SUMMARY OF SALES DATA, AND PERFORMANCE METRICS ADVENTURES WORK 2016

Herbert Toyota

Company Overview

- Global bicycle manufacturer
- Strong presence in North America, Europe, and Asia-Pacific
- Sells directly online and through retail partners
- Diverse product lines: high-performance bikes, components, clothing, and accessories

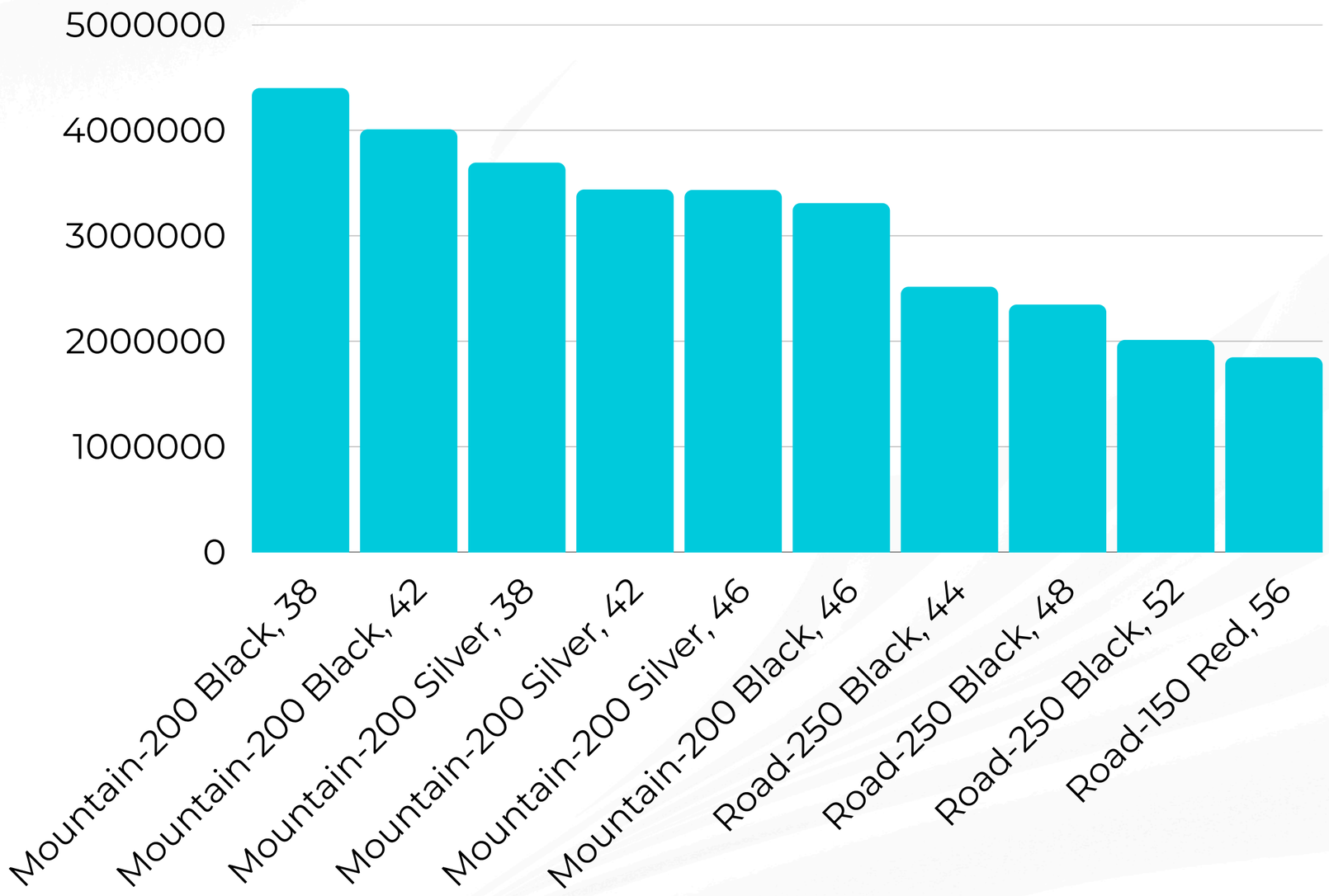
Total Sales by Quarter/Year

- Performance Peak: Sales peaked in Q3 2013, reaching their highest point on the chart.
- Recent Decline: Following the peak, sales show a clear decline from Q3 2013 to Q2 2014, indicating a recent downturn in performance.

