Business data analysis portfolio

1. Sales analysis request scenario

Steven - sales manager:

Hi Hyun Suk
I hope you are doing well. We need to improve our internet sales reports and want to move from static reports to visual dashboards.

Essentially, we want to focus it on how much we have sold of what products, to chich clients and how it has been over time.

Seeing as each salesperson works on different products and customers it would be beneficial to be able to filter them also.

We measure our numbers against budget as I added that a spreadsheet so we can compare our values against performance.

The budget is for 2024 and we usually look 2 years back when we analyze sales.

Let me know if you need anything else!

Steven

2. Business document overview

- Reporter: Steven - Sales manager
- Value of change: Visual dashboards and improved sales reporting of
- Necessary Systems: Power BI, CRM Systems
- Others: Budgets have been delivered in Excel for 2022,3

User Stories

ID	As a (role)	I want to	So that	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 call sell 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 KPI's comparing against budget

3. Data Cleansing & Transformation (MSSQL)

To create the necessary data model for doing analysis to fulfill business needs defined in the user stories the following tables extracted using MSSQL

DIM_Calendar:

```
-- Cleansed DIM_Date Table --
SELECT
  [DateKey],
  [FullDateAlternateKey] AS Date,
  --[DayNumberOfWeek],
  [EnglishDayNameOfWeek] AS Day,
  --[SpanishDayNameOfWeek],
  --[FrenchDayNameOfWeek],
  --[DayNumberOfMonth],
  --[DayNumberOfYear],
  --[WeekNumberOfYear],
  [EnglishMonthName] AS Month,
  Left([EnglishMonthName], 3) AS MonthShort,   -- Useful for front end date
navigation and front end graphs.
  --[SpanishMonthName],
  --[FrenchMonthName],
  [MonthNumberOfYear] AS MonthNo,
  [CalendarQuarter] AS Quarter,
  [CalendarYear] AS Year --[CalendarSemester],
  --[FiscalQuarter],
  --[FiscalYear],
  --[FiscalSemester]
FROM
 [AdventureWorksDW2019].[dbo].[DimDate]
WHERE
  CalendarYear >= 2019
```

DIM_Customers:

```
-- Cleansed DIM_Customers Table --
SELECT
  c.customerkey AS CustomerKey,
  --      ,[GeographyKey]
  --      ,[CustomerAlternateKey]
  --      ,[Title]
  c.firstname AS [First Name],
  --      ,[MiddleName]
  c.lastname AS [Last Name],
  c.firstname + ' ' + lastname AS [Full Name],
  -- Combined First and Last Name
  --      ,[NameStyle]
  --      ,[BirthDate]
  --      ,[MaritalStatus]
  --      ,[Suffix]
  CASE c.gender WHEN 'M' THEN 'Male' WHEN 'F' THEN 'Female' END AS Gender,
  --      ,[EmailAddress]
  --      ,[YearlyIncome]
```

```
  --      ,[TotalChildren]
  --      ,[NumberChildrenAtHome]
  --      ,[EnglishEducation]
  --      ,[SpanishEducation]
  --      ,[FrenchEducation]
  --      ,[EnglishOccupation]
  --      ,[SpanishOccupation]
  --      ,[FrenchOccupation]
  --      ,[HouseOwnerFlag]
  --      ,[NumberCarsOwned]
  --      ,[AddressLine1]
  --      ,[AddressLine2]
  --      ,[Phone]
  c.datefirstpurchase AS DateFirstPurchase,
  --      ,[CommuteDistance]
  g.city AS [Customer City] -- Joined in Customer City from Geography Table
FROM
  [AdventureWorksDW2019].[dbo].[DimCustomer] as c
  LEFT JOIN dbo.dimgeography AS g ON g.geographykey = c.geographykey
ORDER BY
  CustomerKey ASC -- Ordered List by CustomerKey
```

DIM_Products:

```
-- Cleansed DIM_Products Table --
SELECT
  p.[ProductKey],
  p.[ProductAlternateKey] AS ProductItemCode,
  --      ,[ProductSubcategoryKey],
  --      ,[WeightUnitMeasureCode]
  --      ,[SizeUnitMeasureCode]
  p.[EnglishProductName] AS [Product Name],
  ps.EnglishProductSubcategoryName AS [Sub Category], -- Joined in from Sub
Category Table
  pc.EnglishProductCategoryName AS [Product Category], -- Joined in from Category
Table
  --      ,[SpanishProductName]
  --      ,[FrenchProductName]
  --      ,[StandardCost]
  --      ,[FinishedGoodsFlag]
  p.[Color] AS [Product Color],
  --      ,[SafetyStockLevel]
  --      ,[ReorderPoint]
  --      ,[ListPrice]
  p.[Size] AS [Product Size],
  --      ,[SizeRange]
  --      ,[Weight]
  --      ,[DaysToManufacture]
  p.[ProductLine] AS [Product Line],
  --     ,[DealerPrice]
  --      ,[Class]
  --      ,[Style]
  p.[ModelName] AS [Product Model Name],
  --      ,[LargePhoto]
  p.[EnglishDescription] AS [Product Description],
  --      ,[FrenchDescription]
  --      ,[ChineseDescription]
```

