Unicorn©

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Data Cleaning

To properly check this data before using it, we performed some data cleaning after joining all of the tables together through SQL.

- First, we separated the year and month from the order date to have cleaner subsets to work within.
- Secondly, we checked for null values. These were for the shipping postal codes for Burlington, Vermont. As we were using state and city data, we decided to leave these as is.
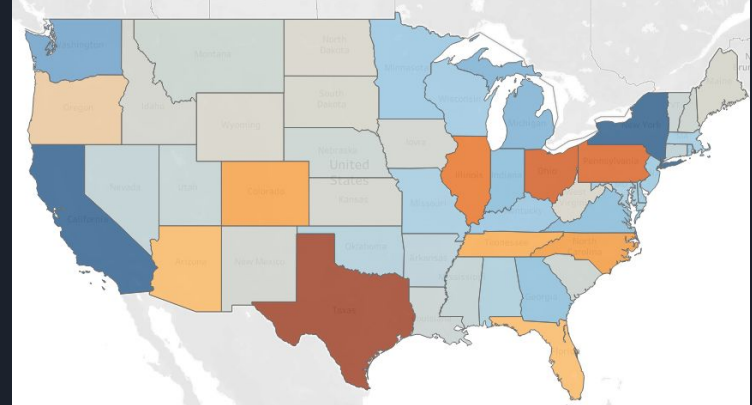
What we looked for

When first going through the data after cleaning, we asked some key questions to jump start our deep dive.

- What was the lowest & highest profitable state/region? What were they buying?
- How did profits and sales change over time? Were there any interesting patterns or spikes?

Profit by Months

Profit by State

Unique...California?

While New York has the highest overall profits, California has almost caught up and it trending upwards. California also has:

- Most sales throughout data
- Most quantity sold throughout, with the exception of 2015
- Highest overall order to profit ratio

We see that California's highest category is office supplies, compared to the rest of the states where technology is the highest.

Drilling down from that, we see that the highest subcategory for California is binders.

Unique...California? cont'd.

