

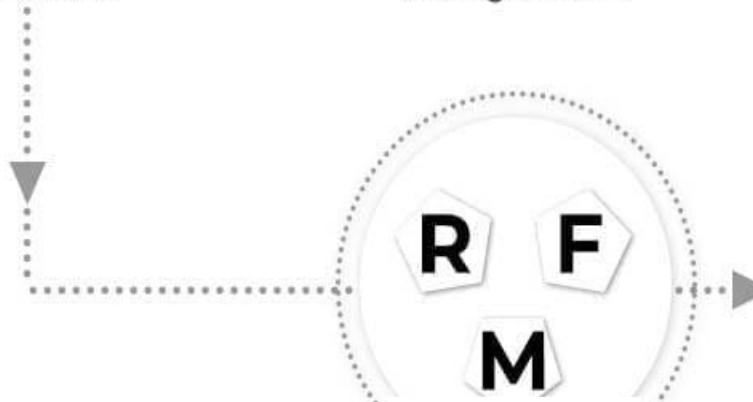
Marketing & Retail Analytics



RECENCY

FREQUENCY

MONETARY



IDEAL CUSTOMER
SEGMENTS



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ANALYSIS

Agenda

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Executive Summary

Total Sales

\$9.76 M



Total Orders

298



Total Customers

89



Total ProductLines

7 having 109 parts



Avg Recency

384 Days



Avg Frequency

7.9



Monetary/Customer

\$109.7K



Total Coverage

**19 Countries,
71 Cities**





Problem Statement

The Company's Data Challenge

For the past three years, an automobile parts manufacturing company has diligently collected transaction data. However, they lack an in-house data science team to unlock its potential. They've turned to us, to leverage our expertise.

Objective:

Our objective is to :

- **Discover buying patterns:** comprehend how customers make purchasing decisions.
- **Find Useful Customer Insights:** insights unique to the company's operations and customer base.
- **Share Marketing Plans basis Customer Segments:** formulate marketing strategies for distinct customer segments.



ABOUT DATA



About Data : Data Characteristics

```
RangeIndex: 2747 entries, 0 to 2746
Data columns (total 20 columns):
 #   Column           Non-Null Count  Dtype  
 --- 
 0   ORDERNUMBER      2747 non-null    int64  
 1   QUANTITYORDERED 2747 non-null    int64  
 2   PRICEEACH        2747 non-null    float64 
 3   ORDERLINENUMBER 2747 non-null    int64  
 4   SALES            2747 non-null    float64 
 5   ORDERDATE        2747 non-null    datetime64[ns]
 6   STATUS            2747 non-null    object  
 7   PRODUCTLINE      2747 non-null    object  
 8   MSRP              2747 non-null    int64  
 9   PRODUCTCODE      2747 non-null    object  
 10  CUSTOMERNAME     2747 non-null    object  
 11  PHONE             2747 non-null    object  
 12  ADDRESSLINE1     2747 non-null    object  
 13  CITY              2747 non-null    object  
 14  POSTALCODE       2747 non-null    object  
 15  COUNTRY           2747 non-null    object  
 16  CONTACTLASTNAME  2747 non-null    object  
 17  CONTACTFIRSTNAME 2747 non-null    object  
 18  DEALSIZE          2747 non-null    object  
 19  DAYS_SINCE_LASTORDER 2747 non-null    int64  
dtypes: datetime64[ns](1), float64(2), int64(5), object(12)
```

- Shape of the data:** The dataset contains 2747 rows and 20 columns.
- Data types :** We have the columns with data type as datetime64(1), float64(2), int64(5), object(12)
- No Duplicate or Missing values in the data**
- Key columns include sales transaction details, customer information, geographical data, product details, order status, and recency information..**

Sample of dataset

	ORDERNUMBER	QUANTITYORDERED	PRICEEACH	ORDERLINENUMBER	SALES	ORDERDATE	STATUS	PRODUCTLINE	MSRP	PRODUCTCODE	CUSTOMERNAME	PHONE	ADDRESSLINE1	CITY	POSTALCODE	COUNTRY	CONTACTLASTNAME	CONTACTFIRSTNAME	DEALSIZE	DAYS_SINCE_LASTORDER
0	10100	30	171.70	3	5151.00	2018-01-06	Shipped	Vintage Cars	170	S18_1749	Online Diecast Creations Co.	6035558647	2304 Long Airport Avenue	Nashua	62005	USA	Young	Valarie	Medium	877
1	10100	50	67.80	2	3390.00	2018-01-06	Shipped	Vintage Cars	60	S18_2248	Online Diecast Creations Co.	6035558647	2304 Long Airport Avenue	Nashua	62005	USA	Young	Valarie	Medium	877
2	10100	22	86.51	4	1903.22	2018-01-06	Shipped	Vintage Cars	92	S18_4409	Online Diecast Creations Co.	6035558647	2304 Long Airport Avenue	Nashua	62005	USA	Young	Valarie	Small	877
3	10100	49	34.47	1	1689.03	2018-01-06	Shipped	Vintage Cars	41	S24_3969	Online Diecast Creations Co.	6035558647	2304 Long Airport Avenue	Nashua	62005	USA	Young	Valarie	Small	877
4	10101	25	151.28	4	3782.00	2018-01-09	Shipped	Vintage Cars	127	S18_2325	Blauer See Auto, Co.	+49 69 66 90 2555	Lyonerstr. 34	Frankfurt	60528	Germany	Keitel	Roland	Medium	874



About Data : Data Dictionary

Column Name	Description
ORDERNUMBER	This column represents the unique identification number assigned to each order.
QUANTITYORDERED	It indicates the number of items ordered in each order.
PRICEEACH	This column specifies the price of each item in the order.
ORDERLINENUMBER	It represents the line number of each item within an order.
SALES	This column denotes the total sales amount for each order, which is calculated by multiplying the quantity ordered by the price of each item.
ORDERDATE	It denotes the date on which the order was placed.
DAYS_SINCE_LASTORDER	This column represents the number of days that have passed since the last order for each customer. It can be used to analyze customer purchasing patterns.
STATUS	It indicates the status of the order, such as "Shipped," "In Process," "Cancelled," "Disputed," "On Hold," or "Resolved."
PRODUCTLINE	This column specifies the product line categories to which each item belongs.
MSRP	It stands for Manufacturer's Suggested Retail Price and represents the suggested selling price for each item.
PRODUCTCODE	This column represents the unique code assigned to each product.
CUSTOMERNAME	It denotes the name of the customer who placed the order.
PHONE	This column contains the contact phone number for the customer.
ADDRESSLINE1	It represents the first line of the customer's address.
CITY	This column specifies the city where the customer is located.
POSTALCODE	It denotes the postal code or ZIP code associated with the customer's address.
COUNTRY	This column indicates the country where the customer is located.
CONTACTLASTNAME	It represents the last name of the contact person associated with the customer.
CONTACTFIRSTNAME	This column denotes the first name of the contact person associated with the customer.
DEALSIZE	It indicates the size of the deal or order, which are the categories "Small," "Medium," or "Large."



About Data : Descriptive Statistics- Numerical

	QUANTITYORDERED	PRICEEACH	ORDERLINENUMBER	SALES	MSRP	DAYS_SINCE_LASTORDER
count	2747.00	2747.00	2747.00	2747.00	2747.00	2747.00
mean	35.10	101.10		6.49	3553.05	100.69
std	9.76	42.04		4.23	1838.95	40.11
min	6.00	26.88		1.00	482.13	33.00
25%	27.00	68.74		3.00	2204.35	68.00
50%	35.00	95.55		6.00	3184.80	99.00
75%	43.00	127.10		9.00	4503.09	124.00
max	97.00	252.87		18.00	14082.80	214.00

- **Sales:** The **average sales** per transaction is approximately **\$3,553**. Customers make purchases ranging from **\$482.13' to \$14,082.80**. The data is **skewed** with presence of outliers on **right tail**
- **Quantity Ordered:** On average, customers order approximately **35 items per transaction**, with a **minimum of 6** and a **maximum of 97 items**. Data is **slightly skewed towards right**.
- **Price Each:** The average price of each item in an order is approximately **101**. Prices vary between a **minimum of 26.88 and a maximum of 252.87**. The data is **skewed** with presence of outliers on **right tail**
- **Manufacturer's Suggested Retail Price (MSRP):** The average MSRP is approximately **00.69**, with prices ranging from **33 to 214**. Data is **slightly skewed towards right**.



About Data : Descriptive Statistics – Categorical

	count	unique		top	freq
STATUS	2747	6		Shipped	2541
PRODUCTLINE	2747	7		Classic Cars	949
PRODUCTCODE	2747	109		S18_3232	51
CUSTOMERNAME	2747	89	Euro Shopping Channel		259
PHONE	2747	88	(91) 555 94 44		259
ADDRESSLINE1	2747	89	C/ Moralzarjal, 86		259
CITY	2747	71		Madrid	304
POSTALCODE	2747	73		28034	259
COUNTRY	2747	19		USA	928
CONTACTLASTNAME	2747	76		Freyre	259
CONTACTFIRSTNAME	2747	72		Diego	259
DEALSIZE	2747	3		Medium	1349

- **Order Status:** The most common order status is "Shipped," occurring 2541 times.
- **Product Line:** "Classic Cars" is the dominant product line with 949 entries.
- **Customer Concentration:** "Euro Shopping Channel" is the top customer, with 259 transactions.
- **Geographic Trends:** "Madrid" and "USA" are the most frequent city and country, respectively.
- **Deal Sizes:** The majority of deals fall into the "Medium" category, accounting for 1349 cases.



About Data : Assumptions & Modification in data

Data Modifications :-

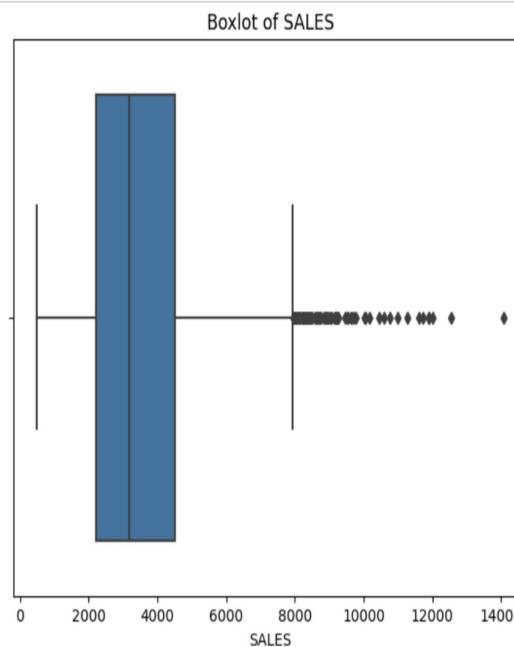
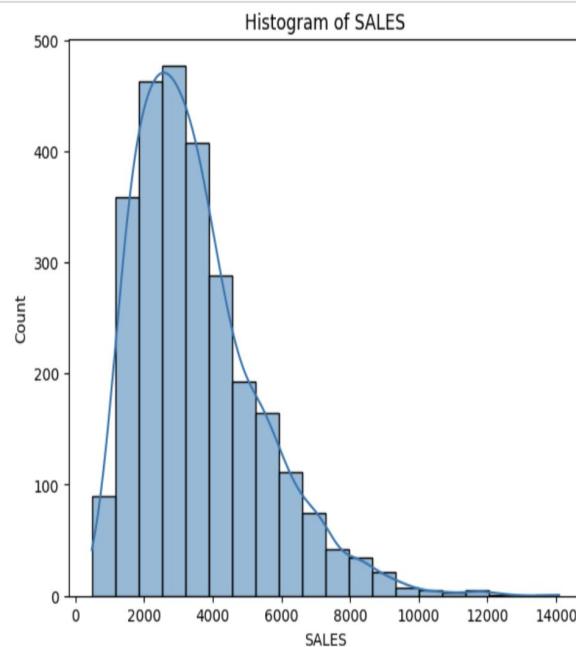
- In the raw data, **DAYS_SINCE_LASTORDER** is taken as **2022-06-07** for the difference, we will be **removing it & creating new Days difference baseline as 01-06-2020 (1st June 2020)**
- For Exploratory Analysis, we have created below features:
 - Year
 - Month
 - Week
 - Quarter
 - SALES (K) : Custom sales feature with scaling of 1000s
 - Profit : Difference between Manufacturer's Suggested Retail Price (MSRP) and PRICEEACH
- New temporary data frames creates for the Categorical & Numerical features, and below features were excluded in it: **'ORDERNUMBER', 'PHONE', 'ADDRESSLINE1', 'CONTACTLASTNAME', 'CONTACTFIRSTNAME** as these have no relevance in the data



EXPLORATORY DATA ANALYSIS



Univariate Analysis – Sales



Description of SALES

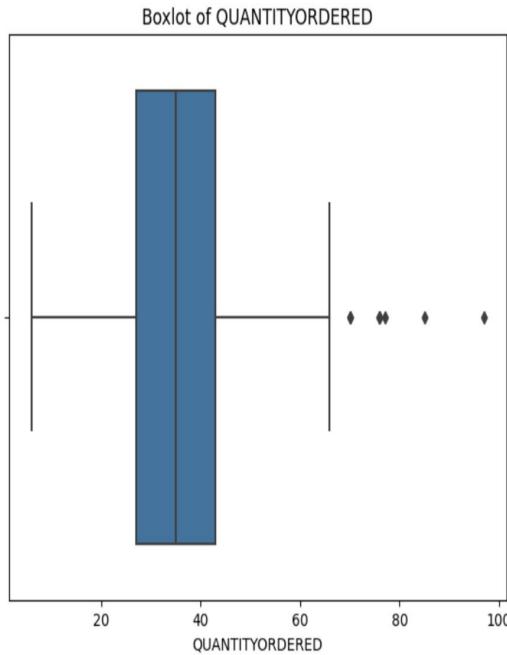
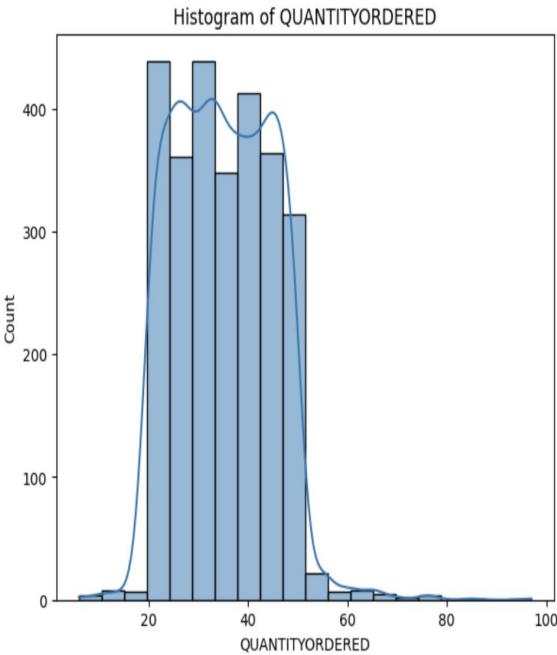
count	2747.000000
mean	3553.047583
std	1838.953901
min	482.130000
25%	2204.350000
50%	3184.800000
75%	4503.095000
max	14082.800000

Insights

- Total **2,747** sales transactions having total sales of **\$9.76M**
- The **average sales** amount is approximately **\$3,553.05** and with a **standard deviation** of about **\$1,838.95**
- The data is **highly skewed** with presence of **outliers on right tail**



Univariate Analysis - Quantities Ordered



Description of QUANTITYORDERED

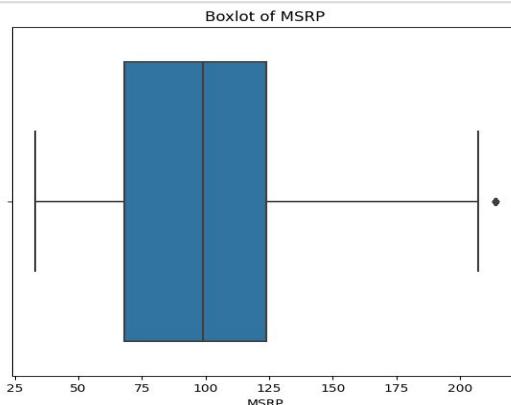
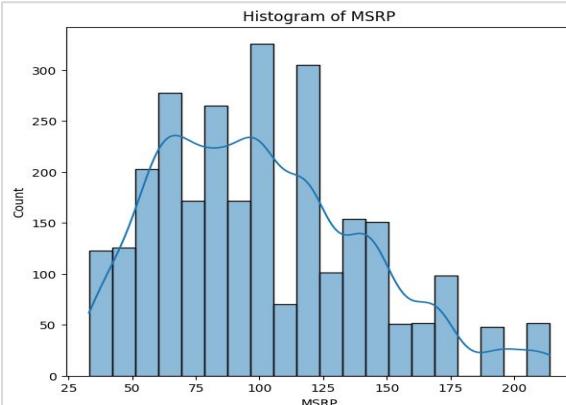
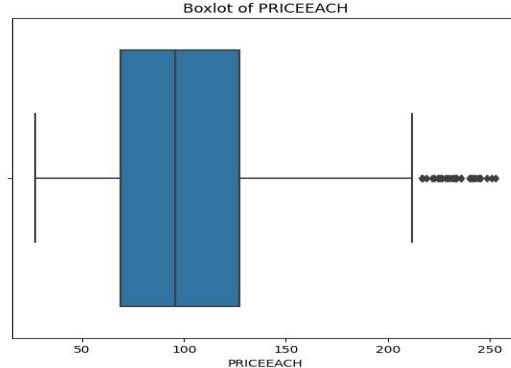
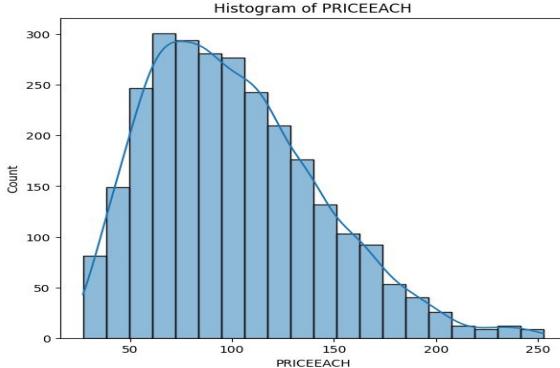
count	2747.000000
mean	35.103021
std	9.762135
min	6.000000
25%	27.000000
50%	35.000000
75%	43.000000
max	97.000000

Insights

- Average quantities ordered – **35.10**
- Range: From **6 to 97**, showing a span of 91 units.
- Most ordered quantities are **between 20-50**



Univariate Analysis - Price & MSRP



Insights

Selling Price

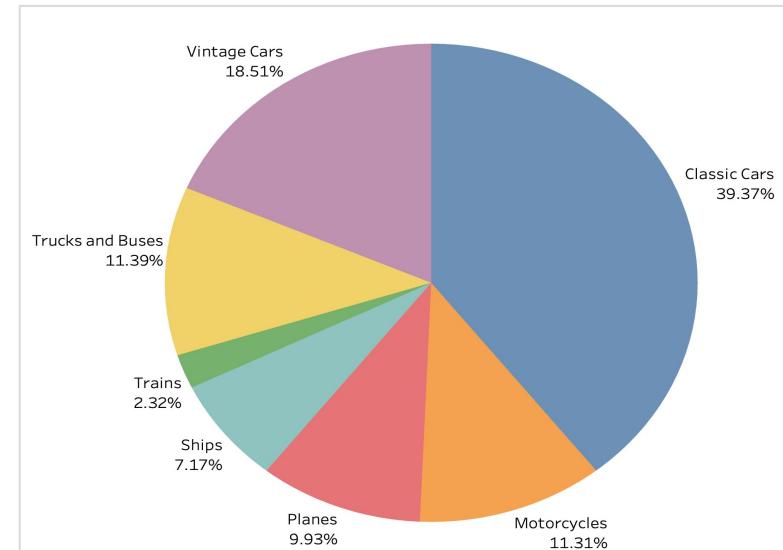
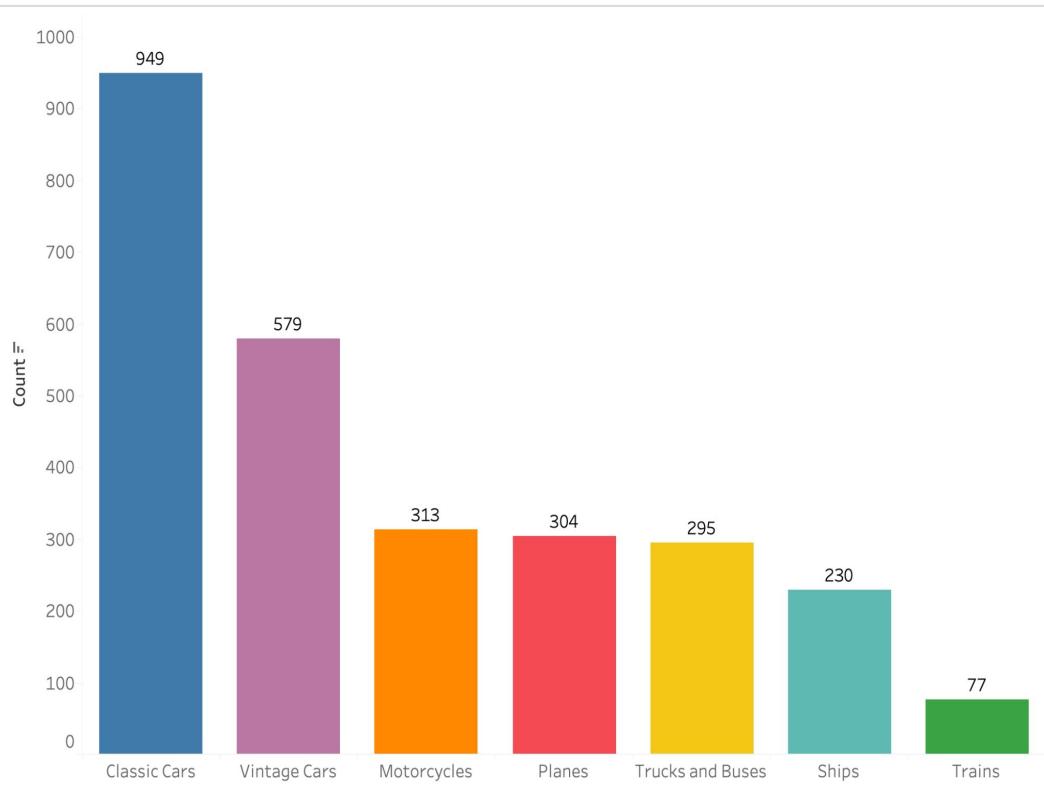
- **Average MSRP:** \$101.10
- **Price Range:** vary widely, ranging from \$26.88 to \$252.87
- **Distribution:** The 25th %tile is \$68.75, **median is** \$95.55, and the 75th %tile is \$127.10.
- Skewed towards right

MSRP(Manufacturer Suggested Selling Price)

- **Average MSRP:** \$100.69,
- **Price Range:** vary widely, ranging from \$33 to \$214
- **Distribution:** The 25th %tile is **\$68**, **median is \$99**, and the 75th %tile is \$124.



