

# CRM Analytics

Customer Relationship Management

# What is CRM?

- Even if you believe you've developed the best product or service in the world, you must find people who agree enough to buy what you're selling.
- With customer relationship management (CRM) analytics, you can determine who's buying, who might buy soon and how you can retain your customers.
- CRM analytics are data that demonstrate your company's sales and customer service performance.
- CRM analytics provide customer data that can inform smarter business decisions.
- The benefits of CRM data analysis are company-wide: marketing, sales, and customer service departments can all benefit from getting more visibility into their operations.
- CRM data analysis can also be used to analyze feedback from surveys, reviews and to track pain points with your company.
- This lets you get ahead of issues that may cause a strain on your customer service operations down the road.

# Introduction to dataset

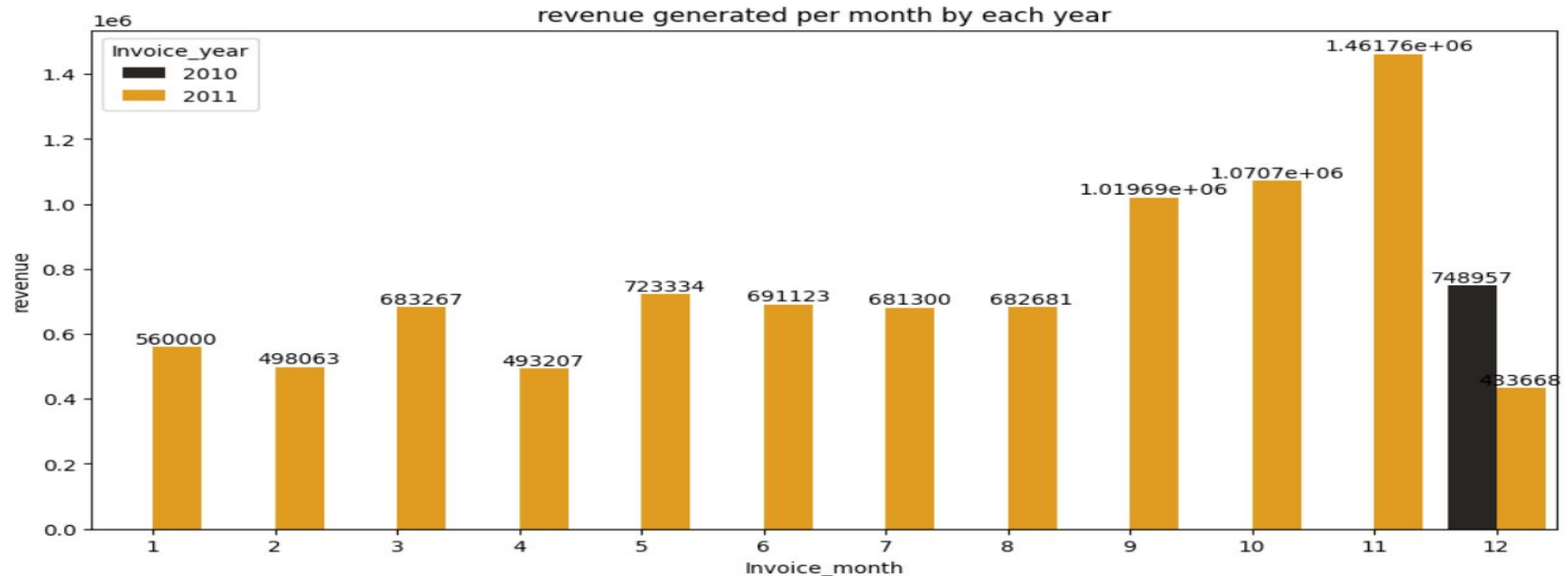
- The dataset encompasses transactions from 01/12/2010 to 09/12/2011 for a non-store online retail business based and registered in the UK. Specializing in distinctive all-occasion gifts, the company's clientele includes a significant number of wholesale customers.

