

ANALYZING AXON'S SALES

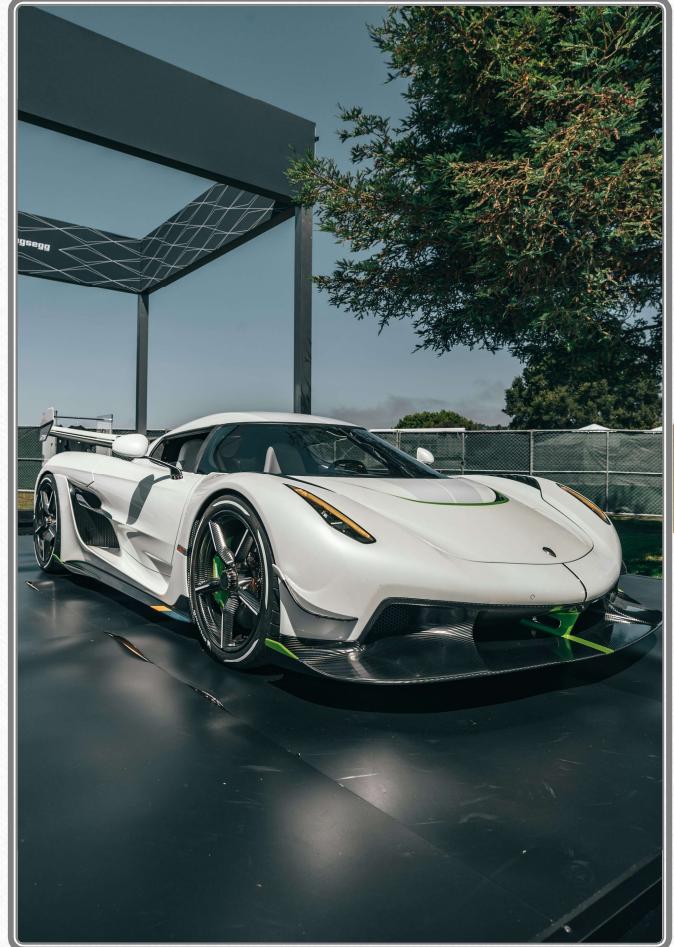


SQL CASE STUDY ON AXON SALES

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AXON:

A PREMIER RETAILER OF CLASSIC CARS

Introduction to Axon

Axon is a well-established company specializing in high-quality collectible models, catering to enthusiasts and collectors worldwide. The company offers a diverse range of products, including Classic Cars, Motorcycles, Trains, Ships, Planes, Trucks & Buses, and Vintage Cars.

About the Company

Axon is known for its commitment to excellence, ensuring top-tier product quality and exceptional customer service. The company has built strong relationships with trusted vendors and suppliers to maintain a steady product supply. With a customer-centric approach, Axon focuses on efficient order management, timely deliveries, and seamless transactions. Its growing market presence and data-driven strategies enable sustainable growth and continuous expansion into new regions.



