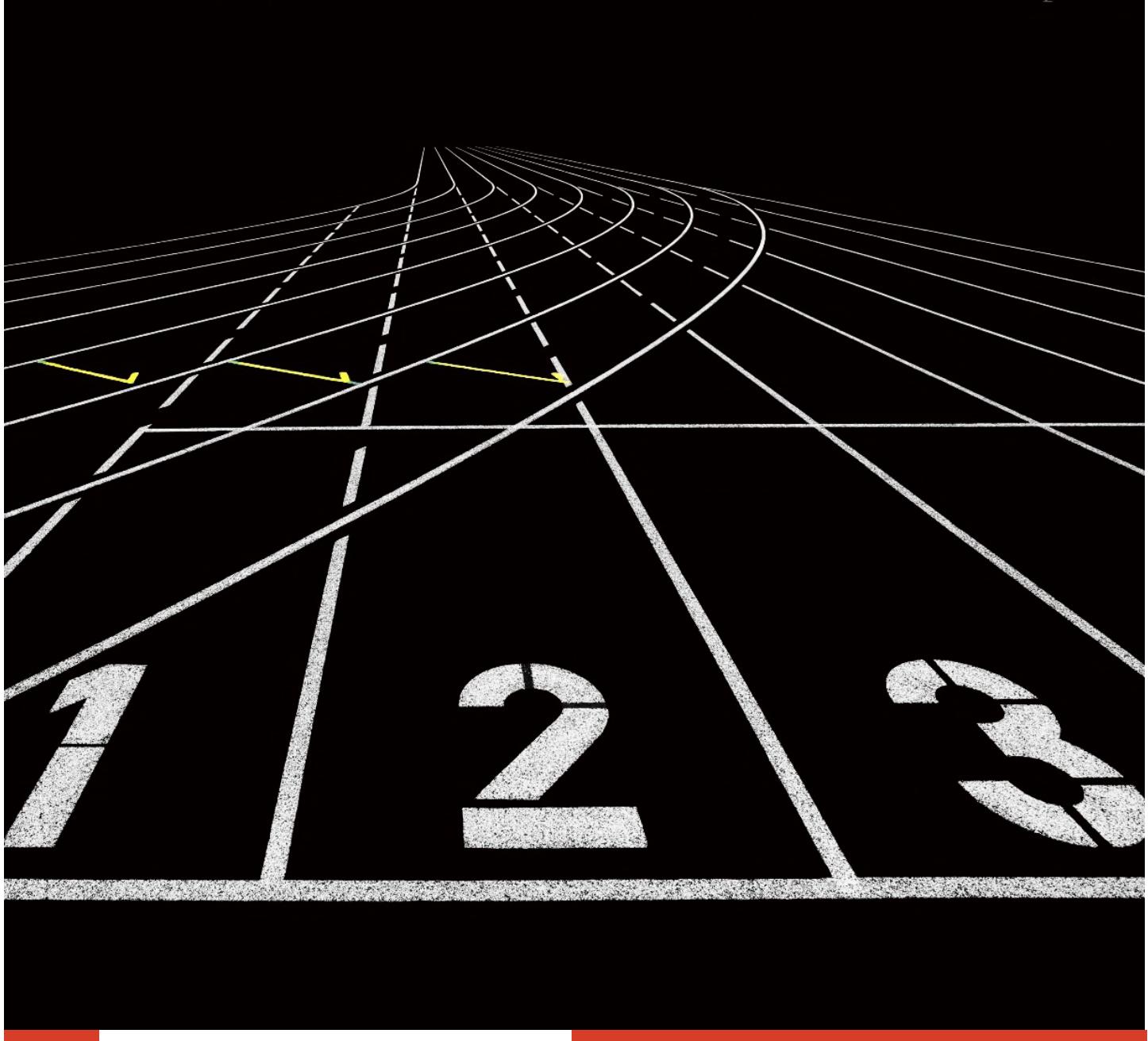




BIXI BIKING TRENDS & IMPACTS

MAXIMIZING VOLUME OF USAGE AND MEMBERSHIP

BIXI MONTRÉAL



INTRODUCTION

As a means to maximize revenue and company growth, we will analyze Bixi bike usage in 2016 and 2017. The purpose of the analysis is to find trends in usage; identify factors that impact usage; and to leverage *how* those factors effect trends to develop strategies to increase profit, membership, and company growth.