Other States

California

Customer Segment
- Consumer
- Corporate
- Home Office
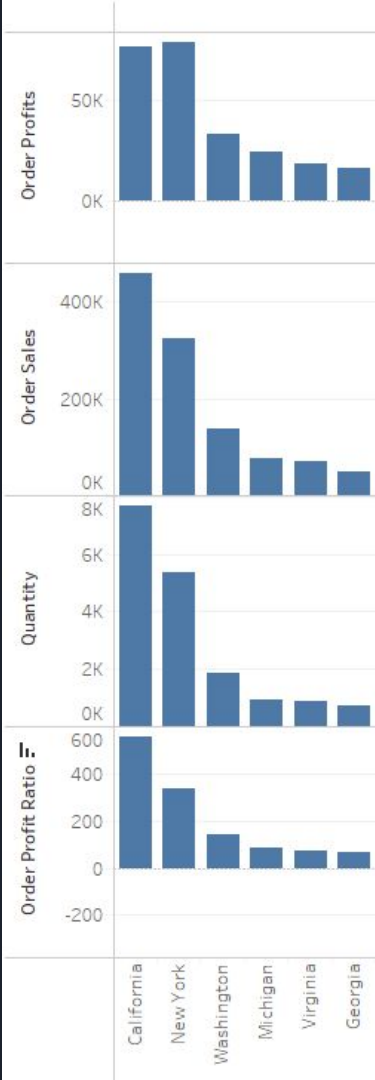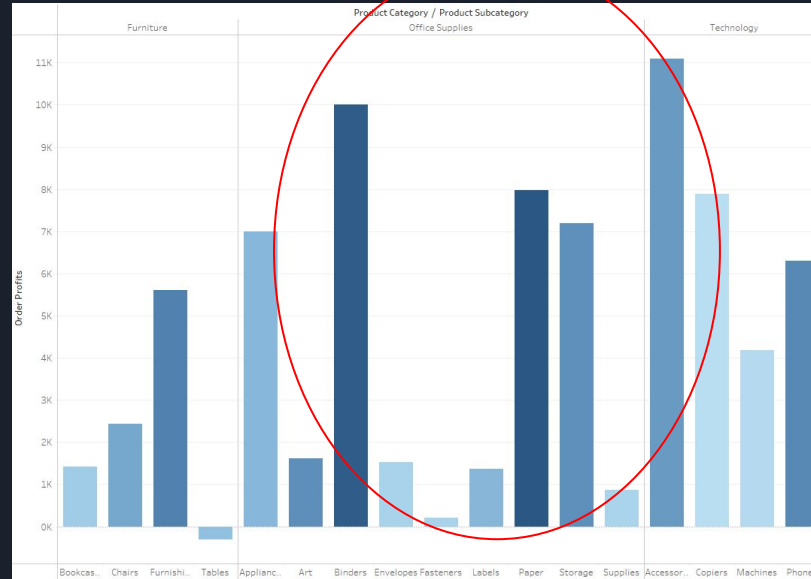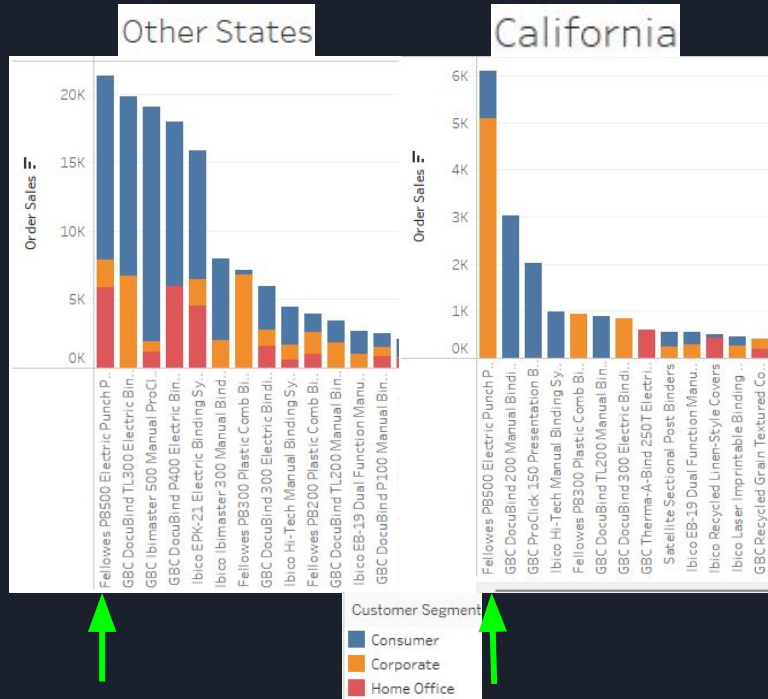
While looking into the Binders subcategory, we see that the most profitable item is the Fellowes PB500 Electric Punch Binding Machine. This is the same across all states, including California.

However, California has sold this item for $6101, compared to the rest of the states with a total of $21353. This means California alone accounts for almost 30% of the sales for this one item.

Also, when looking at customer segments for this item, 83% of the sales for California come from Corporate buyers whereas less than 10% of the sales for the rest of the states come from Corporate.

The Problem with Texas

What we see in California, unfortunately can't be said of Texas. Although it has the 3rd highest sales and quantity overall, it has the lowest profits and order to profit ratio.

When we look at the subcategory and categories, we also see that Binders show up yet again, but as a huge negative for Texas.

