SALES & PROFIT INSIGHTS

Tableau Dashboard Project

About ATLIQ Hardware: It's a company that manufactures computer hardware peripherals for various clients in India, including stores.

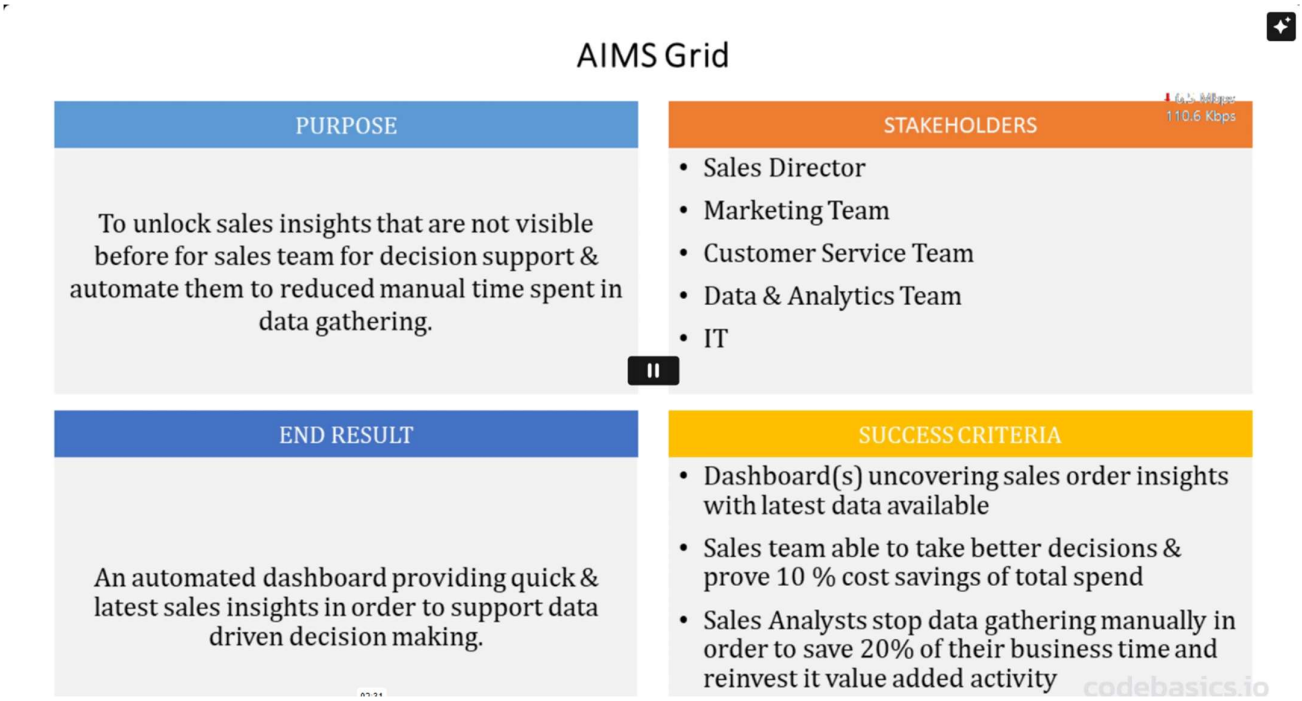
Problem Statement: What's happening is that the sales are declining of this company from the previous 3 quarters in the current financial year.

Work To Be Done: So basically what the MD called is that he wanted data from all the departments like sales, customer, employee etc. and wanted to conduct the data analysis so that he can make some business decisions of what to do in order to improve the sales and revenue of the company.

- Got the Excel files from all departments.
- Will do data analysis like cleaning, visualisation and insights generation and all.
- Create a dashboard to show all the insights as one picture.
- Dashboard should be interactive so that the director can filter the sector that he wants.
- Communicating the dashboard and the valuable insights that you have generated via it to the stakeholders, directors or the officer in charge.

AIM's GRID :

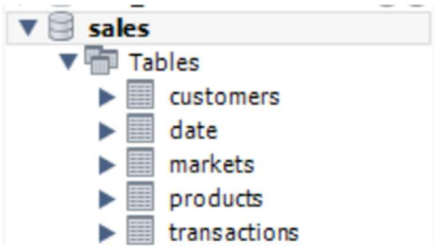
- **Purpose**: Why are we doing this, and what do we want from this?
- **Stakeholders**: All those involved in this project, such as the sales team, IT Team, DA team, etc.
- **End Result:** What do you want to achieve, like in our case, it is an automated dashboard providing quick and latest sales insights for our decision making to make the company profitable in the next quarter.
- **Success Criteria:** After getting the insights, we took a business decision to increase the marketing budget by 20% on our best-selling product and get at least 50% Quarter-On-Quarter growth in sales.



Some Terms :

- **IT Team:** It is responsible for making and maintaining the software used by ATLIQ hardware. (Sales Management System)
- **OLTP:** Online Transaction Processing means that all the day-to-day sales that are occurring are real-time saved in this.
- **OLAP:** Online Analytical Processing, in this, what we do is we create a data warehouse, i.e. copy of your main database to perform analytical activities.
- **Data Warehouse:** It is a copy of your main database via a process called ETL (TaraData, Amazon RedShift or MySQL).
- **Data Analyst:** Now this Data Warehouse is used by the DA Team to create dashboard, visualisations, Python code, etc to create insights of the raw data.

