Marek Bike Company

Sales Insights & Recommendations

2021 & 2022 Sales Performance

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Overview

Context

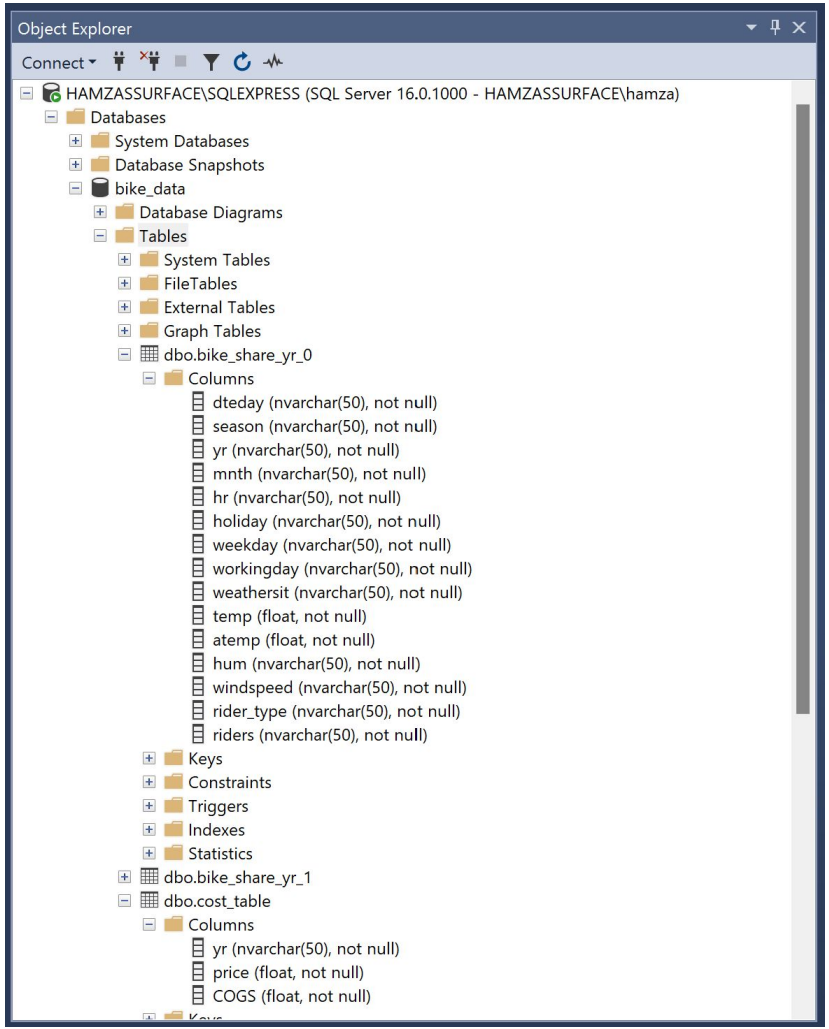
The goal of this project is to **investigate the sales performance** of Marek Bike Company in the previous two years to surface recommendations on a **future pricing model**.

The requirements for this project are as follows: 1) Create a **new database** to store the raw data tables and 2) Provide the following **key performance metrics**: Hourly Revenue Analysis, Profit & Revenue Trends, Seasonal Revenue and Rider Segments.