CHALLENGES IN SALES DATA MANAGEMENT AT AXON

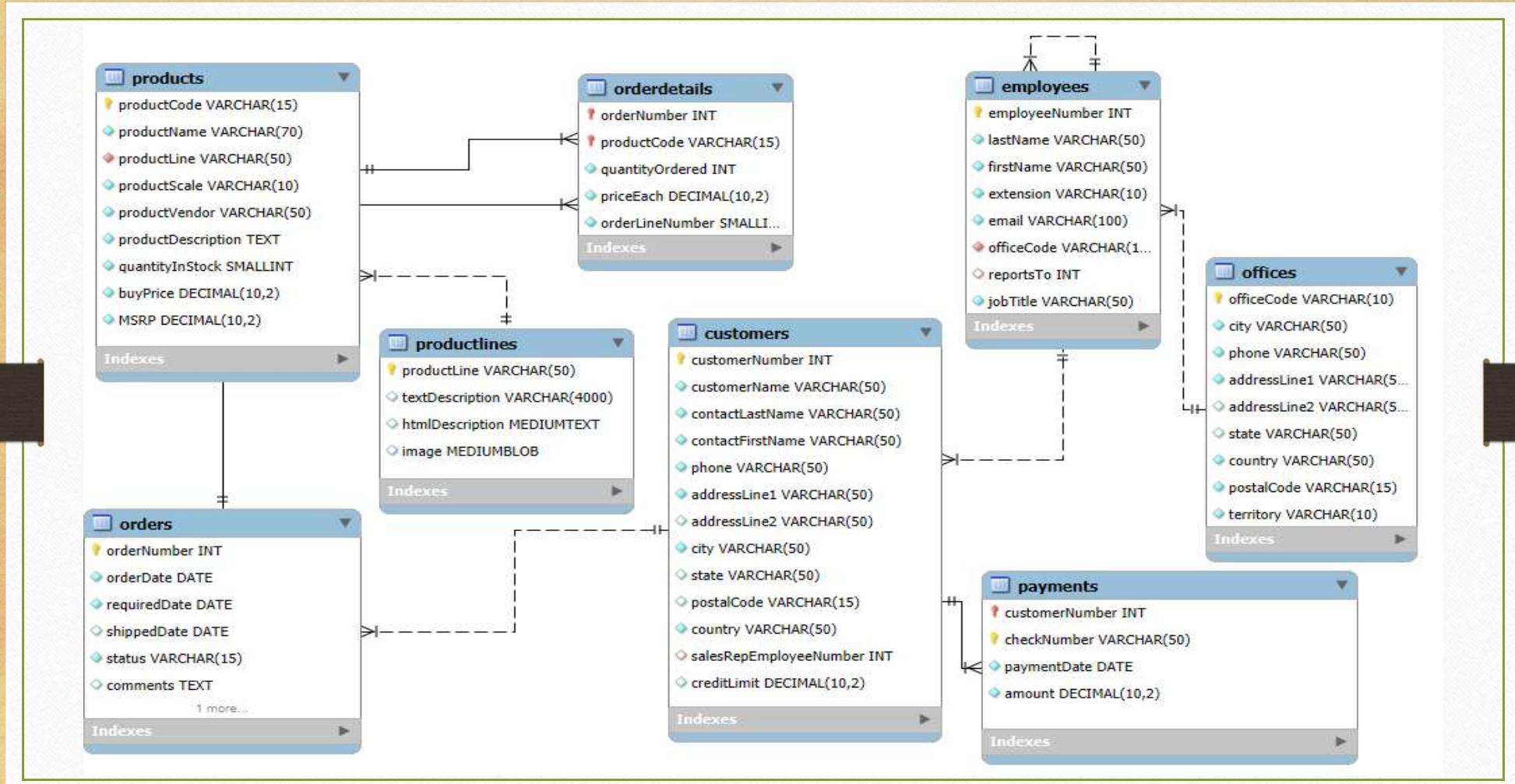
- Axon lacks a centralized system to manage and store its sales data, leading to inefficiencies in data retrieval and analysis.
- The sales team struggles to generate accurate, up-to-date reports, impacting their ability to make informed decisions.
- There is no streamlined process for tracking sales performance and customer insights, hindering the optimization of sales strategies.
- The management team is unable to access real-time sales data, affecting timely decision-making and strategic planning.
- The absence of an integrated system for data analysis and reporting limits the company's ability to forecast future sales trends effectively.

Overview of MySQL Sample Database Schema

The MySQL sample database schema consists of the following 8 tables, each designed to store specific data relevant to the retail business:

1. **Customers:** Stores customer data, including personal information and contact details.
2. **Products:** Stores a list of scale model cars available for sale.
3. **Product Lines:** Stores a list of product line categories that group the products.
4. **Orders:** Stores sales orders placed by customers, capturing order details and status.
5. **Order Details:** Stores sales order line items, detailing the individual products in each order.
6. **Payments:** Stores records of payments made by customers for their purchases.
7. **Employees:** Stores employee information, including organizational structure and reporting hierarchy.
8. **Offices:** Stores sales office data, including locations and office-related details.

