A pizza with a red ribbon

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**The Pizza Project**

**September, 2023**

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**Step 1 – Ask**

In this step we will identify the problem and objective of our case study and present our results.

**Background –**

You have been contacted by your local pizza store to analyze a year’s worth of sales that involves customers order details and ranges all the way to every ingredient used in all the pizzas.

As a data analyst, Kidus is extremely confident that with his knowledge of SQL and Tableau, he can use these tools to discover trends and patterns to foster data driven decision making.

**Business objectives –**

* What trends can be identified?
* Where and when does most of our revenue come from?
* How can these trends and the variables that affect them help the local pizza store in making data driven decision making?

**Deliverables –**

* Summary of the business objectives
* Description of data source
* Summary of the analysis
* Visualizations and key findings
* Recommendations

**Stakeholders –**

* The owner of the local pizza store.

**Step 2 – Prepare**

In this step we will identify the data being used.

**Information on data source –**

This data was collected from Maven Analytics, found here, [Maven Analytics](https://www.mavenanalytics.io/data-playground?page=2&pageSize=5). This data contains 12 fields with over 48,000 number of records.

Data includes 4 tables that are orders, order details, pizzas, and pizza types. Columns that have information on date, time, quantity, size, price, category, and more.

**Is data ROCCC?**

A good data source is ROCCC which stands for Reliable, Original, Comprehensive, Current, and Cited.

* Reliable – HIGH – Dataset has over 48,00 records for 12 different fields
* Original – HIGH – Easily available to the public
* Comprehensive – MED – Just the right amount of fields to gather insightful analysis.
* Current – LOW – Older than 5 years
* Cited – Yes

**Step 3 - Process**

Thanks to the creators of Maven Analytics they have provided us with a cleaned dataset, however we had to change the file coding in Cot Editor from

Unicode(UTF-8) with BOM to Unicode(UTF-8). This was because there were error codes occurring when trying to import the dataset into MySQL.

**Dataset –**

This dataset is consistent and shows the data and time columns to be in the right data type. There are primary and foreign keys in each of the 4 tables to join all the tables to one another. Although the ingredients column will need to be broken individually to get a concise analysis on it, we will solve that in the later step.

**Step 4 - Analyze**

Key tasks for analysis –

1. Count of orders and quantities sold by month, day of week, and hour
2. Quantity of every pizza sold by month
3. Quantity sold and revenue gained from most popular sizes
4. Quantity sold and revenue gained from most popular category of pizza
5. Total Sales per quarter
6. Total Revenue of every pizza
7. Average revenue per order
8. Number of pizzas with each ingredient

**Query 1(3 Queries) Results –**

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**Query 2 Results –**

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Description automatically generatedA table with numbers and a number of pizzas

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**Query 3 Results –**

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**Query 4 Results –**

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**Query 5 Results –**

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**Query 6 Results –**

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**Query 7 Results –**

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**Query 8 Results –**

**A screen shot of a computer program

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**Interpreting findings –**

1. There appears to be a peak in orders and quantity sold during the months of June – July, Wednesday – Friday, and 12 -13 hour of the day.
2. The classic deluxe, Thai chicken, and the barbecue chicken appear to be the top 3 most consistent and highest selling pizzas on the menu.
3. The large size brings in the most revenue, but the medium size sells well compared to its quantities sold.
4. The classic pizza brings in the most revenue, while the other 3 categories are relatively close together.
5. Quarters 1-3 appear to be very close together, while quarter 4 is the lowest out of the 4.
6. The Thai chicken pizza is the highest selling pizza, while the Brie Carre pizza is the lowest selling pizza.
7. The average revenue per order is $38.31.
8. Tomato, red onions, and red peppers, appear to be the top 3 most used ingredients in all the pizzas on the menu.

**Step 5 – Share**

In this step, we will create visualizations and present our findings based on our analysis using tableau.

**Tableau Dashboard –**

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**Findings –**

In the year 2015, the local pizza store brought in $818,000 in total revenue, 21,000 orders fulfilled, and 49,000 pizzas sold. Without knowing the costs of running the store, this local store is well over the average revenue of pizza stores in the U.S.

1. The most-busiest times according to the pizzas sold by the hour chart are 12pm, 1pm Monday – Friday, and 5pm, 6pm all week. These times are consistent throughout the year, as it is indicated by the dark red color (dark red – high count, dark blue – low count). Vice Versa, the least-busiest times are going to be the first hour of opening and last hour of closing. It is important to note that 2pm and 3pm are low compared to their busiest times of the day.
2. The number of orders fulfilled for the year have all been over 1,600 with February, September, and October being the lowest. Vice Versa, the months of March, May, and July have been the peak in terms of orders fulfilled. It is important to know that seasons and promotions may have a lot to do with the distribution and inconsistency of orders fulfilled for the year.
3. The top 5 pizzas make over bring in over $35,000 of revenue, while the bottom 5 pizzas make under $16,000. This is important to know when to put certain pizzas on promotion and where more resources are needed.
4. The classic pizzas are leading all other categories with a total of $220,000 of revenue, while the veggie category is the lowest with a total of $194,000 of revenue. This is mainly because veggie pizzas are the least attractive and among the 4 categories.
5. The most sizes sold is going to be large pizzas with small and medium pizzas following. This may be due to the customer preferences, pizza per price, and any promotions that are available at the time. The XL and XXL sizes have very little demand as that is not an ideal purchase for the average customer.

**Step 6 – Act**

In this final step we will be presenting our findings and provide recommendations based on our analysis.

Here, we will revisit our business questions and share our data driven business recommendations.

**Recommendations -**

* The busiest hours are 12pm, 1pm Monday – Friday, and 5pm, 6pm all week. The busiest months are March, May, and July. Knowing this information, it is best to make sure you are properly staffed during the busiest months and hours. Vice versa, the least-busiest hours should not be fully staffed to account for the low volume of orders. This is attempts to fully maximize your resources and revenue that can potentially be earned.
* The lowest selling sizes being XL and XXL, it is recommended to consider taking those sizes out in attempts to save resources and lower the cost of producing those pizzas. Another solution may be to have them on a big promotion, especially during the holidays or big events that require the gathering of people.
* Now that you know your bestselling and worst selling pizzas, it is recommended to leverage this to your advantage. You may consider having deals and coupons over the weekend for pizzas that you know there is demand.
* Another recommendation to consider is taking the lowest selling pizzas out of the menu. It will save a ton of resource and allow for new pizzas to be introduced. If this is implemented, it is recommended to make a new pizza is the classic, chicken, or supreme category since they are the top 3 best selling categories.