Caterpillar INC-Team 6

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In the first part we have setup the AWS Pipeline architecture which is the base of our marketing system. The second part explains how we have come up with analysis on how to tackle the company's problem and visualized the same.

Part 2:

Caterpillar Inc dashboard

The below image depicts the revenue of caterpillar company over the past three years. We can infer that the maximum revenue is generated from large scale industries. The contribution from medium and small-scale industries is comparatively lesser. Also, we can deduce that the sale through dealership is also low.

Sales vs Customer Group
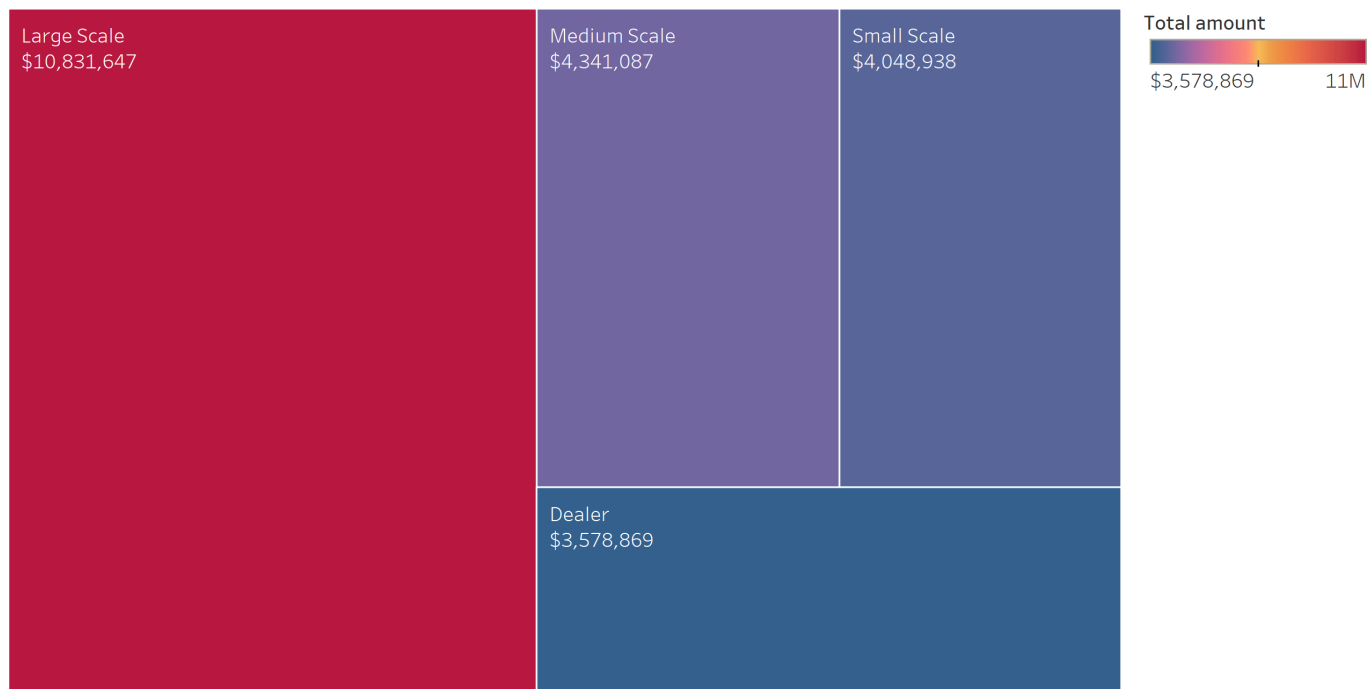
Cusomter Category and sum of Total amount. Color shows sum of Total amount. Size shows sum of Total amount. The marks are labeled by Cusomter Category and sum of Total amount.
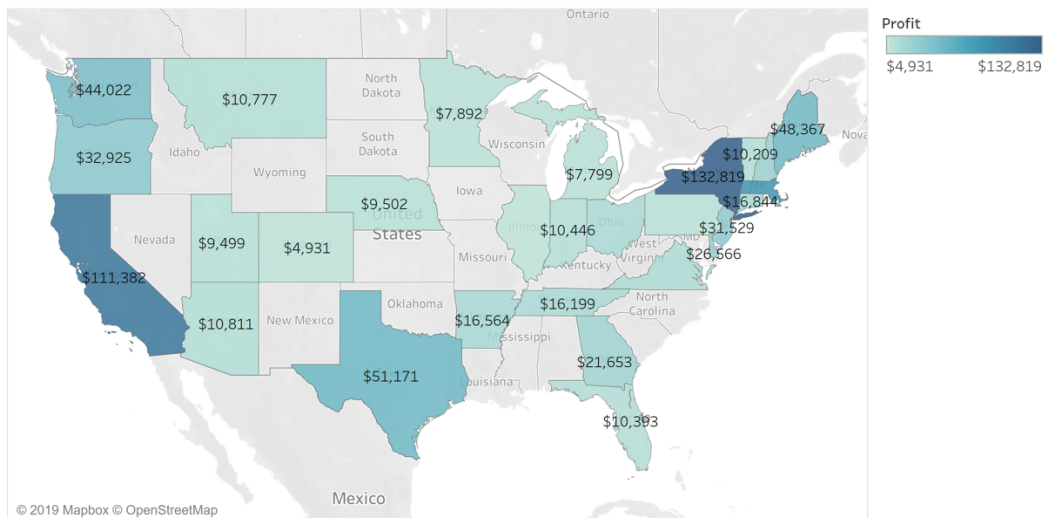
In 2018, the company introduced a promotional policy targeting small scale industries which increased the sales for the segment. This can be inferred from the graph below.