Even though the quantity of Binders ordered by both states is comparable, the profits couldn't be more different, with California making $10,006 in Binders and Texas losing $14,705.
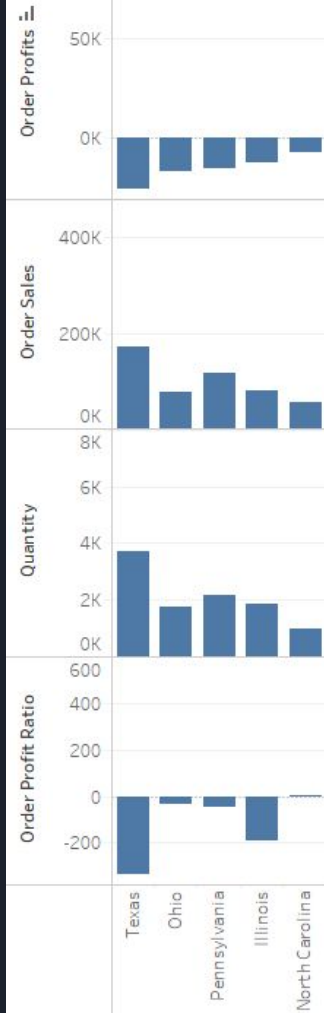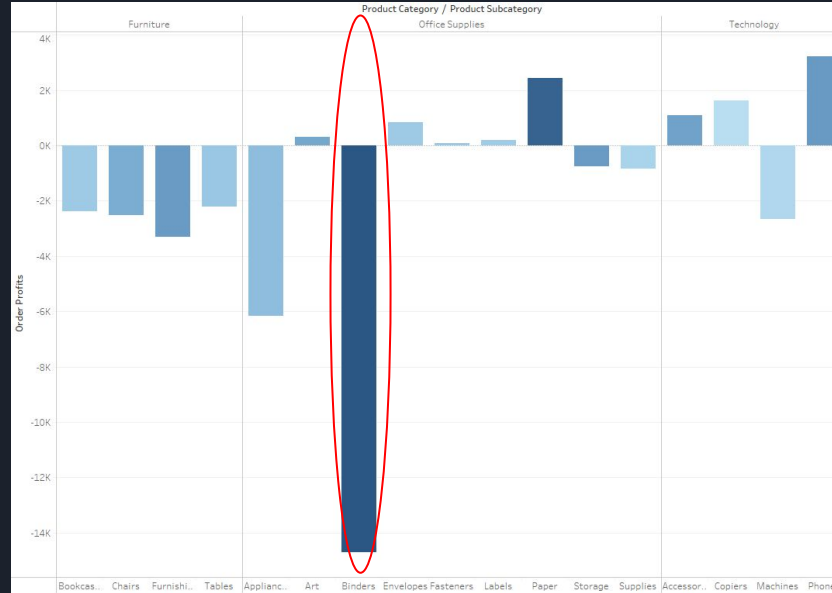
The Problem with Texas, cont'd.
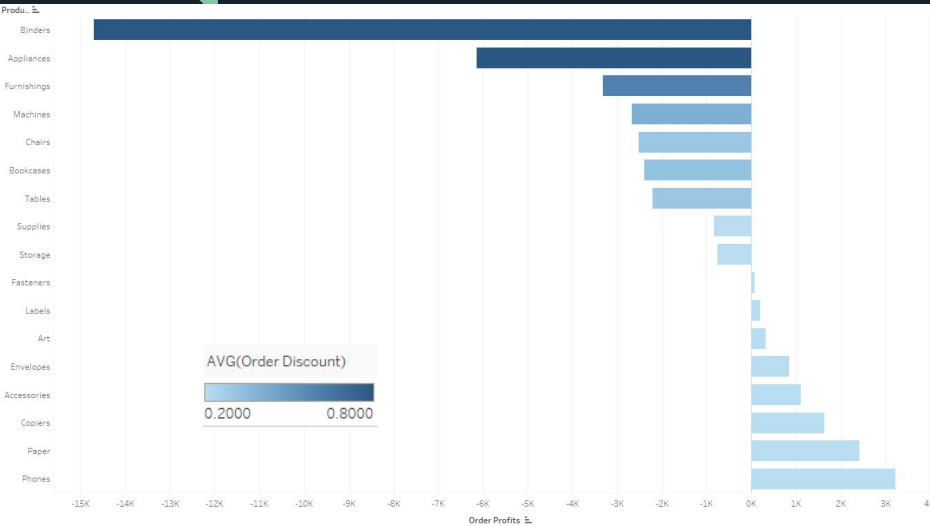
When we drill down to the actual items, we see that the same item that made California (and other states) so much profit, is actually losing Texas money. We also see that Texas sells significantly more to individual consumers than corporate buyers.

