Insights Architects: Requirements Gathering for Store Sales Dashboard

1. Stakeholder Analysis

Stakeholder	Benefits from Dashboard	What They Expect to Receive	Key KPIs	Visual Elements
Project Sponsor	Better visibility on investment returns and strategic insights.	High-level KPIs, revenue trends, and ROI insights.	Total Sales, Top-Selling Products, Customer Retention Rate	Executive summary dashboard, High-level KPI cards, Trend line graphs
Top Management	Data-driven decision-making for business expansion and profitability.	Profitability insights, regional sales comparisons, growth trends.	Total Sales, Top-Selling Locations, Order Quantity Trends	Sales heatmaps, Regional performance bar charts, Monthly sales trends
Sales Team	Tracks performance, identifies high-selling products, and refines sales strategies.	Real-time sales tracking, customer purchasing patterns, sales goals progress.	Count of Orders, Top-Selling Products, Order Quantity Trends	Sales leaderboard, Product performance charts, Daily/weekly sales trends
Marketing Team	Enables targeted promotions, better campaign effectiveness, and customer segmentation.	Insights on best-selling products, customer retention, and campaign impact.	Customer Retention Rate, Top-Selling Products, Top-Selling Locations	Customer segmentation charts, Campaign effectiveness heatmaps, Retention rate graphs

IT Department	Ensures system security, uptime, and smooth data integration.	System performance reports, security logs, and data integration status.	System response time, Data accuracy score	System performance logs, Data sync status indicators, Security alerts dashboard
Finance Team	Monitors revenue, cost analysis, and overall financial health.	Financial reports, revenue trends, order impact on profitability.	Total Sales, Count of Orders, Profitability Analysis	Financial dashboards, Revenue vs. cost line charts, Order volume impact graphs
Customers	Indirect benefit: better shopping experience with personalized promotions.	Personalized deals, optimized inventory, and loyalty programs.	Customer Retention Rate, Top-Selling Products	Personalized product recommendations, Discount offers display, Order history insights
Suppliers	Improves inventory planning based on sales trends and demand forecasting.	Stock level insights, demand predictions, and supply chain optimization.	Order Quantity Trends, Top-Selling Products, Count of Orders	Supply chain trend charts, Stock level dashboards, Supplier performance heatmaps

Key Takeaways:

- **Executives & Sponsors** → High-level sales and profitability insights.
- **Sales & Marketing** → Real-time product performance and customer behavior.
- **Finance & IT** → Revenue analysis, system security, and financial tracking.
- **Suppliers & Customers** → Demand trends, stock optimization, and personalized experiences.

Visual Dashboard Features for Stakeholders:

- **Executives & Sponsors** → High-level summary with sales trends, profitability, and ROI graphs.

- **Sales & Marketing** → Leaderboards, customer segmentation charts, retention heatmaps.
- **Finance & IT** → Financial dashboards, system performance logs, and revenue reports.
- **Suppliers & Customers** → Personalized product recommendations, demand forecasting insights.

2. User Stories & Use Cases

USER STORY:

Shipping & Delivery Efficiency

- As a Logistics Coordinator, I want to compare shipping times across different carriers, so that I can choose the most efficient shipping method.
- As a Warehouse Manager, I want to identify regions with frequent shipping delays, so that I can optimize logistics in those areas.
- As an Operations Analyst, I want to track delivery performance by ship mode, so that I can improve overall efficiency.

USE CASE:

Actors: Logistics & Operations Team

Goal: Optimize delivery performance by minimizing shipping times and ensuring on-time deliveries.

Pre-conditions:

- Orders must have valid **Order Date** and **Ship Date** values.
- Shipments should be categorized under different **Ship Modes**.

Steps:

1. Calculate shipping time (Ship Date - Order Date).
2. Identify fastest and slowest shipping methods.
3. Detect regions with frequent delays.
4. Optimize Ship Mode selection based on past performance.

USER STORY:

Customer Purchase History

- As a Sales Representative, I want to identify high-value customers based on their purchase history, so that I can offer them exclusive deals.
- As a Business Analyst, I want to analyze repeat purchases, so that I can recommend personalized marketing campaigns.

USE CASE:

Actors: Customer Support Team, Sales Team

Goal: Provide a comprehensive view of individual customer purchases to improve customer service and personalized engagement.

Pre-conditions:

- Each customer must have a unique **Customer ID**.
- Purchases should be linked to customers via **Order ID**.

Steps:

1. Retrieve all orders for a specific customer.
2. Analyze order frequency and trends.
3. Identify top-spending customers based on total sales.
4. Track preferred product categories for each customer.

USER STORY:

Customer Segmentation by Order Behavior

- As a Marketing Manager, I want to segment customers based on purchase frequency, so that I can create targeted campaigns.
- As a Business Strategist, I want to analyze customer spending patterns, so that I can tailor promotions to different customer groups.
- As a Product Manager, I want to categorize customers by preferred product categories, so that I can optimize product recommendations.

USE CASE:

Actors: Marketing Team, Business Analysts

Goal: Categorize customers into distinct groups based on their purchasing habits to enable targeted marketing and retention strategies.