Promotional Stats
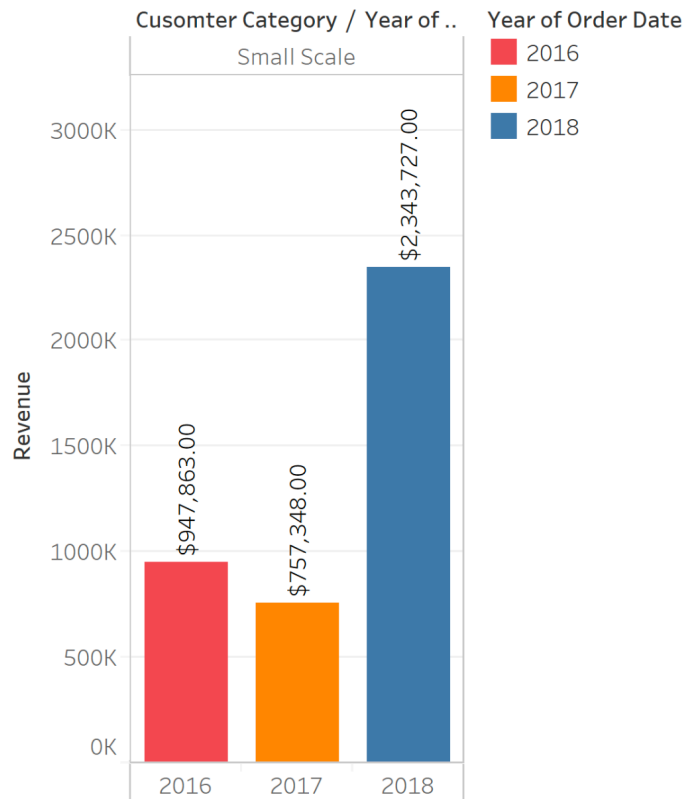
The above visualization shows the profit distribution in different states of United States. We can see that the two most profitable regions in the United states are East and West, while the central and southern region are showing less profitability. Therefore, we need to focus on marketing strategies on these 2 regions.

Statewise Profit distribution

Map based on Longitude (generated) and Latitude (generated). Color shows sum of Profit. The marks are labeled by sum of Profit. Details are shown for State or Province.

