Power BI Dashboard "Sales" Summary
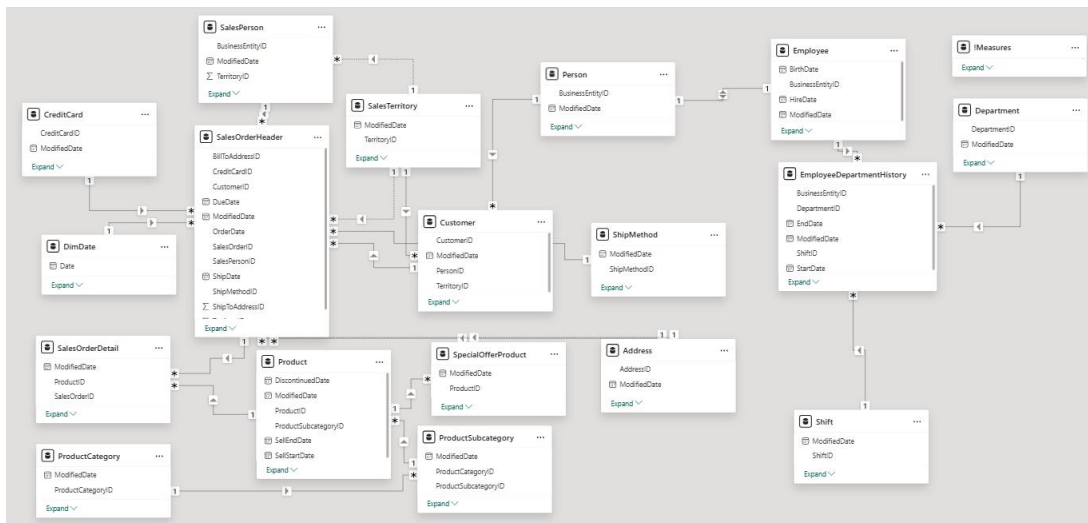By **Tomer Orly**

Project Objective

The dashboard was developed to consolidate and analyze key organizational performance data. It offers a multi-dimensional view covering Sales, Customers, Products & Inventory, and Human Resources. The primary goal is to enable data-driven decision-making, identify business trends, and monitor performance over time.

Data Model Overview

The Power BI data model is architected to facilitate comprehensive business performance analysis. The model seamlessly consolidates data from key operational areas, encompassing sales, customer relations, product management, and human resources.

The model comprises several interconnected tables:

- Sales-related tables: Central to tracking and analyzing sales transactions and overall performance.
- Customer-related tables: Provide detailed insights into customer demographics, payment methods, and shipping logistics.
- Product-related tables: Enable in-depth analysis of product performance, inventory levels, and sales categorized by product hierarchy.
- Employee/HR-related tables: Crucial for human resources analytics, encompassing employee data, departmental assignments, and work shifts.

- Date Dimension: Essential for time-intelligence calculations and analyzing trends across various periods.
- Fact and Dimension Tables: The model clearly differentiates between fact tables (e.g., orders, employee history) and dimension tables (e.g., dates, products, customers, employees), optimizing for efficient querying and data aggregation.

Relationships are meticulously established with appropriate cardinality (one-to-many, one-to-one) to ensure data integrity and enable seamless filtering and slicing capabilities across the dashboard.

Data Manipulation, Cleaning, and DAX Calculations

To prepare the data for insightful analysis, significant data manipulation and cleaning processes were undertaken, including:

- Data Transformation: Raw data from disparate sources was transformed to ensure consistency and usability within PowerQuery, including handling data types, formatting, and resolving inconsistencies.
- Data Cleaning: Thorough cleaning addressed missing values, duplicates, and errors, ensuring data accuracy and reliability.
- DAX Calculations: A comprehensive set of Data Analysis Expressions (DAX) was developed to create powerful measures and calculated columns, fundamental for deriving KPIs and enabling deep analytical insights.
- '!Measures' Table: To maintain a clean and organized model, all DAX calculations were consolidated into a dedicated table named '!Measures'. This centralized approach streamlines management, location, and reuse of measures throughout the report, enhancing maintainability and user experience.

Key Development Activities

Development efforts focused on enhancing the functionality and analytical depth of the Power BI dashboard:

- Data Model Refinement: Reviewed and optimized to ensure efficient relationships and appropriate data types, contributing to performance and scalability.
- Advanced DAX Measure Implementation: Developed complex DAX measures to support key analysis areas: Sales Performance, Customer Insights, Product & Inventory Analysis, and HR metrics.
- Data Quality Assurance: Executed meticulous cleaning and transformation processes to guarantee the highest data quality for accurate reporting.
- Organized Measure Management: Created the '!Measures' table to improve organization and accessibility of calculated fields, contributing to a more user-friendly and maintainable solution.

