**Case Study: How Does a Bike-Share Navigate Speedy Success?**

# **Executive Summary**

Cyclistic’s bike-share service declares the importance of annual membership as the key factor of growth for the business. This analysis focuses on (1) defining key differences in behaviors between casual and member users, (2) identifying key leverages to convert casual users to members, and (3) identifying digital media approaches to influence the conversion.

Key recommendations:

* Promotional campaign in May – October that revamps fee structure focusing on docked and electric bikes for casual users.
* Loyalty reward programs focusing on leisure aspects, including partnerships with local shopping centers, attraction sites, and local restaurants.
* Marketing strategies focus on digital media leverage including SEO, advertising, social media, and CRM through email marketing, and OOH activations.

Tools used: R (data wrangling and initial analyses), Tableau (data visualization), Google Slides (data presentation).

# **Scenario**

You are a junior data analyst working in the marketing analyst team at Cyclistic, a bike-share company in Chicago. The director of marketing believes the company’s future success depends on maximizing the number of annual memberships. Therefore, your team wants to understand how casual riders and annual members use Cyclistic bikes differently. From these insights, your team will design a new marketing strategy to convert casual riders into annual members. But first, Cyclistic executives must approve your recommendations, so they must be backed up with compelling data insights and professional data visualizations.

# **Characters and teams**

* **Cyclistic:** A bike-share program that features more than 5,800 bicycles and 600 docking stations. Cyclistic sets itself apart by also offering reclining bikes, hand tricycles, and cargo bikes, making bike-share more inclusive to people with disabilities and riders who can’t use a standard two-wheeled bike. The majority of riders opt for traditional bikes; about 8% of riders use the assistive options. Cyclistic users are more likely to ride for leisure, but about 30% use them to commute to work each day.
* **Lily Moreno:** The director of marketing and your manager. Moreno is responsible for the development of campaigns and initiatives to promote the bike-share program. These may include email, social media, and other channels.
* **Cyclistic marketing analytics team:** A team of data analysts who are responsible for collecting, analyzing, and reporting data that helps guide Cyclistic marketing strategy. You joined this team six months ago and have been busy learning about Cyclistic’s mission and business goals — as well as how you, as a junior data analyst, can help Cyclistic achieve them.
* **Cyclistic executive team:** The notoriously detail-oriented executive team will decide whether to approve the recommended marketing program.

# **About the company**

In 2016, Cyclistic launched a successful bike-share offering. Since then, the program has grown to a fleet of 5,824 bicycles that are geotracked and locked into a network of 692 stations across Chicago. The bikes can be unlocked from one station and returned to any other station in the system anytime.

Until now, Cyclistic’s marketing strategy relied on building general awareness and appealing to broad consumer segments. One approach that helped make these things possible was the flexibility of its pricing plans: single-ride passes, full-day passes, and annual memberships. Customers who purchase single-ride or full-day passes are referred to as casual riders. Customers who purchase annual memberships are Cyclistic members.

Cyclistic’s finance analysts have concluded that annual members are much more profitable than casual riders. Although the pricing flexibility helps Cyclistic attract more customers, Moreno believes that maximizing the number of annual members will be key to future growth. Rather than creating a marketing campaign that targets all-new customers, Moreno believes there is a very good chance to convert casual riders into members. She notes that casual riders are already aware of the Cyclistic program and have chosen Cyclistic for their mobility needs.

Moreno has set a clear goal: Design marketing strategies aimed at converting casual riders into annual members. In order to do that, however, the marketing analyst team needs to better understand how annual members and casual riders differ, why casual riders would buy a membership, and how digital media could affect their marketing tactics. Moreno and her team are interested in analyzing the Cyclistic historical bike trip data to identify trends.

# **Ask**

In this section, we will make clear the business tasks of this project:

* To identify the key differences in bike-sharing activities of member riders (annual subscribers) and casual riders.
* To identify incentives that convert casual riders to annual subscribers.
* To identify communication channels using digital media to influence casual riders to become annual members.

The stakeholders who are involved in this project would be:

* Lily Moreno: the director of marketing and your manager, who is responsible for the development of campaigns and initiatives to promote the bike-share program. These may include email, social media, and other channels.
* Cyclistic executive team: The notoriously detail-oriented executive team will decide whether to approve the recommended marketing program.

