Marek Bike Company

Sales Insights & Recommendations

2021 & 2022 Sales Performance

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Overview

Context

This project aims to analyze Marek Bike Company's sales performance over the past two years to identify opportunities for **optimizing pricing strategies** and **maximizing revenue and profit**.

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 & Daily Revenue Analysis, Profit & Revenue Trends, Seasonal Revenue, and Rider Segments.

Data Source and Structure

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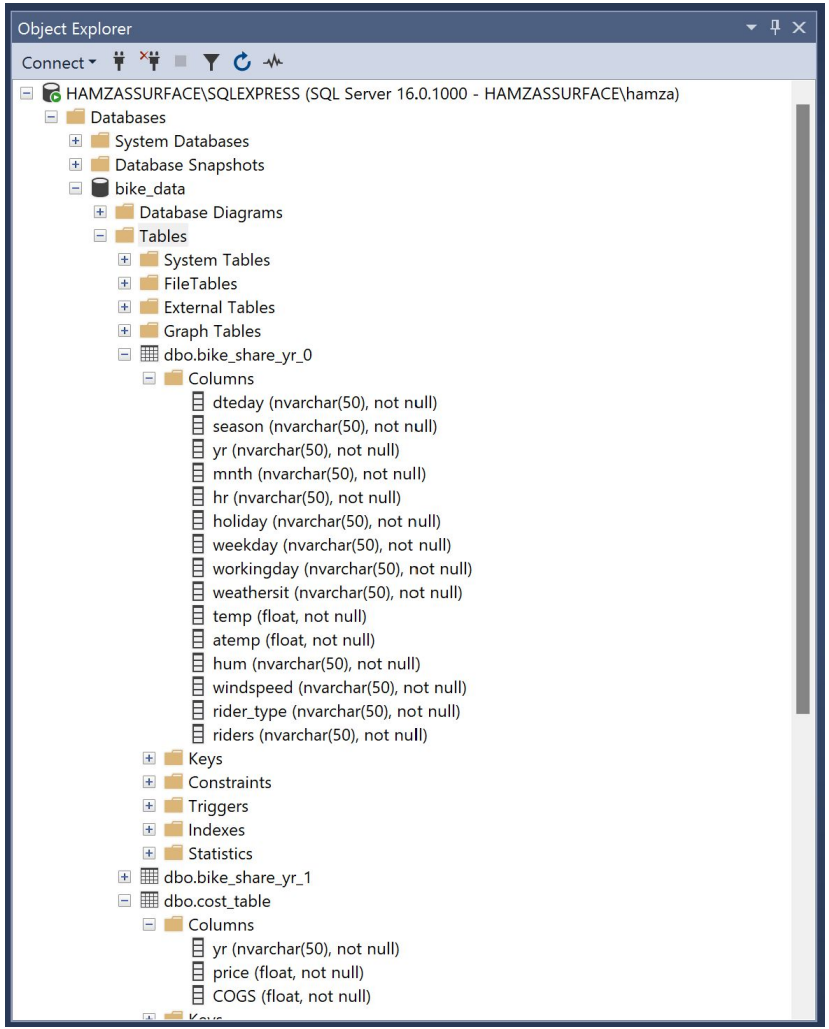
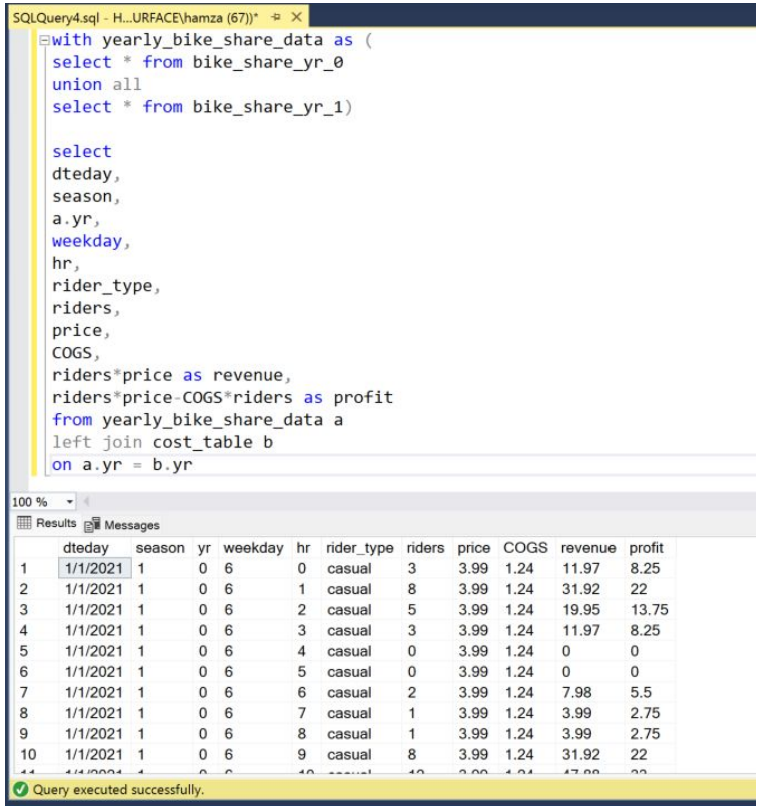
- The dataset consisted of three large .csv files that needed to be stored in a database and then queried
- The bike_share_yr_0 and bike_share_year_1 both have identical column headers and contain information about date and time and rider demographics
- The cost_table file includes the price and cost 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