Slide 6 – Sales by Quarter

```
SELECT
    YEAR(OrderDate) AS SalesYear,
    DATEPART(QUARTER, OrderDate) AS Quarter,
    SUM(sod.LineTotal) AS TotalSales
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID = sod.SalesOrderID
GROUP BY YEAR(OrderDate), DATEPART(QUARTER, OrderDate)
ORDER BY SalesYear, Quarter;
```

Top10 Products by Revenue



- The top five products, and six of the top ten, are all variations of the "Mountain-200" model.
- Products from other lines, such as the "Road-250" and "Road-150," are present in the top 10 but at much lower revenue levels

Slide 8 – Top 10 Products by Revenue

```
SELECT TOP 10
    p.Name AS ProductName,
    SUM(sod.LineTotal) AS Revenue
FROM Sales.SalesOrderDetail sod
JOIN Production.Product p ON sod.ProductID = p.ProductID
GROUP BY p.Name
ORDER BY Revenue DESC;
```

Participation Revenue by Category

Total Revenue: $ 109.845k

Product Category	Participation Revenue (%)
Bikes	**86,17**
Components	**10,74**
Clothing	**1,93**
Acessories	**1,16**

- The top five products, and six of the top ten, are all variations of the "Mountain-200" model.
- Products from other lines, such as the "Road-250" and "Road-150," are present in the top 10 but at much lower revenue levels

Slide 9 – Sales by Product Category

```
SELECT
pc.Name AS ProductCategory,
ROUND(SUM(sod.LineTotal), 2) AS Revenue,
ROUND(SUM(sod.LineTotal) * 100.0 / (SELECT SUM(LineTotal)
FROM Sales.SalesOrderDetail), 2) AS ParticipationPercent
FROM Sales.SalesOrderDetail sod
JOIN Production.Product p ON sod.ProductID = p.ProductID
JOIN Production.ProductSubcategory ps ON
p.ProductSubcategoryID = ps.ProductSubcategoryID
JOIN Production.ProductCategory pc ON ps.ProductCategoryID =
pc.ProductCategoryID
```

Profit x Margin Profit

Product Category	Profit ($Million)	Margin Profit (%)
Bikes	**7.93**	**8.38**
Accessories	**0.63**	**50.03**
Components	**0.49**	**4.15**
Clothing	**0.3**	**14.57**

- The company’s profit is mainly generated by Bikes, driven by high sales volume but with a low margin (8.38%)
- In contrast, Accessories deliver the highest margin (50%) despite modest profit, making them a strong growth opportunity

Slide 10 – Revenue vs. Cost vs. Profit

```
SELECT
    pc.Name AS ProductCategory,
    SUM(sod.LineTotal) AS Revenue,
    SUM(sod.OrderQty * p.StandardCost) AS Cost,
    SUM(sod.LineTotal) - SUM(sod.OrderQty * p.StandardCost) AS
Profit
FROM Sales.SalesOrderDetail sod
JOIN Production.Product p ON sod.ProductID = p.ProductID
JOIN Production.ProductSubcategory ps ON
p.ProductSubcategoryID = ps.ProductSubcategoryID
JOIN Production.ProductCategory pc ON ps.ProductCategoryID =
pc.ProductCategoryID
```