Univariate Analysis – Product Line

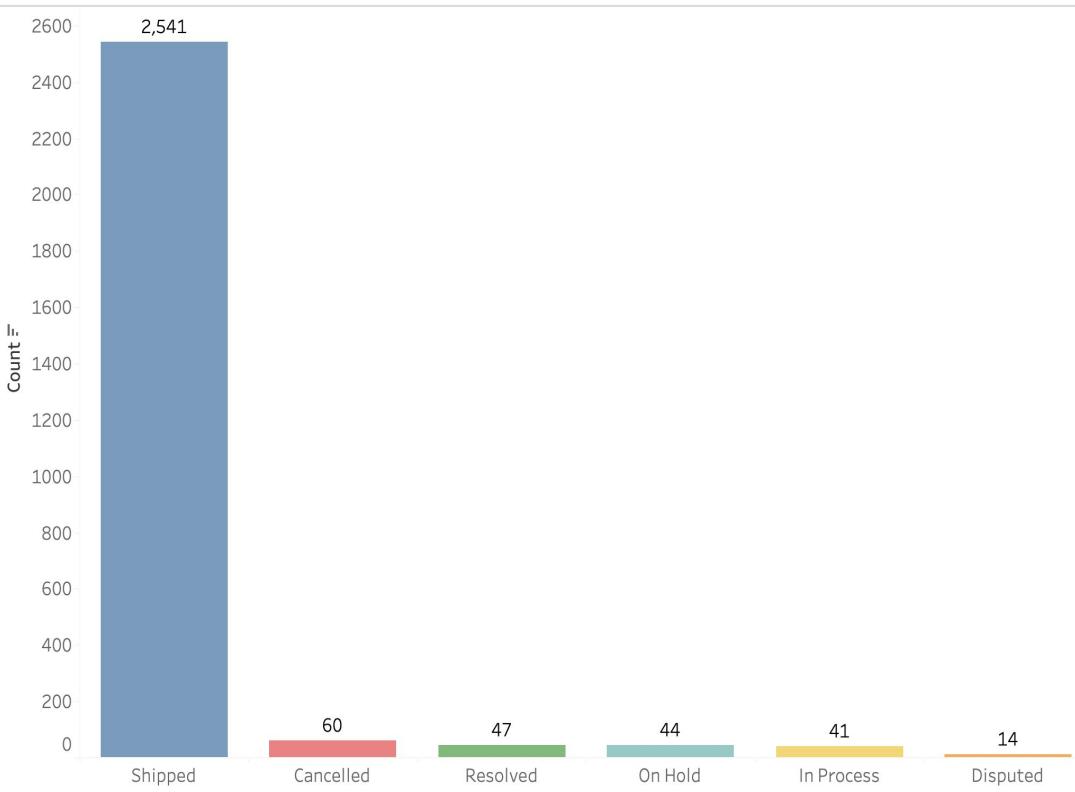


Insights

- Total **7 product lines**.
- **Most sold** parts are of **Classic & Vintage** automobiles having a share of **approx. 57.9%**
- **Train** parts are sold the **least (7.2%)**



Univariate Analysis - Order Status

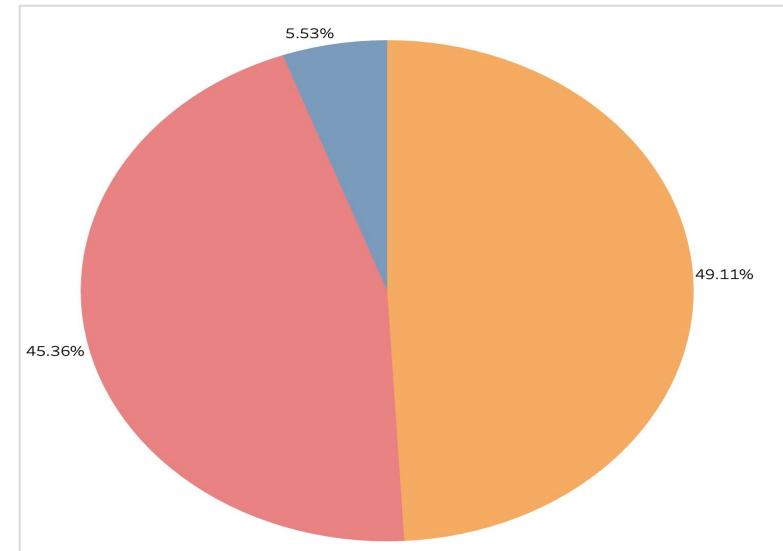
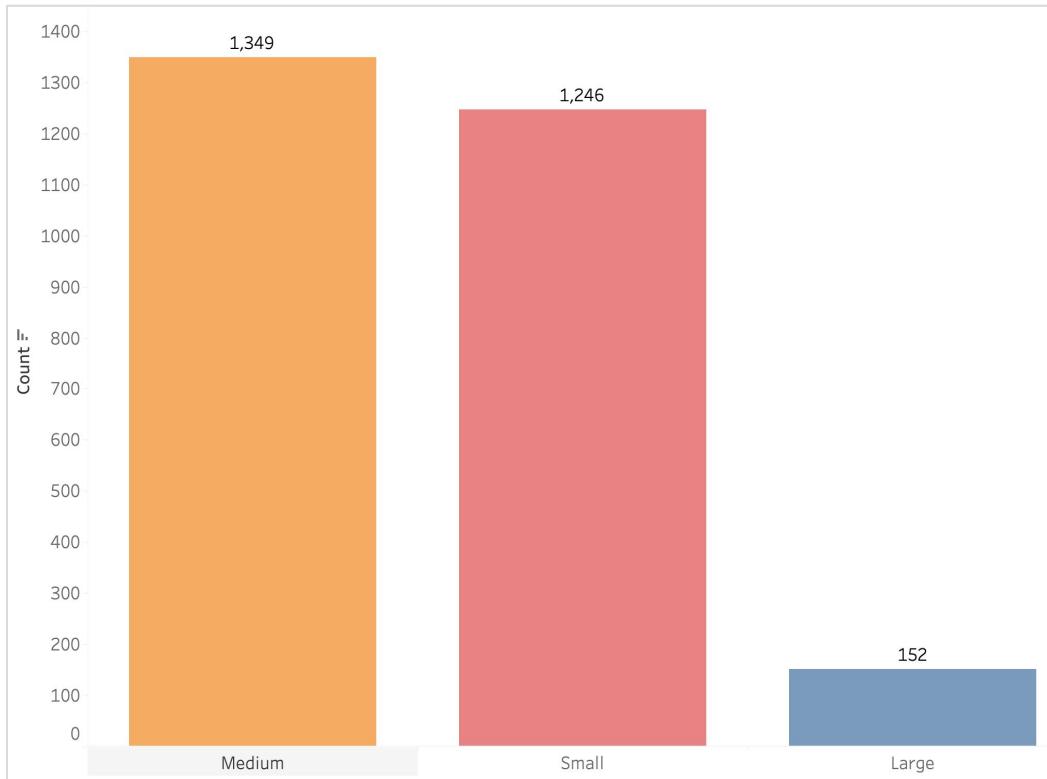


Insights

- Total 6 Order status
- Most orders are parts are at **Shipped** status i.e. **92.5%**



Univariate Analysis – Deal Size

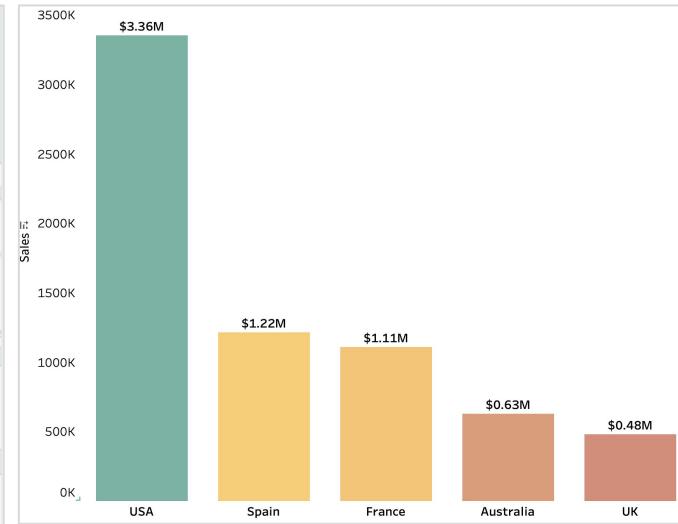
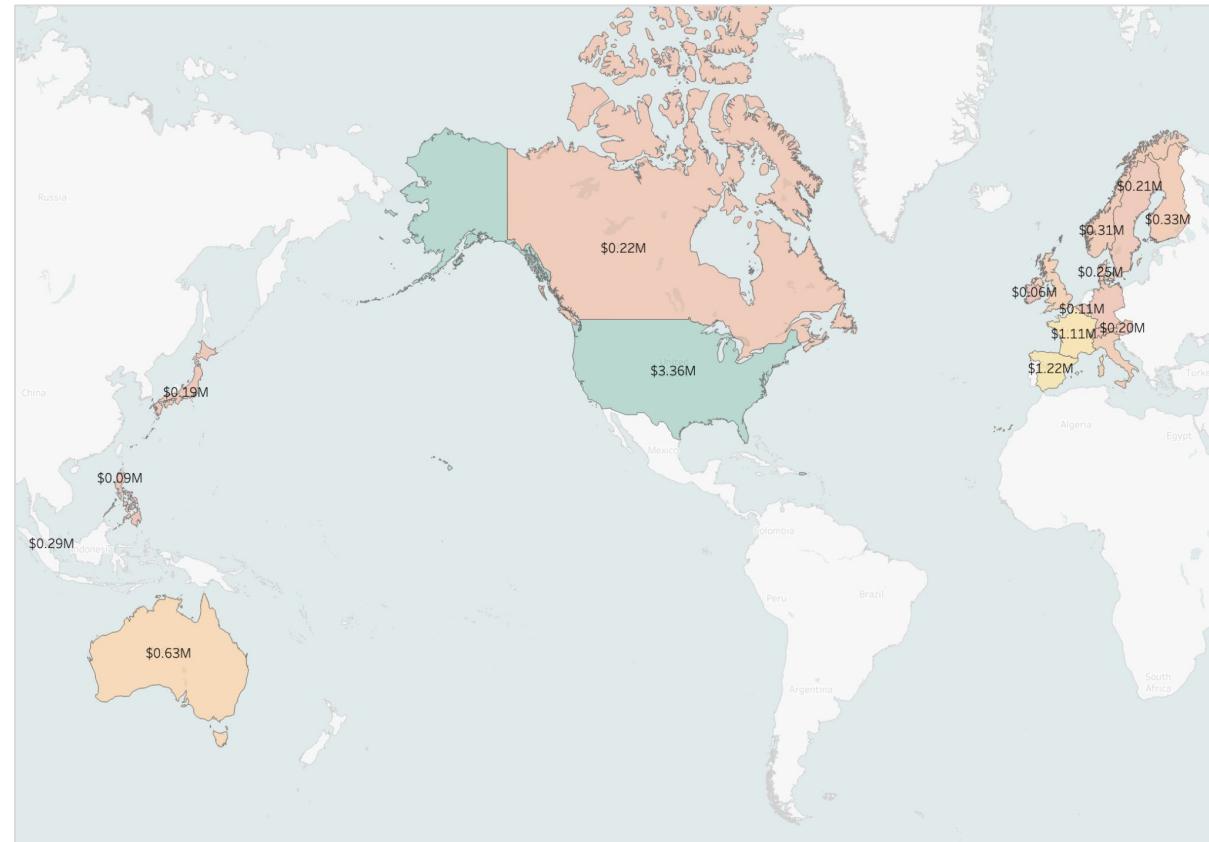


Insights

- Total **3 types** of deals.
- **Most** occurring deal size is **Medium (49.11%)** followed by **Small (45.36%)**



Geographical Overview of Sales – Country

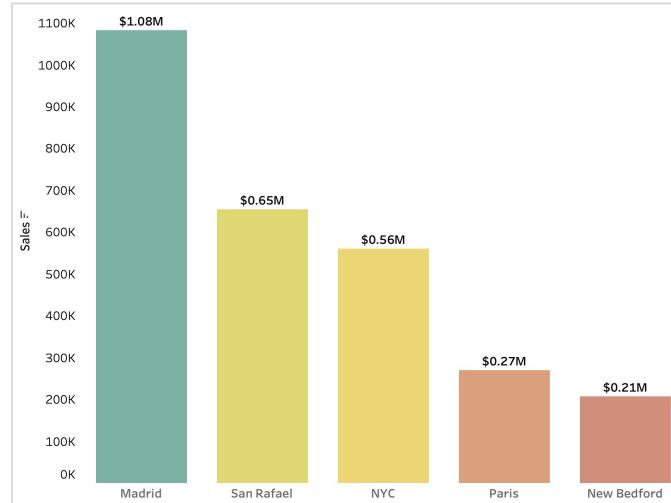
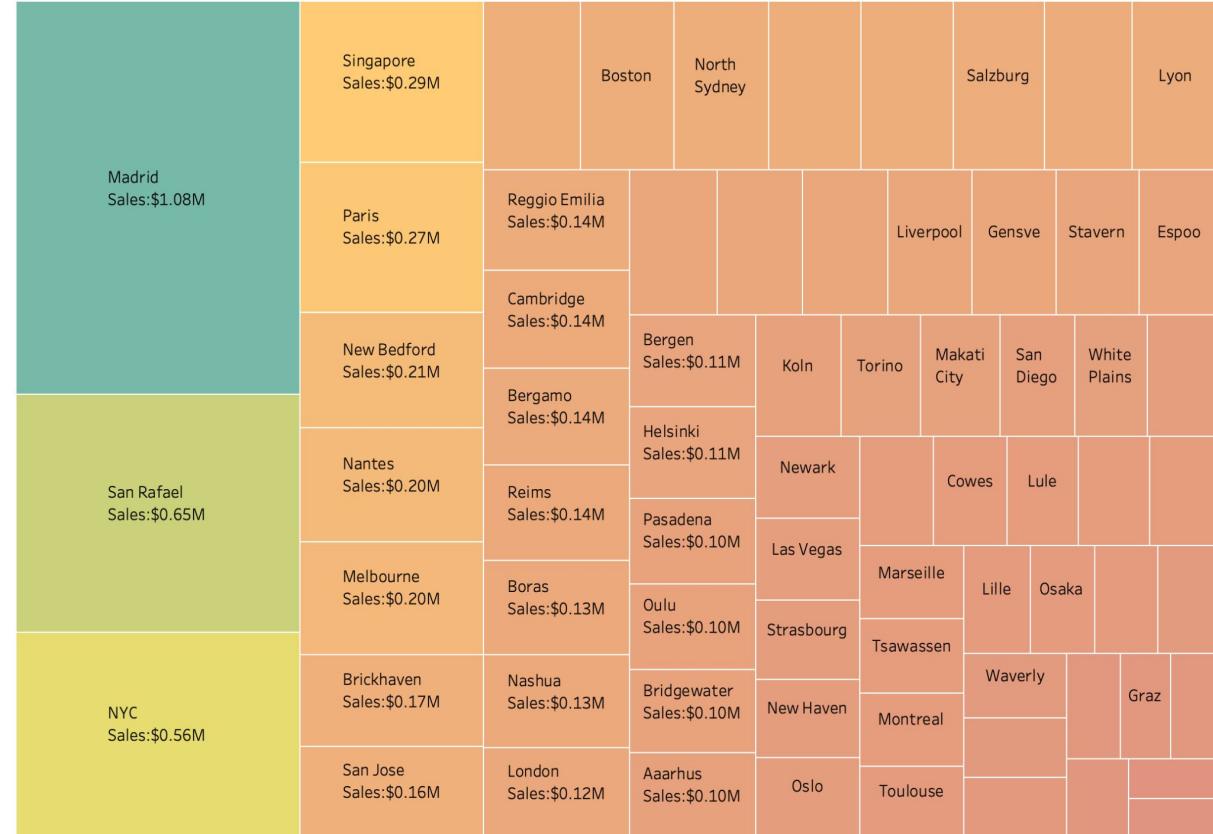


Insights

- **Top 5 countries with Highest Sales value** are **USA, Spain, France, Australia and UK**.
- **Highest Sales** are from **USA** i.e. **\$3.36M**, while **Lowest sales** are from **Ireland** i.e. **\$57.7K**



