**Analysis for Whiskique**

**Customer Analysis**

We want to see distribution of customers by state, so we created a map on the sheet “Customer Info” visualizing how are the customers spread out across different states with bubble sizes representing the size of the distribution. The state of **California** has the highest amount of customers *419* followed by **Florida** which has *229*.

We added “**Region**” as the legend in the map visual to show what state does each region belong to.

Created a bar graph to show the top 20 states by the Lifetime Value Average (LTV (avg)) of customers. **North Dakota** has the highest LTV (avg) of customers (*1,277.8*) and the state with the least LTV (avg) of customers is **Missouri** (*333.28*).

Although California has the highest number of customers among all states, it doesn’t even rank in the top 10 for average customer Lifetime Value.

**Products and Shipping**

Let’s see what products sell well and the costs associated with selling these products.

On the sheet “Product Info”, we inserted a table that displays the average quantity sold by product in descending order. The top 3 products sold are “Sheba Wet Portions Pat Wet Cat Food”, “Canned Cat Food” and “Templation Soft Cat Treats” which are all cat foods.

Created a **treemap** visual that shows the total sales amount by product, and added the product category in the hierarchy. Although the top 3 sold products are cat food related, we can see in this visual that the top products by sales amount here are dog related, with the top product being “**Taste of the Wild High Prairie Grain-Free Dog Food 40lb**” with a total **revenue of 270,364.38**.

Visualized the average shipping cost by product in a **column chart**. Turns out that the highest shipping cost product is the same as the one which generated the most revenue (**Taste of the Wild High Prairie Grain-Free Dog Food 40lb**) with an average shipping cost of 20.

**Looking at Quantities**

Let’s view the total sales by average quantity (the average quantity of products per transaction (invoice)).

We created a column chart visual on the sheet “Quantity Info” to show the percentage of the grand total sum of sales by order quantity. In simpler terms we are seeing which order quantities contribute most to total sales. We can see here that the order quantity of 1 item has the highest percentage of total sales with a percentage of *32.25%*.

Created another column chart that displays the percentage of the grand total of the sum of total sales by total quantity which in simple terms translate to the total quantity of items per invoice. The order quantity of 2 here has the highest percentage of *7.22%*, which means most invoices consist of 2 items.

**Market Basket Visualization**

We’ll try to understand customer patterns better. For example if a customer buys a specific item, what else do they buy?

On the sheet “Market Basket Analysis”, we created a table listing all products by description using variables from the “**Sales**” table. We added the sales and profit percentage margin for each product.

Next to the table we inserted a column chart that shows product count by description using variables form the duplicated sales table that we renamed to “**Market Basket**”.

Now when you select an item in the table, the bar chart next to it gets filtered on all the invoices that contain that specific item and the other things that get ordered along with it.

This happens because we created an active “**many to many**” relationship between the “**Sales**” table and the “**Market Basket**” table.

We see cross selling opportunity here to promote “Memory Foam Pet Beds for Small, Medium, and Large Dogs and Cats” with the most selling product “Taste of the Wild High Prairie Grain-Free Dry Dog Food 40lb” since it is the most product bought in combination with it.

**Shipping Costs (What-if)**

The shipping department informed us that shipping more than one quantity of an item costs, on average 70% of the cost of a single unit shipment. Meaning for example, say the shipping cost of one item is $10. If you ship two or more, the average cost per item becomes $7 (which is 70% of $10).

To create this shipping cost we created the measure “**Shipping (Baseline)**”.

Added a measure “**Blended Shipping Cost Factor**” which is a dynamic shipping cost that varies with the quantity.

The slicer we added to the page “**Shipping Metrics 1**” is basically a parameter that allows you to control the quantity of items so you can see the shipping costs.

Created another measure “**Shipping (What-if)**” which is basically the same as the measure “**Shipping (Baseline)**”, but replaced the fixed value 0.7 with the measure we created “**Blended Shipping Cost Factor**” which is more dynamic.

Added a measure “**Shipping (Difference)**” that calculated the difference between “**Shipping (Baseline)**” and “**Shipping (What-if)**”.

Insights:

The funnel visualization here shows us the difference between the 3 metrics we created in the “Sales” table which are “**Shipping (Baseline)**”, “**Shipping (What-if)**” and “**Shipping (Difference)**” . The slicer is set for 10+ items. We can see that the “**Shipping (Baseline)**” cost (*385.15K*) is bigger than the “**Shipping (What-if)**” cost (*266.96K*) with a difference of (*$118.19K*) which is a *30.7%* difference and it’s a quite remarkable amount!

We can actually start to see a substantial reduction in the shipping costs between the flat and dynamic models at a quantity of 5 items where the difference in cost is 15%.

The progressive discounting becomes more aggressive at higher quantities (dropping to 30% of base cost at 10+ items)

**Shipping Costs by Product (What-if)**

To compare the baseline shipping costs with hypothetical costs across different products, we visualized these 2 shipping costs by product description with a column chart on the “**Shipping Metrics 1**” sheet. Added the shipping difference on the Line Y-axis.

We can see that as we increase the quantity of items, the what-if shipping cost decreases in comparison to the baseline shipping cost.

Added a column chart the shows the average quantity of products sold by category

**Shipping Metrics**

To tidy things up for shipping metrics, we created a final clean dashboard for it “**Shipping Metrics**”. We displayed the 3 main shipping metrics that as cards so we can keep an eye on what’s important here. We added the column chart for the shipping costs difference by product, and of course the quantity slicer.

We created an area chart here for the running totals of these 3 main shipping metrics. We displayed a constant line for the shipping difference. Here we can see that as the year advances, the shipping costs increases. There is a clear and significant difference between the baseline and what-if running totals, with the what-if scenario showing substantially lower values specially with the increase of quantity to 10+.

Added a column chart that shows average quantities of product sold by category. Highest average quantity of a products category sold goes to “Pet Food” and the least average quantity goes to the “Electronics” category.

Displayed the baseline shipping cost by region and state on a map visual.

**Revenue and Profits**

In this section, we’ll answer frequently asked questions by executives. For example, who are my top customers? What are the company2’s profits?

To answer these questions, on the “Sales” page, we visualized the sales by state and we can see that the state of California has the highest amount of sales ($172,697) followed by Florida ($107,522) and then Massachusetts ($88,279).

To see the profits and sales, we displayed the sales, baseline profit and profit % as cards. We have a profit percentage of **27.50%** which a very good percentage for this type of business. The total profit for the business is **$427.34K**!

**Building an Executive Summary**

On this page you can see that we have the same map visual and cards form the “Sales” page. We added the Total shipping cost as a card visual.

In the bar graph we can see that the top selling product is “Taste of the Wild High Prairie Grain-Free Dry Dog Food 40lb”, it’s of the food category is food that scored a total of $270,364 in sales!

We inserted a slicer at the top right corner of the page that lets you choose a specific product to see its metrics.

The tree map shows the percentage of profit margin layered by category and under that product, to make things cleaner and easier to see. Electronics has the highest profit margin among categories (44.28%) followed by Grooming and then Cleaning supplies.