## Variables in dataset:

- **InvoiceNo**: Invoice number that consists 6 digits. If this code starts with letter 'c', it indicates a cancellation.
- **StockCode**: Product code that consists 5 digits.
- **Description**: Product name.
- **Quantity**: The quantities of each product per transaction.[both purchased and cancelled(negative values)]
- **InvoiceDate**: This represents the day and time when each transaction was generated.
- **UnitPrice**: Product price per unit.
- **CustomerID**: Customer number that consists 5 digits. Each customer has a unique customer ID.
- **Country**: Name of the country where each customer resides.

# Insights from data

- Here we can see the revenue generated by website for each month per year
- we can see that more sales or revenue was in months of September, October and November.
- There are 2 graphs for december which resembles for 2 years of 2010 and 2011.
- The ending months of year did well in terms of sales whereas the beginning and middle months still have to do well for sales.



# RFM analysis

- The “RFM” in RFM analysis stands for **Recency**, **Frequency** and **Monetary** value.
- RFM analysis is a way to use data based on existing customer behavior to predict how a new customer is likely to act in the future
- **Recency score** : how recently a customer has transacted with a brand
- **Frequency score** :how frequently they've engaged with a brand
- **Monetary score** : how much money they've spent on a brand's products and services

Customers with good RFM score will be considered as loyal and regular shopper on our website.

|   | CustomerID | InvoiceDate         | recency | CustomerID | Frequency | CustomerID | monetary | recency_score | Frequency_score | monetary_score |
|---|------------|---------------------|---------|------------|-----------|------------|----------|---------------|-----------------|----------------|
| 0 | 12346.0    | 2011-01-18 10:17:00 | 325     | 12346.0    | 2         | 12346.0    | 0.00     | 1             | 1               | 0              |
| 1 | 12347.0    | 2011-12-07 15:52:00 | 1       | 12347.0    | 182       | 12347.0    | 4310.00  | 7             | 1               | 1              |
| 2 | 12348.0    | 2011-09-25 13:13:00 | 74      | 12348.0    | 31        | 12348.0    | 1797.24  | 6             | 1               | 1              |
| 3 | 12349.0    | 2011-11-21 09:51:00 | 18      | 12349.0    | 73        | 12349.0    | 1757.55  | 7             | 1               | 1              |
| 4 | 12350.0    | 2011-02-02 16:01:00 | 309     | 12350.0    | 17        | 12350.0    | 334.40   | 1             | 1               | 1              |

# Customer visits monthly

- We can observe from the above plot that on average customers are more buying or interacting with our business in the months from 6-11 which are generally from JUNE to NOVEMBER are the month with more business.
- The first quarter or first four months from JANUARY - APRIL or MAY are dull in business where the customer interactions are low.
- The peak of the business is in of 3 months SEPTEMBER, OCTOBER and NOVEMBER.