Geographical Overview of Sales – City

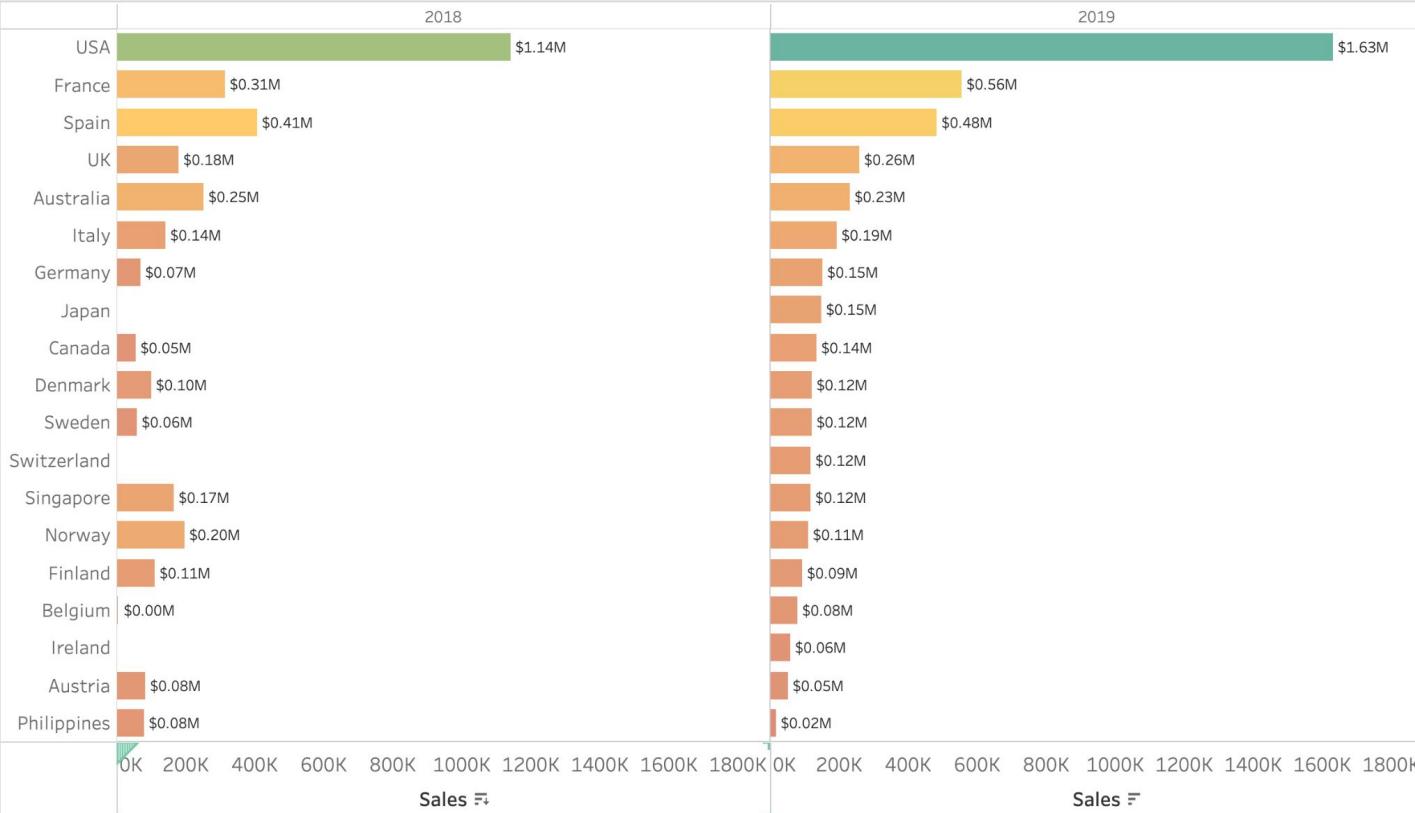


Insights

- Top 5 cities with Highest Sales are Madrid, San Rafael, NYC, Paris and New Bedford.
- Highest Sales are from Madrid i.e. \$1.08M, while Lowest sales are from Charleroi i.e. \$33.4K



Sales Over Time: YOY Comparison on Country



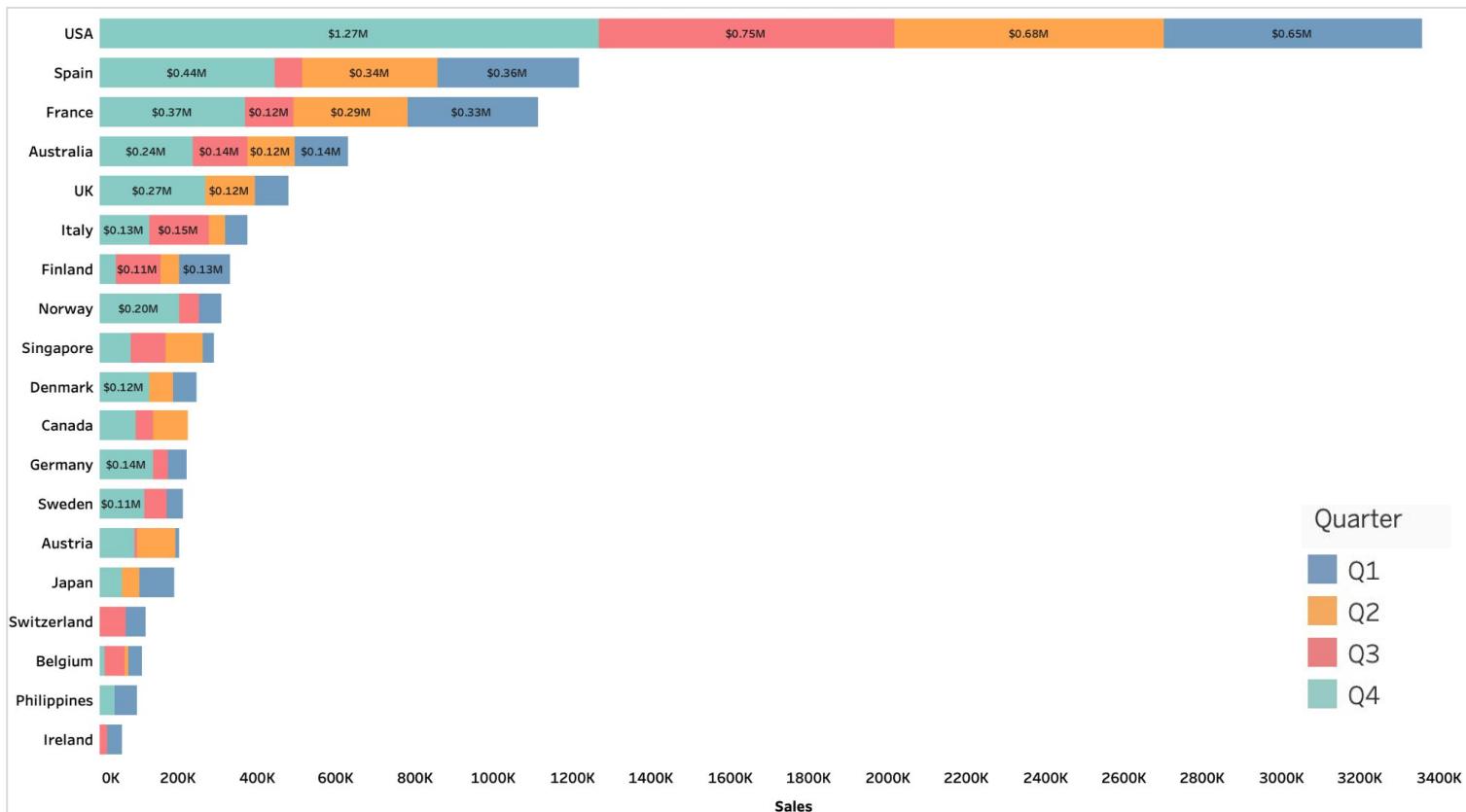
Insights

- There was a notable year-over-year revenue growth in the **United States** and **France** between 2018 and 2019.
- In **2019**, the customer base **expanded** to include **Japan, Switzerland, and Ireland**.
- Conversely, sales experienced a **decline** in **Australia, Norway, and Singapore** in 2019.

*2020 Being only half years data not compared on YOY Sales.



Sales Over Time: Quarterly Sales by Countries

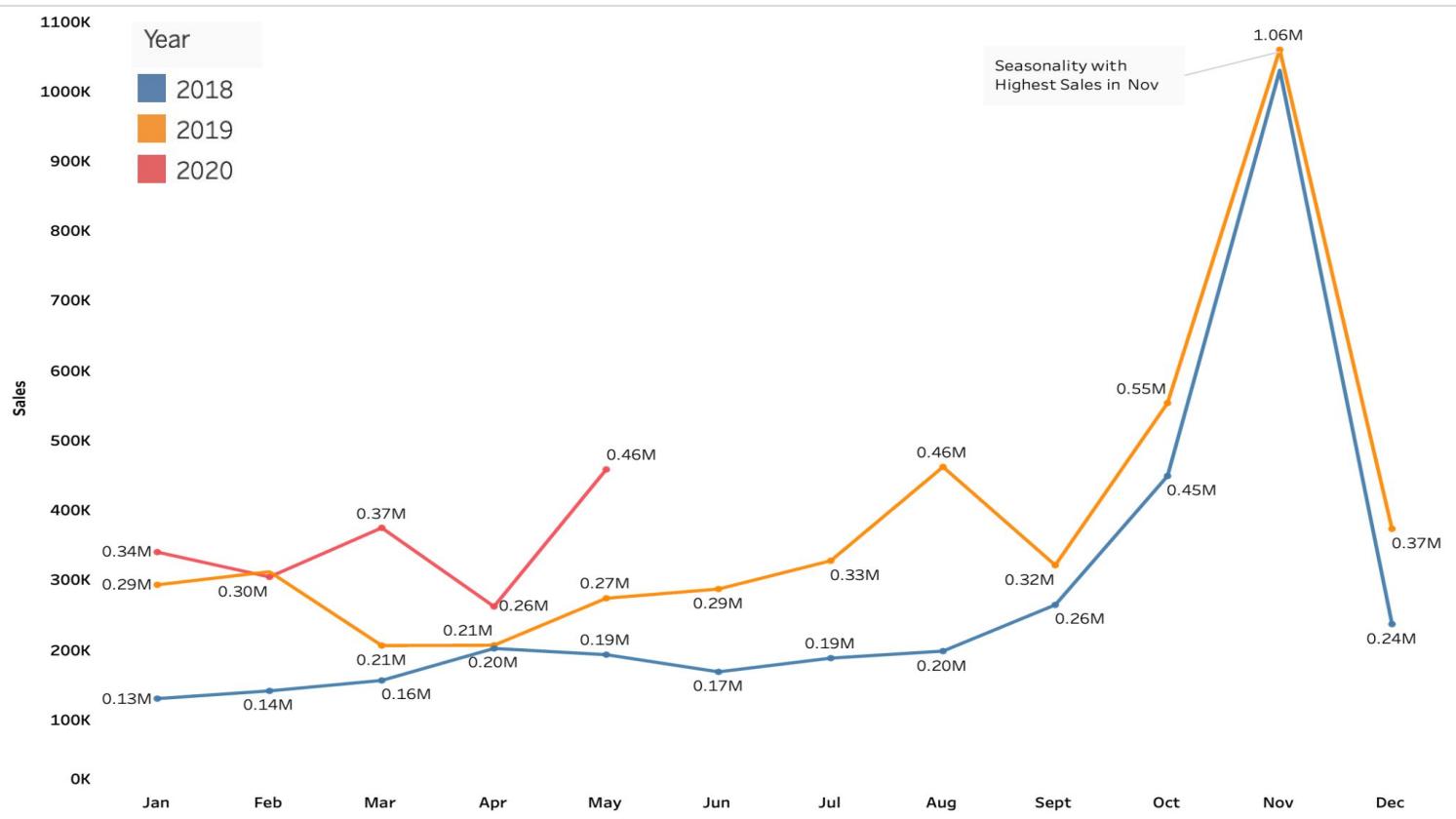


Insights

- **Quarter 4** being the Highest Sales in most of the Countries
- USA being highest Sales overall has highest quarterly sales as well



Sales Over Time: YOY Monthly Sales Trend

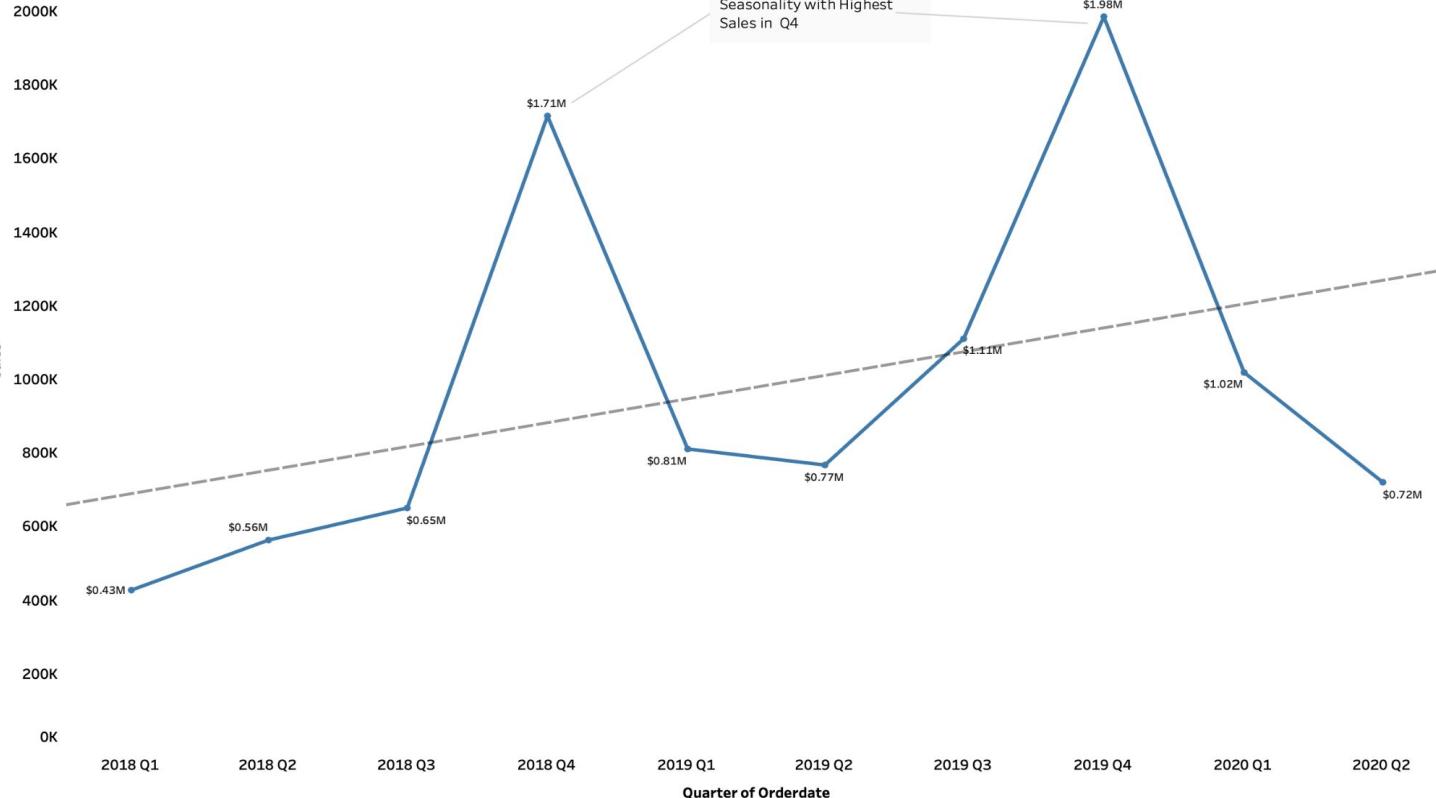


Insights

- **Highest sales** are in **Nov.** every year
- This Sales Trend indicates **Seasonality**
- **Sales in 2020** are **comparatively higher** than the rest 2 years shows **upward Trend**



Sales Over Time: Quarterly Sales Trend

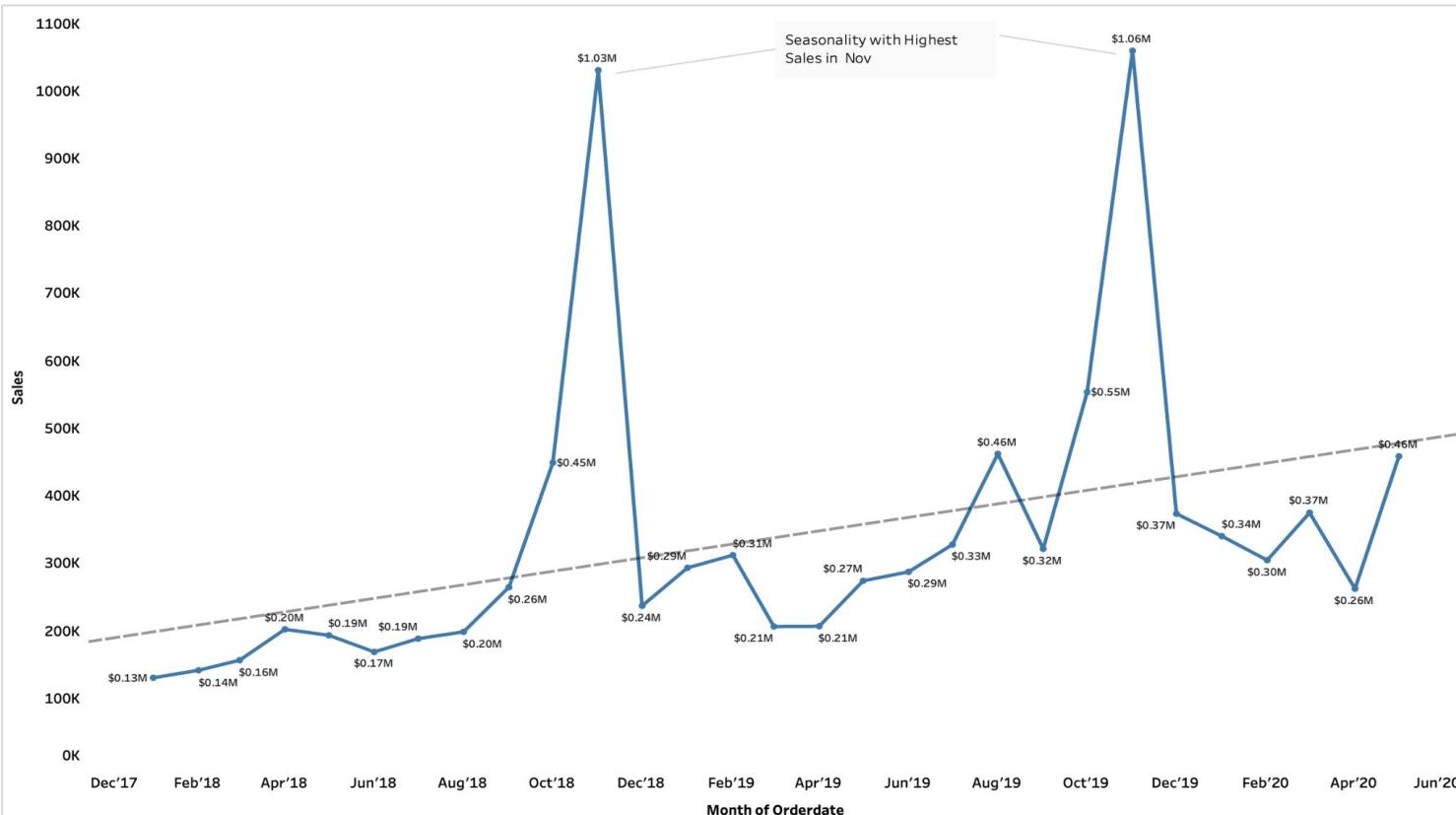


Insights

- Highest sales are in **Quarter 4**
- This Sales Trend indicates **Seasonality**
- Post reaching highest in Q4, **sales drops in Q1 & starts going up after Q2** (Excep 2020)
- Overall sales Trend is **upward**