Pre-conditions:

- Each customer must have a unique **Customer ID**.

- Customer orders should be trackable via **Order ID**.

Steps:

1. Segment customers based on total sales and purchase frequency.
2. Identify high-value, frequent, and one-time buyers.
3. Classify customers by preferred product category.
4. Analyze customer behavior by region and segment (Consumer, Corporate, Home Office).

USER STORY:

Sales Performance per Product

- As a Product Manager, I want to identify the best-selling products, so that I can ensure sufficient inventory levels.
- As a Sales Executive, I want to track product sales trends, so that I can forecast demand accurately.
- As a Supply Chain Analyst, I want to compare product performance across different regions, so that I can adjust stock distribution.

USE CASE:

Actors: Product Managers, Inventory Team

Goal: Identify top-performing and underperforming products to optimize inventory management and sales strategies.

Pre-conditions:

- Each product must have a unique **Product ID**.
- Sales data should be recorded in the **Sales** and **Category/Sub-Category** fields.

Steps:

1. Aggregate total sales per Product ID.
2. Identify best-selling and slow-moving products.
3. Compare product performance across regions and states.
4. Analyze seasonal demand fluctuations.

USER STORY:

Regional Sales Distribution

- As a Regional Sales Manager, I want to compare sales performance across states, so that I can allocate sales resources effectively.

- As a Business Development Executive, I want to identify underperforming regions, so that I can develop strategies to boost sales.
- As a Data Analyst, I want to track sales trends by city, so that I can provide insights for market expansion.

USE CASE:

Actors: Regional Sales Managers

Goal: Understand regional sales trends to drive market expansion and sales optimization.

Pre-conditions:

- Orders must have valid **State, City, and Region** values.

Steps:

1. Compare total sales across regions and states.
2. Identify highest and lowest revenue-generating areas.
3. Analyze city-wise sales trends.
4. Evaluate regional customer preferences for products.

USER STORY:

- **Product Category Performance Analysis**

- As a Marketing Executive, I want to track which categories perform best during specific seasons, so that I can optimize campaign timing.

USE CASE:

Actors: Sales Managers, Product Team

Goal: Evaluate product category performance to focus on profitable segments and improve sales strategies.

Pre-conditions:

- Each product must be associated with a **Category** and **Sub-Category**.
- Sales data should be recorded in the **Sales** and **Profit** fields.

Steps:

1. Rank product categories by total sales and profit.
2. Identify underperforming categories needing promotion.
3. Analyze category performance over time.
4. Detect product categories with repeat purchases.

3.Functional Requirements

1. Sales Performance Analysis

Functional Requirements:

- Display total sales, revenue, and profit trends over time.
- Show sales performance by region, city, and country.
- Identify top-selling products and least-performing products.
- Track sales growth rate compared to previous periods.
- Provide monthly, quarterly, and yearly comparisons for sales trends.
- Predict future sales trends based on historical data.

Steps and PowerBI implementation:

1. **Total Sales Trends:** Line charts with filters (Last 12 months, Year-to-Date).
2. **Sales by Region, City, and Country:** Maps and bar charts with drill-downs.
3. **Top & Least-Performing Products:** Bar charts sorted by sales volume.
4. **Sales Growth Rate Comparison:** DAX formulas for period-over-period analysis.
5. **Monthly, Quarterly, and Yearly Comparisons:** Time-based filters and visuals.
6. **Forecasting Future Sales:** Power BI's forecasting feature based on historical trends.

Filters and Interactions:

- Filters: Date, region, and product filters allow users to focus on specific time periods, geographical regions, or product categories.

Interactions: Cross-filtering and drillthrough features allow users to interact with visuals and explore data in more detail.

2. Customer Insights & Behavior

Functional Requirements:

- Segment customers based on demographics, purchase history, and order frequency.

- Identify high-value customers (e.g., frequent buyers, big spenders).
- Track customer retention rate and churn patterns.
- Analyze customer preferences for different product categories.
- Show average spending per customer.
- Calculate customer lifetime value (CLV) to estimate long-term profitability.
- Identify unique customers and track their purchasing patterns.

Steps and PowerBI implementations:

1. **Customer Segmentation:** Filters for demographics, purchase history, and frequency.
2. **High-Value Customers:** Bar charts ranking frequent buyers and big spenders.
3. **Customer Retention & Churn:** Line charts tracking repeat purchases.
4. **Customer Preferences:** Pie charts for product category preferences.
5. **Average Spending per Customer:** DAX formula AVERAGE(Sales[Amount]).
6. **Customer Lifetime Value (CLV):** Calculated using historical purchase data.
7. **Unique Customers:** Table visuals tracking purchase frequency.

Filters and Interactions:

Filters: Demographic, purchase history, and product filters help refine customer segments and focus on specific behaviors.

Interactions: Cross-filtering allows users to drill down into customer segments and view detailed trends, while drillthrough helps analyze specific customer purchasing patterns.

