Cyclistic Bike-Share Speedy Success

Create by Pei Tao

Executive Summary

Business Ask

Problem Statement:

Cyclistic currently has a user base where 70% are casual riders, not opting for annual memberships, leading to a substantial untapped revenue potential.

Task:

The company need a comprehensive analysis of user behavior to help uncover the underlying opportunity and formulate strategies.

Goal:

10% increase in annual membership subscriptions through selected media channels within the next six months.

Stakeholders

External: Customer marketing analytics team | executive team

Internal: Marketing director Lily Moreno | Data analytics team

Summary Index

Data Source & Data Frame

Data Sources: This analysis use Cyclistic's 2023 bike-share trip data, provider by Google Data Analytic Certificate course, made available by Motivate International Inc. Copyright under license https://ride.divvybikes.com/data-license-agreement

Time Frame: January – July 2023

Original Data Size:

Total Files	Total Size (KB)	Total Rows	File Names
7	605.77	3158109	Divvy_Trip202301.csv Divvy_Trip202302.csv Divvy_Trip202303.csv Divvy_Trip202304.csv Divvy_Trip202305.csv Divvy_Trip202306.csv Divvy_Trip202307.csv

Original Data Schema:

ride_id	member_casual	rideable_type	start_lat	start_lng
A unique identifier for each ride	The type of user (e.g., "member", "casual")	The type of bike used for the ride	The latitude of the start location.	The longitude of the start location.
started_at	**start_station_name**	**start_station_id**	**end_lat**	**end_lng**
The start timestamp of the ride	The name of the station where the ride started	The ID of the station where the ride started	The latitude of the end location.	The longitude of the end location.
ended_at	**end_station_name**	**end_station_id**		
The end timestamp of the ride	The name of the station where the ride ended	The ID of the station where the ride ended		

Data Sample:

ride_id	started_at	ended_at	member_casual	start_station_id	start_station_name	end_station_id	end_station_name	rideable_type	start_lat	start_lng	end_lat	end_lng
F96D5A74A3E41399	1/21/2023 20:05	1/21/2023 20:16	member	TA1309000058	Lincoln Ave & Fullerton Ave	202480	Hampden Ct & Diversey Ave	electric_bike	41.92407394	-87.64627838	41.93	-87.64
13CB7EB698CEDB88	1/10/2023 15:37	1/10/2023 15:46	member	TA1309000037	Kimbark Ave & 53rd St	TA1308000002	Greenwood Ave & 47th St	classic_bike	41.799568	-87.594747	41.809835	-87.599383
BD88A2E670661CE5	1/2/2023 7:51	1/2/2023 8:05	casual	RP-005	Western Ave & Lunt Ave	599	Valli Produce - Evanston Plaza	electric_bike	42.008571	-87.69048283	42.039742	-87.699413
C90792D034FED968	1/22/2023 10:52	1/22/2023 11:01	member	TA1309000037	Kimbark Ave & 53rd St	TA1308000002	Greenwood Ave & 47th St	classic_bike	41.799568	-87.594747	41.809835	-87.599383

Data Preparation

Step1: Data Location:

Original: D:\Case_Study\BikeShare\2_Data\BikeShare_Data_AnalyOP_Backup
Analysis: D:\Case_Study\BikeShare\3_Analysis Results

Step 2: Data Operation: BigQuery (link)

Step 3: Data Preparation:

- Union all data files into table 2023 under dataset divvy_trip
- Added Columns

ride_length AS INT64	**hour** AS INT64	**day_of_week** AS INT 64	**month** AS INT 64	**season** AS INT 64
The delta between "started_at" and "ended_at" timestamp	The hour of the "started_at" timestamp	The day of the week of the "started_at" timestamp	The month of the "started_at" timestamp	The season of the "started_at" timestamp

- Data and business goal relevance: The data provide signal trip graduality and user type info allowing behavior analysis between user types to support business goal.
- Data Issue & Cleaning Steps
- Analysis Planning
  - User type trends by time
  - User type trends by ride length
  - member rider frequent stations
  - Casual rider frequent stations