Sales Over Time: Monthly Sales Trend

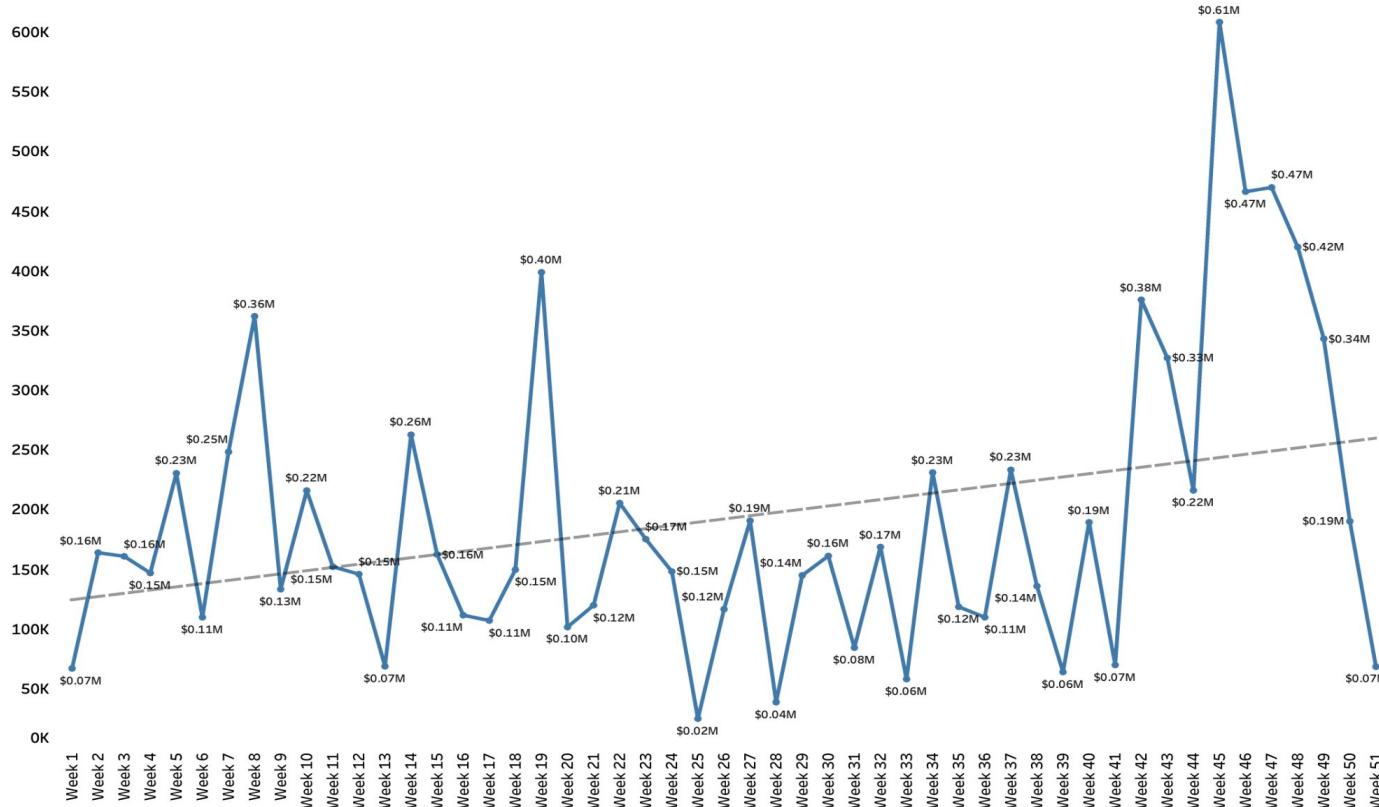


Insights

- **Highest sales** are in **Nov.** every year.
- Sales **goes up** in **Sept. till Nov.**
- This Sales Trend indicates **Seasonality**
- Overall sales Trend is **upward**



Sales Over Time: WOW Sales Trend

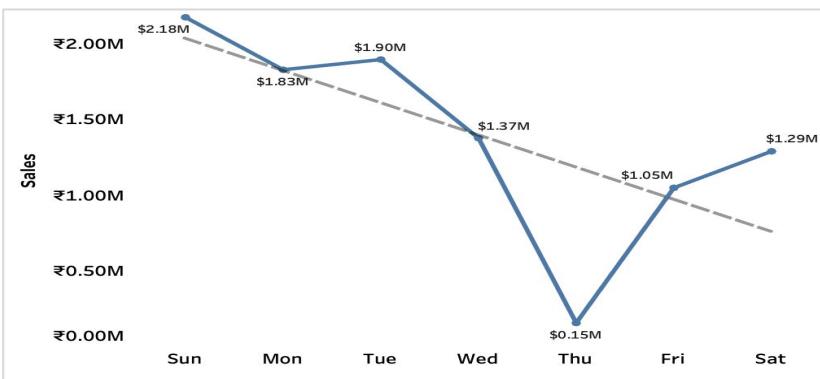


Insights

- Highest sales are in Week 45 i.e. around Nov wherein we have seen highest sales
- Overall, it shows upward Trend



Sales Over Time: Day Sales Trend

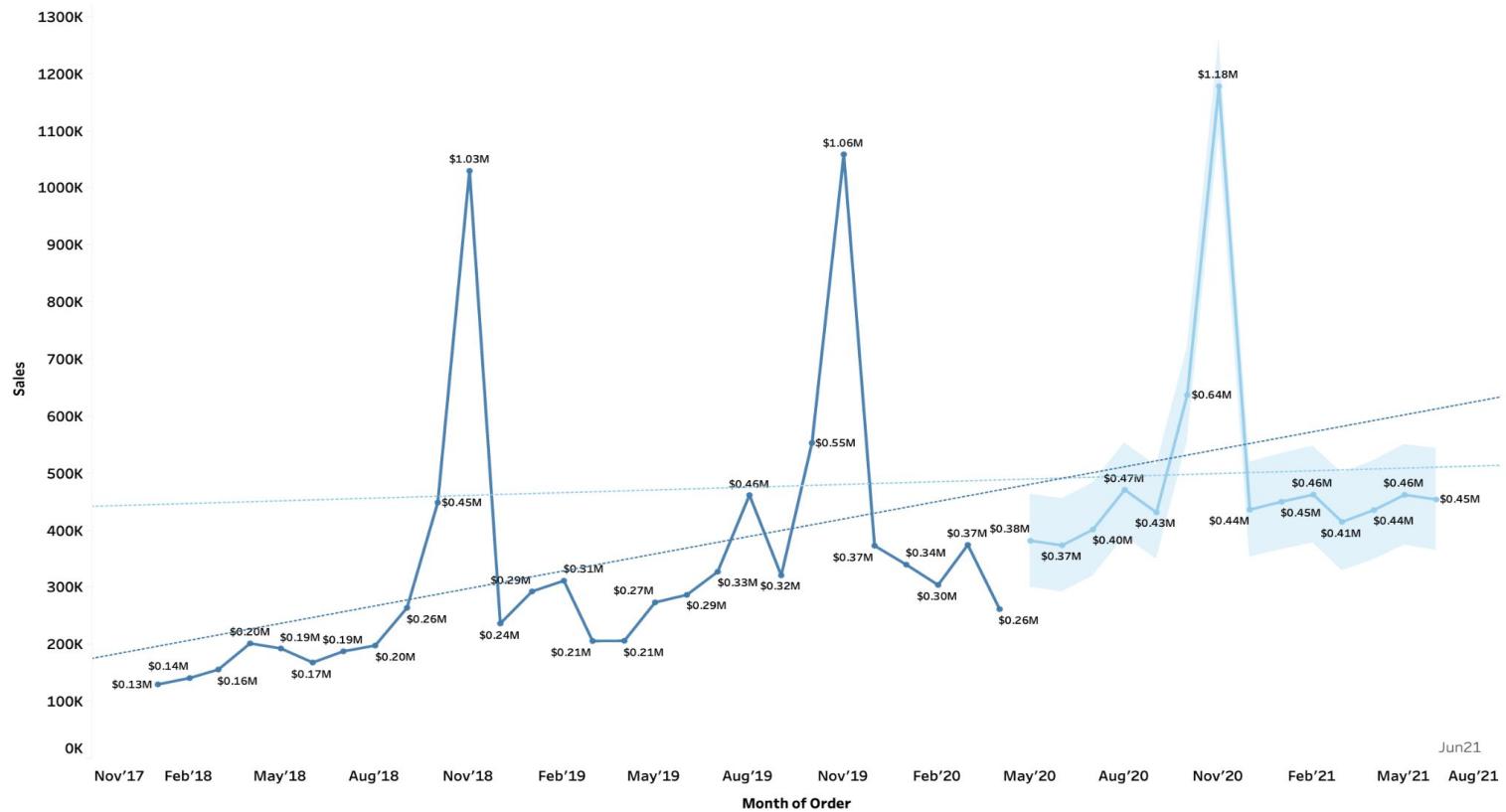


Insights

- The sales are generally highest at the **start of the month** and trend decreases towards the end with spikes in mid.
- On Weekdays**, the sales **decreases** while **highest on weekend**.
- Thursdays** are the lowest **selling weekdays**, while **Sunday** has the **highest sales**.



Forecast 1 Year in Future

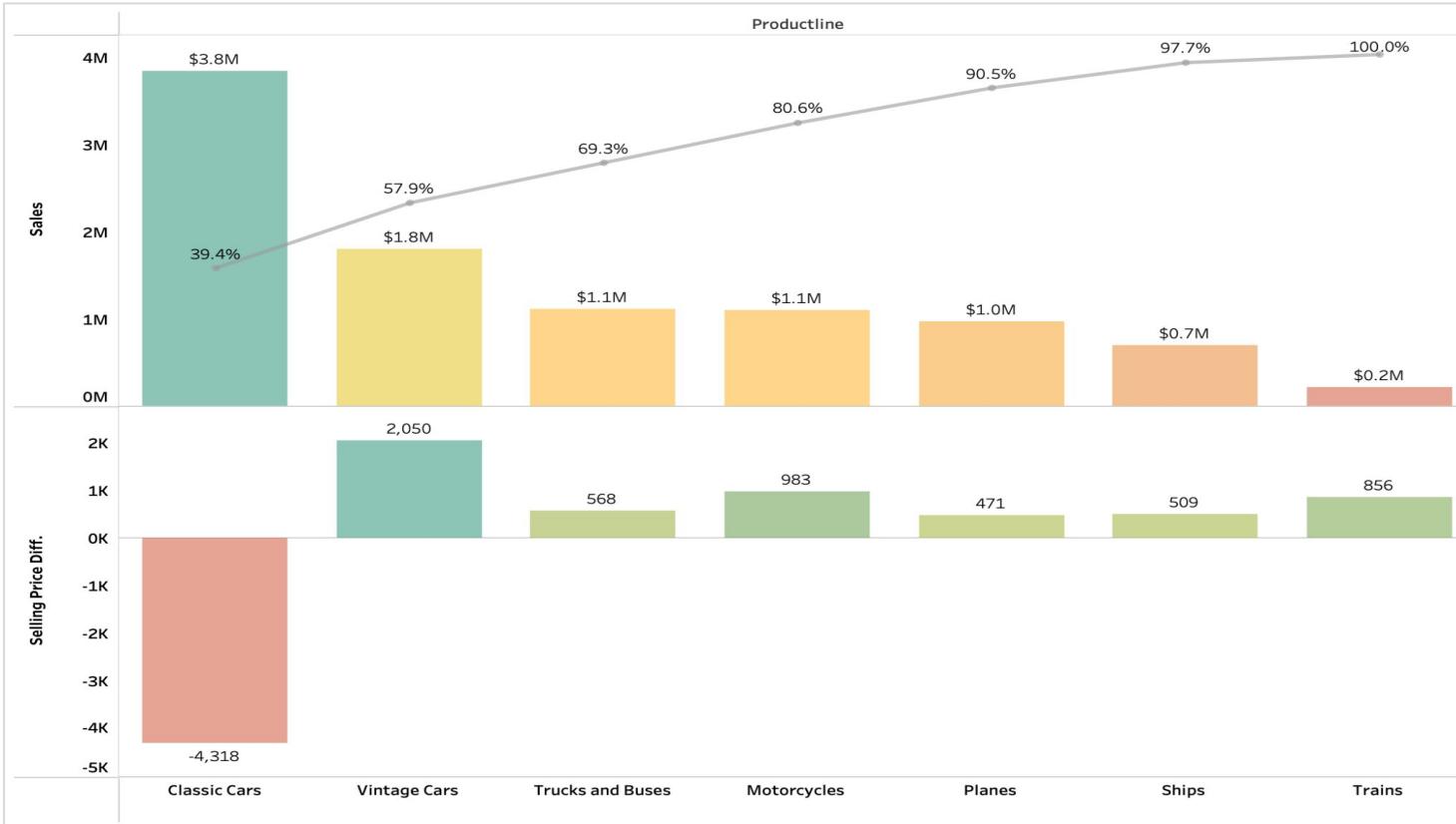


Insights

- Forecast for 12 month in future shows the same **seasonality & increasing Trend**



Product Line & Sales

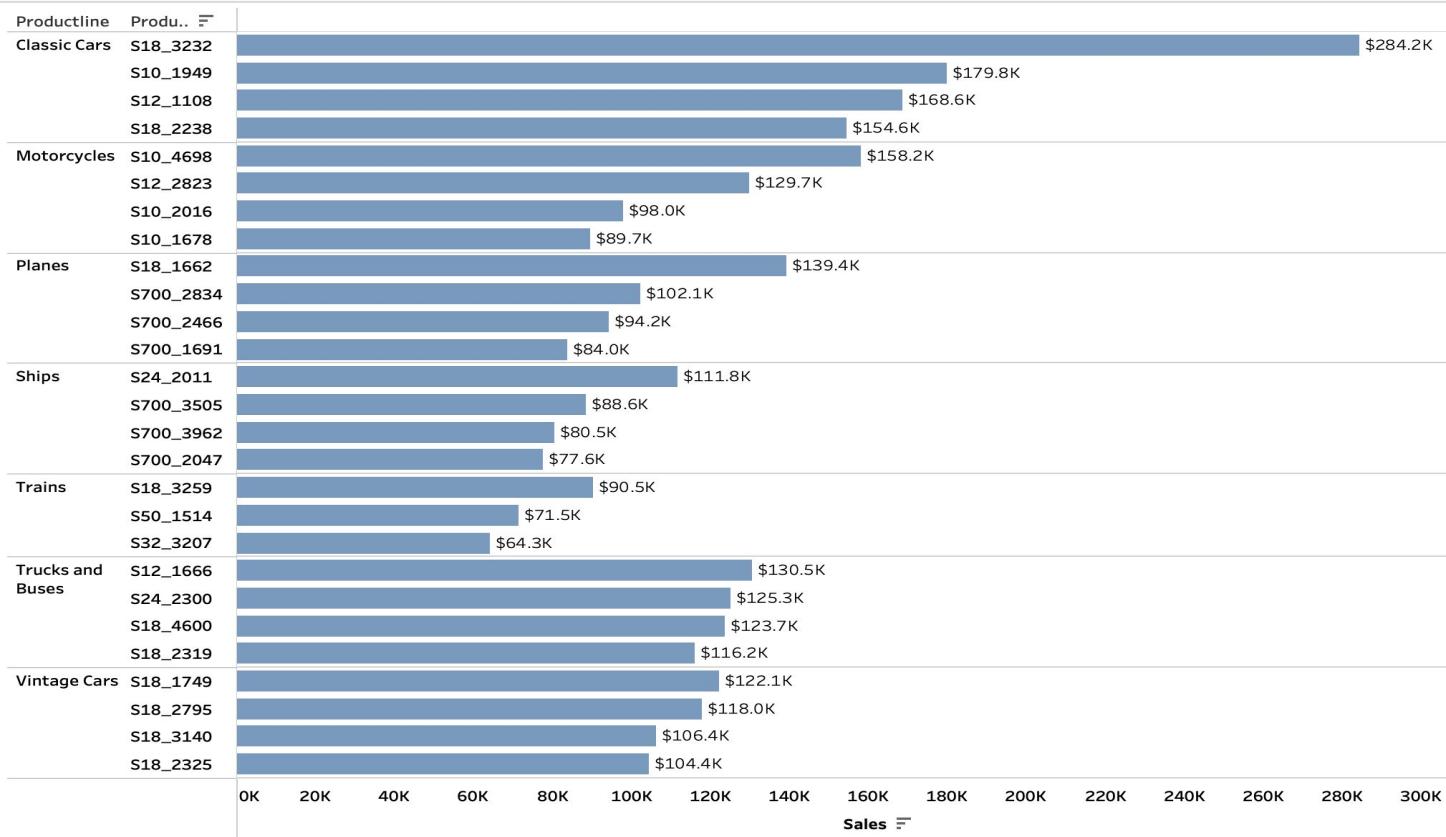


Insights

- Most Sales are from **Classic car parts** i.e. ~39.4%.
- Car, Truck, Bus & Motorcycle** parts accounts for 80% of the company's revenue.
- Train parts** generates the **least revenue**.
- While **Classic cars** has Highest Sales, it also has the **Least Selling price difference in negative** (MSRP - Actual selling price)



Product Line & Sales : Top Products

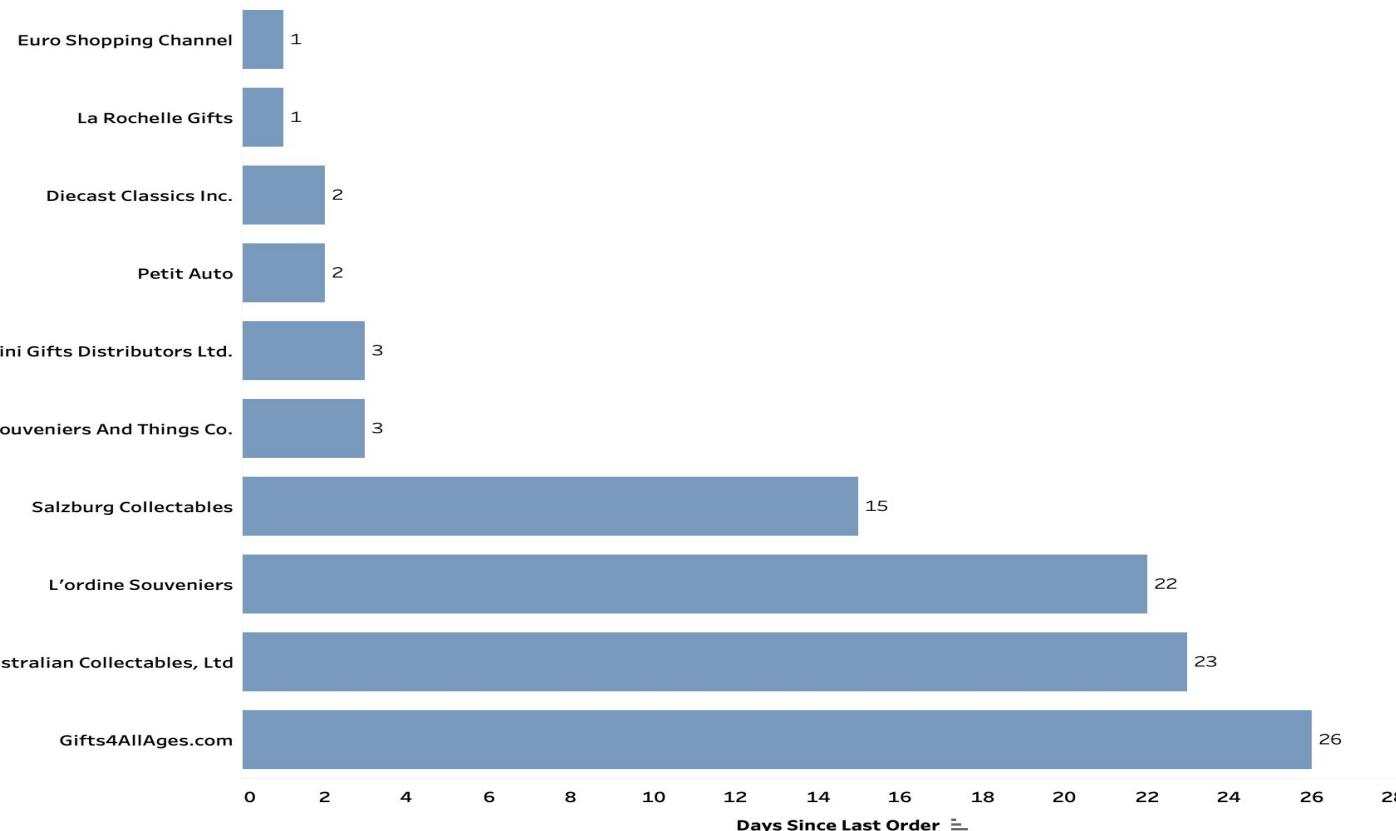


Insights

- S18_3232 is the **most selling** item across all Product Lines & Classic car parts