FullName	NumberOfOrders	TotalValue
Roger Harui	13	877.303.480.000
Andrew Dixon	12	853.849.180.000
Reuben D'sa	12	841.908.770.000
Robert Vessa	12	816.755.580.000
Ryan Calafato	12	799.277.900.000
Joseph Castellucio	12	787.773.040.000
Kirk DeGrasse	8	746.317.530.000
Lindsey Camacho	12	740.985.830.000
Robin McGuigan	12	730.798.710.000
Stacey Cereghino	12	727.272.650.000
Richard Bready	12	724.299.640.000
Valerie Hendricks	12	711.864.760.000
François Ferrier	12	700.803.790.000
Blaine Dockter	12	693.502.490.000
Anton Kirilov	8	671.618.030.000
Mandy Vance	8	643.745.900.000
Kevin Liu	8	636.226.470.000
John Arthur	12	618.616.130.000
Barbara Calone	8	617.340.460.000
Marcia Sultan	8	602.559.890.000

- 20 customers made purchases worth than $ 600k
- Understaning the feedback of these customers bought the products can help on engagement
- Retains these customers are necesary , it is important to engage them for long term

```
SELECT
p.FirstName + ' ' + p.LastName AS FullName,
COUNT(DISTINCT soh.SalesOrderID) AS NumberOfOrders,
ROUND(SUM(sod.LineTotal), 2) AS TotalValue
FROM Sales.SalesOrderHeader AS soh
INNER JOIN Sales.SalesOrderDetail AS sod
ON soh.SalesOrderID = sod.SalesOrderID
INNER JOIN Sales.Customer AS c
ON soh.CustomerID = c.CustomerID
INNER JOIN Person.Person AS p
ON c.PersonID = p.BusinessEntityID
GROUP BY
p.FirstName, p.LastName
HAVING
SUM(sod.LineTotal) > 600000
ORDER BY
TotalValue DESC;
```

Customers

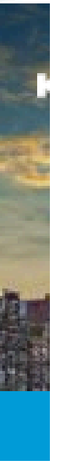
- 20 customers made purchases worth **$250K.**
- Such Customers should be retained, by direct engagements and acknowledgement of their loyalty
- Engagement should involve seeking **feedback** from them, for what they are happy about, and how they can be served better
- The Positive feedback should be extended to other customers, across all regions.
- The Negative feedback should be improved on.

Customer	Total Orders	Revenue
Jordan Turner	20	£15,999.10
Willie Xu	9	£13,490.06
Nichole Nara	13	£13,295.38
Kaitlyn Henderson	14	£13,294.27
Margaret He	14	£13,269.27
Randall Dominguez	11	£13,265.99
Adriana Gonzalez	10	£13,242.70
Rosa Hu	15	£13,215.65
Brandi Gill	12	£13,195.64
Brad She	11	£13,173.19
Francisco Sara	12	£13,164.64
Maurice Shan	12	£12,909.67
Janet Munoz	14	£12,489.17
Lisa Cai	25	£11,469.19
Franklin Xu	14	£11,284.97
Lacey Zheng	17	£11,248.48
Larry Munoz	12	£11,068.07
Larry Vazquez	11	£10,899.62
Kate Anand	12	£10,872.08
Lawrence Alonso	11	£10,836.90
Total	269	£251,683.93