BIXI DATA

Data Collection

The Bixi bike usage data used in our analysis was collected from Spring to Fall in 2016 and 2017. The dataset includes the date and time a bike was rented and returned, as well as which the station the bike was picked up and dropped off at, and if the customer riding is Bixi member or not. Based on this dataset, the factors identified effecting usage are time of year, station location, time of day, and membership status.

Time of Year & Membership Status

In Figure 1, we saw a major increase in usage in the summer months, as expected. In Figure 2, we found a major decrease in the percentage of riders who are members and an increase as temperatures decreased.*¹ These two trends tell us that as usage in the summer increases, non-members usage increases. Non-members are a key factor in the summer surge. This is due to weather, and of course, tourism.

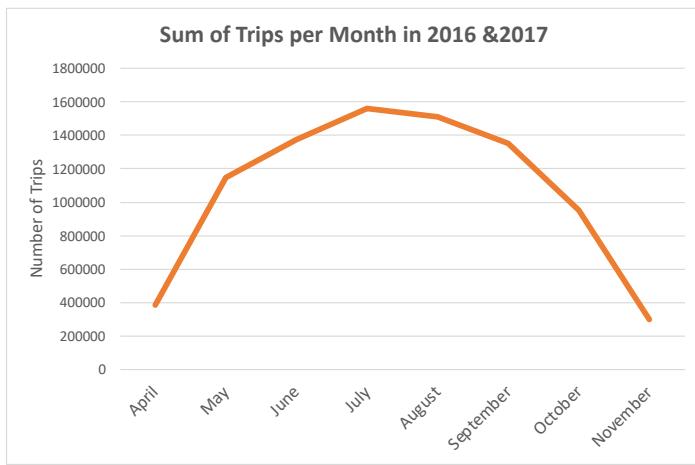


Figure 1

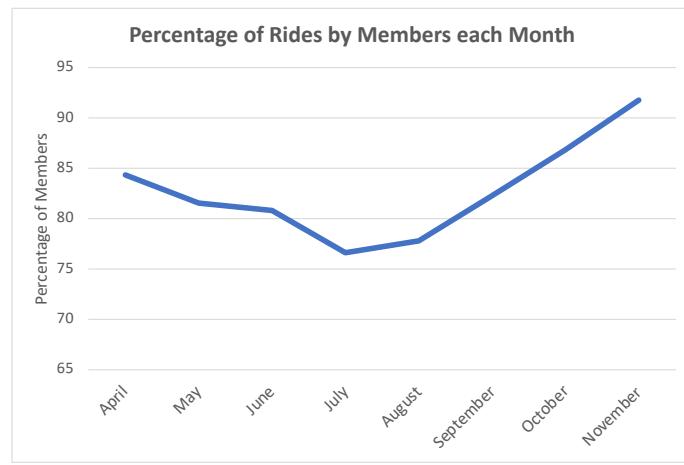


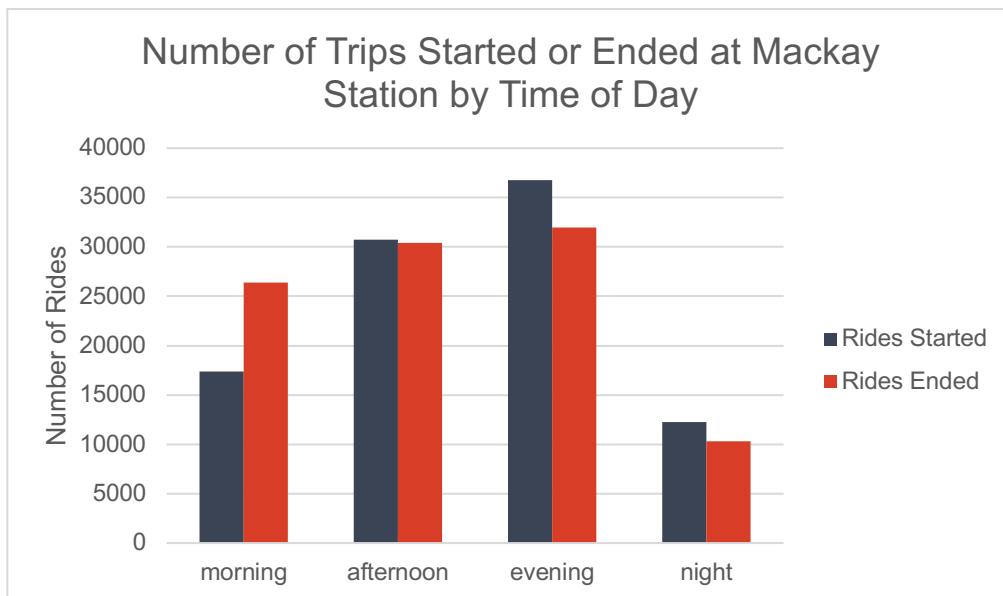
Figure 2

This presents an opportunity to grow Bixi bike usage in non-members during the summer months. Non-members can also be thought of as short-term members. Bixi can offer short-term memberships to attract tourists and seasonal riders. Partnering with summer events such as concerts, theater in the park, and sporting events to bring event goers event-special rates will make Bixi more attractive on-top of not having to sit in major event traffic or pay for car-share during price surges at peak times.. Another opportunity is to offer AirBnB hosts special rates for becoming long-term members so that their guests have easy access to Bixi Bikes. This can be a temporary code that the AirBnB host has to give to their guest to use our bikes and hosts having an option for weekly or bi-weekly bike drop-offs to their rental, making guest access even smoother.

¹ To analyze how membership behavior varies month to month in 2017 I will use the total number of trips each month as the denominator. This will shed light on how membership status fluctuates as the seasons change, when people are starting or dropping their membership. Such as if there are more non-members riding in April than members but more members riding in May than non-members. Using the number of member trips in 2017 as the denominator would tell us which month has fewer trips, which we already know just from counting the number of trips each month. Furthermore, to analyze how membership status fluctuates from month to month we need to compare the number of members to the number of members and non-members for each month. Using the total number of member trips for 2017 as the denominator does not meet the objective since it compares members to members.

Pick-up/Drop-off Locations & Times

