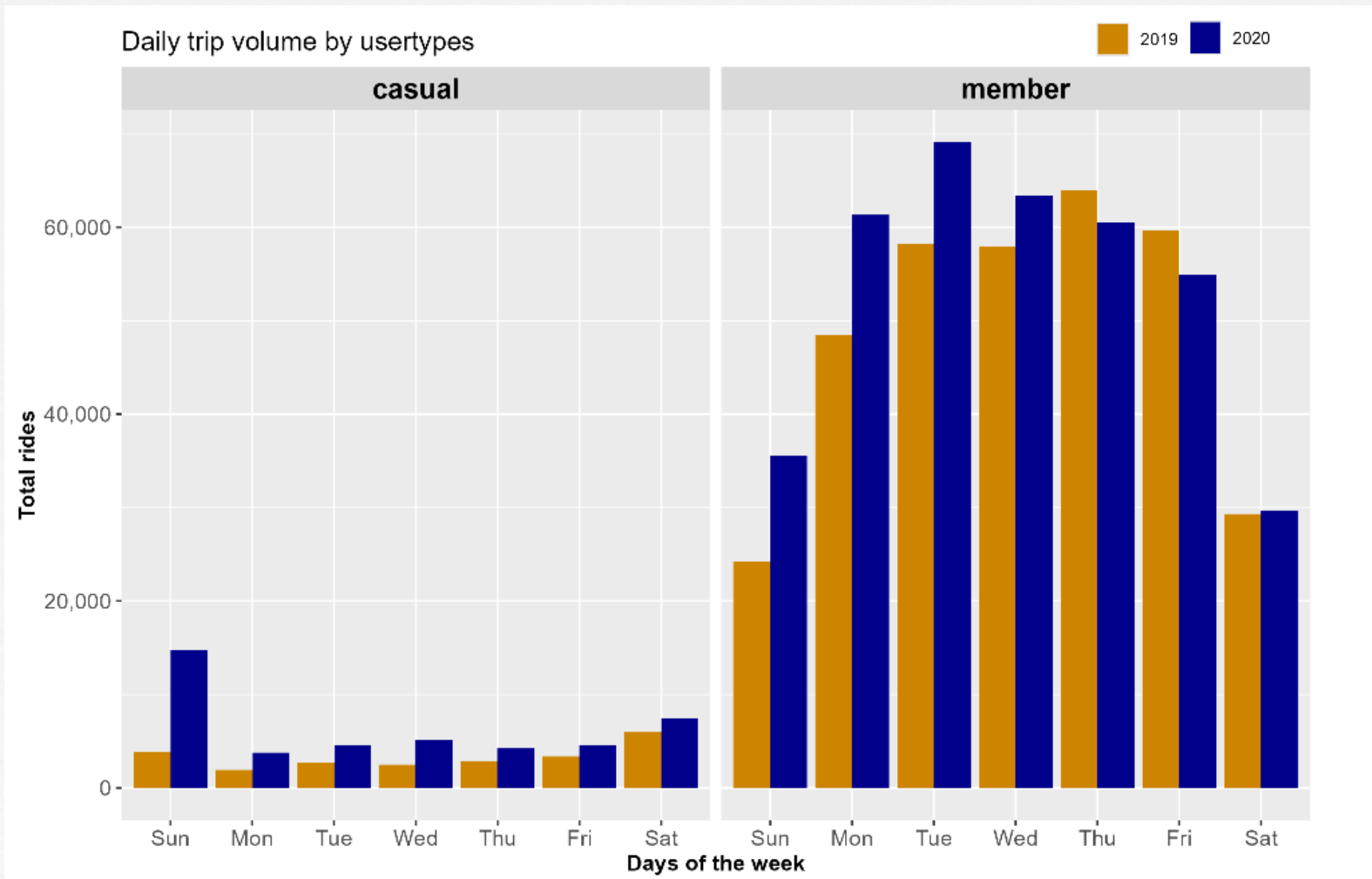


Incremental changes in trip volume by both user groups

TEMPORAL TRIP VOLUME ANALYSIS

Analysis period: Q1, 2019 -2020

Daily trips by both casual and annual members grouped by year



Members (annual subscribers)



**WEEKDAY
RIDERS**

Casual (casual riders)