User Type Usage Overview

Member Usage

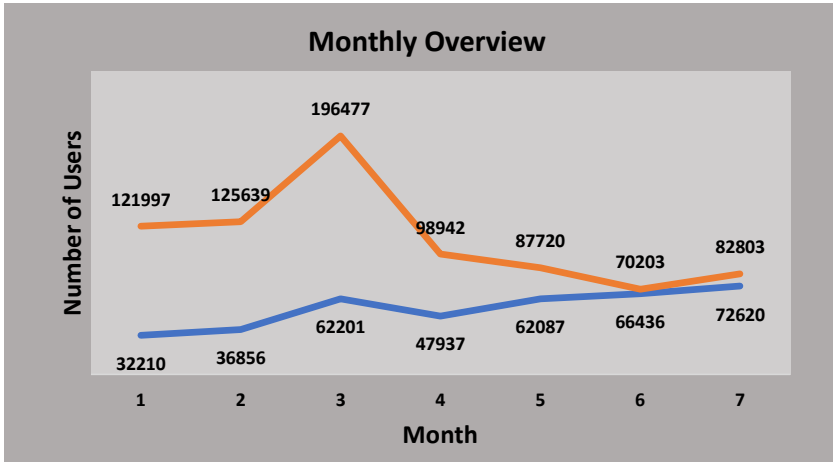
- **Started High:** More than 3 times higher than casual users' usage from January to March,2023.
- **Ended Low:** More than 50 % drop from March to April and continue downward to June, while usage started to pick up in July.

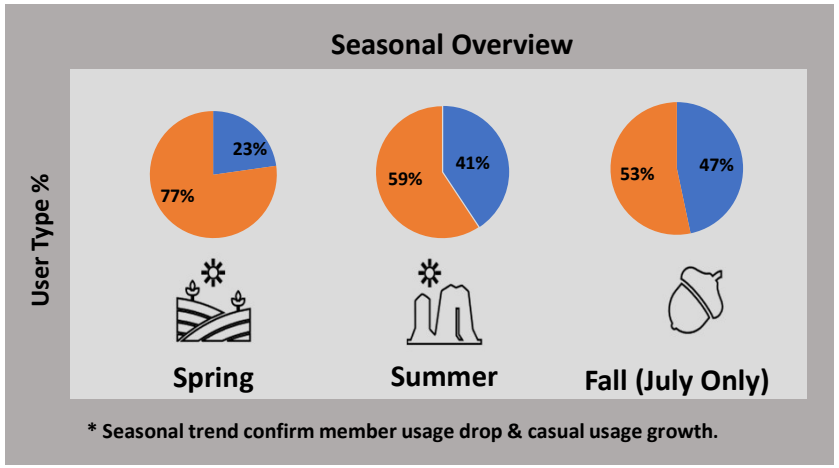
- **Waring Sign:** Need an urgent research for the reasons of usage sharp drop.
- **Protect Revenue:** Retention promotions are.

Casual Usage

- **Growth:** Casual usage showed a slow and steady increase from January to July, resulting in a total usage growth of 106%.

- **Casual User Lifestyle:** The growing trend implies that casual users have developed a health awareness about the service and increasingly incorporated it into their lifestyle.
- **Sign-up Incentive:** Membership package according casual user lifestyle would keep stimulate the growth.





* Seasonal trend confirm member usage drop & casual usage growth.

