

Sales Analytics Business Case

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Business Request & User Stories

The business request for this data analyst project was an executive sales report for sales managers. Based on the request that was made from the business we following user stories were defined to fulfill delivery and ensure that acceptance criteria's were maintained throughout the project.

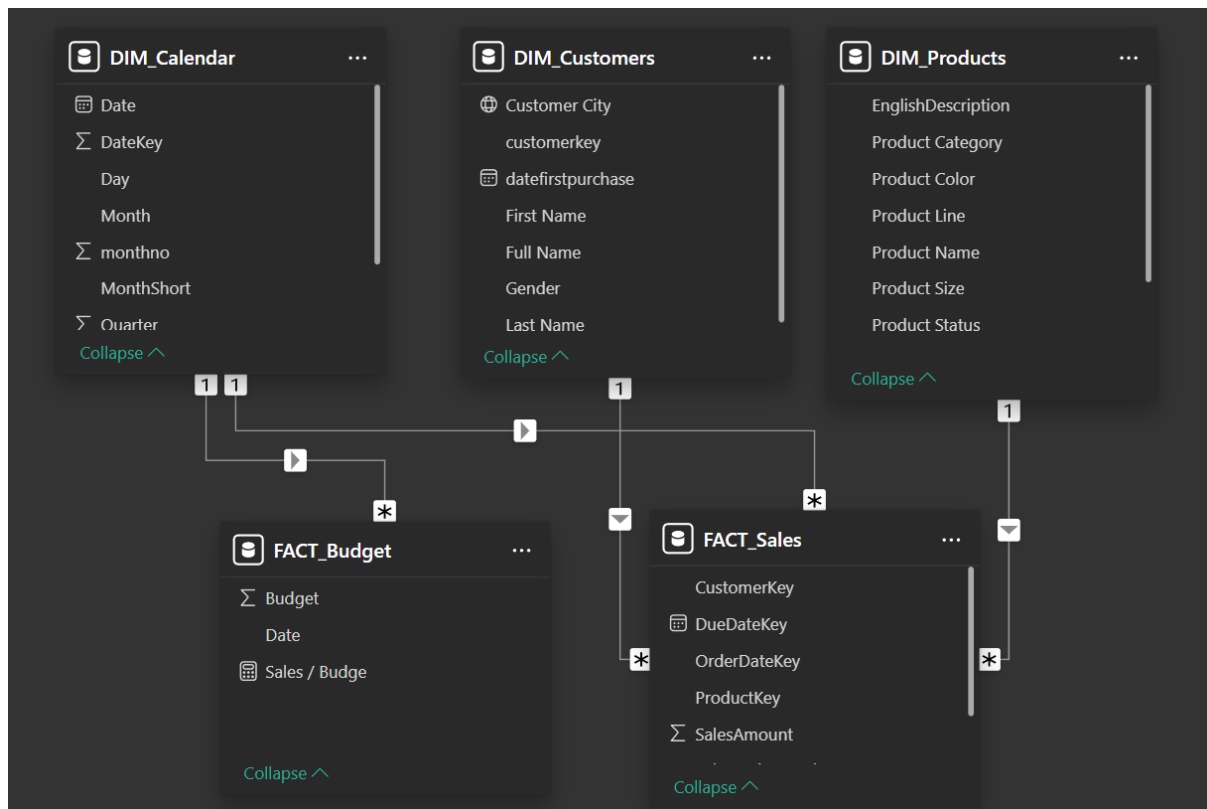
#	As a (role)	I want (request / demand)	So that I (user value)	Acceptance Criteria
1	Sales Manager	To get a dashboard overview of internet sales	Can follow better which customers and products sells the best	A Power BI dashboard which updates data once a day
2	Sales Representative	A detailed overview of Internet Sales per Customers	Can follow up my customers that buys the most and who we can sell more to	A Power BI dashboard which allows me to filter data for each customer
3	Sales Representative	A detailed overview of Internet Sales per Products	Can follow up my Products that sells the most	A Power BI dashboard which allows me to filter data for each Product
4	Sales Manager	A dashboard overview of internet sales	Follow sales over time against budget	A Power Bi dashboard with graphs and KPIs comparing against budget.

Data structure

To create the necessary data model for doing analysis and fulfilling the business needs defined in the user stories the following tables were extracted using SQL.