Jordan Turner

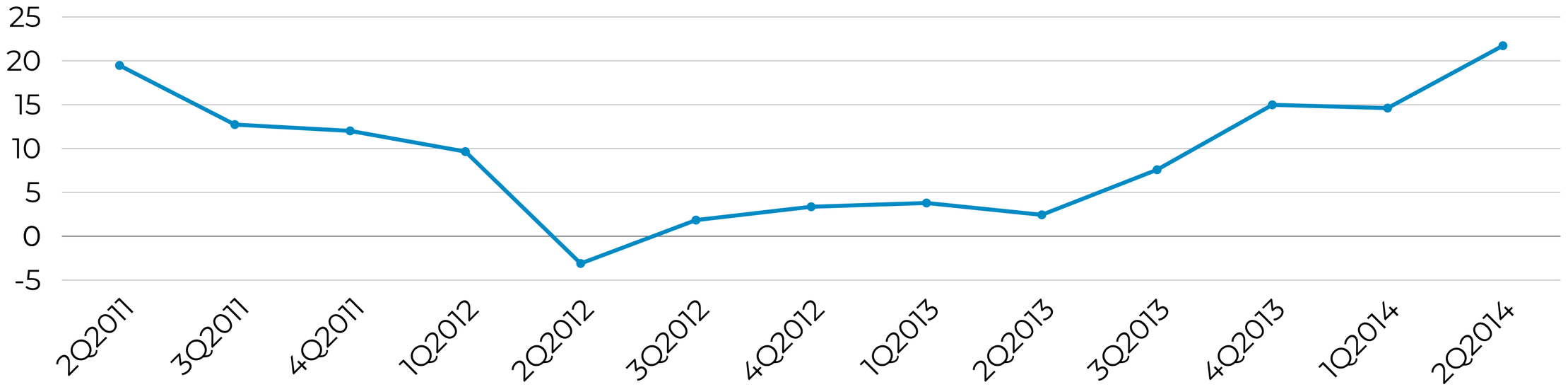
Top Customer, by Revenue

20	£15,999
Orders	Revenue



Margin Profit by Quarter

- That’s a severe decline between 2Q2011 and 2Q2012, achieving -3.11% on margin in 2Q2012
- After 2Q2012, the margin profit shows a gradual turnaround, suggesting improved operational efficiency or better cost control



```
SELECT
    CAST(DATEPART(QUARTER, soh.OrderDate) AS VARCHAR(1))
        + 'Q' + CAST(DATEPART(YEAR, soh.OrderDate) AS VARCHAR(4)) AS QuarterLabel,
        ROUND(
        (SUM(sod.LineTotal) - SUM(p.StandardCost * sod.OrderQty)) / SUM(sod.LineTotal) *
100,
        2
    ) AS ProfitMarginPercent
FROM Sales.SalesOrderHeader AS soh
INNER JOIN Sales.SalesOrderDetail AS sod
    ON soh.SalesOrderID = sod.SalesOrderID
INNER JOIN Production.Product AS p
    ON sod.ProductID = p.ProductID
GROUP BY
    DATEPART(YEAR, soh.OrderDate),
    DATEPART(QUARTER, soh.OrderDate)
ORDER BY
    DATEPART(YEAR, soh.OrderDate),
    DATEPART(QUARTER, soh.OrderDate);
```

Impact of discounts

ProductName	Avg Discount (%)	AvgProfitMargin (%)
Mountain-500 Silver, 40	40	-172,76
Mountain-500 Silver, 42	40	-172,76
Mountain-500 Silver, 44	40	-172,76
Mountain-500 Silver, 48	40	-172,76
Mountain-500 Silver, 52	40	-172,76
Mountain-100 Black, 48	35	-124,96
Mountain-100 Silver, 38	35	-124,96
Mountain-100 Silver, 48	35	-124,96
Mountain-100 Black, 42	33,26	-118,22
Mountain-100 Silver, 42	33,06	-117,43
Mountain-100 Silver, 44	31,86	-112,77
Mountain-100 Black, 44	30,88	-108,96

AvgDiscount_2Q2012 (%)	AvgDiscount_AllQuarters (%)
1,32	0,28

- The high discount on 2Q2012 comapred the all quartes impacted a lot on the margin
- A lot of Moutain that had more that 30% discount have margin -100%

```
WITH QuarterlyMargin AS (
    SELECT
        CAST(DATEPART(QUARTER, soh.OrderDate) AS VARCHAR(1))
            + 'Q' + CAST(DATEPART(YEAR, soh.OrderDate) AS VARCHAR(4)) AS
QuarterLabel,
        DATEPART(YEAR, soh.OrderDate) AS OrderYear,
        DATEPART(QUARTER, soh.OrderDate) AS OrderQuarter,
        ROUND(
            (SUM(sod.LineTotal) - SUM(p.StandardCost * sod.OrderQty)) / SUM(sod.LineTotal)
* 100,
            2
        ) AS ProfitMarginPercent
    FROM Sales.SalesOrderHeader AS soh
    INNER JOIN Sales.SalesOrderDetail AS sod
        ON soh.SalesOrderID = sod.SalesOrderID
    INNER JOIN Production.Product AS p
        ON sod.ProductID = p.ProductID
    GROUP BY
        DATEPART(YEAR, soh.OrderDate),
        DATEPART(QUARTER, soh.OrderDate)
)
SELECT
    ROUND(AVG(CASE
                WHEN DATEPART(YEAR, soh.OrderDate) = 2012
                    AND DATEPART(QUARTER, soh.OrderDate) = 2
                THEN sod.UnitPriceDiscount
            END) * 100, 2) AS AvgDiscount_2Q2012,
    ROUND(AVG(sod.UnitPriceDiscount) * 100, 2) AS AvgDiscount_AllQuarters
FROM Sales.SalesOrderHeader AS soh
INNER JOIN Sales.SalesOrderDetail AS sod
    ON soh.SalesOrderID = sod.SalesOrderID;