In 2016, the company had introduced a Promotional Policy "Promo1" for Dozers category which increased the sales significantly, however due to some faulty decision making by the company, the policy was scraped in 2017 onwards and this resulted in decline in sales. We suggest company to reintroduce the same policy to increase the sales of dozers
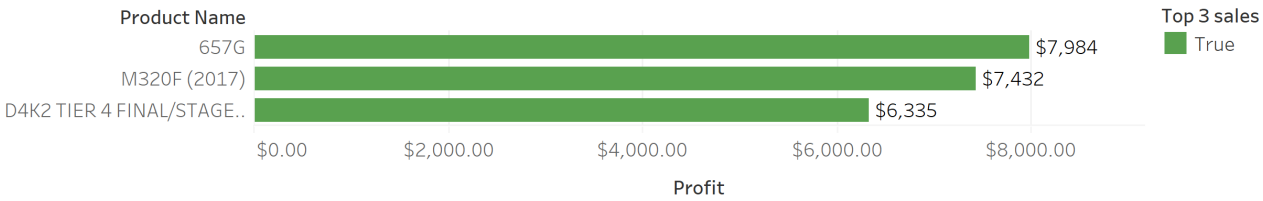
Product Category Promotions
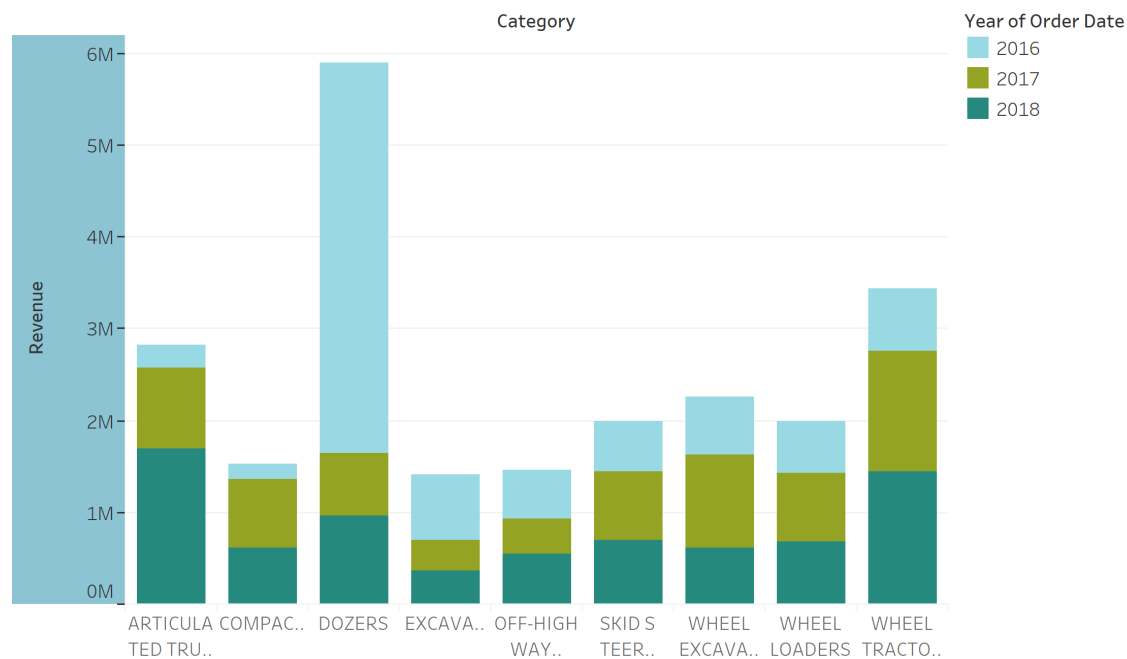
Sum of Total amount for each Category. Color shows details about Order Date Year. The data is filtered on Promotion ID, which keeps 6 of 6 members.