Top Customers : Recency

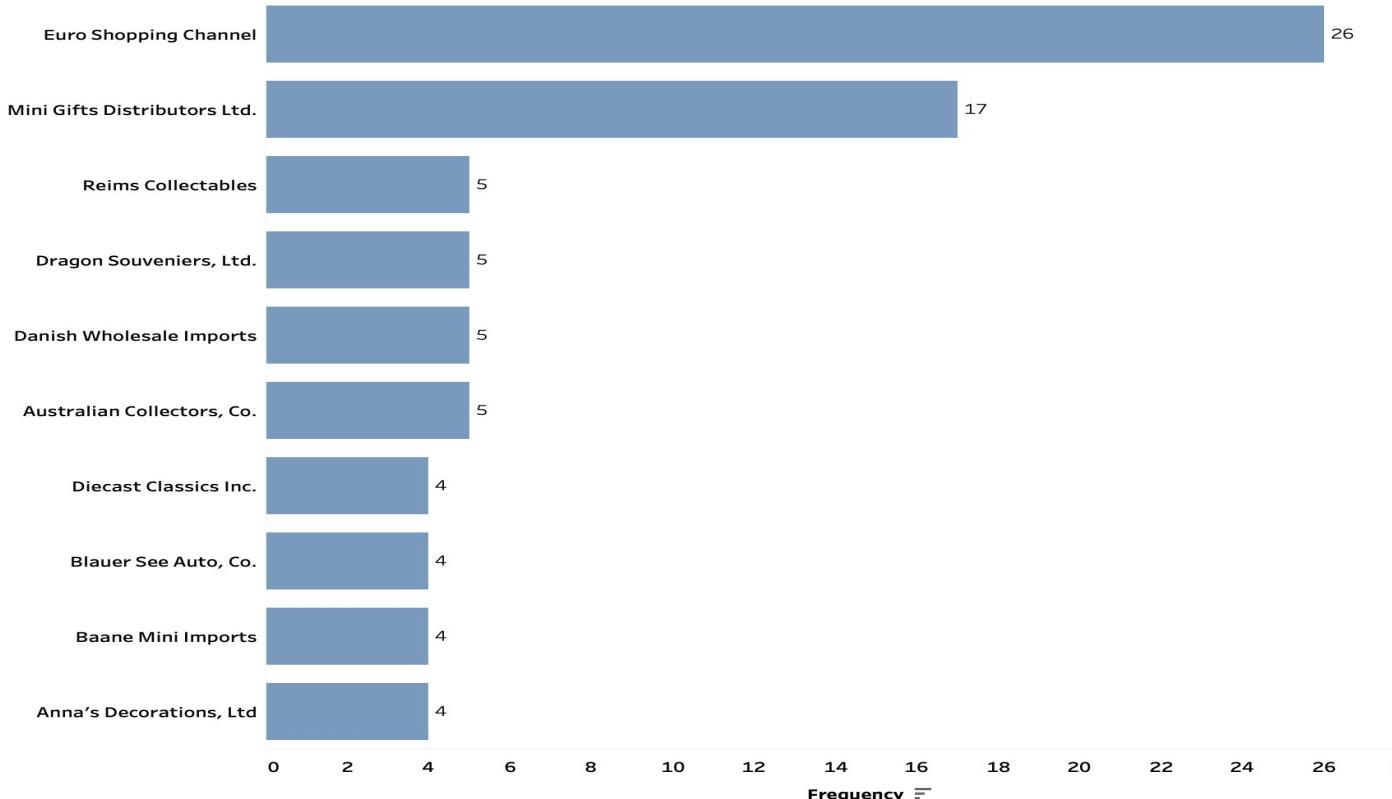


Insights

- The most recent customers are :
Euro Shopping Channel, La Rochelle Gifts, Diecast Classics Inc., Petit Auto



Top Customers : Frequency

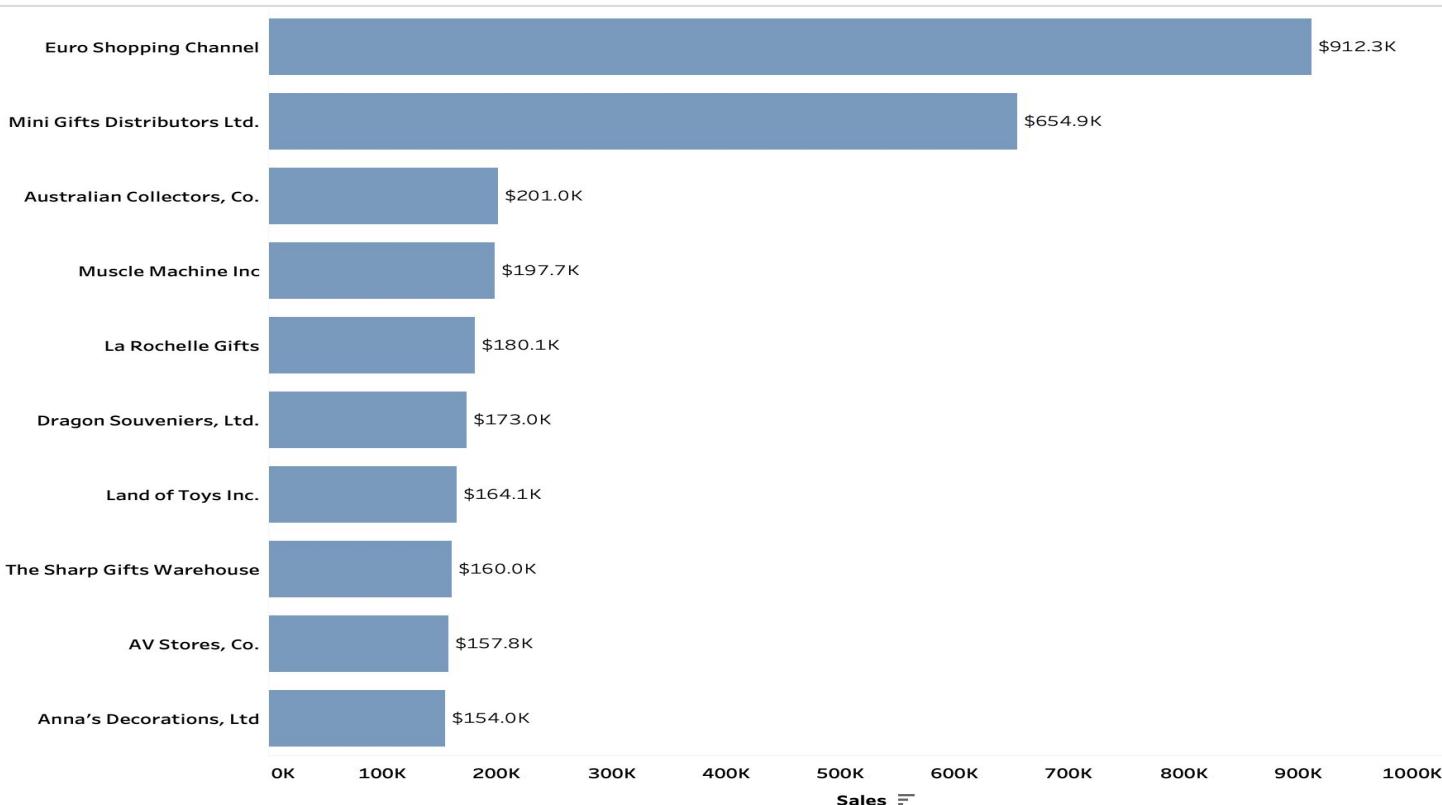


Insights

- The most recent customers are : **Euro Shopping Channel & Mini Gifts Distributors Ltd.**



Top Customers : Monetary

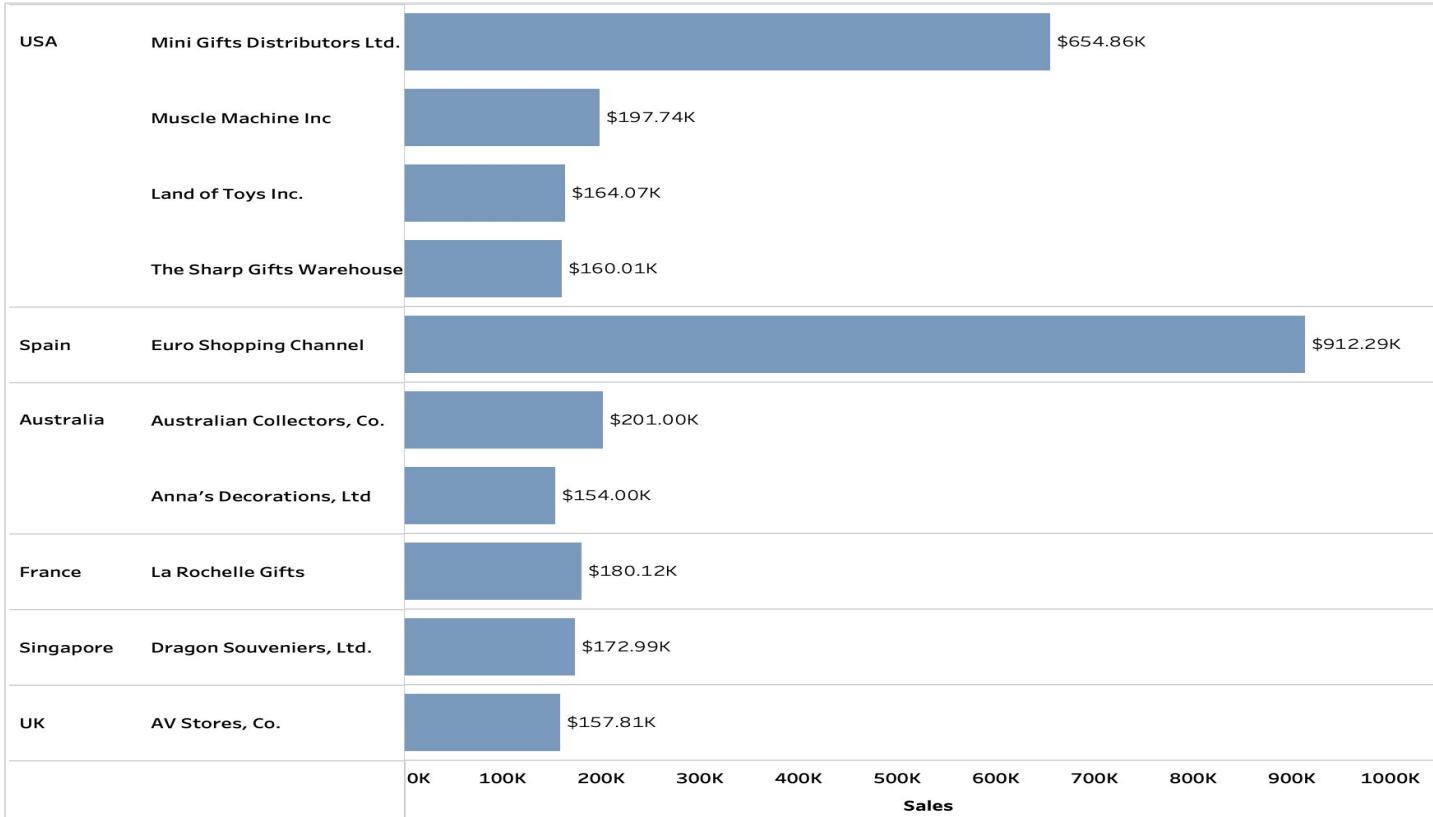


Insights

- The most recent customers are : **Euro Shopping Channel & Mini Gifts Distributors Ltd.**
- The above customers were most recent & frequent as well, indicating them as the most valuable customers for the brand



Top 10 Customers distribution across Countries

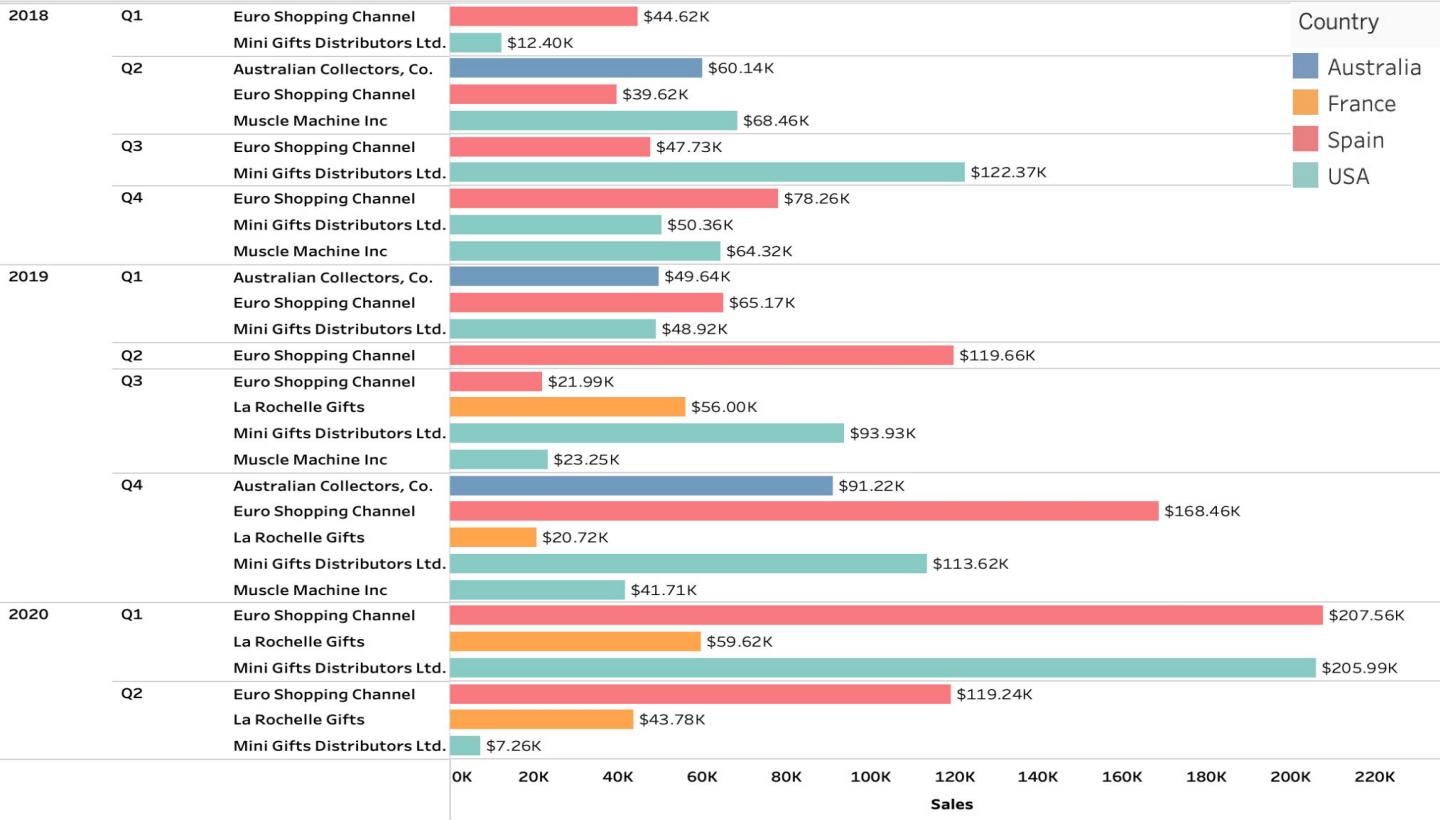


Insights

- Most of the customers belongs to USA
- Euro Shopping Channel is the most spending Customer across all countries as well as Spain.
- It contributes over 80% of the sales from Spain.



Top Customers : Year & Quarter

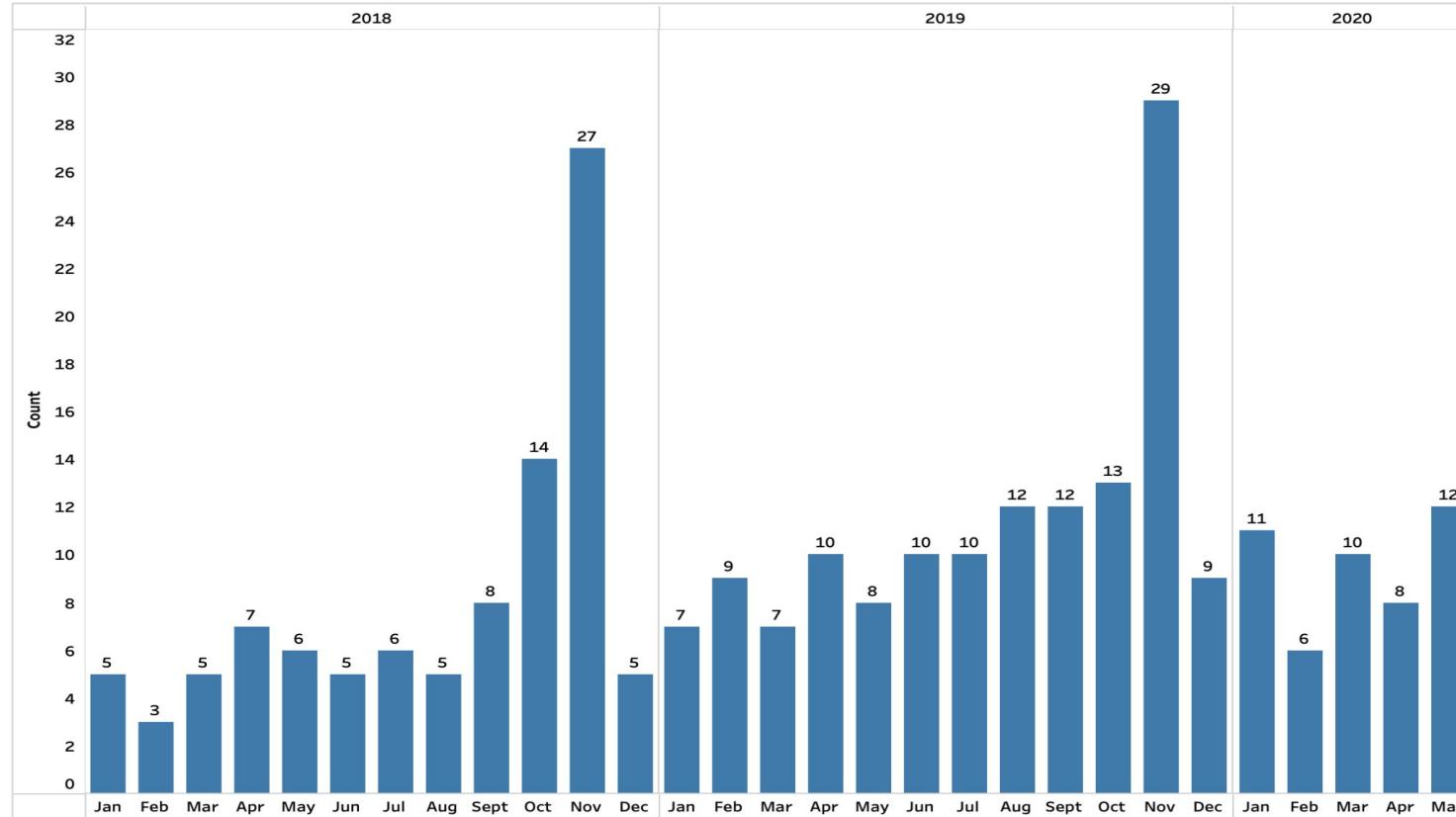


Insights

- Sales in Q1 of 2020** are comparatively **higher than rest** of the quarters.
- Highest Contribution** to sales in most quarters are from **Euro Shopping channel & Mini Gifts distributors Ltd.**