User Type Trends by Time

Member Usage

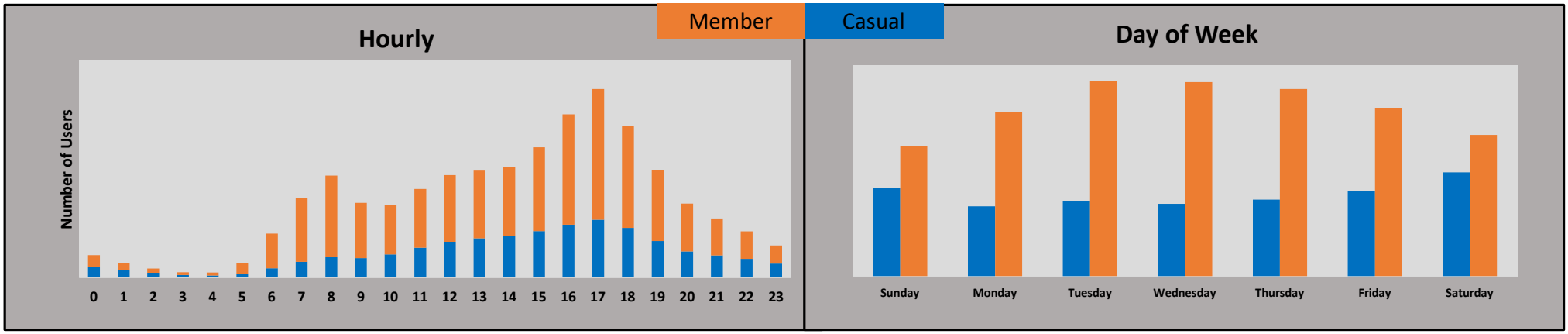
- **Rush Hours:** 8 am and 5 pm were the morning and evening rush spiks.
- **Weekday Rides:** Member usage is high during weekdays and low on weekends.

- ➢ **Regular & Frequent Daily Commute:** Members likely relied on bike sharing for work or school.
- ➢ **Promotion:** Reward on ride frequency would help membership retention.
- ➢ **Promotion Time:** Weekday around 8 am and 5 pm.

Casual Usage

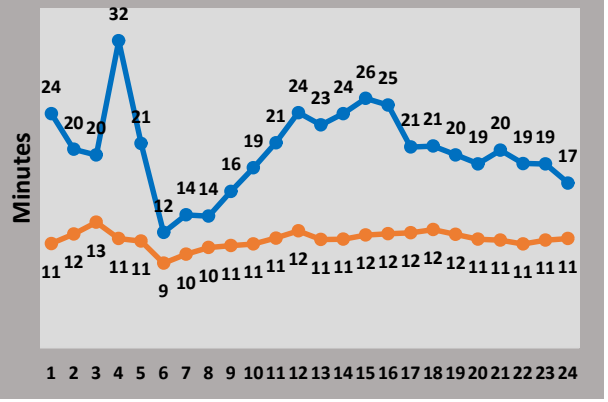
- **Off Peak Hours:** Steady upward trend during times of day and peak at 5 pm.
- **Weekend Peaks:** Weekend casual usage exceeded weekday usage.

- ➢ **Activity Types:** Casual users likely used the service for leisure activities, errands, or spontaneous trips.
- ➢ **Promotion:** Member benefits such as off-peak hour rate or weekend cross-marketing events could motive sign-ups.
- ➢ **Promotion Time:** Around 5 pm on weekends.

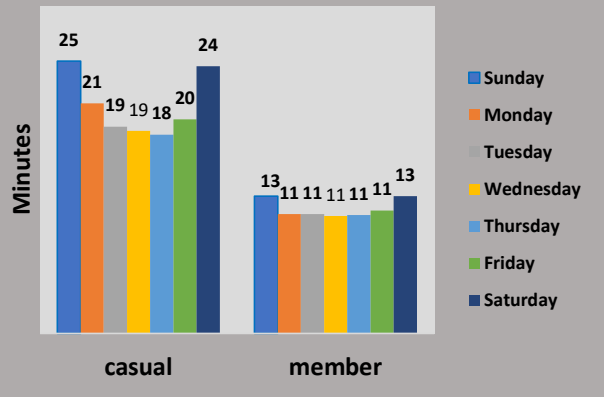


User Type Trends by Average Ride Length

Hourly



Day of Week



Member Usage

- **Around 10 Mins Regular Rides:** Members took regular and consistent daily commute rides between 9 to 13 minutes.

- **Route:** Likely from their resident areas to near by stations, thus they are urban residence.
- **Bike Availability:** Providing bikes in popular areas or offering information on nearby bike availability helps members with their daily routines.
- **Frequency Rewards:** Reward ride frequency to keep the sense of membership value. Ex: accumulative 50 or 100 rides a month would get free rides for the rest of the month; or a free day pass to their non-member family members or friends.