The following image shows the top three products sold to the dealers by the company over the period of three years i.e. from 2016-2018
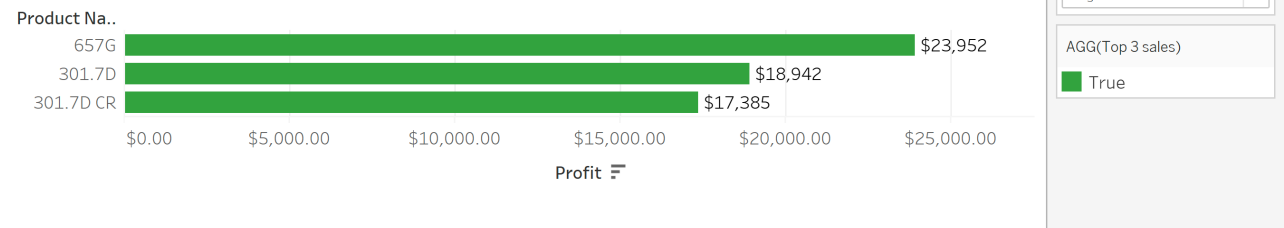
Product Profit Margins

Product Name	
657G	$7,984
M320F (2017)	$7,432
D4K2 TIER 4 FINAL/STAGE..	$6,335

$0.00 $2,000.00 $4,000.00 $6,000.00 $8,000.00

Profit

Top 3 sales
■ True

Sum of Profit for each Product Name. Color shows details about Top 3 sales. The data is filtered on Cusomter Category, which keeps Dealer. The view is filtered on Top 3 sales, which keeps True.

The below image depicts the top 3 products sold to the customers (construction companies) over the period of three years i.e. from 2016-2018

Product Profit Margins
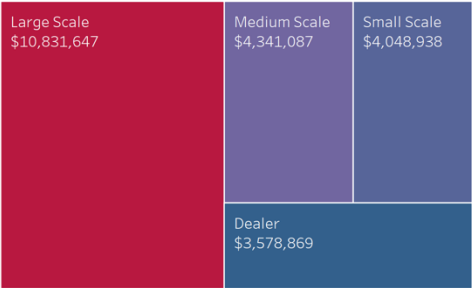
Product Na..	
657G	$23,952
301.7D	$18,942
301.7D CR	$17,385

$0.00 $5,000.00 $10,000.00 $15,000.00 $20,000.00 $25,000.00

Profit ☰

Cusomter Category

| Large Scale | ▼ |

AGG(Top 3 sales)

■ True

The below image represents the dashboard for the analysis of the Caterpillar company

CATERPILLAR INC
SALES ANALYSIS

MARKET DATA

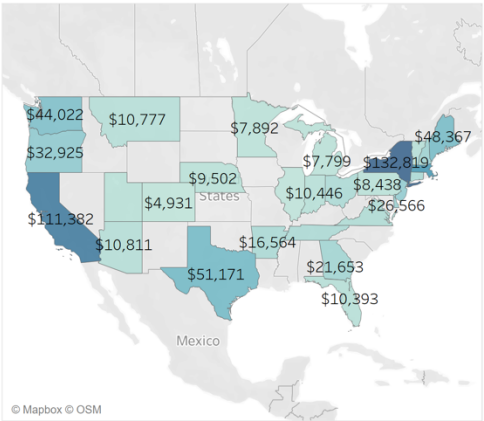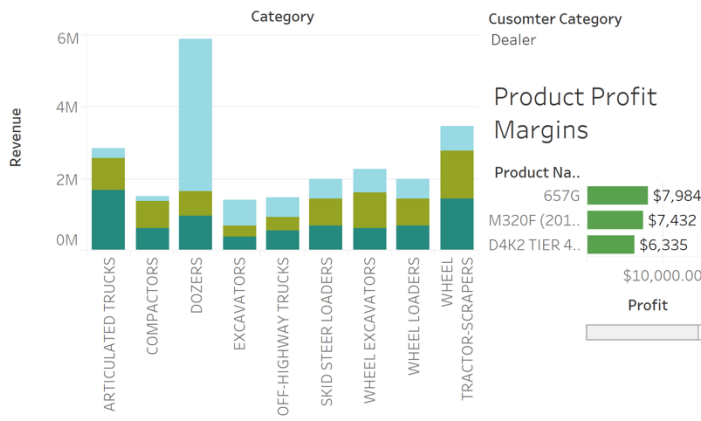### Sales vs Customer Group

Large Scale $10,831,647	Medium Scale $4,341,087	Small Scale $4,048,938
	Dealer $3,578,869	