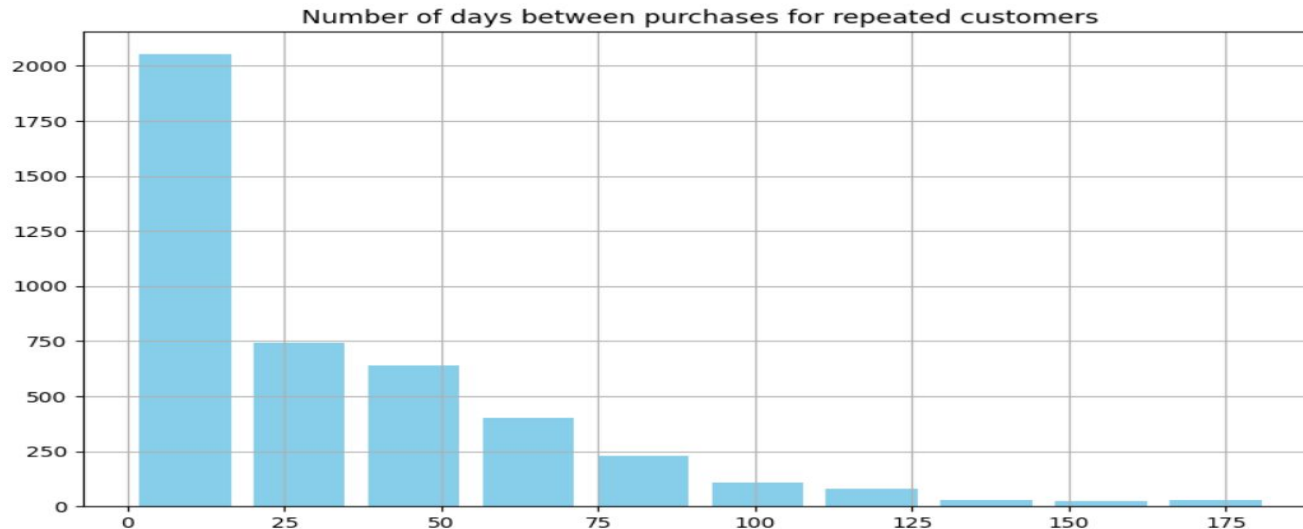
# Customer Analysis

- The table below shows revenue generated by customer like minimum revenue, maximum revenue and average revenue.
- The 'invoice\_purchase\_duration' resembles the range between his first and last order where 'invoicedate\_purchase\_frequency' give detail about average days customer takes to shop again.
- The customer (12347) has made six purchases within December 7, 2010 and October 31, 2011. The timespan here is about 365 days. The average amount this customer spent on each order is 615. We also see from the record, that this customer made a purchase every 52.5 days.

| CustomerID | revenue_min | revenue_max | revenue_sum | revenue_avg  | revenue_count | invoicedate_min        | invoicedate_max        | invoicedate_purchase_duration | invoicedate_purchase_frequency |
|------------|-------------|-------------|-------------|--------------|---------------|------------------------|------------------------|-------------------------------|--------------------------------|
| 12346.0    | 77183.60    | 77183.60    | 77183.60    | 77183.600000 | 1             | 2011-01-18<br>10:01:00 | 2011-01-18<br>10:01:00 | 0                             | 0.000000                       |
| 12347.0    | 224.82      | 1294.32     | 4310.00     | 615.714286   | 7             | 2010-12-07<br>14:57:00 | 2011-12-07<br>15:52:00 | 365                           | 52.142857                      |
| 12348.0    | 227.44      | 892.80      | 1797.24     | 449.310000   | 4             | 2010-12-16<br>19:09:00 | 2011-09-25<br>13:13:00 | 282                           | 70.500000                      |
| 12349.0    | 1757.55     | 1757.55     | 1757.55     | 1757.550000  | 1             | 2011-11-21<br>09:51:00 | 2011-11-21<br>09:51:00 | 0                             | 0.000000                       |
| 12350.0    | 334.40      | 334.40      | 334.40      | 334.400000   | 1             | 2011-02-02<br>16:01:00 | 2011-02-02<br>16:01:00 | 0                             | 0.000000                       |

# Return customer Analysis

- The plot shows the Average days for a customer to return for shopping
- In the below graph most of our data is concentrated between 0-20 which is a good sign but also some customers return for shopping more than 30 days on average.
- returning of customers are very prominent in our business as they will tell about our business model like rating or likelihood of shopping on our platform.





# Recommendations

- As ecommerce business is full of competition we should not let customer to slip away due to product related issues.
- We must take care of products information that provided on website and also make sure what is customer requirement and product matching.
- Customer loyalty and campaigns programs must be done to increase customer retention and also belief on our business.
- Besides, We can see that months that attract more customers and sales are most in Quarter 3 and Quarter 4 which indicates us most months in Q1 and Q2 are low in sales even in customers visits.
- Customer segmentation and customer journey analysis has to be done in these months from January to August for the insights that missing in attracting more customers and increasing sales.
- More marketing and sale days must be introduced in months where customer visits are less and make conversions more effective in these months as it is time where other competitors move up by taking chance.

- There should be plan to be take forward for increasing the customer visits in weekends where most of the people are free and ads like email marketing,notification and other ways for contacting customers and introducing them for weekend special offers or delivery free campaign when ordered on weekends leads to more conversions on weekends which makes the business to run on all 7 days with maximum conversions.
- It should also note that making the customer visits in the evening or night will increase the customer experience ,as of payment gateways and other internet traffic are less that can make smooth experience for customers to shop. Making segmentation of customers psychographically will help us in solving this case as most of people are active on internet after 7 PM. Making use of this time will increase sales. Making products available to customers that are delivered within hours after ordering also a one way for more conversions.

These are some of recommendations from my side.

## Thank You