One data source (sales budgets) were provided in Excel format and were connected in the data model in a later step of the process.

Below are the SQL statements for cleansing and transforming necessary data.



Dimension tables

Customers

This query retrieves cleansed customer data, including names, gender, first purchase date, and city. It transforms gender codes into readable formats, combines first and last names for a full name field, and joins geography details for enhanced context. Results are sorted by customer key.

```
-- Cleansed DIM_Customers Table Query
SELECT
    [CustomerKey], -- Unique identifier for the customer
    [FirstName] AS [First Name], -- Customer's first name
    [LastName] AS [Last Name], -- Customer's last name
    [FirstName] + ' ' + [LastName] AS [Full Name], -- Concatenated full name (First Name + Last Name)
    CASE Gender
        WHEN 'M' THEN 'Male' -- Converts 'M' to 'Male'
        WHEN 'F' THEN 'Female' -- Converts 'F' to 'Female'
    END AS [Gender], -- Translated gender information
    [DateFirstPurchase], -- Date of the customer's first purchase
    g.City AS [Customer City] -- Customer's city from geography table
FROM
    [AdventureWorksDW2022].[dbo].[DimCustomer] AS c -- Customer dimension table
    LEFT JOIN [AdventureWorksDW2022].[dbo].[DimGeography] AS g -- Geography dimension table
        ON g.GeographyKey = c.GeographyKey -- Join condition between customer and geography
ORDER BY
    [CustomerKey] ASC; -- Sort results by CustomerKey in ascending order
```

Calendar

This query retrieves a structured view of the date dimension table, including full and abbreviated date details such as day, month, year, week number, and quarter. It filters dates from 2012 onwards to ensure relevance and provides both textual and numeric representations for easy analysis.

```
-- Cleansed dim_DataTable Query
SELECT
    [DateKey], -- Unique key representing the date
    [FullDateAlternateKey] AS [Date], -- Full date in alternate key format
    [EnglishDayNameOfWeek] AS [Day], -- Day name in English
    [WeekNumberOfYear] AS [Weeknr], -- Week number of the year
    [EnglishMonthName] AS [Month], -- Full month name in English
    LEFT([EnglishMonthName], 3) AS [MonthShort], -- Abbreviated month name (first 3 characters)
    [MonthNumberOfYear] AS [MonthNo], -- Numeric representation of the month
    [CalendarQuarter] AS [Quarter], -- Calendar quarter of the date
    [CalendarYear] AS [Year] -- Calendar year of the date
FROM
    [AdventureWorksDW2022].[dbo].[DimDate] -- Date dimension table
WHERE
    [CalendarYear] >= 2012 -- Filter for dates from the year 2012 onwards
```

Products

This query retrieves a detailed and cleansed product dataset, including product name, category, subcategory, color, size, and description. It ensures data quality by setting a default status for missing values and organizes the output in ascending order by product key.

```
-- Cleansed DIM_Products Table Query
SELECT
    [ProductKey], -- Unique identifier for the product
    [ProductAlternateKey] AS [ProductItemCode], -- Product item code (alternate key)
    [EnglishProductName] AS [Product Name], -- Name of the product in English
    ps.EnglishProductSubcategoryName AS [Sub Category], -- Product subcategory name in English
    pc.EnglishProductCategoryName AS [Product Category], -- Product category name in English
    [Color] AS [Product Color], -- Color of the product
    [Size] AS [Product Size], -- Size of the product
    [ProductLine] AS [Product Line], -- Product line information
    [EnglishDescription], -- Product description in English
    ISNULL(Status, 'Outdated') AS [Product Status] -- Product status, defaults to 'Outdated' if NULL
FROM
    [AdventureWorksDW2022].[dbo].[DimProduct] AS p -- Product dimension table
    LEFT JOIN dbo.DimProductSubcategory AS ps -- Subcategory dimension table
        ON ps.ProductSubcategoryKey = p.ProductSubcategoryKey -- Join condition with subcategory
    LEFT JOIN dbo.DimProductCategory AS pc -- Category dimension table
        ON ps.ProductCategoryKey = pc.ProductCategoryKey -- Join condition with category
ORDER BY
    p.ProductKey ASC; -- Sort results by ProductKey in ascending order
```

Fact tables

Sales

This query retrieves key details from the Internet Sales fact table, including product, customer, and order-specific data. It includes an optional filter to limit sales to the last 12 years and organizes the results chronologically by order date.

