**KMS Data Analysis Report**

**Case Scenario 1**

**1. Max product category**

SELECT Product\_Category, SUM(Sales) AS Max\_Sales  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
GROUP BY Product\_Category  
ORDER BY Max\_Sales DESC  
LIMIT 1;

**2. Top and Bottom Performing Region**

1. Top 3 regions by sales

SELECT Region, SUM(Sales) AS Total\_Sales  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
GROUP BY Region  
ORDER BY Total\_Sales DESC  
LIMIT 3;

1. Bottom 3 regions by sales

SELECT Region, SUM(Sales) AS Total\_Sales  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
GROUP BY Region  
ORDER BY Total\_Sales ASC  
LIMIT 3;

**3. Total Sales in Ontario**

SELECT SUM(Sales) AS Total\_Sales  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
WHERE Region = 'Ontario';

**4. Bottom 10 Customers**

* By total sales:

SELECT Customer\_Name AS Customer, SUM(Sales) AS Total\_Sales  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
GROUP BY Customer\_Name  
ORDER BY Total\_Sales ASC  
LIMIT 10;

* With segmentation:

SELECT Customer\_Name AS Customer, Customer\_Segment AS Segment,  
 ROUND(SUM(Sales), 2) AS Total\_Sales,  
 COUNT(DISTINCT Order\_ID) AS Total\_Order,  
 ROUND(AVG(Sales), 2) AS Avg\_Order\_Value,  
 COUNT(DISTINCT Product\_Category) AS Category\_Count  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
GROUP BY Customer\_Name, Customer\_Segment  
ORDER BY Total\_Sales ASC  
LIMIT 10;

**5. Cost-consuming shipping mode**

SELECT Ship\_Mode, SUM(Shipping\_Cost) AS Expenses  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
GROUP BY Ship\_Mode  
ORDER BY Expenses DESC  
LIMIT 1;

**Case Scenario 2**

**6. Most Valuable Customers**

WITH TopCustomers AS (  
 SELECT Customer\_Name, SUM(Sales) AS Total\_Sales  
 FROM KMS\_Sql\_Case\_Study\_\_3\_  
 GROUP BY Customer\_Name  
 ORDER BY Total\_Sales DESC  
 LIMIT 10  
)  
SELECT tc.Customer\_Name,  
 ROUND(tc.Total\_Sales, 2) AS Total\_Sales,  
 cs.Product\_Category,  
 COUNT(\*) AS Purchase\_Count,  
 ROUND(SUM(cs.Sales), 2) AS Category\_Sales  
FROM TopCustomers tc  
JOIN KMS\_Sql\_Case\_Study\_\_3\_ cs ON cs.Customer\_Name = tc.Customer\_Name  
GROUP BY tc.Customer\_Name, cs.Product\_Category  
ORDER BY tc.Total\_Sales DESC, tc.Customer\_Name, Category\_Sales DESC;

**7. Small Business with the highest sales**

SELECT Customer\_Name AS Customer, ROUND(SUM(Sales)) AS Total\_Sales  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
WHERE Customer\_Segment = 'Small Business'  
GROUP BY Customer\_Name  
ORDER BY Total\_Sales DESC  
LIMIT 1;

**8. Most Orders by a Corporate Customer (2009-2012)**

SELECT Customer\_Name AS Customer, COUNT(DISTINCT Order\_ID) AS Total\_Order  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
WHERE Customer\_Segment = 'Corporate'  
 AND YEAR(STR\_TO\_DATE(Order\_Date, '%m/%d/%Y')) BETWEEN 2009 AND 2012  
GROUP BY Customer\_Name  
ORDER BY Total\_Order DESC  
LIMIT 1;

**9. Most Profitable Consumer Customer**

SELECT Customer\_Name AS Customer, ROUND(SUM(Profit)) AS Profit  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
WHERE Customer\_Segment = 'Consumer'  
GROUP BY Customer\_Name  
ORDER BY Profit DESC  
LIMIT 1;

**10. Returned Items and Segment (using returned status)**

SELECT cs.Customer\_Name AS Customer, cs.Customer\_Segment AS Segment, COUNT(\*) AS Returned\_items  
FROM KMS\_Sql\_Case\_Study\_\_3\_ cs  
JOIN Order\_Status os ON cs.Order\_ID = os.Order\_ID  
WHERE os.Status = 'Returned'  
GROUP BY Customer, Segment  
ORDER BY Returned\_items DESC;

**11. Shipping Cost Spend Based on Priority Level**

SELECT Order\_Priority AS Priority, Ship\_Mode AS Shipping,  
 COUNT(\*) AS Orders, ROUND(AVG(Shipping\_Cost), 2) AS Avg\_Shipping\_Cost  
FROM KMS\_Sql\_Case\_Study\_\_3\_  
WHERE Profit < 0  
GROUP BY Order\_Priority, Ship\_Mode  
ORDER BY Priority, Shipping;

**Explanation**

*Based on the link between “Order Priority” and “Delivery Mode”, there are certain worries concerning the balance between urgency and delivery cost. It was observed that, irrespective of priority level, “Regular Air” is the most used delivery mode.  
Same way, some orders were delivered through “Express Air”, even though it has the lowest “Avg. Shipping Cost” across the delivery mode, it shows that KMS did not appropriately spend on shipping costs based on order priority.*

**Recommendation**

*Enforce Priority-Shipping Alignment Rules:*

* Restrict Express Air to only Critical and High-priority orders using validations.
* Default Low or Not Specified orders to Delivery Truck or Regular Air.

*Implement Shipping Audits:*

* Periodically review mismatches between shipping mode and priority.
* Flag unusual cases for manual review.

*Staff Training:*

* Train teams on the cost and speed implications of each shipping method.

*Customer Communication:*

* Set clear delivery expectations based on priority levels.

*Optimize Logistics Cost Reporting:*

* Use dashboards to monitor expedited shipping use by priority and customer segment.