Entity-Relationship Diagram of MySQL Sample Database



Key Business Metrics Overview

Total Customers

122

Revenue

96,04,190

Total No of Orders

326

Average Delivery Days
4 DAYS

Products

7

Types of Products

1. Classic cars
2. MotorCycles
3. Planes
4. Ships
5. Trains
6. Trucks and Buses
7. Vintage Cars

Best Selling Product

1992 Ferrari 360 Spider Red

Customers with the Highest Number of Products Purchased

```
select c.customerName , count(o.orderNumber) as Total_orders  
from customers as c  
join orders as o on c.customerNumber=o.customerNumber  
group by customerName  
order by Total_orders desc  
limit 10;
```

customerName	Total_orders
Euro+ Shopping Channel	26
Mini Gifts Distributors Ltd.	17
Down Under Souveniers, Inc	5
Dragon Souveniers, Ltd.	5
Australian Collectors, Co.	5
Reims Collectables	5
Danish Wholesale Imports	5
Baane Mini Imports	4
Blauer See Auto, Co.	4
Kelly's Gift Shop	4

Where Are the Majority of Our Customers Located?

```
select country, count(*) as total_customers from customers  
group by country  
order by total_customers desc  
limit 5;
```

country	total_customers
USA	36
Germany	13
France	12
Spain	7
Australia	5

How Are Customers Categorized Based on Their Credit Limits?

```
select
    CASE
        WHEN creditLimit >= 100000 THEN 'Platinum (100,000 & above)'
        WHEN creditLimit BETWEEN 50000 AND 99999 THEN 'Gold (50,000 - 99,999)'
        WHEN creditLimit BETWEEN 20000 AND 49999 THEN 'Silver (20,000 - 49,999)'
        ELSE 'Bronze (Below 20,000)'
    END as creditCategory,
    COUNT(*) as customerCount
from customers
group by creditCategory
order by customerCount desc;
```

creditCategory	customerCount
Gold (50,000 - 99,999)	60
Platinum (100,000 & above)	25
Bronze (Below 20,000)	25
Silver (20,000 - 49,999)	12

Top 10 Best-Selling Products by Quantity Ordered

```
select productName,sum(quantityOrdered) as TotalQuantityOrdered  
from orderdetails as od  
join products p on od.productCode = p.productCode  
group by productName  
order by TotalQuantityOrdered desc  
limit 10;
```

productName	TotalQuantityOrdered
1992 Ferrari 360 Spider red	1808
1937 Lincoln Berline	1111
American Airlines: MD-11S	1085
1941 Chevrolet Special Deluxe Cabriolet	1076
1930 Buick Marquette Phaeton	1074
1940s Ford truck	1061
1969 Harley Davidson Ultimate Chopper	1057
1957 Chevy Pickup	1056
1964 Mercedes Tour Bus	1053
1956 Porsche 356A Coupe	1052

Tracking the Number of Orders Placed Annually

```
select year(orderDate) year, count(orderDate) total_orders  
from orders  
group by year(orderDate);
```

year	total_orders
2003	111
2004	151
2005	64

How Many Customers Does Each Sales Representative Handle?

```
select e.employeeNumber, concat(firstname, ' ', lastname) as Full_Name, count(*) Total_customers  
from customers c  
join employees as e on c.salesRepEmployeeNumber= e.employeeNumber  
where salesRepEmployeeNumber is not null  
group by 1  
order by Total_customers desc;
```

employeeNumber	Full_Name	Total_customers
1401	Pamela Castillo	10
1504	Barry Jones	9
1323	George Vanauf	8
1501	Larry Bott	8
1286	Foon Yue Tseng	7
1370	Gerard Hernandez	7
1165	Leslie Jennings	6
1166	Leslie Thompson	6
1188	Julie Firrelli	6
1216	Steve Patterson	6
1337	Loui Bondur	6
1702	Martin Gerard	6
1611	Andy Fixter	5
1612	Peter Marsh	5
1621	Mami Nishi	5