Key Analysis Areas

Sales Performance
- The United States leads in total sales volume, with approximately $63 million.
- The "Bikes" category is the dominant revenue generator, totaling around $95 million.
- Other categories such as Accessories, Clothing, and Components contribute significantly less.
- Approximately 31,000 total orders were recorded, with cumulative revenue of $110 million.

Customer Insights
- Customer count increased steadily from 2011 to 2013, with a moderate decline in 2014.
- Credit card usage is fairly evenly distributed across four major card types.
- The majority of shipments are handled by a single logistics company.
- Customer data is segmented by geography (North America, Europe, Pacific), as well as by country and city.

Product & Inventory
- The five best-selling products account for 13% of total item sales.
- Approximately 275,000 items were sold.
- The average item price is $465.
- Comparison between item quantities sold and total revenue by product category.

Employees & Human Resources
- Total number of employees: 290.
- Most employees belong to Manufacturing, Sales & Marketing, and Administration departments.
- Gender distribution varies between departments.
- The average employee age is 46.9 years (youngest 34, oldest 73).
- Includes yearly hiring data, employee levels, and retention rates by level.

Screenshots

Welcome to the Business Performance Dashboard

This report provides a comprehensive overview of our business performance across Sales, Customers, Products & Inventory, and HR metrics. It is designed to support data-driven decision-making at all organizational levels. By consolidating key performance indicators into a unified view, the report enables stakeholders to identify trends, monitor progress against goals, and uncover areas for improvement. Each section is tailored to highlight actionable insights, helping teams to make informed, timely, and strategic business decisions.

Sales Performance   Customer Insights   Product & Inventory   Employees & HR

CUSTOMER INSIGHT

Grand Total Customers
19K

Number of Customers
19K

PctOfTotal
100.0%

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Date
All

Region
Europe | Pacific
North America

Country
AU | FR
CA | GB
DE | US

City
All

Count Orders by CreditCard Type

7K (24.5%) | 8K (25.31%)
8K (25.02%) | 8K (25.17%)

CardType
- ColonialVoice
- SuperiorCard
- Distinguish
- Vista

Customers Distrubtion by Ship Company

1K (3.32%)
18K (96.68%)

Name
- XRQ - TRU…
- CARGO TR…

Number of Customers by YEAR

11.1K
10.4K
10K
5K
3.2K
1.4K
0K
2011 | 2012 | 2013 | 2014

Number of Customers

YEAR

Total Customers By each Region distributed by Year

- Count Customers 2011
- Count Customers 2012
- Count Customers 2013
- Count Customers 2014

North America: 0.7K, 1.5K, 5.4K, 5.1K
Pacific Group: 0.5K, 0.9K, 2.5K, 2.1K
Europe: 0.3K, 0.8K, 3.2K, 3.1K

Count Customers
5K
0K

Top 5 Best - Selling Products

Name	Total Quantity	PctOfTotalQuantity
AWC Logo Cap	8311	3%
Water Bottle - 30 oz.	6815	2%
Sport-100 Helmet, Blue	6743	2%
Long-Sleeve Logo Jersey, L	6592	2%
Sport-100 Helmet, Black	6532	2%
Total	**34993**	**13%**

Items Sold
275K

Average Price
$465

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Date
All

Category
- Accessories
- Bikes
- Clothing
- Components

Sub - Category
All

Scatter plot of Total Quantity Vs. Sum Total By Category

Name
- Accessories
- Bikes
- Clothing
- Components

Total Quantity
50K
0K
$0M | $10M | $20M | $30M | $40M
Sum Total

Quantity Vs. Grand Quantity by Year

2011 | 2012 | 2013 | 2014

Employees	Average Age	Oldest Age	Youngest Age
290	46.92	73.70	34.00

Gender

F	M

Age Group

34–39	50–54	65–69
40–44	55–59	70+
45–49	60–64	

Department

Executive General and Administration
Inventory Management
Manufacturing
Quality Assurance
Research and Development
Sales and Marketing

Count Employees By Level

27 (9.31%)
66 (22...)
190 (65.52%)

Level
- 5
- 4
- 3
- 2
- 1

Number of Employees by Department

EmployeesByDept

- Manufacturing: 185
- Executive General and Administration: 35
- Sales and Marketing: 27
- Inventory Management: 18
- Research and Development: 14
- Quality Assurance: 11

GroupName

Retention By Level

66 (22.76%)
215 (74.14%)

Retention Gro...
- Senior
- Intermediate
- Junior
- Expert

Hires By Year Distributed by Gender

Gender ● F ● M

Number Employees

Year	F	M
2006		1
2007	1	5
2008	22	52
2009	40	108
2010	10	28
2011	7	9
2012	2	2
2013	2	1