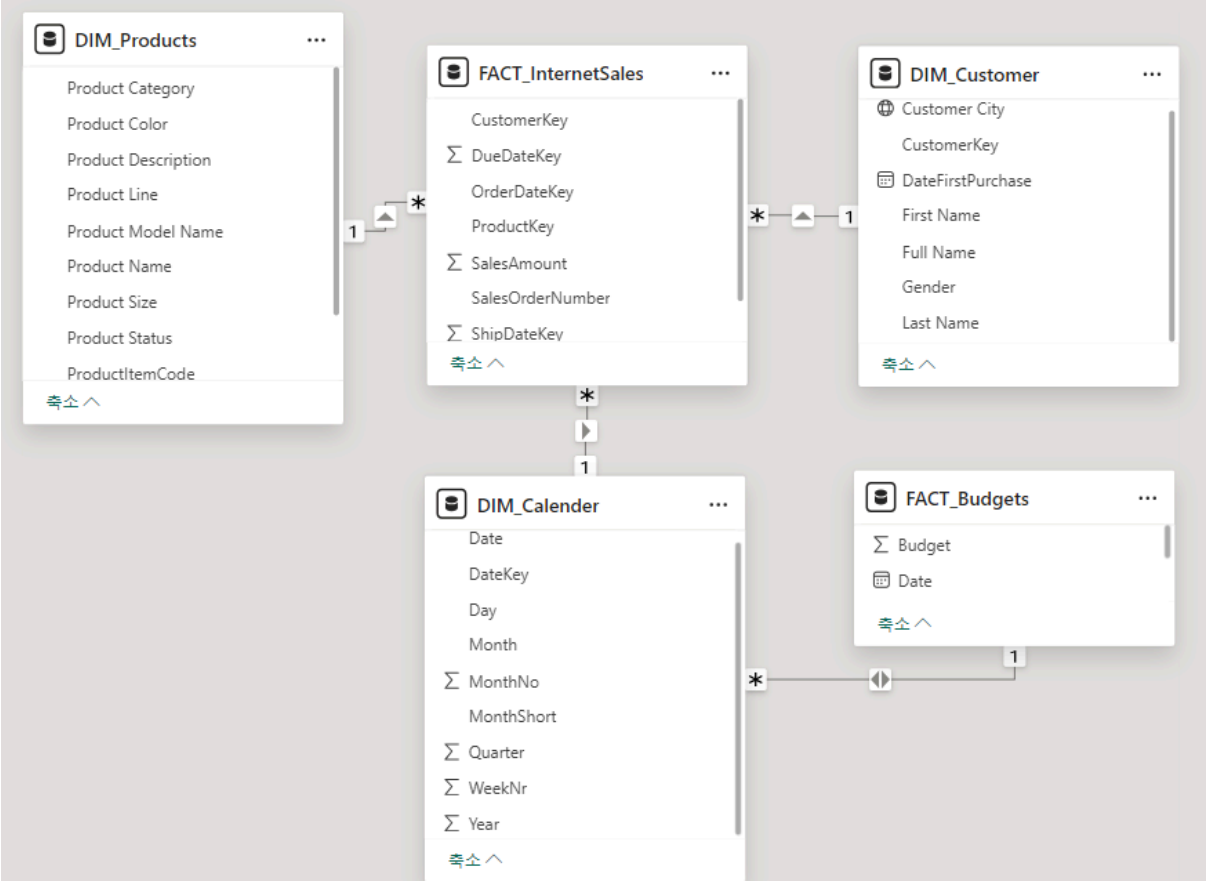
```
  --      ,[ArabicDescription]
  --      ,[HebrewDescription]
  --      ,[ThaiDescription]
  --      ,[GermanDescription]
  --      ,[JapaneseDescription]
  --      ,[TurkishDescription]
  --      ,[StartDate],
  --      ,[EndDate],
  ISNULL (p.Status, 'Outdated') AS [Product Status]
FROM
  [AdventureWorksDW2019].[dbo].[DimProduct] as p
  LEFT JOIN dbo.DimProductSubcategory AS ps ON ps.ProductSubcategoryKey =
p.ProductSubcategoryKey
  LEFT JOIN dbo.DimProductCategory AS pc ON ps.ProductCategoryKey =
pc.ProductCategoryKey
order by
  p.ProductKey asc
```

FACT_InternetSales:

```
-- Cleansed FACT_InternetSales Table --
SELECT
  [ProductKey],
  [OrderDateKey],
  [DueDateKey],
  [ShipDateKey],
  [CustomerKey],
  --  ,[PromotionKey]
  --  ,[CurrencyKey]
  --  ,[SalesTerritoryKey]
  [SalesOrderNumber],
  --  [SalesOrderLineNumber],
  --  ,[RevisionNumber]
  --  ,[OrderQuantity],
  --  ,[UnitPrice],
  --  ,[ExtendedAmount]
  --  ,[UnitPriceDiscountPct]
  --  ,[DiscountAmount]
  --  ,[ProductStandardCost]
  --  ,[TotalProductCost]
  [SalesAmount] --  ,[TaxAmt]
  --  ,[Freight]
  --  ,[CarrierTrackingNumber]
  --  ,[CustomerPONumber]
  --  ,[OrderDate]
  --  ,[DueDate]
  --  ,[ShipDate]
FROM
  [AdventureWorksDW2019].[dbo].[FactInternetSales]
WHERE
  LEFT (OrderDateKey, 4) >= YEAR(GETDATE()) -2 -- Ensures we always only bring two
years of date from extraction.
ORDER BY
  OrderDateKey ASC
```

4. Entities relationships of each datasets by ER Diagram

The datasets extracted from the cleansed MSSQL data table.



5. Power BI Sales Dashboard