Requirements and Strategy Document

Cyclistic Business Intelligence Dashboard Implementation

# **Stakeholder Requirements**

## Business Problem

Cyclistic’s Customer Growth Team is creating a business plan for the upcoming year. The team wants to understand how their customers are using their bikes. Their top priority is identifying customer demand at different station locations.

## Stakeholders

Major stakeholders include:

* Sara Romero, VP, Marketing
* Ernest Cox, VP, Product Development
* Jamal Harris, Director, Customer Data
* Nina Locklear, Director, Procurement

## Stakeholder Usage Details

Stakeholders will use the BI tool to understand:

* What customers want, what makes a successful product, and how new stations might alleviate demand in different geographical areas,
* How the current line of bikes is used by subscribers and non-subscribers, and
* How we can we apply customer usage insights to inform new station growth.

## Primary Requirements

We’ll want to investigate a large group of users to get a fair representation of users across locations and with low- to high-activity levels.

Analyze data that spans at least one year to see how seasonality affects usage. Exploring data that spans multiple months will capture peaks and valleys in usage.

Gather insights about congestion at stations.

Gather insights about the number of trips across all starting and ending locations.

Gather insights about peak usage by time of day, season, and the impact of weather.

# **Project Requirements**

## Purpose

Insights generated by the dashboard will inform the business plan for the upcoming year.

## Key Dependencies

The project needs approval by the teams that own specific product data, including bike trip duration and bike identification numbers. Need to ensure that stakeholders have data access to all datasets. The datasets will include customer (user) data, which Jamal will need to approve.

## Stakeholder requirements

Requirements are prioritized as follows:

| **Requirement** | **Priority** |
| --- | --- |
| We’ll want to investigate a large group of users to get a fair representation of users across locations and with low- to high-activity levels. | Desired |
| Analyze data that spans at least one year to see how seasonality affects usage. Exploring data that spans multiple months will capture peaks and valleys in usage. | Desired |
| Gather insights about congestion at stations. | Must Have |
| Gather insights about the number of trips across all starting and ending locations. | Must Have |
| Gather insights about peak usage by time of day, season, and the impact of weather. | Must Have |

## Success Criteria

### Specific

BI insights must clearly identify the specific characteristics of a successful product. They must demonstrate how customers are currently using bikes and what impacts demand at station locations.

### Measurable

Each trip should be evaluated using starting and ending location, duration, variables such as time of day, season, and weather. For example, do customers use Cyclistic less when it rains? Or does bike-share demand stay consistent? Does this vary by location and user types (subscribers vs. non-subscribers)?

### Action-Oriented

These outcomes must prove or disprove the theory that location, time, season, and weather impact user demand. Then, the Cyclistic team will use this knowledge to refine future product development.

### Relevant

All metrics must support the primary question: How can we build a better Cyclistic experience?

### Time-Bound

Analyze data that spans at least one year to see how seasonality affects usage. Exploring data that spans multiple months will capture peaks and valleys in usage.

## User Journeys

A deeper-dive into trip trends will help decision-makers explore how customers are currently using Cyclistic bikes and how that experience can be improved.

## Assumptions

The dataset includes latitude and longitude of stations but does not identify more geographic aggregation details like zip code, neighborhood name, or borough. The team will provide a separate database with this data.

The weather data provided does not include what time precipitation occurred; it’s possible that on some days, it precipitated during off-peak hours. However, for the purpose of this dashboard, you should assume any amount of precipitation that occurred on the day of the trip could have an impact.

Starting bike trips at a location will be impossible if there are no bikes available at a station, so we might need to consider other factors for demand.

## Compliance and Privacy

Data must not include any personal info (name, email, phone, address). Personal info is not necessary for this project. Anonymize users to avoid bias and protect their privacy.

## Accessibility

The dashboard needs to be accessible, with large print and text-to-speech alternatives.

