



SSAS Exploration Document

Inventory and Sales Management System

Project business intelligence

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**Business Requirements:**

The business requirements for the Inventory and Sales Management System include:

* Optimizing inventory levels to minimize stockouts and overstock situations.
* Improving sales performance through targeted marketing strategies and promotions.
* Enhancing customer satisfaction and loyalty by providing personalized shopping experiences.
* Streamlining supply chain management processes to ensure timely delivery of products.

**DAX Variables:**

* **TotalRevenue**: Calculation of total revenue generated from sales transactions.

**TotalRevenue = SUMX(Sales\_Fact\_table, Sales\_Fact\_table[Quantity] \* RELATED(Products\_dim[ProductPrice]))**

* **AverageOrderValue**: Calculation of the average value of each sales transaction.

**AverageOrderValue = DIVIDE([TotalRevenue], DISTINCTCOUNT(Sales\_Fact\_table[TID]))**

* **CustomerCount**: Count of total number of unique customers.

**CustomerCount = DISTINCTCOUNT(Customers\_dim[CustomerID])**

* **TotalQuantitySold**: Calculation of the total quantity of products sold.

**TotalQuantitySold = SUM(Sales\_Fact\_table[Quantity])**

* **AverageQuantityPerTransaction**: Calculation of the average quantity of products per transaction.

**AverageQuantityPerTransaction = DIVIDE([TotalQuantitySold], DISTINCTCOUNT(Sales\_Fact\_table[TID]))**

* **TotalProductsSold**: Count of total number of unique products sold.

**TotalProductsSold = DISTINCTCOUNT(Products\_dim[ProductID])**

* **RevenueByCategory**: Calculation of revenue by product category.

**RevenueByCategory =**

**SUMX(**

**VALUES(Products\_dim[CategoryID]),**

**CALCULATE(**

**[TotalRevenue],**

**FILTER(Products\_dim, Products\_dim[CategoryID] = EARLIER(Products\_dim[CategoryID]))**

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* **CustomerLifetimeValue**: Estimation of the lifetime value of each customer.

**CustomerLifetimeValue =**

**AVERAGEX(**

**VALUES(Customers\_dim[CustomerID]),**

**CALCULATE(**

**[TotalRevenue],**

**ALLEXCEPT(Sales\_Fact\_table, Customers\_dim[CustomerID])**

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* **RevenuePerRegion**: Calculation of revenue by store region.

**RevenuePerRegion =**

**SUMX(**

**VALUES(Stores\_dim[StoreRegion]),**

**CALCULATE(**

**[TotalRevenue],**

**FILTER(Stores\_dim, Stores\_dim[StoreRegion] = EARLIER(Stores\_dim[StoreRegion]))**

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**Data Analysis and Insights:**

* The data analysis conducted using the defined DAX variables revealed valuable insights into sales performance, customer behavior, and inventory management. Key findings include:
* High revenue-generating categories and products.
* Patterns in customer purchasing behavior across different regions and store locations.
* Opportunities for targeted marketing campaigns and promotions to drive sales growth.

**Recommendations:**

Based on the insights gained from the data analysis, the following recommendations are proposed:

* Implement dynamic pricing strategies based on demand and competition.
* Enhance inventory forecasting models to optimize stock levels and reduce inventory carrying costs.
* Launch loyalty programs and personalized marketing initiatives to increase customer engagement and retention.
* Strengthen partnerships with top-performing vendors and suppliers to ensure product availability and quality.

**Conclusion**:

The Inventory and Sales Management System project provides actionable insights and recommendations to support informed decision-making and strategic planning for retail businesses. By leveraging data-driven approaches, businesses can improve operational efficiency, maximize profitability, and deliver superior customer experiences.