Active Customers - Monthly

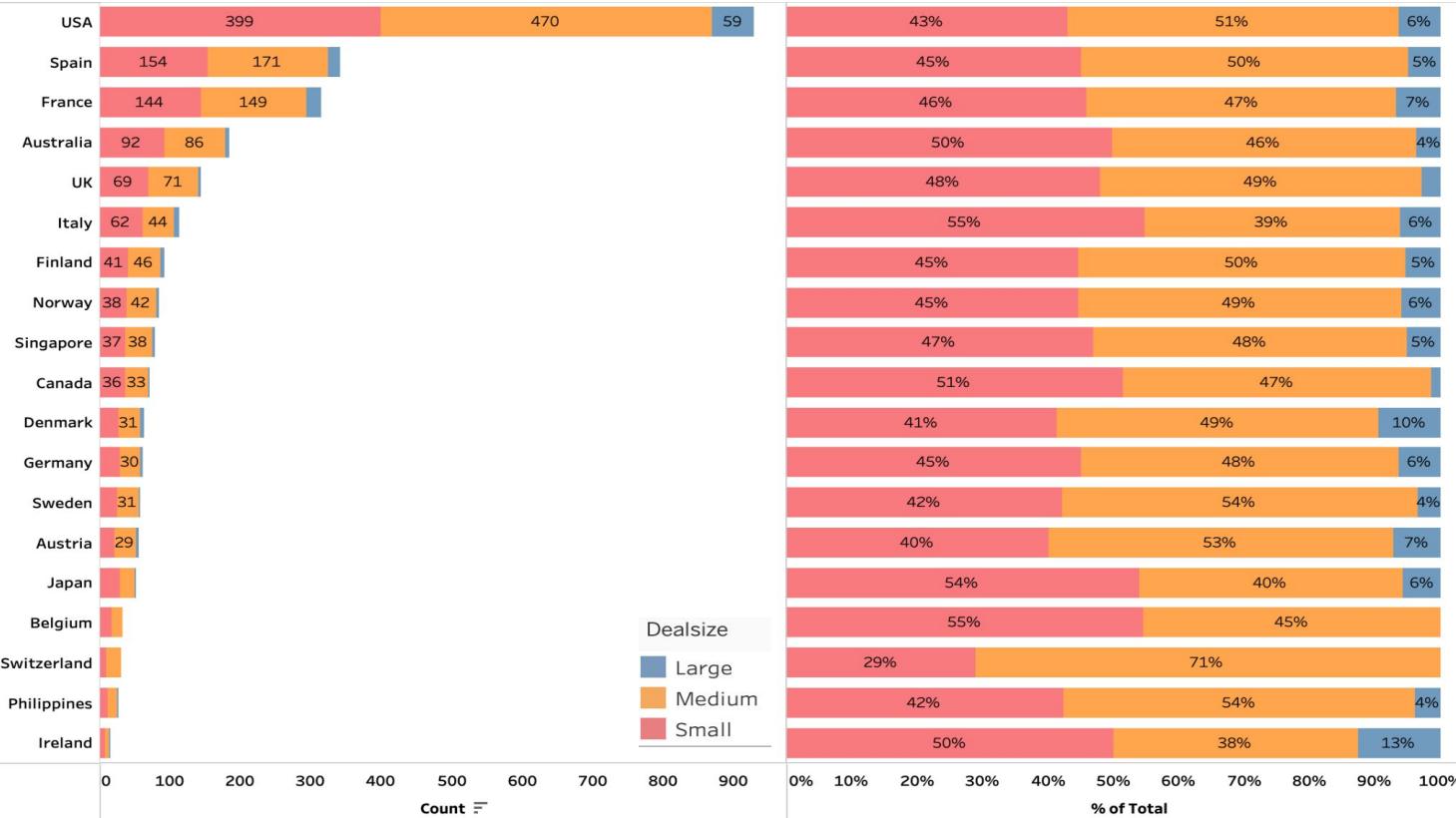


Insights

- Customers are **most active in Nov.** followed by **Oct. month**
- **YOY, Initial months of 2020** has seen **more active customer than same months in previous years**



Deal Size Across Countries

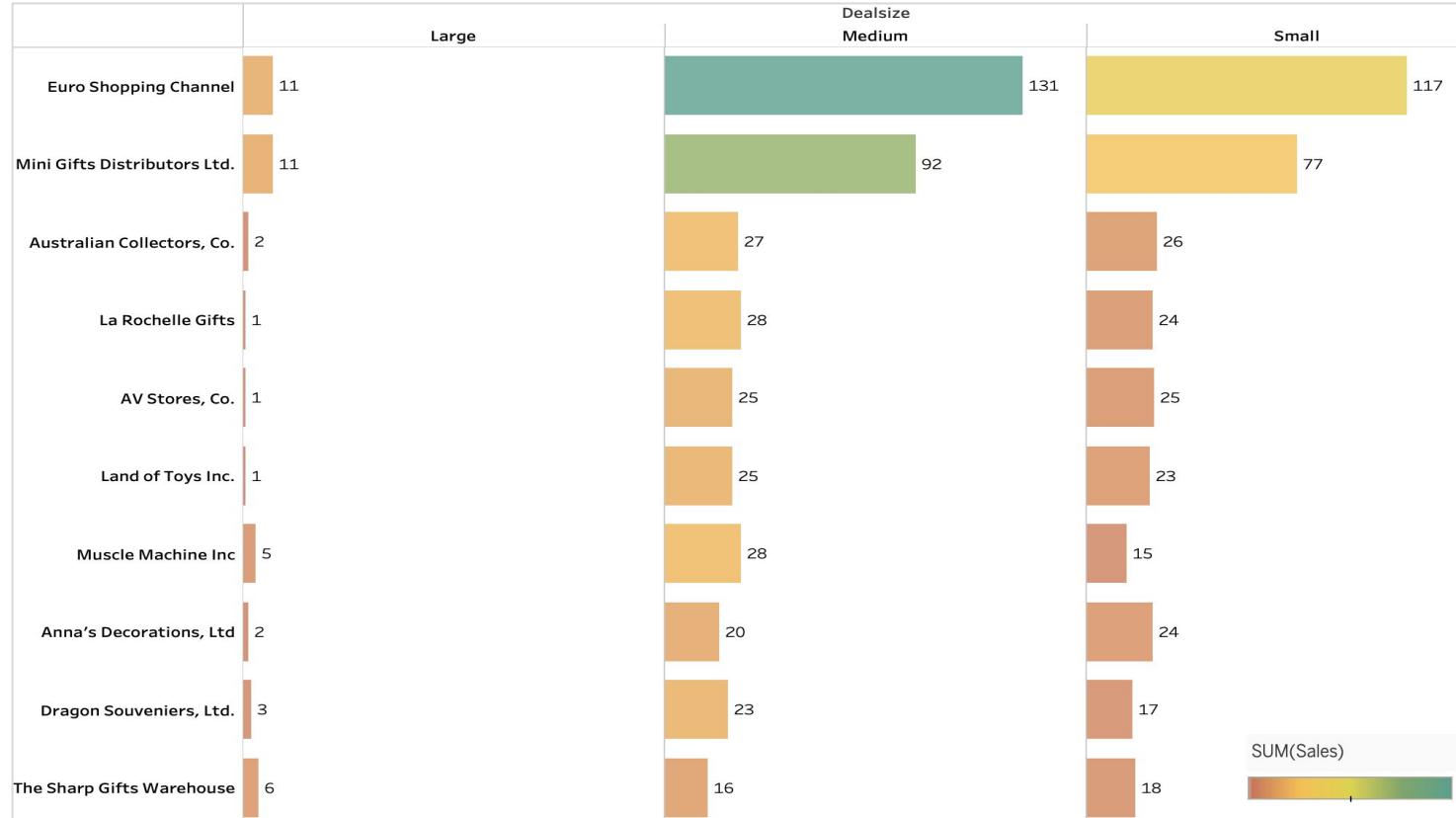


Insights

- Majority of deals are Medium Sized followed by Small
- Most of the large sized deals are from USA



Top Customers by Deal Size



Insights

- The **Top customer** Euro Shopping channel & Mini Gifts distributors Ltd has **majority of medium** followed by Small Deals



Product Live & Status

Status	Classic Cars	Motorcycles	Planes	Ships	Trains	Trucks and Buses	Vintage Cars
Cancelled	1.69%		3.95%	7.83%	1.30%		2.25%
Disputed	0.32%	1.92%	0.66%	0.43%			0.35%
In Process	1.48%					3.73%	2.76%
On Hold	1.26%	0.32%	2.96%	3.48%	1.30%	1.36%	1.55%
Resolved	0.84%		3.95%	5.22%		1.69%	1.73%
Shipped	94.42%	97.76%	88.49%	83.04%	97.40%	93.22%	91.36%

Insights

- **Most** of the orders in each Product Line are currently in **shipping status**.
- **Ships** has the **highest cancellation rate** of ~8% among all.
- **Motorcycles, Truck & Buses** parts have no **cancellations** at all.



Selling Price vs Suggested – Product Line

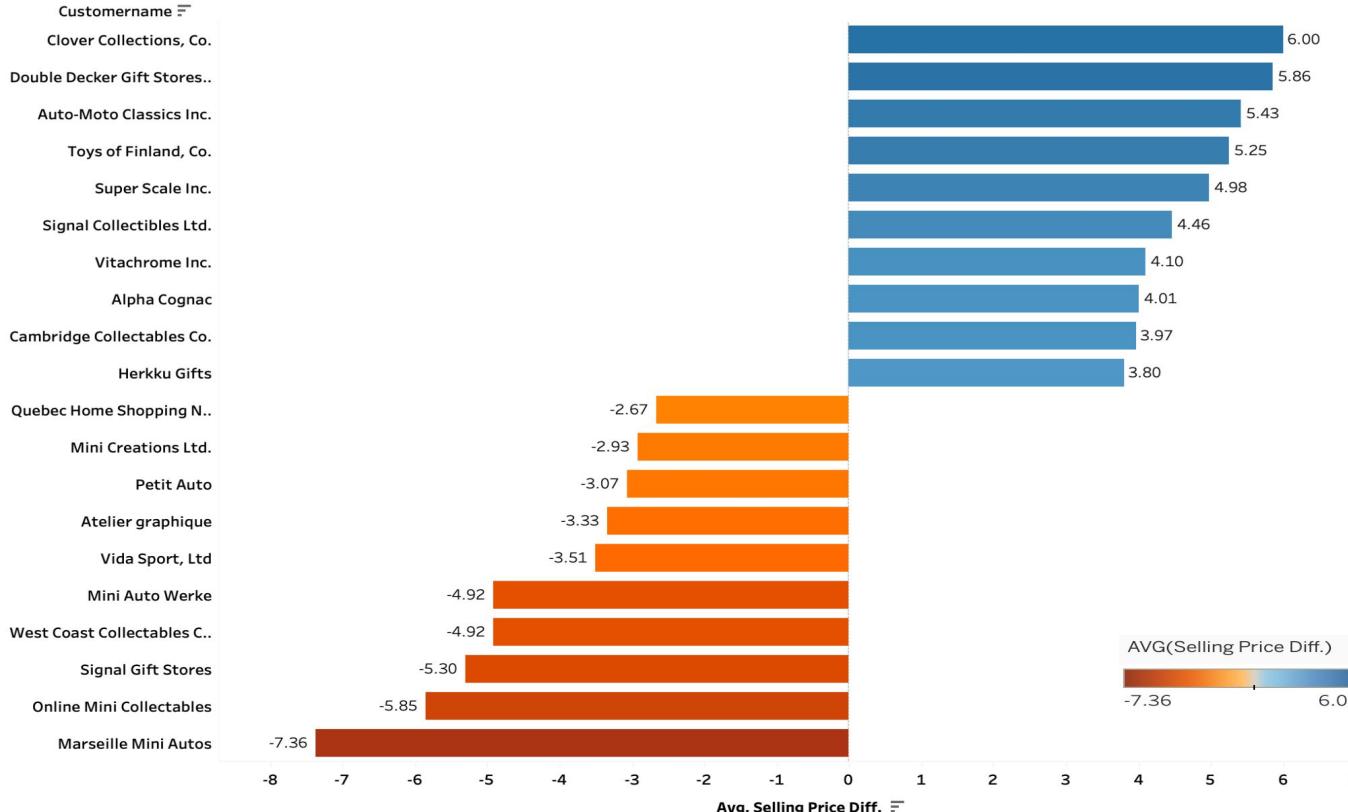


Insights

- The average of Selling price & suggested price is between **-4.55**, indicating **sold on lower price than suggested (Orange)** to **+11.12** indicates **sold at higher price than suggested (Blue)**
- **Classic cars** have the **highest difference in negative**, while **trains** have the **highest difference in positive**



Selling Price vs Suggested - Customer wise

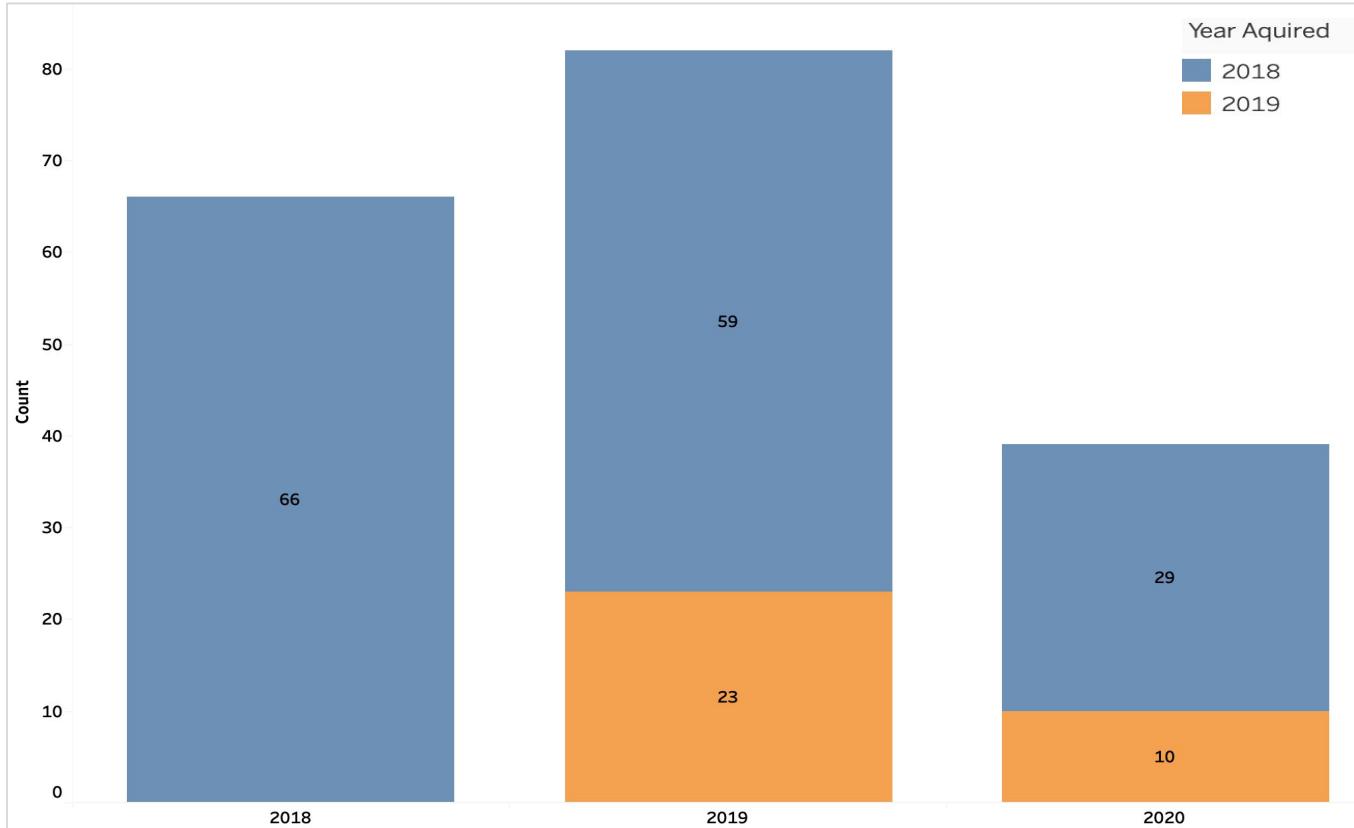


Insights

- The range of Selling price & suggested price is between **-7.36** indicating **sold on lower price than suggested (Orange)** to **+6.0** indicates **sold at higher price than suggested (Blue)**
- The customers in Orange can be analysed for a Cost & Benefit Analysis.



New Customer Acquisition & Retention

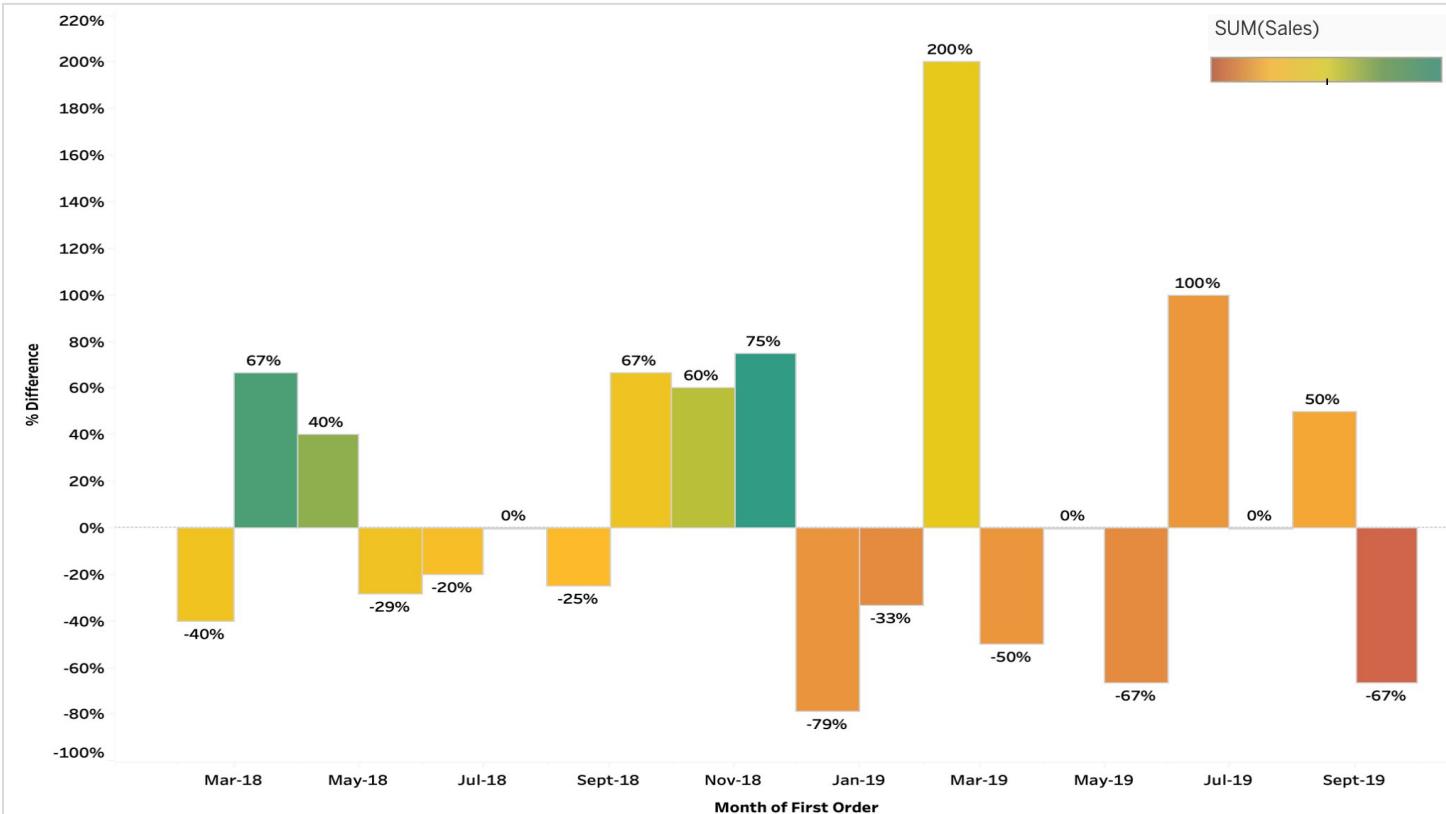


Insights

- No new customers acquired in **2020**.
- Only **23 new customers acquired in 2019**.
- ~. 90% customers of 2018 were retained in **2019**.



New Customer Growth Rate



Insights

- **Highest growth rate in new customers** was seen in **Feb'2019**
- **Dec 2018** saw the least new customer growth.
- **No new customers** acquired post Sept 2019.



Key Insights

Sales Overview:

- **298 orders** placed by **89** customers from **19** countries in the last **2.5 years**.
- **United States** leads in sales, followed by **Spain and France**. Notable sales from **Australia** and **Singapore** in the **Eastern Hemisphere**.
- Among cities, **Madrid tops sales**, with **San Diego and New York City** following.
- In the **Eastern Hemisphere**, sales from **Australia and Singapore declined**, while customers from **Japan were added in 2019**.
- Significant sales **increase** observed in **US and France in 2019**.