```

Strategic Motivations Behind Discounting

- The companyt applied high discount to attract new customers, even with the high negative

- The subsequent (after 2Q2012) increase in profit margin indicates that the discount strategy may have successfully attracted new customers, leading to higher sales or repeat purchases in later quarters

Profit vs Retail Price Sensitivity

- The sales data shows a profit margin of about **40%** of total revenue from all regions.
- A large share ***[of over 90%]*** of this profit comes from sales of **Bikes.**
- This can be improved, by slightly increasing the retail price of the **Accessories** which are in high demand.
- However, a reduction in the retail price of Bikes drove more sales, but **profit dropped** by about **10%** in 2019 and 2020.

2017	2018	2019	2020	2021
50%	50%	36%	37.5%	-

Influence of Price on Orders

- Orders are generally influenced by price in Australia and the US, especially in the Bikes product category.
- This is understandable as this category of products is highly priced – up to £3,500. The average product price in this category is £1,500.
- The influence of price on orders can be seen in the US and Australia.
- *Price Sensitivity study can be used to make sales advantage, in all sales regions.*

Profit x Margin Profit

Territory	TotalSales
Southwest	24184609.600810
Canada	16355770.454862
Northwest	16084942.547585
Australia	10655335.959317
Central	7909009.005872
Southeast	7879655.072151
United Kingdom	7670721.035475
France	7251555.646926

- The company’s profit is mainly generated by Bikes, driven by high sales volume but with a low margin (8.38%)
- In contrast, Accessories deliver the highest margin (50%) despite modest profit, making them a strong growth opportunity

Slide 12 – Sales by Region (Territory)

```
SELECT
st.Name AS Territory,
SUM(sod.LineTotal) AS TotalSales
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID =
sod.SalesOrderID
JOIN Sales.SalesTerritory st ON soh.TerritoryID = st.TerritoryID
GROUP BY st.Name
ORDER BY TotalSales DESC;
```

Slide 13 – Year-over-Year Growth by Region

```
SELECT
st.Name AS Territory,
YEAR(OrderDate) AS SalesYear,
SUM(sod.LineTotal) AS TotalSales
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID =
sod.SalesOrderID
JOIN Sales.SalesTerritory st ON soh.TerritoryID =
st.TerritoryID
GROUP BY st.Name, YEAR(OrderDate)
ORDER BY Territory, SalesYear;
```

Slide 14 – Top Performing Cities

```
SELECT sp.City, SUM(sod.LineTotal) AS Revenue
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID = sod.SalesOrderID
JOIN Person.Address sp ON soh.ShipToAddressID = sp.AddressID
GROUP BY sp.City
ORDER BY Revenue DESC;
```

Slide 15 – Market Share per Region

```
SELECT st.Name AS Territory,
    SUM(sod.LineTotal) AS Revenue,
SUM(sod.LineTotal) * 100.0 / (SELECT SUM(LineTotal) FROM
Sales.SalesOrderDetail) AS MarketSharePercent
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID =
sod.SalesOrderID
JOIN Sales.SalesTerritory st ON soh.TerritoryID = st.TerritoryID
GROUP BY st.Name
ORDER BY MarketSharePercent DESC;
```

