Sales Data Analysis in Power BI

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Business Task: *Provide sales insights and analysis for all the products and markets.*

Problem Statement:

XYZ is an electronic company deals with different hardware, electronics devices, and peripherals. The company is spread across the country and has many branches in different states. The Market is growing dynamically and numbers of sales are declining. So, the sales director wants the insights and gets to know the situation from all the branches of the company so that important data-driven decisions can be taken to increase the sales of the products and improve the market.

Data Exploration:

Planning phases for collection and communications (Following AIMS) are:

1. Purpose: To unlock sales insights that are not visible before for the sales team for decisions support & automate them to reduce manual time spent in data gathering.
2. Stakeholders: Sales Director/ Marketing Team/ Customer Service Team/ Data & Analytics Team/ IT
3. END Result: An automated dashboard provides quick & latest sales insights to support data-driven making the decision.
4. Success Criteria:
    - Dashboard uncovering sales order insights with the latest data available.
    - Sales team able to make better decisions & prove 10% cost savings of total spend
    - Sales Analysts stop data gathering manually to save 20% of their business time and reinvest it in value-added activity.

For **Data** refer to this link **Click here>> SQL**

Data Analysis (SQL)

Query data with SQL

1. Count the total number of records

SELECT count(*) FROM sales.markets;

SELECT count(*) FROM sales.transactions;

SELECT count(*) FROM sales.customer;

SELECT count(*) FROM sales.date;

2. Find the transactions from Chennai only

SELECT count(*) from sales.markets;

SELECT * FROM sales.transactions limit 5;

SELECT * FROM sales.transactions WHERE market_code="Mark001";

#Total number of transactions in Chennai

SELECT count(*) FROM sales.transactions WHERE market_code="Mark001";

3. How many transactions have currency USD?

SELECT * FROM sales.transactions WHERE currency="USD";

4. How many transactions are performed in 2019 or 2020?

#Perform INNER JOIN to join two tables

SELECT sales.transactions.*,sales.date.* FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date;

#Perform INNER JOIN to find for the year 2019 or 2020

SELECT sales.transactions*,sales.date* FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date WHERE sales.date.year=2019;

SELECT sales.transactions*,sales.date* FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date WHERE sales.date.year=2020;

5. What is the total revenue or sales in the year 2019 or 2020?

SELECT SUM(sales.transactions.sales_amount) FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date WHERE sales.date.year=2019;

SELECT SUM(sales.transactions.sales_amount) FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date WHERE sales.date.year=2020;

6. Compare the total revenue or sales in year 2019 and 2020

SELECT SUM(sales.transactions.sales_amount) FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date WHERE sales.date.year=2019;

SELECT SUM(sales.transactions.sales_amount) FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date WHERE sales.date.year=2020;

7. What is the total revenue or sales in year 2019 of Chennai?

#Check for market code

SELECT * FROM sales.markets

SELECT SUM(sales.transactions.sales_amount) FROM sales.transactions INNER JOIN sales.date ON sales.transactions.order_date=sales.date.date WHERE sales.date.year=2019 AND sales.transactions.market_code="Mark001";

8. Check or query the distinct product code or type of product

SELECT distinct product_code FROM sales.transaction WHERE market_code="Mark001";

Data Cleaning & ETL

Data cleaning was performed in Power BI and the following steps followed:

Extract the sales data and Load all the data or Mysql data

- Report – To create a visualization or dashboard.
- Tables – To view tables or schema.
- Data model – To represent the relationship of the tables.

Data models are in STAR Model to establish a relationship (It includes a Fact table in the middle and connected each dimensions table to the fact table in the form of a star)

1. Transform the data in Power Query Editor

Transform data (it will open power query editor for transformation, wrangling, and cleaning)

2. Filter on the zone to deselect blank values

Filter on sales amount in the transaction to deselect -1 or 0

3. Convert Currency USD to INR

Check for USD value by creating a custom condition column then select currency and print 1 else 0 for all USD and change the attribute name from custom to normalize sales amount in the formula box.

#For custom column there is a need for codes to write in the code box to command any task

#Now convert USD 0 or 1 to a sales amount by editing the formula by replacing 1 to sales_amount*75 to convert it into INR currency and else replacing 0 to sales_amount

Note: There is another format of USD as USD(cr)

#To convert the USD(cr) Add a [currency]=USD OR [currency]=USD(cr) in the formula

Formula:

4. Close and save the transformation

To apply all the transformations Click on Home and click close and apply

It will apply all the transformations and return to the main page (Power BI Report)

Dashboard & Reporting (Power BI):

1. Create a Base measure by clicking enter data

2. Create Revenue measure within Base measure following a formula {Revenue = SUM(transactions[sales_amount])}

3. Create Sales Quantity measure within Base measure following a formula { Sales

   Quantity = SUM(transactions[sales_qty])}

Design a Dashboard by adding the following data:

- Total number of Revenue
- Total number of Sales Quantity
- Years of Revenue
- Date or month of Revenue
- Revenue by Markets
- Revenue by Customers
- Top five Products
- Top five Customers
- Revenue Trend

For Interactive **Dashboard (Sales Insight)** refer to this link **Click here>> Power BI or GitHub**