When ordered by discount, we see what is happening. Binders has an overall average order discount of 80% in Texas whereas California only discounts 20% and all other states discount 32%.

Even when we take a look on the whole, Texas has an average order discount of 37% while across all the other states that average is only 13%.

WHAT you sell Matters

We saw that the biggest monthly fall in sales occurred from March 2018 to April 2018, with a decrease of about $13K. The second largest fall occurred December 2015 to January 2016, with a decrease of about $12K.

Looking into this more, we found that the 2018 decrease was much more interesting than the 2015-2016 decrease due to several factors. Those being:

- Sales
- Discount
- Quantity
- Order to Profit ratio

WHAT you sell Matters, cont'd.
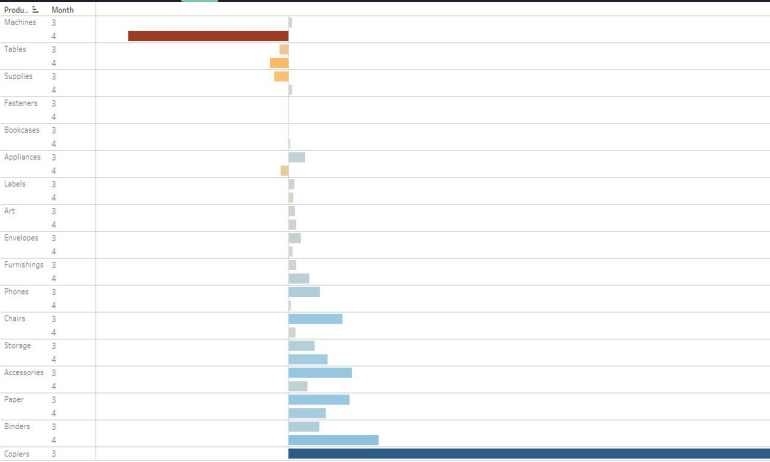
Order to profit ratio was key to informing us that item selection dictates profits. Specifically:

- Machine subcategory was vital in all four months previously mentioned, especially March-April 2018, as seen on the left.
- Specific items in the Machines category can decide entire months profit.
  - Lexmark Monochrome Laser Printer has lost about $4500 overall
    - $3400 in one month
  - HD inkjet has profited about $4000 overall
    - $2200 in one month
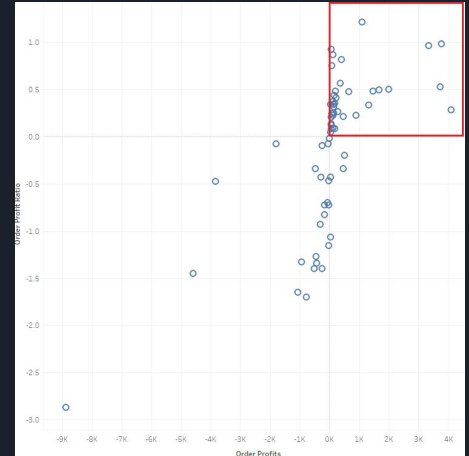
Summary

Conclusion from recommendations

1. Target more Corporate accounts, especially ones that primarily need office supplies and technology.
2. Texas needs to be discounted significantly less.
3. Discontinue unprofitable items from Machines subcategory, or recommend alternative profitable items to customers.

Alternative areas to look into:

1. Table subcategory, as only 21% of items are profitable.
2. Growing market of Pacific Northwest that is already profitable.

Thank you!