Could you show the product-wise inventory remaining in the Classic warehouse?

```
→ with cte as(  
  
    select p.productcode,productName,quantityinstock,sum(quantityordered) as quantityordered  
    from products as p  
    join orderdetails as od on p.productCode=od.productCode  
    group by p.productCode,productName,quantityInStock  
    order by quantityordered desc)  
select productcode,productName,quantityinstock,(quantityinstock - (quantityordered)) as Remained_Stock from cte  
order by Remained_stock desc;
```

productcode	productName	quantityinstock	Remained_Stock
S12_2823	2002 Suzuki XREO	9997	8969
S18_1984	1995 Honda Civic	9772	8855
S700_2466	America West Airlines B757-200	9653	8669
S24_3432	2002 Chevy Corvette	9446	8552
S18_2325	1932 Model A Ford J-Coupe	9354	8397
S32_2206	1982 Ducati 996 R	9241	8335
S18_3482	1976 Ford Gran Torino	9127	8212
S12_3380	1968 Dodge Charger	9123	8198
S24_3151	1912 Ford Model T Delivery Wagon	9173	8182
S18_1589	1965 Aston Martin DB5	9042	8128
S18_3685	1948 Porsche Type 356 Roadster	8990	8042
S18_1889	1948 Porsche 356-A Roadster	8826	7854
S700_4002	American Airlines: MD-11S	8820	7735
S18_1367	1936 Mercedes-Benz 500K Special...	8635	7675
S32_3207	1950's Chicago Surface Lines Stre...	8601	7667
S18_1342	1937 Lincoln Berline	8693	7582
S18_2870	1999 Indy 500 Monte Carlo SS	8164	7309

Product-wise Profit Margin Report

```
select productLine as Category,
       SUM(quantityInStock) as Total_Stock,
       SUM(quantityOrdered) as Items_Sold,
       SUM(quantityInStock) - SUM(quantityOrdered) as Stock_Remaining,
       AVG(buyPrice) as Avg_Cost_Price,
       AVG(priceEach) as Avg_Sale_Price,
       SUM(quantityOrdered * priceEach) as Revenue,
       SUM(quantityOrdered * buyPrice) as Total_Expense,
       SUM(quantityOrdered * priceEach) - SUM(quantityOrdered * buyPrice) as Net_Profit,
       CONCAT(ROUND((SUM(quantityOrdered * priceEach) - SUM(quantityOrdered * buyPrice)) / NULLIF(SUM(quantityOrdered * priceEach), 0) * 100, 2)
      ) as Profit_Percentage from products p
join orderdetails od on p.productCode = od.productCode
group by productLine
order by Profit_Percentage desc;
```

Category	Total_Stock	Items_Sold	Stock_Remaining	Avg_Cost_Price	Avg_Sale_Price	Revenue	Total_Expense	Net_Profit	Profit_Percentage
Motorcycles	1915517	12778	1902739	50.849554	87.322925	1121426.12	652170.82	469255.30	41.84%
Vintage Cars	3439570	22933	3416637	46.017686	78.356088	1797559.63	1060291.30	737268.33	41.01%
Classic Cars	5844033	35582	5808451	65.271901	108.004475	3853922.49	2327710.29	1526212.20	39.60%
Ships	732251	8532	723719	46.997265	77.752041	663998.34	402708.87	261289.47	39.35%
Trucks and Buses	1003828	11001	992827	56.329091	92.709253	1024113.57	623560.35	400553.22	39.11%
Planes	1744036	11872	1732164	49.629167	80.327202	954637.54	588676.83	365960.71	38.34%
Trains	450792	2818	447974	43.923333	67.140494	188532.92	123191.90	65341.02	34.66%