Data Source and Structure

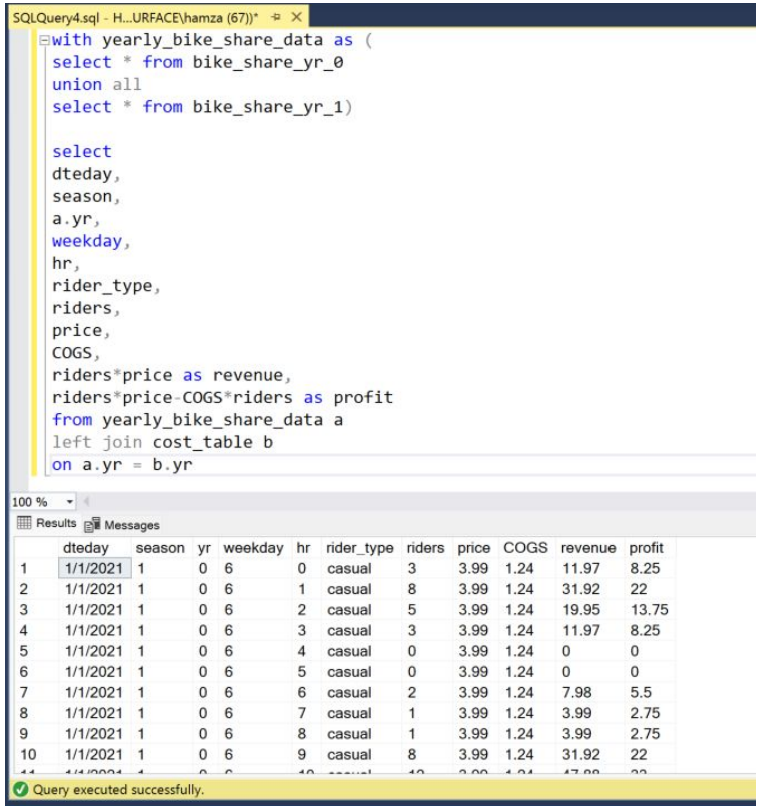
Data Source and Structure

- The dataset consisted of three large .csv files that needed to be stored in a database and then queried
- The bike_share_yr_0 and bike_share_year_1 both have identical column headers and contain information about date and time and rider demographics
- The cost_table file includes the price and cost of goods sold for year 0 and year 1
- Within Microsoft SQL Server, a new local database was created named bike_data where the three tables were stored



SQL Query

- The dataset contained no missing or duplicate values
- A query was executed to union the bike_share_yr_0 and bike_share_yr_1 tables, selecting only the necessary columns
- Revenue and profit were calculated as new measures and added as separate columns
- A left join was performed with the cost_table using the yr column to append the cost data to the result



	dteday	season	yr	weekday	hr	rider_type	riders	price	COGS	revenue	profit
1	1/1/2021	1	0	6	0	casual	3	3.99	1.24	11.97	8.25
2	1/1/2021	1	0	6	1	casual	8	3.99	1.24	31.92	22
3	1/1/2021	1	0	6	2	casual	5	3.99	1.24	19.95	13.75
4	1/1/2021	1	0	6	3	casual	3	3.99	1.24	11.97	8.25
5	1/1/2021	1	0	6	4	casual	0	3.99	1.24	0	0
6	1/1/2021	1	0	6	5	casual	0	3.99	1.24	0	0
7	1/1/2021	1	0	6	6	casual	2	3.99	1.24	7.98	5.5
8	1/1/2021	1	0	6	7	casual	1	3.99	1.24	3.99	2.75
9	1/1/2021	1	0	6	8	casual	1	3.99	1.24	3.99	2.75
10	1/1/2021	1	0	6	9	casual	8	3.99	1.24	31.92	22

Insights Deep-Dive

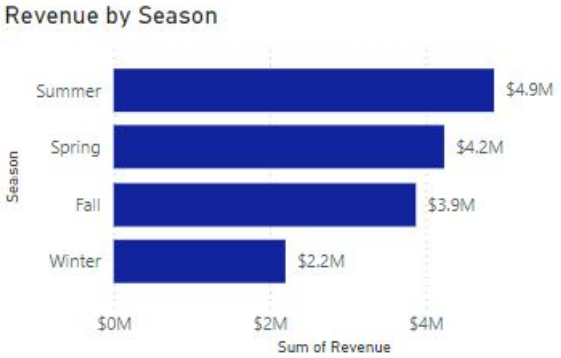
Significant Revenue Growth Driven by Seasonal Peaks

Revenue more than **doubled in 2022 ($10.23M) versus 2021 ($4.96M).**

Average revenue by month was **highest between March through October, peaking in September 2022 ($699.33).**