Data Analysis Using SQL



customers

customer_code	custmer_name	customer_type
Cus001	Surge Stores	Brick & Mortar
Cus002	Nomad Stores	Brick & Mortar
Cus003	Excel Stores	Brick & Mortar

transactions

product_code	customer_code	market_code	order_date	sales_qty	sales_amount	currency
Prod001	Cus001	Mark001	2017-10-10	100	41241	INR
Prod001	Cus002	Mark002	2018-05-08	3	-1	INR
Prod002	Cus003	Mark003	2018-04-06	1	875	INR
Prod002	Cus003	Mark003	2018-04-11	1	583	INR

date

date	cy_date	year	month_name	date_yy_mmm
2017-06-01	2017-06-01	2017	June	17-Jun
2017-06-02	2017-06-01	2017	June	17-Jun
2017-06-03	2017-06-01	2017	June	17-Jun

market

markets_code	markets_name	zone
Mark001	Chennai	South
Mark002	Mumbai	Central
Mark003	Ahmedabad	North
Mark004	Delhi NCR	North

products

product_code	product_type
Prod001	Own Brand
Prod002	Own Brand
Prod003	Own Brand
Prod004	Own Brand

*Above is the information about the data *

```sql
-- Total transactions
SELECT COUNT(*)
FROM transactions;

-- No. of transactions of market code 1.
SELECT COUNT(*)
FROM transactions
WHERE market_code = 'Mark001';

-- Give the transactions done in USD
SELECT *
FROM transactions
WHERE currency = 'USD';
-- So make sure that when you make the dashboard convert it to INR


-- Transactions done in the month of october in the year 2017.
SELECT *
FROM transactions
WHERE MONTH(order_date) = '10'
      AND YEAR(order_date) = '2017';



-- Q4: Calculate the total sales amount (sales_amount) for each market (markets_code).
SELECT market_code, SUM(sales_amount) AS total_sales
FROM transactions
GROUP BY market_code
ORDER BY total_sales DESC
LIMIT 5; -- TOP 5 performing markets



-- Q5: Find the month with the highest sales amount for "Own Brand" products.

SELECT MONTH(order_date) AS month, SUM(sales_amount) AS total_sales
FROM transactions t
JOIN products p ON t.product_code = p.product_code
WHERE product_type = 'OwnBrand'
GROUP BY MONTH(order_date)
ORDER BY total_sales DESC
LIMIT 1;
```

```sql
-- Calculate the month-on-month growth rate of total sales amount.

SELECT
    MONTHNAME(order_date) AS month_name,
    SUM(sales_amount) AS gross_sales,
    100 * (SUM(sales_amount) - LAG(SUM(sales_amount)) OVER (ORDER BY MONTH(order_date))
    LAG(SUM(sales_amount)) OVER (ORDER BY MONTH(order_date)) AS mom_growth_rate
FROM transactions
GROUP BY MONTH(order_date), MONTHNAME(order_date)
ORDER BY MONTH(order_date);
```

```sql
-- For each market zone (South, Central, North), calculate the total
-- and average sales amount, and count of unique customers.
SELECT zone, SUM(sales_amount) AS total_sales,
       ROUND(AVG(sales_amount),2) AS Avg_sales,
       COUNT(customer_code) AS unique_customers
FROM transactions t
     JOIN markets m ON t.market_code = m.markets_code
GROUP BY zone;
```

Step-By-Step Process To Make The Dashboard

Step 1: Download Tableau Public and install it as it has 14-day free Trial.

- It has a special feature that allows it to directly connect to our MySQL database.
- We can enable the 'update automatically' option, which will update in real time whenever an update happens in our MySQL.

Step 2: Now we will establish a relationship between the tables.

- We will create a star schema.
- Star Schema will have a fact table in between and dimension tables in all around.
- We will do the data modelling.
- So that data modelling is basically done to make the tableau dashboard understand that exactly how out data tables relates to each other.
- It is done prepare the data for visualization and interaction, this makes our dashboard interactive.
- So data modelling is nothing but connecting the tables.
- While doing data modelling you need to specify the common columns in both the table on which the connection need to be established.

Step-3: Data Cleaning & ETL in Tableau

- In sales amount column of transactions table we see that some values are -1 which is not possible hence we need to replace it.
- We can remove these type of data entries.
- We can create a new column to convert all USD transactions in INR by creating a new calculated column and writing the formula .

Step-4: Now we will create an interactive dashboard.

- What we are going to do is we will individually build the components (Widgits) Charts and then later combine them to create an interactive dashboard.
- We will create sheets.

CREATING THE DASHBOARD

- The process is very simple we will create some individual sheets according to our business requirement and then later combine in one sheet to make a dashboard view.

- And this is the advantage of Tableau over any other BI Tool that we can combine the individual sheets into a dashboard.

- Codebasic Tableau Dashboard Making (Click This) : Watch this video for understanding the complete dashboard making process, step by step.

- If you want to access this particular interactive dashboard then click this (Sales Insight Tableau Project).

- Later according to the feedback of our business stake holders we are now creating a new version of the same dashboard.

- We will take the feedback from the stakeholders and then do the required changes.

- We have actually created two dashboards like the 1st one is 'Sales Insights' and the 2nd one is 'Profit Dashboard'.