# **Prepare**

The Cyclistic’s historical trip data is used to analyze and identify trends.

Data can be found [here](https://divvy-tripdata.s3.amazonaws.com/index.html).

Data characteristics:

* How the data is organized: The public datasets include trip records in the last 29 months, each dataset includes trip records from one specific month.
* Creditability: The datasets have a different name because Cyclistic is a fictional company. For the purposes of this project, the datasets are appropriate. The data has been made available by Motivate International Inc. under this [license](https://ride.divvybikes.com/data-license-agreement).
* Privacy: The datasets do not include personally identifiable information of customers.
* Accessibility: The data is made available by Motivate International Inc. in a public dataset.

# **Process & Analyze**

For the purpose of easy data manipulation, cleaning, and documentation, the tool used would be R.

The detailed cleaning and transformation process could be found in this [documentation](Challenge1_DataWrangling_Report.html).

# **Share**

I decided the tools to be used in this project section are Tableau & Google Slides.

The visualization dashboard can be found here in Tableau, and the analysis deck can be found here in Google Slides.

Following are graphs showing trends of the total of rides and ride time between casual users and member users considering:

* Ride type: Which types of bikes are their favorites?
* Month: How do the two figures change throughout the year? Is there a peak season?
* Weekday: Do the two figures vary between weekends and weekdays?
* Hour: Which timeframe during the day would the two groups of users use the bike-share services? How do these behaviors tell us about the users?
* Favorite start station: How do favorite start stations vary between the two groups of users? Are they having different interests to use the services?

Chart, bar chart

Description automatically generated

Chart, bar chart, line chart, histogram

Description automatically generated

Chart, bar chart, histogram

Description automatically generated

Chart, line chart

Description automatically generated

Map

Description automatically generated

There are some insights I got from the graphs:

* **Docked and electric bikes** are favorite for **casual users**. They tend to use bike-share services to commute between popular city attractions or home to city attractions and vice versa. And since destinations are city attractions, **shopping partnerships** or **ride rewards for shopping** can be considered.
* **Casual users** spend more time riding. As service fees for electric bikes are charged by the time used and unlock fees for docked bikes, **fee structure adjustments** should be considered.
* **The campaign period** to be considered is from **May to October** - a great season to promote and convert casual users to annual members as both the number of rides and total ride time peaked, especially for entertaining activities like visiting harbor, parks, museums, and aquariums. As bike-share service does not require long periods of advanced booking, lagged time planning might not be necessary.

# **Act**

Recommendations:

1. The promotion campaign can be run from April to September with promotional incentives for casual riders during this time of the year. **Seasonal passes** might be an option, yet this can result in annual members churn to seasonal users. My recommendation is to **revamp the fee structure for annual membership regarding electric and docked bikes**, intentionally focusing on the benefits for casual users to pursue leisure purposes.
2. **Loyalty rewards** for leisure-focused members give points to users with total ride time and points can be exchanged for rewards. Rewards include shopping discounts, free tickets to city attractions, discounts in local restaurants, etc. This requires partnerships with local shops, city attractions, local restaurants, etc.
3. Marketing channels can be through **digital media**: emails, social media branding, and advertising campaign for promoting the initiatives. Email for customer relationship management, keeping personalized updates for casual users, self and partnered social media to shout out about the campaign, and increase SEO/paid media to increase the campaign’s chance of getting hit by targeted users. Banners on travel sites and OOH billboards at city attractions are also good ways of getting noticed.

The presentation can be found [here](https://docs.google.com/presentation/d/1pD0Zvs9MHIT0-3zTd5wbwpnZL6IRlqUJpKv-TKym4UE/edit#slide=id.g15414c2f9ae_0_158).

# **Wrap-up**

There are improvement points that can be done during this project:

* Apply more statistical approaches to identify relationships between ride time variables and start/end stations and identify trends in the number of rides.
* More market research can be done to identify favorite shopping places or attraction sites to casual users, which can later be used to drive campaign strategies.
* Efficiency during the analysis process can be improved by determining approaches and frameworks from the start of this project.
* More data regarding customers’ demographical data can influence the recommendations made by this project.