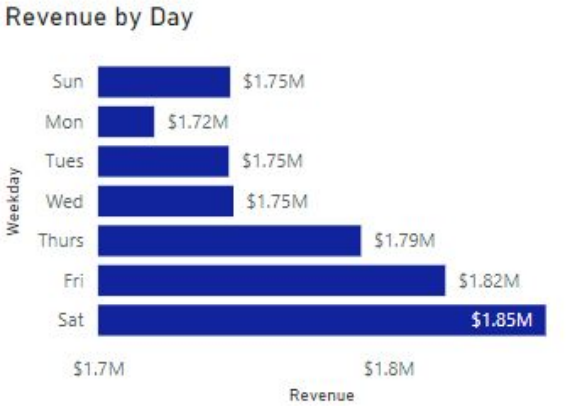
Peak Hour and Weekend Sales Drive Revenue Surge

Revenue peaks during specific hours of operation. The **highest revenue is seen at hour 17 ($1,063.90)**, while **early morning (hours 9-11) generate the lowest revenue at $400.63 - $506.27**.

There is a noticeable **dip in revenue after hour 8**, followed by a **gradual rise from hour 10 onward**.

Thursday, Friday, and Saturday generate the highest revenue ($1.79M, $1.82M, $1.85M, respectively) indicating that these days are critical for sales performance.

Sunday through Wednesday performance is fairly consistent, with **Monday being the worst performer** of the entire week ($1.72M).



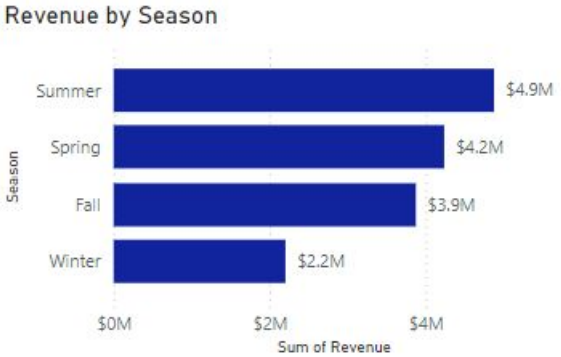
Significant Revenue Growth Driven by Seasonal Peaks

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 ($1M).**

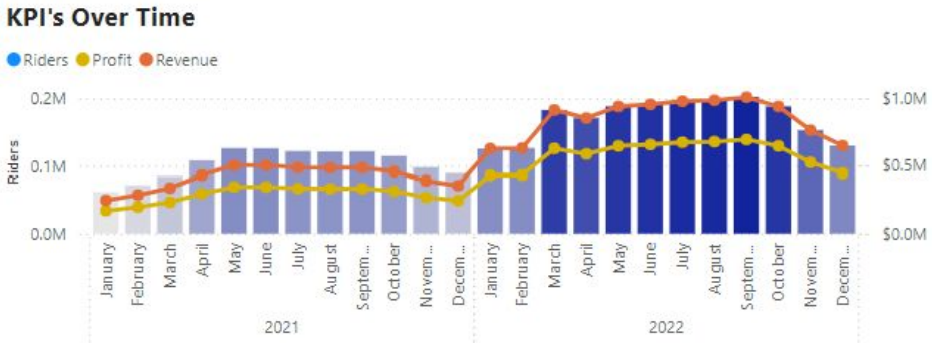
In both years, **Summer** accounted for the **most revenue by season ($4.9M total).**

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 ($692K).**

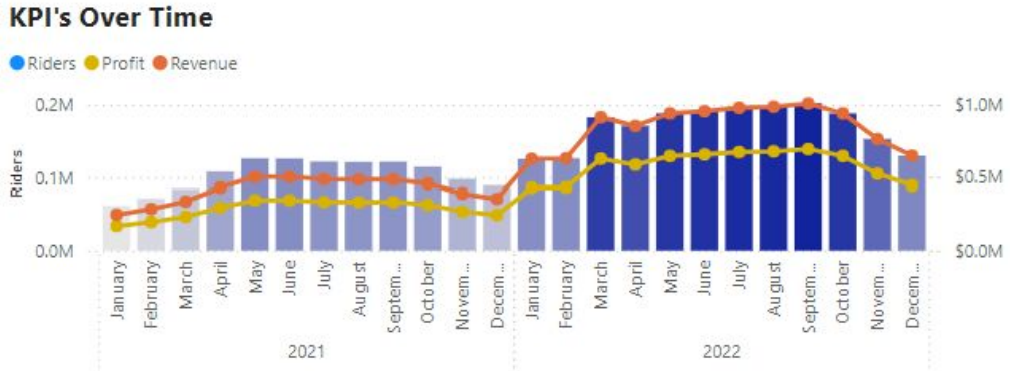
Profit margin and service margin was **69% in both years.**

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 to maximize revenue and attract more customers.
- Pricing should be priced at a premium in the summer, at 8am and from noon onwards peaking at 5pm, and on Thursday, Friday, and Saturday to match demand during these peak periods.

Leverage Price Elasticity

- The price increase from 2021 to 2022 resulted in more than doubling of revenue and profit 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!