## Rollout Plan

The stakeholders have requested a completed BI tool in six weeks:

* Week 1: Dataset assigned. Initial design for fields and Bike Ids validated to fit the requirements.
* Weeks 2-3: SQL & ETL development
* Weeks 3-4: Finalize SQL. Dashboard design. 1st draft review with peers.
* Weeks 5-6: Dashboard development and testing

# **Implementation Strategy**

## Signoff

| **Name** | **Team** | **Date** |
| --- | --- | --- |
|  |  |  |

## Status

## Datasets

Two source datasets: 1) NYC Citibike Trips, and 2) Census Bureau US Boundaries.

## User Profiles

Sara Romero, VP, Marketing

Ernest Cox, VP, Product Development

Jamal Harris, Director, Customer Data

Nina Locklear, Director, Procurement

Adhira Patel, API Strategist

Megan Pirato, Data Warehousing Specialist

Rick Andersson, Manager, Data Governance

Tessa Blackwell, Data Analyst

Brianne Sand, Director, IT

Shareefah Hakimi, Project Manager

## Dashboard Functionality

| **Feature** | **Request** |
| --- | --- |
| **Reference:** Should this dashboard be modeled on an existing dashboard? If so, provide a link and describe the similarity. | Build a new dashboard to display the starting and ending locations, aggregated by location. This should show the number of trips at starting locations. |
| **Access:** How should access to the dashboard be limited? Who needs to have access? | Access will be provided as read-only to the user profiles listed in this document. |
| **Scope:** What data should be included or excluded in this dashboard? | Fields include: station, zip code, neighborhood, and/or borough, year, month, trip count, weather. |
| **Data Filters:** Should the dashboard include date filters? If so, what time frame should be displayed by default? | Data filters can be applied for the following:  Date, Month, Year. |
| **Granularity:** Should the dashboard include a “granularity” drop-down? If so, what granularity should be selected by default? | Any chart with user detail metrics should have the ability to click on that metric to view specific information. |

## Metrics and Charts

Create a table for each chart that you’d like to include in the dashboard. If you’d like to break the dashboard under different headers, feel free to list those here as well.

## Chart 1

| Feature | Request |
| --- | --- |
| Title | Trip Totals |
| Type: A table or map visualization exploring starting and ending station locations, aggregated by location. | Line |
| Dimensions: What dimensions does this chart need to include? | Date |
| Metrics: What metrics are relevant to this chart? | Trip Count |

## Chart 2

| Feature | Request |
| --- | --- |
| Title | Trip Counts by Starting Neighborhood |
| Type: A visualization showing which destination (ending) locations are popular based on the total trip minutes. Focus on peak months. | Table |
| Dimensions: What dimensions does this chart need to include? | Neighborhood, Month |
| Metrics: What metrics are relevant to this chart? | Trip Count |

## Chart 3

| Feature | Request |
| --- | --- |
| Title | Trip Total Minutes by Destination |
| Type: A visualization that focuses on trends from the summer of 2015. | Bar |
| Dimensions: What dimensions does this chart need to include? | Zip Code End, Borough End, Neighborhood End, User Type |
| Metrics: What metrics are relevant to this chart? | Trip Minutes |

## Chart 4

| Feature | Request |
| --- | --- |
| Title | Average Time to Arrive |
| Type: A visualization showing the percent growth in the number of trips year over year. | Table |
| Dimensions: What dimensions does this chart need to include? | Zip Code End, Borough End, Neighborhood End, Start Day, Grand Total |
| Metrics: What metrics are relevant to this chart? | Trip Minutes |

## Chart 5

| Feature | Request |
| --- | --- |
| Title | Seasonal Trends |
| Type  A visualization showing the percent growth in the number of trips year over year. | Map |
| Dimensions  What dimensions does this chart need to include? | Neighborhood Start, Neighborhood End, Number of Rides, Average Trip Duration, Weather |
| Metrics  What metrics are relevant to this chart? | Trip Minutes, Weather, Number of Rides |