The Most popular bike stations are at metro stops. To explore why this is we looked at the most popular station, Mackay specifically, and the times people were using the station (picking up a bike to use or dropping one off when done). The difference in the number of rides started and ended in the morning and evening suggest that Mackay is more of a business-orientated district than a residential one. We see that there are more people commuting to Mackay in the morning than leaving, and there are more people leaving Mackay in the evening and at night than coming to Mackay at those times. This suggests that people are commuting to their work or school in Mackay in the morning and leaving in the evening or night when their day is over. The afternoon is nearly the same for rides started and ended at Mackay. This suggests those rides are mostly round-trip, during lunchbreak.



We can increase membership and bike usage by offering businesses bulk-membership packages for their employees. This can be executed in a similar fashion to health insurance. Employers purchase a bulk-membership package and offer their employees one or more options of membership levels. The employer can either pay the whole membership cost or split the cost with employees. This would be a great piece to any company's employee health program or initiatives to lower their carbon footprint. Universities can purchase a bulk-membership package and offer it to its students in the same fashion as meal plans. Another option for universities is to purchase station(s) and bikes for their campus.

Station Locations & Roundtrips

In our analysis we also looked at which stations had the highest percentage of roundtrips. Highest roundtrip percentage is 30% at Métro Jean-Drapeau, the next station has 23% roundtrips. The majority of trips are not roundtrip, yet there are 14 stations with abnormally high roundtrip rates. We discovered that the stations with high roundtrip rates are either popular tourist attractions or entertainment and arts districts, both attracting short- and long-term members. Profits can be increased by surging prices during high traffic times. We can amp up our partnering businesses by starting at the attractions near these stations. Members can get discounts at partnering museums and restaurants.

CONCLUSION

Time of year, time of day, station location, season, and membership status all play a vital role in the usage of Bixi bikes throughout the year. Analyzing these factors and why they fluctuate has given us key insights on why people use Bixi. People use Bixi for work and school, and summer tourism. With bulk-membership packages offered to employers and universities, we will see a rise in long-term membership and revenue. Special promotions through summer events and attractions will further build our base of short-term members and maximizing our profits when Bixi bikes are in peak demand.