



Swift Traq

CUSTOMER LIFETIME VALUE





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Project Objectives



- **Understand Customer Value:** Identify the monetary value each customer brings over their relationship with the business.
- **Segment High-Value Customers:** Focus marketing and retention efforts on profitable customer segments.
- **Optimize Retention Strategies:** Use CLV insights to design strategies that extend customer relationships.
- **Forecast Long-Term Revenue:** Project future revenues by analyzing historical purchase patterns and trends.



Project Scope

Data Utilized:

- FactInternetSales: Sales data including sales amount, OrderDate.
- DimCustomer: Customer details such as demographic and location data.
- DimDate: Date hierarchy for time-based analysis.

Analysis Coverage:

- Individual customer revenue and purchase frequency.
- Retention rates and average lifespan estimation.
- CLV segmentation for actionable insights.

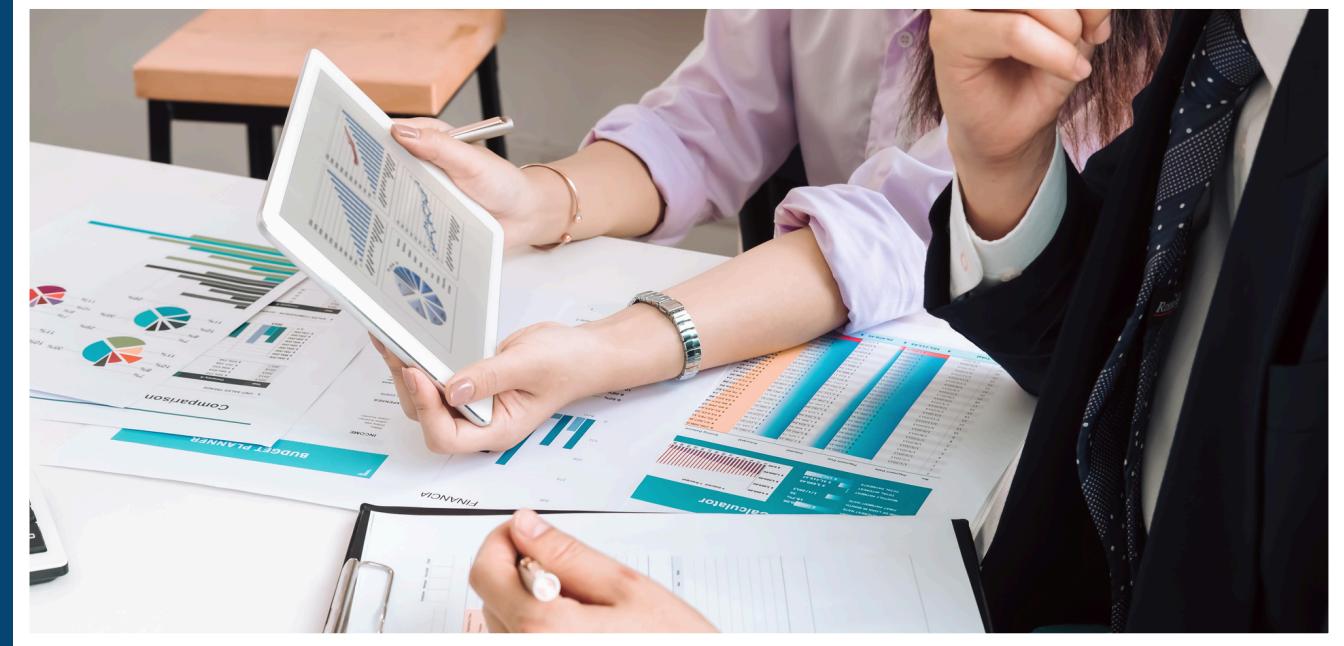
Background Context

- **Business Overview:**

The analysis focuses on leveraging customer data to maximize profitability and long-term value. Understanding CLV is critical for data-driven decision-making in customer-centric industries.

- **Problem Statement**

Businesses often struggle to identify their most valuable customers and allocate resources effectively. Without insights into customer lifetime value, marketing efforts and retention strategies may lack focus, leading to inefficient spending and lost opportunities.





Purchase Frequency

```
--1.2 Purchase Frequency
SELECT
    C.CustomerKey,
    COUNT(FIS.SalesOrderNumber) AS PurchaseFrequency
FROM FactInternetSales FIS
JOIN DimCustomer C ON FIS.CustomerKey = C.CustomerKey
GROUP BY C.CustomerKey
ORDER BY PurchaseFrequency DESC
```

110 %

Results Messages

	CustomerKey	PurchaseFrequency
1	11185	68
2	11300	67



First, Last Purchase Dates

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--2.1 Identify first and last purchase dates

```
SELECT
    C.CustomerKey,
    MIN(FIS.OrderDate) AS FirstPurchaseDate,
    MAX(FIS.OrderDate) AS LastPurchaseDate,
    D.EnglishDayNameOfWeek AS Day
FROM FactInternetSales FIS
JOIN DimCustomer C ON FIS.CustomerKey = C.CustomerKey
JOIN DimDate D ON FIS.OrderDateKey = D.DateKey
GROUP BY C.CustomerKey, D.EnglishDayNameOfWeek
ORDER BY FirstPurchaseDate
```