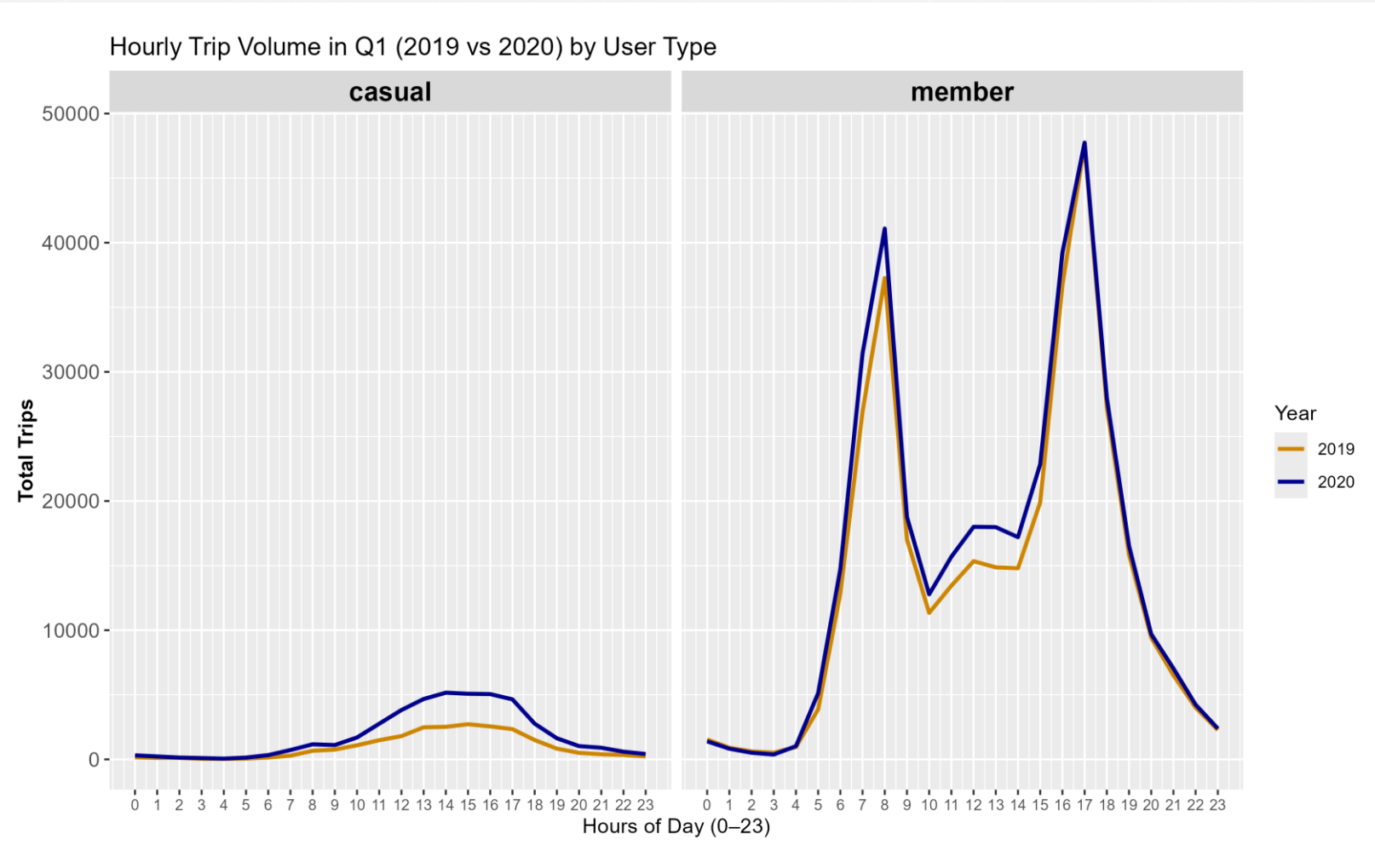


**WEEKEND
RIDERS**

TRIP VOLUME ANALYSIS

Analysis period: Q1, 2019 -2020

Hourly trips by both casual and annual members grouped by year (24hr period)



Members (annual subscribers)



8AM & 5PM

Work commuters

Casual (casual riders)