Product and Revenue:

- The company manufactures **109 automobile parts under 7 product lines** with **prices ranging from 26 to 252**.
- **Classic Car parts generate** the **maximum revenue** through **sales (approx. 40%)**.
- **Car, Truck, Bus, and Motorcycle parts** account for **80% of the company's revenue**.



Key Insights

Sales Trends:

- **Upward sales trend** with **monthly seasonality**. Peak sales in **October and November** annually.
- **Higher sales** and customer activity in the **early months of 2020** compared to previous years.
- Concern: **No new customers added since September 2019**.

Transaction Characteristics:

- **Most deals** are of **medium** and **small size**, with transactions typically containing **20 to 50 items**.

Key Customers:

- **Euro Shopping Channel and Mini Gifts Distribution Ltd.** are best customers (**highest spending, most frequent, and recent**).

Customer Retention:

- A good customer **retention rate** of approximately **90%** was observed **in 2019**.

ABOUT RFM





What is RFM?

The RFM analysis model enables the business to categorize customers using three criteria derived from a customer's transaction history, specifically:

Recency

How recently the user made purchase

Ex: Days since last purchase/visit

Frequency

How frequently the user purchase

Ex: Total number of days when a purchase/visit was done

Monetary

How much do they spend

Ex: Customer Lifetime Value

Benefits of RFM Analysis

- **Personalization:** By creating effective customer segments, you can create relevant, personalized offers.
- **Improve Conversion Rates:** Personalized offers will yield higher conversion rates because your customers are engaging with products they care about.
- **Improve** unit economics
- **Increase** revenue and profits



RFM Analysis : 5 Step Approach

1



Data Import & Cleaning

- The data was imported to **KNIME**
- Group data basis customer name
- Labeling column as **Recency on difference on Order date, Frequency for Order count, Monetary for Spend**

2



Setting the RFM metrics

- Binning the data in 4 bins i.e 1,2,3,4
- Setting bin **1 to 4** each for **Recency, Frequency and Monetary** basis the data
- **4** being the **best & 1** being the **lowest score** for each. For recency, the recent transactions will be given 4.

3



Assigning scores with RFM segmentation

- Creating RFM Scores aggregating R, F, M values
- Export the output data for further segmentation
- The Segmentation approach taken here is manual basis the RFM profile

4



Labeling segments

- Identify the segments
- Labeling the customers to different Segments basis RFM Score
- e.g. RFM score of **444** would be **best customer** while **111** would be considered as **lost**

5



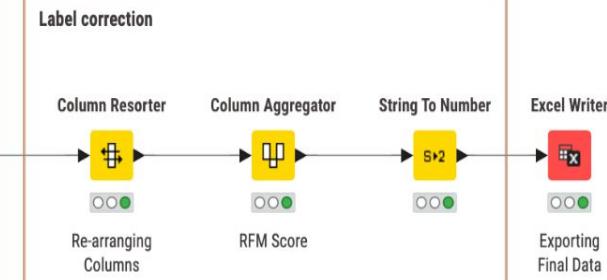
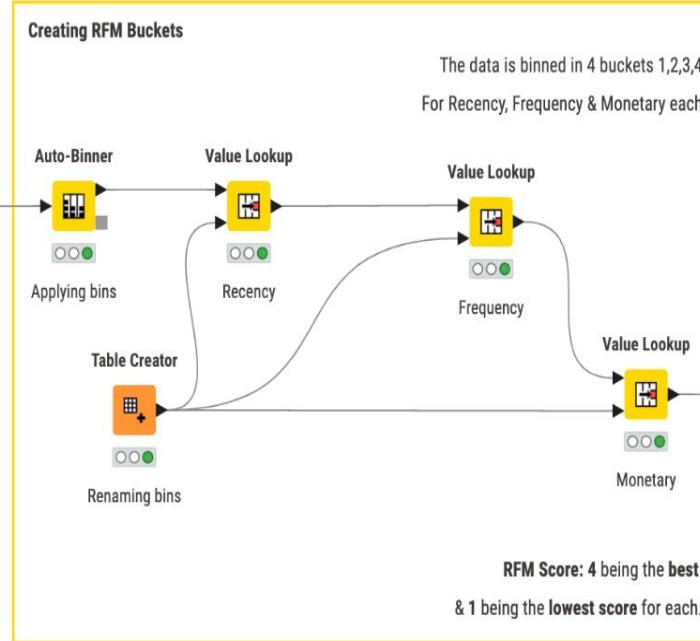
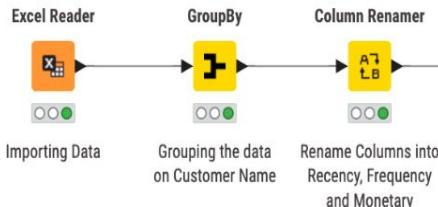
Creating customized strategies

- Create each segment with tailored strategies to target
- e.g. a price sensitive customer to be offered discounts.



RFM Analysis – KNIME Workflow

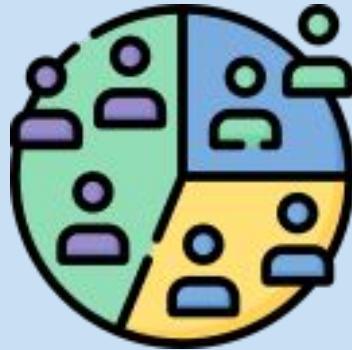
RFM Analysis





RFM Analysis - KNIME Output Sample

Row ID	S CUSTO...	I Recen...	I Frequ...	D Monet...	S Recen...	S Frequ...	S Monet...	D QUAN...	D PRICE...	S PRODUCTLINE	D MSRP	S COUN...	I Recen...	I Frequ...	I Monet...	D ▾	RFM Score
Row26	Danish Whol...	47	5	145,041.6	Bin 1	Bin 4	Bin 4	36.528	108.038	Classic Cars, Vintage Cars, Trains, Shi...	106.417	Denmark	4	4	4	4	444
Row27	Diecast Clas...	2	4	122,138.14	Bin 1	Bin 4	Bin 4	35.839	108.566	Classic Cars, Trains, Trucks and Buses...	106.581	USA	4	4	4	4	444
Row32	Euro Shoppi...	1	26	912,294.11	Bin 1	Bin 4	Bin 4	36.012	97.383	Classic Cars, Trucks and Buses, Trains...	97.015	Spain	4	4	4	4	444
Row43	La Rochelle ...	1	4	180,124.9	Bin 1	Bin 4	Bin 4	34.566	97.046	Motorcycles, Planes, Vintage Cars, Shi...	96.151	France	4	4	4	4	444
Row53	Mini Gifts Di...	3	17	654,858.06	Bin 1	Bin 4	Bin 4	35.367	102.696	Trucks and Buses, Vintage Cars, Classi...	102.506	USA	4	4	4	4	444
Row63	Reims Collect...	63	5	135,042.94	Bin 1	Bin 4	Bin 4	34.951	94.343	Motorcycles, Classic Cars, Trucks and ...	96.585	France	4	4	4	4	444
Row67	Salzburg Col...	15	4	149,798.63	Bin 1	Bin 4	Bin 4	36.05	101.398	Classic Cars, Planes, Ships, Vintage Ca...	102.925	Austria	4	4	4	4	444
Row72	Souveniers ...	3	4	151,570.98	Bin 1	Bin 4	Bin 4	34.804	95.189	Vintage Cars, Classic Cars, Trucks and...	93.087	Australia	4	4	4	4	444
Row78	The Sharp Gi...	40	4	160,010.27	Bin 1	Bin 4	Bin 4	41.4	93.376	Planes, Motorcycles, Vintage Cars, Cla...	92.775	USA	4	4	4	4	444
Row37	Handji Gifts...	39	4	115,498.73	Bin 1	Bin 4	Bin 3	34.333	95.593	Classic Cars, Trucks and Buses, Vintag...	97.222	Singapore	4	4	3	3	443
Row79	Tokyo Collect...	40	4	120,562.74	Bin 1	Bin 4	Bin 3	35.938	101.183	Classic Cars, Trucks and Buses, Vintag...	99.281	Japan	4	4	3	3	443
Row41	L'ordine Sou...	22	3	142,601.33	Bin 1	Bin 2	Bin 4	32.821	111.147	Classic Cars, Trains, Trucks and Buses...	107.795	Italy	4	2	4	4	424
Row9	Auto Canal P...	55	3	93,170.66	Bin 1	Bin 2	Bin 3	37.074	94.255	Motorcycles, Classic Cars	94.852	France	4	2	3	3	423
Row34	Gift Depot Inc.	27	3	101,894.79	Bin 1	Bin 2	Bin 3	36.12	108.932	Classic Cars, Motorcycles, Planes, Trai...	110.92	USA	4	2	3	3	423
Row83	UK Collectab...	54	3	118,008.27	Bin 1	Bin 2	Bin 3	36.069	108.536	Classic Cars, Vintage Cars, Motorcycles	110.276	UK	4	2	3	3	423
Row36	Gifts4AllAge...	26	3	83,209.88	Bin 1	Bin 2	Bin 2	35.885	91.564	Motorcycles, Classic Cars, Vintage Car...	90.731	USA	4	2	2	2	422
Row45	Lyon Souveni...	76	3	78,570.34	Bin 1	Bin 2	Bin 2	34.2	113.003	Motorcycles, Classic Cars, Vintage Car...	110.55	France	4	2	2	2	422
Row50	Mini Caravy	48	3	80,438.48	Bin 1	Bin 2	Bin 2	41	99.27	Classic Cars, Vintage Cars	101.105	France	4	2	2	2	422
Row61	Petit Auto	2	3	74,972.52	Bin 1	Bin 2	Bin 2	31.84	93.494	Vintage Cars, Trains, Ships, Classic Cars	96.56	Belgium	4	2	2	2	422
Row62	Quebec Hom...	31	3	74,204.79	Bin 1	Bin 2	Bin 2	32.591	104.515	Classic Cars, Vintage Cars, Ships, Truc...	107.182	Canada	4	2	2	2	422
Row77	Tekni Collect...	59	3	83,228.19	Bin 1	Bin 2	Bin 2	43.143	93.571	Vintage Cars, Ships, Motorcycles, Planes	93.286	USA	4	2	2	2	422
Row1	Alpha Cognac	65	3	70,488.44	Bin 1	Bin 2	Bin 1	34.35	101.16	Classic Cars, Planes, Ships, Vintage Cars	97.15	France	4	2	1	1	421
Row5	Australian C...	23	3	64,591.46	Bin 1	Bin 2	Bin 1	30.652	90.042	Vintage Cars, Classic Cars, Planes, Ships	88.13	Australia	4	2	1	1	421
Row3	Anna's Deco...	84	4	153,996.13	Bin 2	Bin 4	Bin 4	31.935	106.424	Classic Cars, Vintage Cars, Motorcycle...	104.717	Australia	3	4	4	4	344
Row6	Australian C...	185	5	200,995.41	Bin 2	Bin 4	Bin 4	35.018	104.59	Motorcycles, Planes, Vintage Cars, Cla...	103.527	Australia	3	4	4	4	344
Row30	Dragon Souv...	91	5	172,989.68	Bin 2	Bin 4	Bin 4	35.442	113.106	Classic Cars, Vintage Cars, Trains, Shi...	113.442	Singapore	3	4	4	4	344
Row55	Muscle Mach...	183	4	197,736.94	Bin 2	Bin 4	Bin 4	36.979	111.151	Classic Cars, Trucks and Buses, Trains...	108.396	USA	3	4	4	4	344
Row76	Technics Sto...	148	4	120,783.07	Bin 2	Bin 4	Bin 4	34.676	104.914	Classic Cars, Trucks and Buses, Vintag...	102.294	USA	3	4	4	4	344
Row66	Royale Belge	143	4	33,440.1	Bin 2	Bin 4	Bin 1	34.75	115.195	Trains, Vintage Cars, Planes, Ships, Cla...	115.125	Belgium	3	4	1	1	341
Row69	Scandinavia...	90	3	134,259.33	Bin 2	Bin 2	Bin 4	35.763	97.597	Classic Cars, Planes, Ships, Vintage Ca...	99.184	Sweden	3	2	4	4	324
Row33	FunGiftIdeas...	90	3	98,923.73	Bin 2	Bin 2	Bin 3	34.731	109.587	Vintage Cars, Ships, Classic Cars, Mot...	108	USA	3	2	3	3	323



RFM Analysis

Segmentation



RFM Table

Recency	Frequency	Monetary				Total
		4	3	2	1	
4	4	9	2			11
	2	1	3	6	2	12
3	4	2			2	6
	2	1	7	3	4	15
	1				1	1
2	4	2	2	2		4
	2	4	3	3	1	11
	1		2	3	2	7
1	2	1	1			2
	1		3	5	12	20
Total		22	22	22	23	89

RFM SEGMENTATION
Champions
Loyal
Can't Lose them
Price Sensitive
At Risk
Lost

- The Table bifurcates count of customers basis their **Recency, Frequency and Monetary value**.
- A score of 4 on each represents the best value of the parameter, while 1 represent the lowest value
- The color indicates the segment

The segmentation is manual. Refer to next slide for description of each Segment



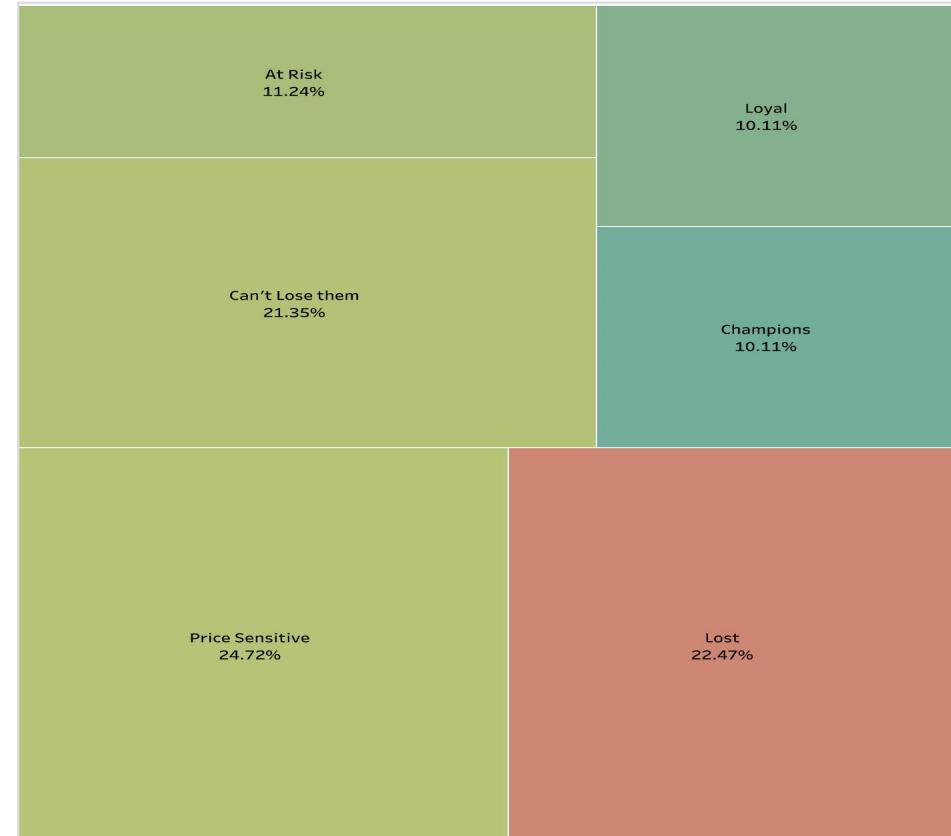
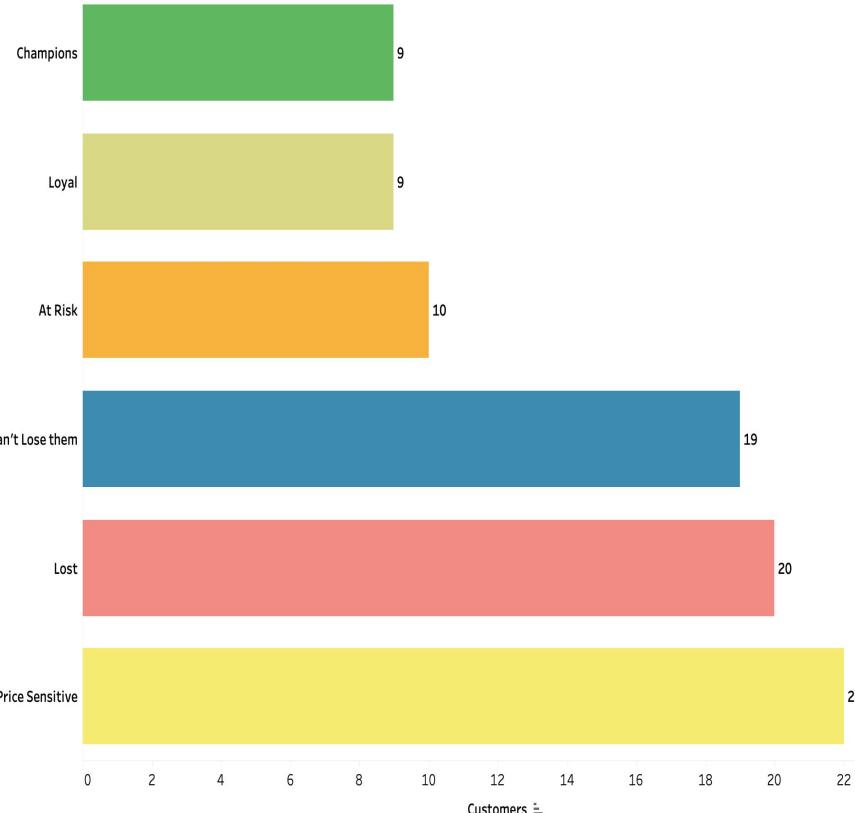
RFM Segmentation Approach

Segment	Description	R	F	M	RFM Scores
Champions	Best Customers. Bought recently, Buys frequently, and buys big. Create positive WOM (word of mouth) for the brand amongst their circles. Contributes a disproportionate amount of revenues to the business, and hence must be treated with care.	4	4	4	444
Loyal	This segment is the bread and butter of every business, as customers in this segment have a clear and positive view of the brand. These customers are happy with the product and service provided, and are unlikely to switch to alternatives. Important to make these customers feel valued	2-4	4	3-4	443,344, 244,243
Can't Lose them	High-value customer. As the label suggests, this segment requires continuous attention, as these customers are regular users of the brand at some risk of switching, and need to feel valued, to continue using it.	2-4	2	3-4	424,423,324,323,224,23
Price Sensitive	These customers are always on the lookout for price-led promotions. Their loyalty and purchase are not defined by brand interactions, but by changes in the price that they have to pay. A segment that can be easily leveraged through offers and discounts	2-4	2-4	1-2	422, 421, 341, 322, 321, 242,222,221
At Risk	This segment constitutes users who are considering stopping use of the brand due to various reasons. In order to prevent this, it's necessary to scrutinize their behavior and create further personalization in communication to ensure an increase in brand trust and loyalty.	1-3	1-2	1-4	311,213,212,211,124,123
Lost	These customers have stopped using services altogether and have decided to use alternatives instead. Very difficult to re-engage with this segment, as they either have a negative view of the service or a more trustworthy alternative.	1	1	1-3	111,112,113

* The approach for segmentation here is manual, the profiling depends upon business and domain expertise hence may vary