3. **Product Performance Tracking**

Functional Requirements:

- List top-performing products based on sales revenue and quantity sold.
- Track inventory turnover rate (how often a product is sold and replaced).
- Identify seasonal trends in product demand.

Steps and PowerBI implementation:

1. **Top-Performing Products**: Bar charts with total sales calculations.
2. **Seasonal Demand Trends**: Line charts segmented by months or quarters.

Filters and Interactions:

Filters: Filters for product categories, regions, and time periods (e.g., specific months or seasons) allow users to analyze performance across different dimensions.

Interactions: Cross-filtering helps explore product performance by different time frames, and drillthrough lets users focus on detailed insights for individual products.

4. **Sales & Order Distribution**

Functional Requirements:

- Show sales contribution by product category (electronics, clothing, etc.).
- Show average order value and order frequency trends.

Steps and PowerBI implementations:

5. **Sales Contribution by Category:** Pie charts for revenue breakdown**.**
6. **Average Order Value:** DAX formula AVERAGE(Sales[Amount]).
7. **Order Frequency Trends:** DAX formula COUNT(Sales[OrderID]).

Filters and Interactions:

Filters: Filter by product category, time periods, or order types.

Interactions: Cross-filtering and drillthrough help explore sales trends by category or time period

5.Supply Chain & Logistics Performance

Functional Requirements:

- Display order fulfillment rate (percentage of orders delivered successfully).
- Track average delivery time for orders.
- Identify regions with frequent shipping delays.
- Analyze supplier performance based on delivery times.

Steps and powerBI interactions:

1. **Order Fulfillment Rate:** KPI showing successful vs. delayed orders.
2. **Average Delivery Time:** DAX formula AVERAGE(Orders[DeliveryTime]).

3. **Shipping Delays by Region:** Bar charts highlighting delay frequency.

Filters and Interactions:

- **Filters**: Use filters for delivery status, regions, and suppliers to drill deeper into the data.
- **Interactions**: Cross-filtering allows users to explore how logistics performance varies by region, supplier, or time period

6.Geographical Sales Analysis

- Provide an interactive geographical breakdown of sales.
- Show top-selling locations (city, region, or country).
- Compare regional sales trends over time.
- Identify underperforming locations to improve sales strategy.

Steps and PowerBI Implementation:

1. **Interactive Sales Map**: Power BI map visuals displaying sales performance.
2. **Regional Trends**: Line charts comparing sales over time.
3. **Underperforming Locations**: Heat maps identifying weak sales regions.

Filters and Interactions:

- Filters: Focus on specific locations or time periods to analyze trends.
- Interactions: Cross-filtering allows deeper analysis of regional performance**.**

7.Marketing Performance

- Analyze customer engagement (repeat purchases).

Steps and PowerBI Implementation:

1. **Repeat Purchases & Customer Engagement**: Bar charts tracking purchase frequency.

Filters and Interactions:

- Filters: Focus on customer segments, purchase frequency, or specific time periods.
- Interactions: Cross-filtering helps explore repeat purchase trends by customer group or marketing campaign.

2. User Interaction & Filtering Features

- Allow users to filter data by date range, product category, region, and customer segment.
- Enable drill-down into specific product categories, cities, or customer segments.
- Provide search functionality for finding specific products, locations, or customer types.
- Offer dynamic sorting options (e.g., sort by highest revenue, lowest sales, fastest delivery).
- Provide tooltip options to display additional insights when hovering over data points.

3. Report Generation & Exporting

- Allow users to download sales reports in Excel or PDF format.

Non-Functional Requirements :

1-Performance

Response Times:

- Dashboards should **load within 3 seconds** for 95% of users.
- Queries should execute in **under 2 seconds** for datasets up to **10 million rows**.

Throughput & Scalability:

- The system must handle **10,000+ concurrent users** with **zero degradation** in performance.

Data Processing Efficiency:

- Stream processing should handle **100K events per second** with **latency <100ms**.

2-Security

Access Control & Authentication:

- Implement **Role-Based Access Control (RBAC)**:
    - **Managers**: Full financial data access.
    - **Analysts**: Access to operational data only.
    - **Executives**: High-level reports without raw data access.
- Multi-Factor Authentication (MFA) for **all privileged users**.

Data Protection & Encryption:

- All sensitive data must be encrypted

3-Usability

User Experience & Accessibility:

- Dashboards should be **fully responsive** (desktop, tablet, mobile).
- Support **keyboard navigation & screen readers**.

Customization & Interactivity:

- Users should be able to **create custom dashboards** and save filters.
- Implement **drill-through functionality** for deeper analysis.

Export & Integration:

- Support **exports to Excel, CSV, PDF, and APIs for real-time integrations**.

4-Reliability & Availability

System Uptime & Disaster Recovery:

- Ensure **99.99% system uptime** with real-time failover.
- **Automatic database backups every 15 minutes**.

Error Handling & Monitoring:

- Implement **real-time monitoring with alerts** for:
    - Query failures
    - Server downtime
    - Security breaches

Data Consistency & Integrity:

- Implement **data validation rules** to prevent inconsistencies.