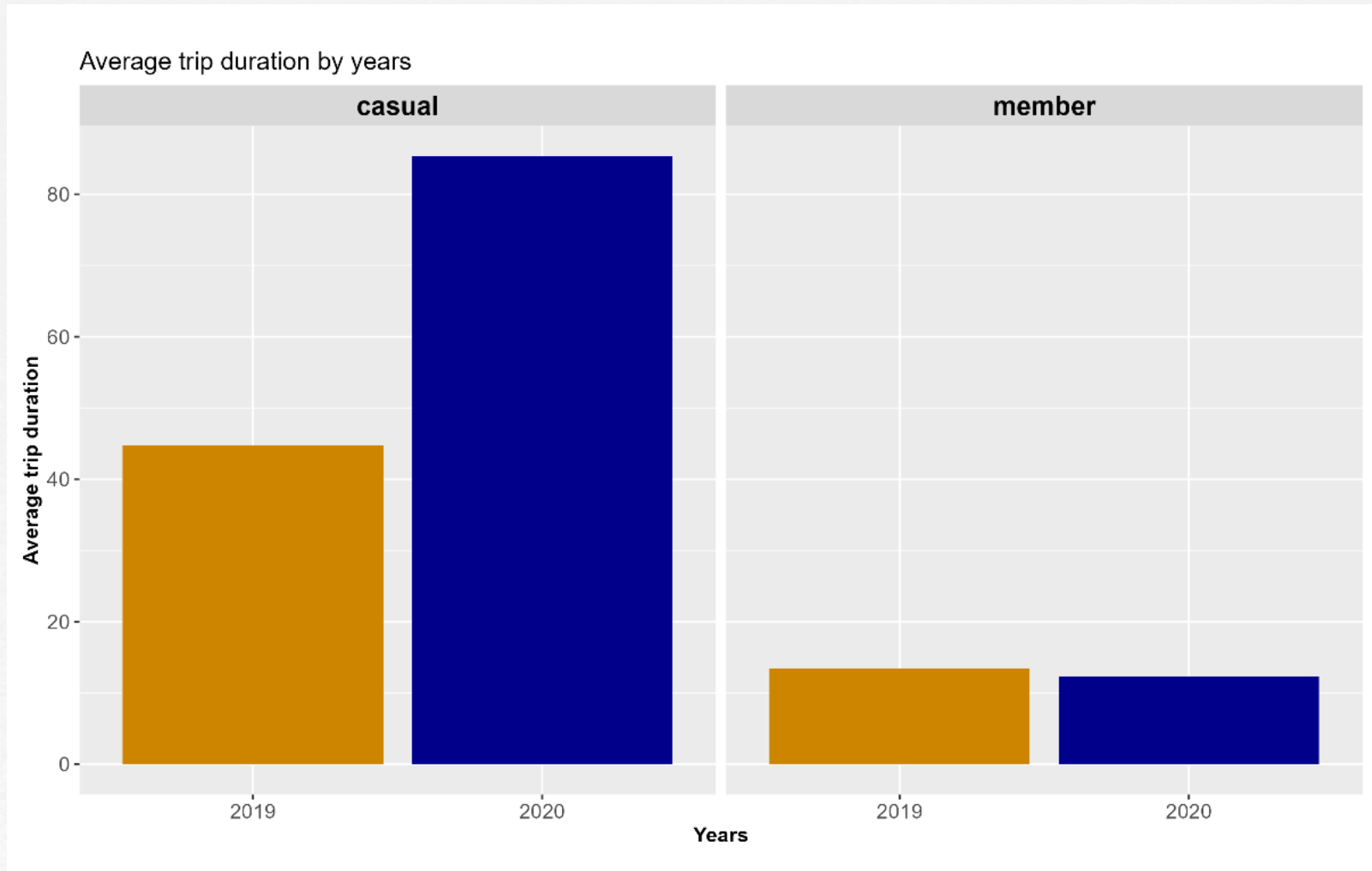
2PM - 4PM

Leisure commuters

TRIP DURATION ANALYSIS

Overall trip duration for both casual and annual members grouped by year

Analysis period: Q1, 2019 -2020



Average trip duration 2020

20 mins

50% of all rider below 9 mins

Members (annual subscribers)

12 mins

50% travelled below 9 mins

Casual (casual riders)

85 mins

50% travelled below 23 mins

7x

Insight



Casual riders travelled longer than annual subscribers

Behavioural Interpretation

Analysis period: Q1, 2019 -2020

How do annual subscribers and casual riders use Cyclistic bikes differently?



The difference in users' behaviour is explicit from the duration, days and purpose of trips

Casual riders



Long-duration riders



Weekend riders



Leisure riders

Annual subscribers



Short-duration riders



Weekday riders



Work-related riders

Business Recommendations (marketing)

Analysis period: Q1, 2019 -2020

Conversion strategies for enhancing Annual Membership Growth through the casual rider pipeline



Reposition the Annual Subscription Package as a value-driven and cost-efficient alternative



Incentivise Long-Duration Casual Riders

Incentivise riders exceeding trip duration thresholds (first-month discounts, trial membership options)



Deploy a Time-specific Campaign

- Run weekend promotional campaigns
- Employ rider specific in app campaign based on cumulative monthly trip duration



Maintain Casual Rider Funnel

Continue investing in casual rider accessibility and visibility to sustain annual conversion flow



Flexible Membership Option (Quarterly subscription)

Lowers commitment barriers and creates a steppingstone to full annual membership

Business Recommendation (Data)

Analysis period: Q1, 2019 -2020

Data collection and future conversion prediction



Data Enhancement and future analysis

To enable more precise, user-level conversion strategies, Cyclistic should expand its data collection beyond trip-level metrics.



Rider Profile & Socio-Demographic Data (age, gender, employment status, etc.)

Enables segmentation of casual riders by life stage and mobility needs, improving targeting precision for membership conversion



Bike & Product Preference Data

Enhance target cyclistic service to meet specific riders needs



Pricing & Spend Data

Enables quantification of the value proposition of membership for individual riders.

1

Casual riders and annual members exhibit structurally different usage patterns

- Annual members are short-distance, weekday commuters
- Casual riders take longer trips, concentrated on weekends

2

Membership Growth Strategy

- should focus on converting high-potential casual riders while sustaining casual rider acquisition
- Include flexible membership options to reduce commitment barriers

3

Expand Trip data

- Expanded data collection beyond trip-level metrics is required to enable targeted marketing and predictive conversion strategies