Number of Products Ordered per Vendor

```
select p.productVendor as Vendor_Name, COUNT(od.orderNumber) as Total_Orders  
from products p  
join orderdetails od on od.productCode = p.productCode  
group by productVendor  
order by Total_Orders DESC;
```

Vendor_Name	Total_Orders
Classic Metal Creations	270
Motor City Art Classics	249
Carousel DieCast Legends	246
Unimax Art Galleries	244
Gearbox Collectibles	242
Exoto Designs	240
Highway 66 Mini Classics	222
Autoart Studio Design	221
Min Lin Diecast	220
Second Gear Diecast	220
Studio M Art Models	217
Welly Diecast Productions	216
Red Start Diecast	189

What is the breakdown of orders by their delivery status, including count and percentage?

```
select status as Order_Status,
       COUNT(DISTINCT orderNumber) as Order_Count,
       CONCAT(ROUND((COUNT(DISTINCT orderNumber) * 100.0) /
                    (select COUNT(DISTINCT orderNumber) from orders),
                    2),
              '%')
       ) as Order_Percentage
  from orders
 group by status
 order by Order_Count desc;
```

Order_Status	Order_Count	Order_Percentage
Shipped	303	92.94%
Cancelled	6	1.84%
In Process	6	1.84%
On Hold	4	1.23%
Resolved	4	1.23%
Disputed	3	0.92%

Key Insights from Axon Case Study

1. Top Customers by Purchases

Euro + Shopping Channel leads with 26 orders, followed by Mini Gifts Distributors Ltd with 17 orders, indicating key repeat customers.

2. Customer Location Distribution

USA has the highest number of customers (36), followed by Germany (13) and France (12), showcasing strong market presence in North America and Europe.

3. Customer Segmentation by Credit Limit

60 customers are categorized as Gold (\$50,000 - \$99,999), representing the largest customer segment by credit limit, with 25 customers in both Bronze and Platinum categories.

4. Top 10 Best-Selling Products by Quantity

The 1992 Ferrari 360 Spider Red leads with 1,808 units sold, followed by 1937 Lincoln Berlin (1,111 units) and American Airlines MD-11 (1,085 units), reflecting strong sales across multiple product lines.

5. Orders by Year

The highest volume of orders was in 2004 with 151 orders, showcasing a peak in sales activity that year.

6. Inventory Management

Some products exhibit negative remaining stock, suggesting potential over-sales or stock mismanagement, warranting further investigation to optimize inventory levels.

7. Profit Margins by Category

Motorcycles & Vintage Cars have the highest profit margin at 41%, followed by Classic Cars, Ships, Trucks & Buses at 39%, and Planes at 38%.

8. Orders Per Vendor

Classic Metal Creations leads with 270 orders, followed by Motor City Arty Classic (249 orders) and Carousel Diecast Legends (246 orders), reflecting strong vendor partnerships and product availability.

9. Order Status Breakdown

92.94% of orders were shipped, with only a small percentage in canceled or disputed statuses, indicating high order fulfillment efficiency.

Strategic Recommendations for Axon's Growth

- Optimize Inventory Management: Address negative stock issues and implement demand forecasting to prevent over-sales.
- Focus on High-Margin Products: Expand offerings in high-margin categories like Motorcycles and Vintage Cars to maximize profits.
- Improve Delivery Times: Explore logistics optimization to reduce the average delivery time and enhance customer satisfaction.
- Target High-Value Customers: Focus marketing efforts on the Gold and Platinum customer segments for better sales growth.
- Enhance Vendor Partnerships: Strengthen relationships with top vendors like Classic Metal Creations to ensure steady product supply.
- Expand in Key Markets: Invest in marketing strategies targeting regions with high customer density like the USA and Germany.
- Improve Order Fulfillment: Streamline the order management process to reduce cancellations and disputed orders



THANK YOU..!