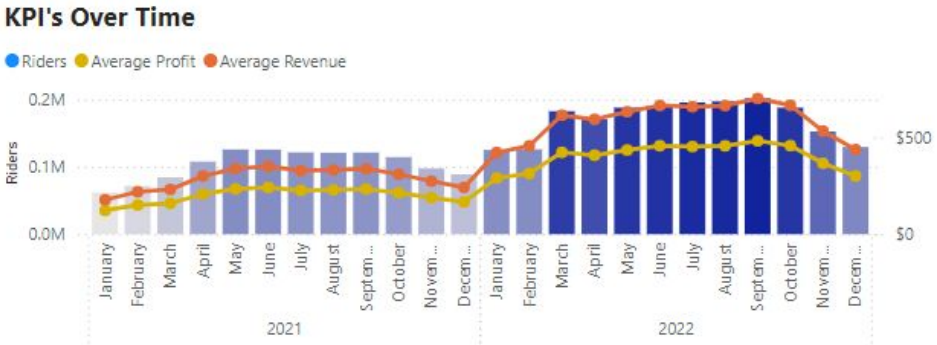
In both years, **Summer** accounted for the **most revenue by season ($4.9M total).**

Year	Sum of Revenue
2021	$4,959,980.97
2022	$10,227,384.24
Total	**$15,187,365.21**



Revenue
$15.19M

Profit
$10.45M



Substantial Profit Growth with Strong Seasonal Performance and Consistent Margins

Profit also more than **doubled in 2022 ($7.03M) versus 2021 ($3.42M).**

Average profit by month was also **highest between March through October, peaking in September 2022 ($480.70).**

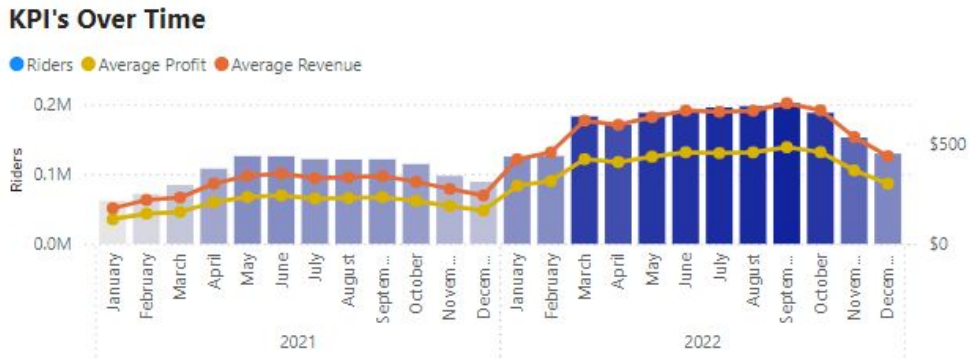
Profit margin and service margin was **69% in both years.**

Year	Sum of Profit
2021	$3,418,533.25
2022	$7,030,045.68
Total	**$10,448,578.93**

Year	Average of Price	Average of COGS	Profit Margin	Service Margin
2021	$3.99	$1.24	69%	69%
2022	$4.99	$1.56	69%	69%

Revenue
$15.19M

Profit
$10.45M



Recommendations

Key Recommendations

Dynamic Pricing

- Implement dynamic pricing strategies to adjust rates based on time of day, day of the week, or season.
- This can help maximize revenue during peak times and attract more customers during off-peak periods.

Leverage Price Elasticity

- The price increase from 2021 to 2022 resulted in an increase in revenue with stable margins while the total customers doubled, suggesting room for further incremental price adjustments.
- Analyze customer sensitivity to small price increases to maximize profit without losing volume.

Upsell Premium Services

- With a doubled customer base in 2022, there is a greater opportunity to upsell premium services or features.
- Introduce perks or promotions to increase the average revenue per customer or convert more customers to registered users.

Recommendations center on two key strategies: maximizing revenue and profit, while minimizing incurred costs

Technical Process

Dataset stats:

- bike_share_yr_0 file has 17,291 unique rows
- bike_share_yr_1 file has 17,469 unique rows
- Data ranges from **2021 to 2022**

The analysis used a customer dataset with the following key dimensions:

- **Season:** winter, spring, summer, fall
- **Month:** January through December (inclusive)
- **Weekday**: Monday through Sunday (inclusive)
- **Riders:** the total number of riders in the given hour
- **Rider Type:** casual, registered

The technical process included:

- Cleaning and preparing the data in **Microsoft SQL Server**
- Calculating metrics and extracting insights in **Power BI**
- Building a self-service dashboard for visualization in **Power BI**

Thank you!