Promotional Stats

Cusomter Category / Year of Order Date
Small Scale

Revenue

- 2500K
- $2,343,727.00 (2018)
- 2000K
- 1500K
- $947,863.00 (2016)
- 1000K
- $757,348.00 (2017)
- 500K
- 0K

2016   2017   2018

Cusomter Category
- Dealer
- Large Scale
- Medium Scale
- ● Small Scale

Promotion id
All

Promotion ID
All

Statewise Profit distribution

$44,022 $10,777 $7,892 $48,367
$32,925 $7,799 $132,819
$9,502 $8,438
$4,931   States $10,446 $26,566
$111,382
$10,811 $16,564
$51,171 $21,653
$10,393

Mexico

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Product Category Promotions

Category

Revenue
- 6M
- 4M
- 2M
- 0M

ARTICULATED TRUCKS, COMPACTORS, DOZERS, EXCAVATORS, OFF-HIGHWAY TRUCKS, SKID STEER LOADERS, WHEEL EXCAVATORS, WHEEL LOADERS, WHEEL TRACTOR-SCRAPERS

Cusomter Category
Dealer

Product Profit Margins

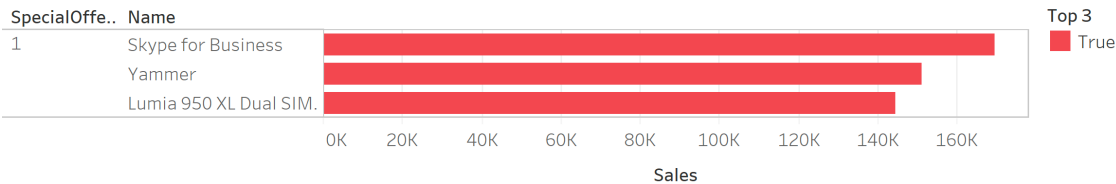| Product Na..	Profit
657G	$7,984
M320F (201..	$7,432
D4K2 TIER 4..	$6,335

$10,000.00

Profit

Team 7: Microsoft Sales Analysis

The data provided by Microsoft team was of Sales Analysis of the company and their products.

The below image depicts the top 3 products using different promotional strategies for each of the products.

Product Performance

Sum of Sales for each Name broken down by SpecialOfferID (Promotions (1).csv). Color shows details about Top 3. The view is filtered on Top 3 and SpecialOfferID (Promotions (1).csv). The Top 3 filter keeps True. The SpecialOfferID (Promotions (1).csv) filter keeps 16 of 16 members.