Casual Usage

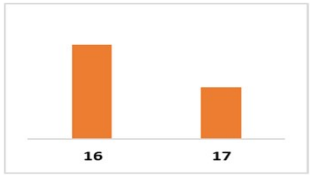
- **Around 20 Mins Rides:** Casual users average ride length is about 20 minutes.
- **Late Night Peak:** 3-4 am average ride length is 32 mins.
- **Weekends Peak:** Weekend ride length is longer than weekday ride length.

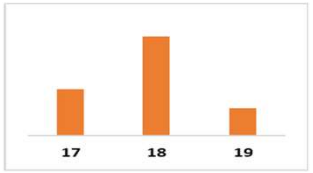
- **Outskirt urban residential area:** Casual riders living in outskirt urban residential areas can use the service for running errands.
- **Late Night Discount:** Offering a late-night rate for members provides a competitive advantage for late-night leisure or work-related transportation needs.
- **Family or Friend Weekend Recreation:** Offering multiple-rider deals or sign-up gifts on weekends could encourage casual riders to convert to members.

User Frequent Stations by Time

Member User Weekday Top Stations & Hours

Top Start Station	Top End Station
Michigan Ave & Lake St	Streeter Dr & Grand Ave

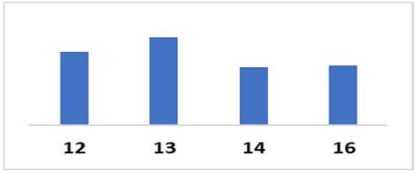


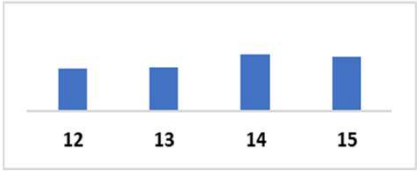


- **Bike Availability:** Very high bike demand on the stations with those peak time. Shortage would interrupt members' regular journey thus affect their loyalty and dependency on bike-share.
- **Real-Time Information:** Use Cyclitic App to provide real time bike availability at near by bike hubs could help the issue.
- **Promotion around the stations & the times:** Cross-marketing membership discounts with nearby restaurants before dinner time would enhance the convenience of members' daily lives.
- **Restaurant Deal Added Value:** This deal will encourage users to explore a broader range of bike hubs, thus reducing the concentration of bike demand in specific areas.

Casual User Weekend Top Stations & Hours

Top Start Station	Top End Station
Streeter Dr & Grand Ave	DuSable Lake Shore Dr & Diversey Pkwy





- **Promotion Time:** These hours are idea to launch promotion activities at the stations.
- **Promotion around the stations & the times:**
  - **Digital promotion:** Launch browser keyword or podcast advertisement on weekend morning when people search weekend events.
  - **Signs or sales rap near bike hubs:** Instant promotion reminder before casual user use the service.
  - **Cross marketing deals:** membership discount with shops, restaurants or beverage company around the stations and time would stimulate impulse sign-ups.

Top 3 Recommendations

Business Ask

10% increase in annual membership subscriptions through selected media channels within the next six months.

Finding Summary

Current member retention and casual rider sign up promotion both are important to contribute 10 % increase annual membership subscriptions.

Top 3 Strategy Recommendation

1. **Member Retention:**
   - ✓ Focusing on rewarding ride frequency and enhancing daily routine convenience.
   - ✓ Utilize the Cyclistic App to send promotions between 12 pm and 5 pm on weekdays.
   - ✓ Examples of rewards include accumulating a certain number of rides to receive gifts, free ride passes, or discounts at restaurants.
2. **Casual Rider Sign-up Boost:**
   - ✓ Design a membership bundle to suit casual rider's lifestyle.
   - ✓ Combine off-peak, late-night, and weekend deals to provide value, and consider adding gifts for impulse purchases.
   - ✓ Utilize social media, podcasts, and digital ads to raise deal awareness and boost promotions at popular stations during peak times with sign-up gifts and signage.
3. **Further Research:**
   - ✓ Investigate the reason on 50% member usage decrease to help identify potential risk, in revenue and operation
   - ✓ Further survey casual riders' trip purpose to help the promotion strategies that solidify their loyalty to bikeshare.