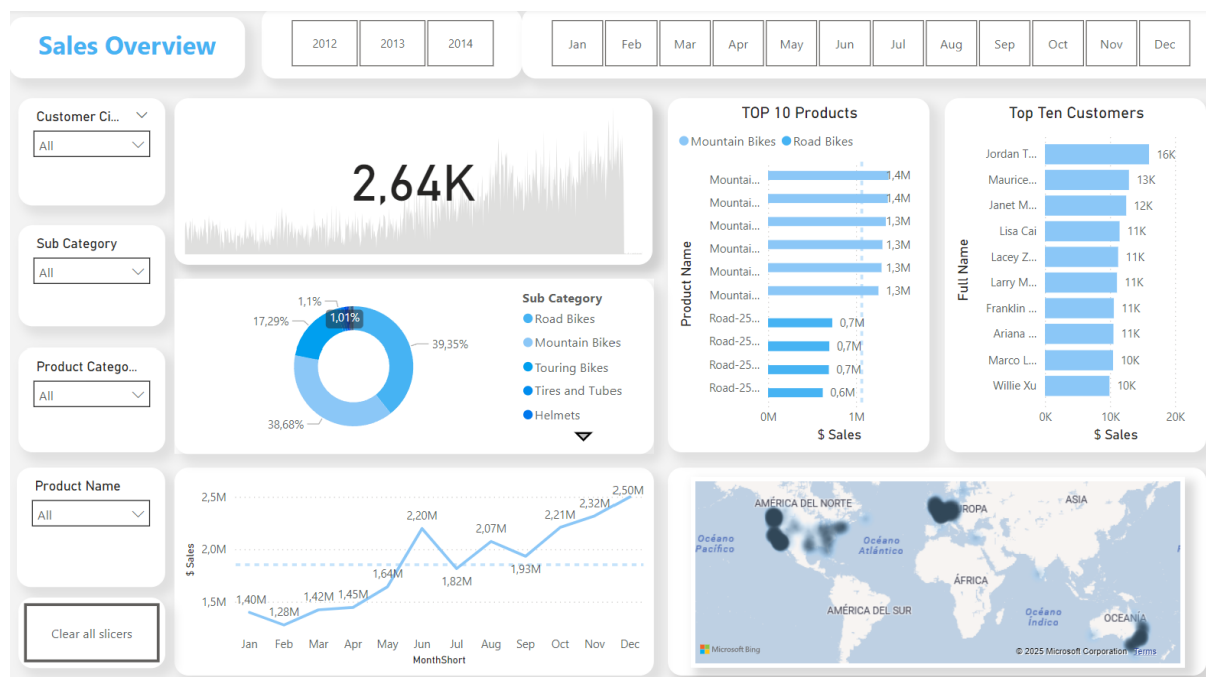
```
-- Cleaned Internet Sales Query
SELECT
    [ProductKey],           -- Unique identifier for the product
    [OrderDateKey],         -- Key representing the order date
    [DueDateKey],           -- Key representing the due date for the order
    [ShipDateKey],         -- Key representing the shipping date
    [CustomerKey],          -- Unique identifier for the customer
    [SalesOrderNumber],     -- Sales order identification number
    [SalesAmount]           -- Total sales amount for the order
FROM
    [AdventureWorksDW2022].[dbo].[FactInternetSales] -- Source table containing Internet Sales facts
WHERE
    -- Filter sales from the last 12 years (uncomment the line below if filtering is required)
    -- LEFT(OrderDateKey, 4) >= YEAR(GETDATE()) - 12
ORDER BY
    OrderDateKey ASC;      -- Sort results by the order date in ascending order
```

Dashboards

Users can filter by year, month, product, subproduct, and customer, with synchronized filters across visuals.

Sales overview

This Power BI dashboard integrates all cleansed tables to provide a comprehensive sales overview. The dashboard features a donut chart for product distribution, top 10 products and customers, a sales trend over the year, and a global heat map highlighting city-level sales performance.



Customer details

The Customer Details dashboard enhances analysis with a detailed table featuring a heat map of customer activity by month. This visualization highlights patterns and trends in customer behavior, complementing the insights from the sales overview. Filters remain synchronized for seamless exploration.