Slide 16 – Regional Profitability

```
SELECT st.Name AS Territory,
SUM(sod.LineTotal) AS Revenue,
SUM(p.StandardCost * sod.OrderQty) AS Cost,
SUM(sod.LineTotal) - SUM(p.StandardCost *
sod.OrderQty) AS Profit
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID =
sod.SalesOrderID
JOIN Production.Product p ON sod.ProductID =
p.ProductID
JOIN Sales.SalesTerritory st ON soh.TerritoryID =
```

Slide 17 – Channel Performance (Online vs Reseller)

```
SELECT CASE WHEN soh.OnlineOrderFlag = 1 THEN 'Online' ELSE
'Reseller' END AS Channel,
    SUM(sod.LineTotal) AS Revenue
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID =
sod.SalesOrderID
GROUP BY soh.OnlineOrderFlag;
```

Slide 18 – Top 10 Customers by Revenue

```
SELECT TOP 10 c.CustomerID, SUM(sod.LineTotal) AS Revenue
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID = sod.SalesOrderID
JOIN Sales.Customer c ON soh.CustomerID = c.CustomerID
GROUP BY c.CustomerID
ORDER BY Revenue DESC;
```

Slide 19 – Customer Segmentation

```
SELECT CASE
    WHEN SUM(sod.LineTotal) < 5000 THEN 'Small'
    WHEN SUM(sod.LineTotal) BETWEEN 5000 AND 20000
    THEN 'Medium'
        ELSE 'Large'
    END AS Segment,
COUNT(DISTINCT soh.CustomerID) AS NumCustomers
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID =
    sod.SalesOrderID
```

Slide 20 – Repeat vs New Customers

```
WITH CustomerOrders AS (
SELECT CustomerID, COUNT(*) AS OrderCount
FROM Sales.SalesOrderHeader
GROUP BY CustomerID
)
SELECT CASE WHEN OrderCount = 1 THEN 'New' ELSE 'Repeat'
END AS CustomerType,
COUNT(*) AS NumCustomers
FROM CustomerOrders
GROUP BY CASE WHEN OrderCount = 1 THEN 'New' ELSE
```

Slide 21 – Customer Lifetime Value

```
SELECT CustomerID, SUM(TotalDue) AS LifetimeValue
FROM Sales.SalesOrderHeader
GROUP BY CustomerID
ORDER BY LifetimeValue DESC;
```

Slide 22 – Customer Trends by Region

```
SELECT st.Name AS Territory, COUNT(DISTINCT
soh.CustomerID) AS NumCustomers
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesTerritory st ON soh.TerritoryID =
st.TerritoryID
GROUP BY st.Name
ORDER BY NumCustomers DESC;
```

Slide 23 – Best-selling Products by Region

```
SELECT st.Name AS Territory, p.Name AS ProductName,
SUM(sod.LineTotal) AS Revenue
FROM Sales.SalesOrderHeader soh
JOIN Sales.SalesOrderDetail sod ON soh.SalesOrderID =
sod.SalesOrderID
JOIN Production.Product p ON sod.ProductID =
p.ProductID
JOIN Sales.SalesTerritory st ON soh.TerritoryID =
st.TerritoryID
GROUP BY st.Name, p.Name
ORDER BY Territory, Revenue DESC;
```

Slide 24 – Product Profitability Analysis

```
SELECT p.Name AS ProductName,
    SUM(sod.LineTotal) AS Revenue,
SUM(p.StandardCost * sod.OrderQty) AS Cost,
SUM(sod.LineTotal) - SUM(p.StandardCost *
sod.OrderQty) AS Profit
FROM Sales.SalesOrderDetail sod
JOIN Production.Product p ON sod.ProductID =
p.ProductID
GROUP BY p.Name
ORDER BY Profit DESC;
```

Slide 25 – Opportunities for Product Upselling

```
SELECT p1.Name AS Bike, p2.Name AS Accessory,
COUNT(*) AS BundledOrders
FROM Sales.SalesOrderDetail sod1
JOIN Sales.SalesOrderDetail sod2 ON sod1.SalesOrderID =
sod2.SalesOrderID AND sod1.ProductID <>
sod2.ProductID
JOIN Production.Product p1 ON sod1.ProductID =
p1.ProductID
```