The below graph sales via customer category. They are divided into 3 categories.
One is customer which is a retuning customer, second being no discount which means it is a new customer and third is the reseller.
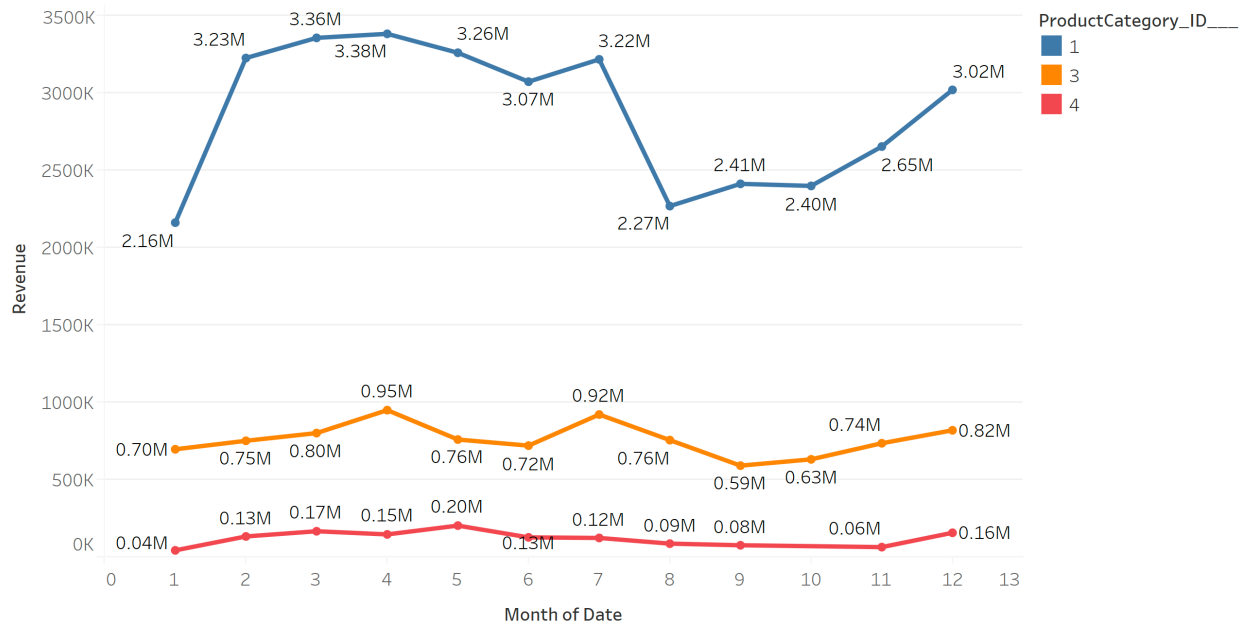
Sales by Customer Category
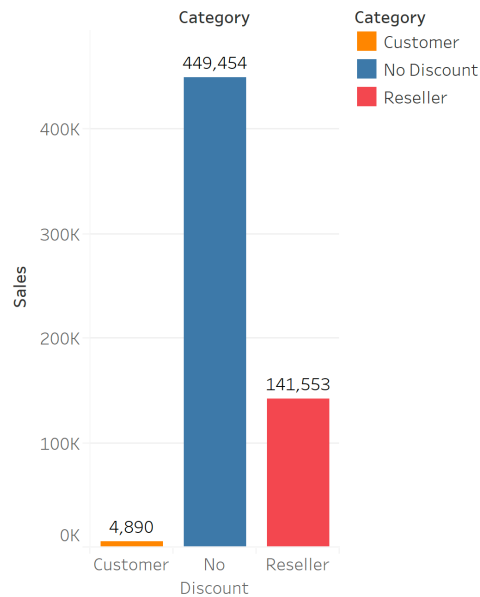
Sum of Sales for each Category. Color shows details about Category. The marks are labeled by sum of Sales. The data is filtered on Business Entity ID, which keeps 274.

This image tells us how much revenue is generated for each month for various categories of product ranges.
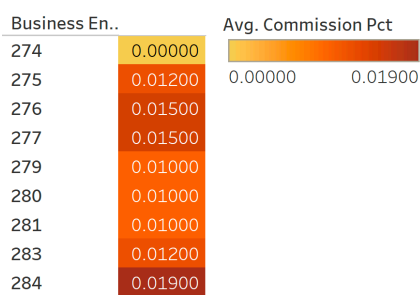
Sales by Month

The trend of sum of Revenue for Date Month. Color shows details about ProductCategory_ID____. The marks are labeled by sum of Revenue.

The image depicts the average sales commission received for a particular business entity. Each business entity is further represented by a salesperson.

Sales Person Commission

Business En..	Avg. Commission Pct
274	0.00000
275	0.01200
276	0.01500
277	0.01500
279	0.01000
280	0.01000
281	0.01000
283	0.01200
284	0.01900

Avg. Commission Pct
0.00000 — 0.01900

Average of Commission Pct broken down by Business Entity ID. Color shows average of Commission Pct. The marks are labeled by average of Commission Pct.

The following image is the dashboard for Microsoft sales analysis

MICROSOFT

Sales Analysis

Market Analysis

Sales by Month

Top Product Sales wise

Product Name / SalesPersonID (SalesPerson.csv)

Windows

Business Entity ID
- 274
- 275
- 276
- 277
- 279
- 280
- 281
- 283
- 284

Category
- Customer
- No Discount
- Reseller

SpecialOfferID (Promotio..
All

Product Performance

SpecialOffe..	Name
1	Skype for Business
	Yammer
	Lumia 950 XL Dual SIM.

0K 50K 100K 150K
Sales

Sales by Customer Category

Category

449,454

141,553

4,890

Top 3
- True

Sales Person Commission

Business En..	
274	0.00000
275	0.01200
276	0.01500