110 %

Results Messages

	CustomerKey	FirstPurchaseDate	LastPurchaseDate	Day
1	14501	2010-12-29 00:00:00.000	2010-12-29 00:00:00.000	Wednesday
2	11003	2010-12-29 00:00:00.000	2010-12-29 00:00:00.000	Wednesday
3	21768	2010-12-29 00:00:00.000	2010-12-29 00:00:00.000	Wednesday



Retention Time

```
-- 2.2 Retention Time
WITH PurchaseDates AS (
    SELECT
        C.CustomerKey,
        MIN(FIS.OrderDate) AS FirstPurchaseDate,
        MAX(FIS.OrderDate) AS LastPurchaseDate
    FROM FactInternetSales FIS
    JOIN DimCustomer C ON FIS.CustomerKey = C.CustomerKey
    JOIN DimDate D ON FIS.OrderDateKey = D.DateKey
    GROUP BY C.CustomerKey
)
SELECT
    CustomerKey,
    DATEDIFF(DAY, FirstPurchaseDate, LastPurchaseDate) as RetentionDays,
    DATEDIFF(MONTH, FirstPurchaseDate, LastPurchaseDate) AS RetentionMonth
FROM PurchaseDates
ORDER BY RetentionDays DESC
```

110 %

Results Messages

	CustomerKey	RetentionDays	RetentionMonth
1	16624	1089	36



CLV for each Customer

```
-- ----- COMPUTE CUSTOMER LIFETIME VALUE -----
--3.1 CLV For each Customer
WITH RevenueandRetention AS (
    SELECT
        C.CustomerKey,
        SUM(FIS.SalesAmount) AS TotalRevenue,
        COUNT(FIS.SalesOrderNumber) AS TotalOrders,
        DATEDIFF(MONTH, MIN(FIS.OrderDate), MAX(FIS.OrderDate)) AS RetentionMonths
    FROM FactInternetSales FIS
    JOIN DimCustomer C ON FIS.CustomerKey = C.CustomerKey
    GROUP BY C.CustomerKey
)
SELECT
    CustomerKey,
    TotalRevenue,
    RetentionMonths,
    CASE
        WHEN RetentionMonths > 0 THEN CAST(TotalRevenue AS FLOAT) / RetentionMonths
        ELSE TotalRevenue -- Transactions within 1 month
    END AS MonthlyCLV
FROM RevenueandRetention
ORDER BY MonthlyCLV DESC
```

110 %

Results Messages

	CustomerKey	TotalRevenue	RetentionMonths	MonthlyCLV
1	16570	4219.32	1	4219.32

CLV by Segments

```
-- 3.2 CLV by segments
WITH RevenueandRetention AS (
    SELECT
        C.CustomerKey,
        SUM(FIS.SalesAmount) AS TotalRevenue,
        COUNT(FIS.SalesOrderNumber) AS TotalOrders,
        DATEDIFF(MONTH, MIN(FIS.OrderDate), MAX(FIS.OrderDate)) AS RetentionMonths
    FROM FactInternetSales FIS
    JOIN DimCustomer C ON FIS.CustomerKey = C.CustomerKey
    GROUP BY C.CustomerKey
)
SELECT
    CASE
        WHEN TotalRevenue > 5000 THEN 'High-Value'
        WHEN TotalRevenue BETWEEN 1000 AND 5000 THEN 'Medium-Value'
        ELSE 'Low-Value'
    END AS CustomerSegment,
    AVG(TotalRevenue) AS AverageRevenue,
    AVG(TotalOrders) AS AverageOrders,
    AVG(RetentionMonths) AS AvgRetentionMonths
FROM RevenueandRetention
GROUP BY
    CASE
        WHEN TotalRevenue > 5000 THEN 'High-Value'
        WHEN TotalRevenue BETWEEN 1000 AND 5000 THEN 'Medium-Value'
        ELSE 'Low-Value'
    END
ORDER BY AverageRevenue DESC
```

Results

100 %

Results Messages

	CustomerSegment	AverageRevenue	AverageOrders	AvgRetentionMonths
1	High-Value	6497.4117	5	21
2	Medium-Value	2782.3242	3	8
3	Low-Value	140.098	2	0



Revenue Trends

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```
--4. CLV Using Trends(Exponential smoothing)
WITH MonthlySales AS (
    SELECT
        YEAR(OrderDate) As Year,
        MONTH(OrderDate) AS Month,
        SUM(SalesAmount) AS MonthlyRevenue
    FROM FactInternetSales FIS
    GROUP BY YEAR(OrderDate), MONTH(OrderDate)
)
SELECT
    Year,
    Month,
    MonthlyRevenue,
    AVG(MonthlyRevenue) OVER (ORDER BY Year, Month ROWS BETWEEN 2 PRECEDING AND CURRENT ROW) AS SmoothedRevenue
FROM MonthlySales
ORDER BY Year, Month
```

100 %

Results Messages

	Year	Month	MonthlyRevenue	SmoothedRevenue
1	2010	12	43421.0364	43421.0364
2	2011	1	469823.9148	256622.4756
3	2011	2	466334.903	326526.618



Benefit Of The Project

10+

1000+

- Enhanced Retention: Identify and retain high-value customers.
- Revenue Growth: Optimize upselling and cross-selling efforts.
- Targeted Marketing: Personalize campaigns for better ROI.





**THANK
YOU**