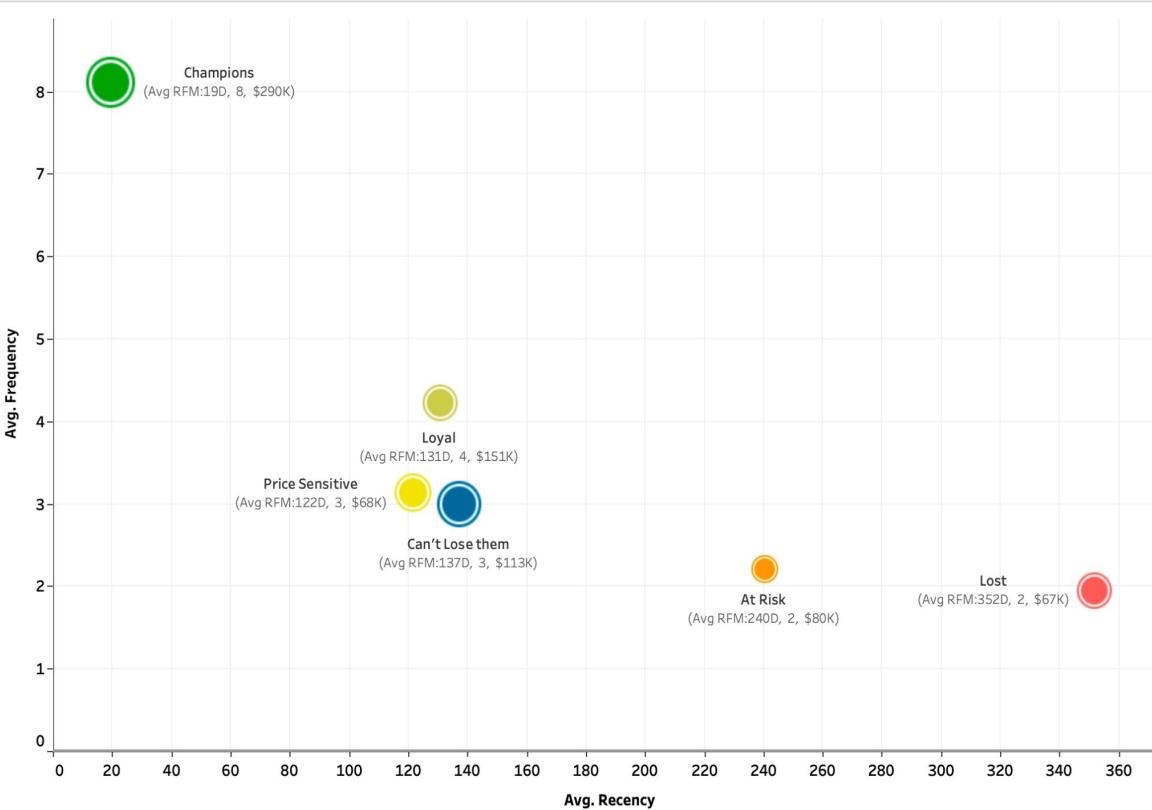


Customers in Each Segment





RFM Matrix



RFM Segment..	Avg. Recency	Avg. Frequency	Avg. Monetary
Champions	19	8.11	\$290K
Loyal	131	4.22	\$151K
Price Sensitive	122	3.14	\$68K
Can't Lose them	137	3.00	\$113K
At Risk	240	2.20	\$80K
Lost	352	1.95	\$67K

RFM Matrix

- The plot is between:
 - Avg of Recency (X)-in Days
 - Avg. Frequency (Y) - Order count
 - Avg Monetary (Size) - in K
- The **Champions**(Best customers) are having the **highest Recency of avg. 19 days, most Frequent (8 times)** and avg Monetary of **~\$290K**
- On the other hand, **Lost Customers** are among the **lowest Recency of avg. 352 day , avg. frequency of 1.95 and Avg Monetary of ~67K**



RFM : Sample of Customer List

Customer Name	Country	RFM Segmentation	RFM Profile	Recency	Frequency	Monetary	RFM Score
Euro Shopping Channel	Spain	Champions	444	1	26	\$912.29K	4.0
Mini Gifts Distributors ..	USA	Champions	444	3	17	\$654.86K	4.0
La Rochelle Gifts	France	Champions	444	1	4	\$180.12K	4.0
Danish Wholesale Impo..	Denmark	Champions	444	47	5	\$145.04K	4.0
Diecast Classics Inc.	USA	Champions	444	2	4	\$122.14K	4.0
Alpha Cognac	France	Price Sensitive	421	65	3	\$70.49K	2.3
Amica Models & Co.	Italy	Lost	113	266	2	\$94.12K	1.7
Anna's Decorations, Ltd	Australia	Loyal	344	84	4	\$154.00K	3.7
Atelier graphique	France	Price Sensitive	221	189	3	\$24.18K	1.7
Australian Collectables,..	Australia	Price Sensitive	421	23	3	\$64.59K	2.3
Australian Collectors, Co.	Australia	Loyal	344	185	5	\$201.00K	3.7
Australian Gift Network..	Australia	Price Sensitive	321	120	3	\$59.47K	2.0
Auto Assoc. & Cie.	France	Lost	111	234	2	\$64.83K	1.0
Auto Canal Petit	France	Can't Lose them	423	55	3	\$93.17K	3.0
Auto-Moto Classics Inc.	USA	Price Sensitive	321	181	3	\$26.48K	2.0
AV Stores, Co.	UK	Can't Lose them	224	197	3	\$157.81K	2.7
Baane Mini Imports	Norway	Loyal	243	209	4	\$116.60K	3.0
Bavarian Collectables I..	Germany	Lost	111	260	1	\$34.99K	1.0
Blauer See Auto, Co.	Germany	Price Sensitive	242	209	4	\$85.17K	2.7
Boards & Toys Co.	USA	At Risk	311	114	2	\$9.13K	1.7
CAF Imports	Spain	Lost	111	440	2	\$49.64K	1.0
Cambridge Collectables ..	USA	Lost	111	390	2	\$36.16K	1.0
Canadian Gift Exchange..	Canada	At Risk	212	223	2	\$75.24K	1.7
Classic Gift Ideas, Inc	USA	At Risk	211	231	2	\$67.51K	1.3
Classic Legends Inc.	USA	Price Sensitive	222	193	3	\$77.80K	2.0
Clover Collections, Co.	Ireland	Lost	111	259	2	\$57.76K	1.0
Collectable Mini Design..	USA	Lost	112	461	2	\$87.49K	1.3
Collectables For Less Inc.	USA	Price Sensitive	322	133	3	\$81.58K	2.3
Corrida Auto Replicas, L..	Spain	Can't Lose them	224	213	3	\$120.62K	2.7
Cruz & Sons Co.	Philippines	Can't Lose them	223	198	3	\$94.02K	2.3
Daedalus Designs Impo..	France	Lost	111	466	2	\$69.05K	1.0
Diecast Collectables	USA	Lost	112	402	2	\$70.86K	1.3



RFM – Best Customers – Champions



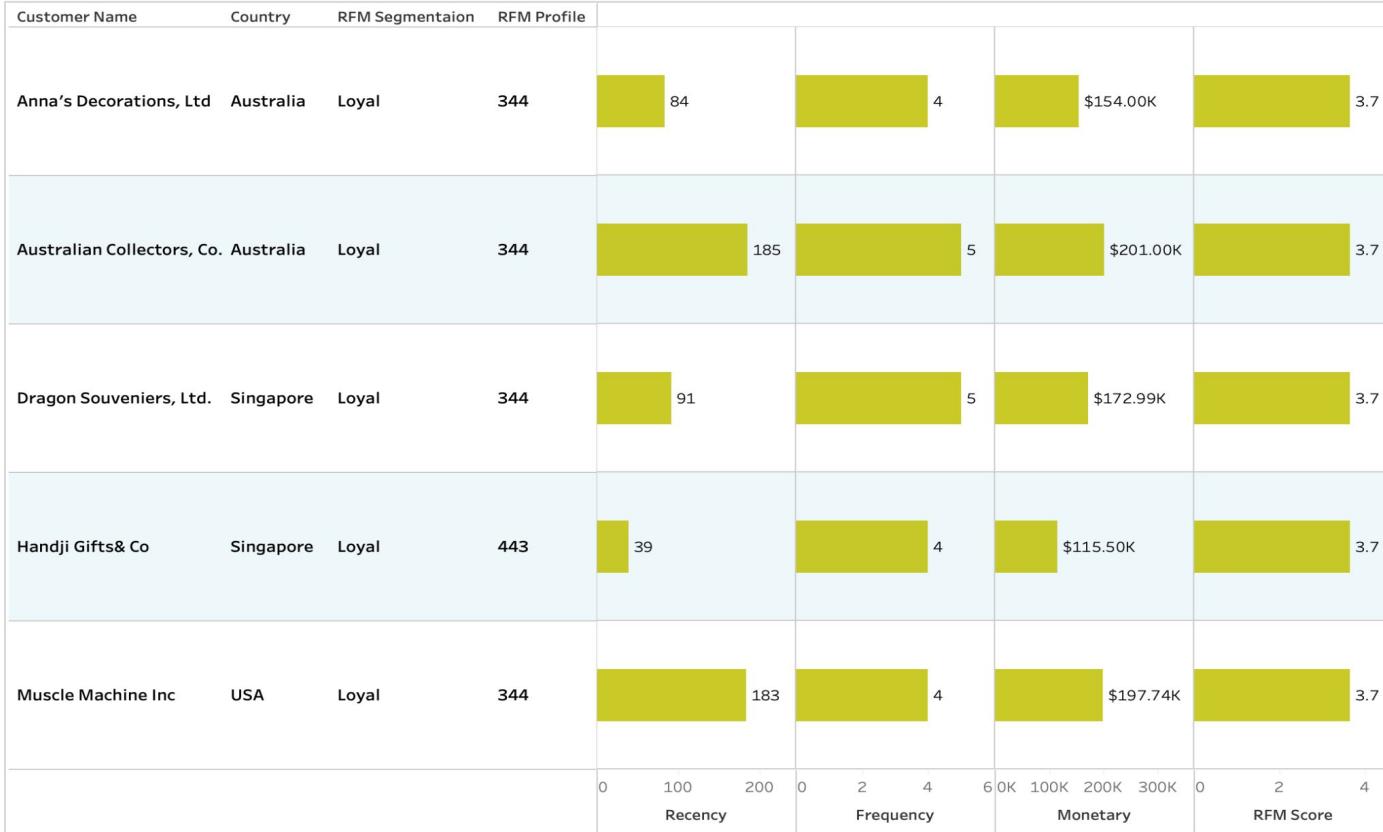
- Customers having a **perfect 4-4-4 score**
- Total 9** customers are segmented as **Best customers**
- They Bought most recently, Buys most frequently, and buys big.
- Create **positive WOM** (word of mouth)

Recommendation

- Loyalty programs, new product and value-added** recommendations based on past purchase



RFM – Loyal Customers



- Recent, most frequent and spends High.
- Total 9** customers are segmented as **Loyal customers**
- Clear and positive view of the brand.
- Happy with the product and service provided, and are **unlikely to switch to alternatives**.
- Important to make these customers **feel valued**

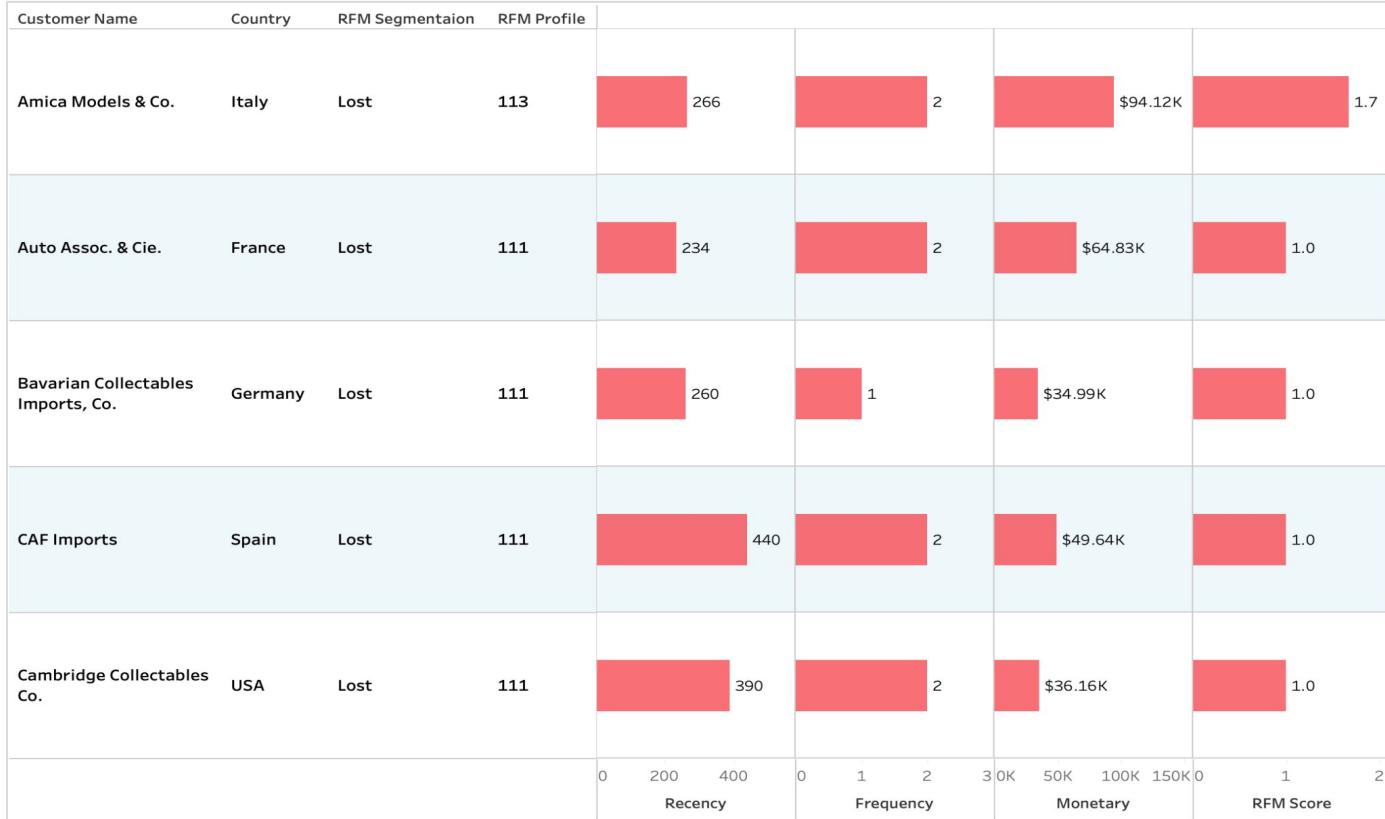
Recommendation

- Offer **Loyalty programs**, ask for reviews, **reward** (e.g., Free Shipping) and **Engage** them.

* Only Top 5 shown above



RFM – Lost Customers



- Inactive since a while, lowest frequent and low spends (11X)**
- Total 20 customers** are segmented as **Lost**
- Stopped** using services altogether
- Very difficult** to **re-engage** with this segment, as they either have a negative view of the service or a more trustworthy alternative.
- Most customers** are from **USA(9)**

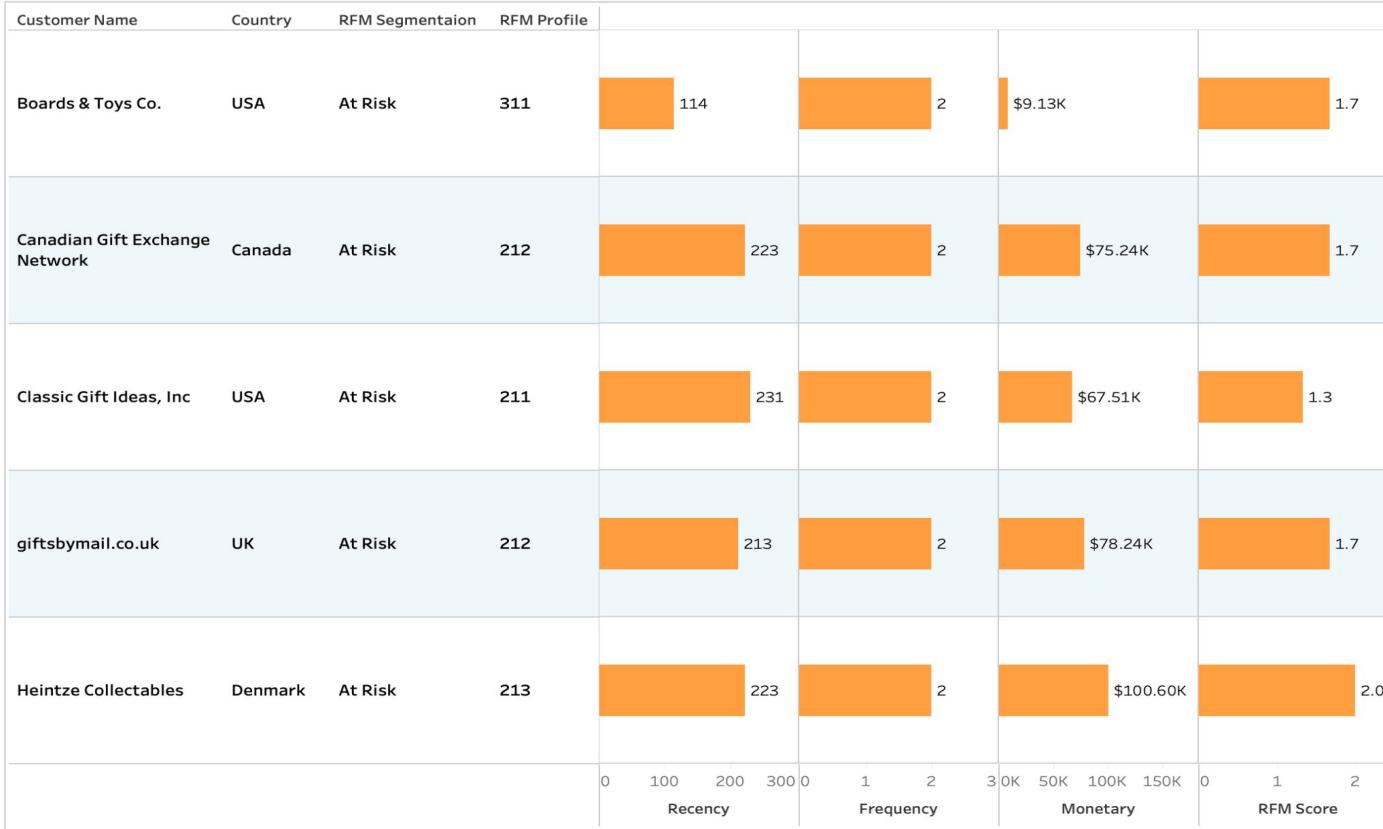
Recommendation

- Revive** interest with **reach out campaign**
- ignore otherwise**

* Only Top 5 shown above



RFM - At Risk Customers- On The Verge of Churning



- Relatively less active since a while, low frequent and average spends
- Total 10 customers are segmented as At Risk
- Considering stopping use of the service due to various reasons.
- Might had bad experience with services
- In order to prevent this, it's necessary to scrutinize their behavior.

Recommendation

- Send personalized emails to reconnect
- Improve trust & loyalty
- Offer renewals, provide helpful resources.

* Only Top 5 shown above



RFM Analysis - Recommendation

RFM Segmentation	Description	Recommendation	Count	Sales
Champions	Best Customers. Bought recently, Buys frequently, and buys big. Create positive WOM (word of mouth) for the brand amongst their circles. Contributes a disproportionate amount of revenues to the business, and hence must be treated with care.	Loyalty programs, new product and value-added recommendations based on past purchase	9	\$2.61M
Loyal	This segment is the bread and butter of every business, as customers in this segment have a clear and positive view of the brand. These customers are happy with the product and service provided, and are unlikely to switch to alternatives. Important to make these customers feel valued	Loyalty programs, ask for reviews, reward (e.g., Free Shipping) and Engage them	9	\$1.36M
Price Sensitive	These customers are always on the lookout for price-led promotions. Their loyalty and purchase are not defined by brand interactions, but by changes in the price that they have to pay. A segment that can be easily leveraged through offers and discounts	Provide cost-effective deals and tailored offers	22	\$1.50M
Can't Lose them	High-value customer. As the label suggests, this segment requires continuous attention, as these customers are regular users of the brand at some risk of switching, and need to feel valued, to continue using it.	Provide continuous attention, personalized offers, and exceptional service	19	\$2.15M
At Risk	This segment constitutes users who are considering stopping use of the brand due to various reasons. In order to prevent this, it's necessary to scrutinize their behavior and create further personalization in communication to ensure an increase in brand trust and loyalty.	Send personalized emails to reconnect, offer renewals, provide helpful resources.	10	\$0.80M
Lost	These customers have stopped using services altogether and have decided to use alternatives instead. Very difficult to re-engage with this segment, as they either have a negative view of the service or a more trustworthy alternative.	Revive interest with reach out campaign, ignore otherwise.	20	\$1.33M

Thank You