**SMG Analytics Exercise**

**Data Given**:

1. Vendor Inventory Information
   1. Product ID
   2. Product Category
   3. Product Name
   4. Quantity Available
   5. Suggested Retail Price
   6. Standard List Price
   7. Pack Quantity
2. Store Info
   1. Location Number
   2. Location
   3. Total Sales in Units

**Analysis**:

1. Cleaned data: Removed null/missing values, consolidated data into a table to enable easy filtering and sorting.
2. Analysis of data: Pivot table of Product Names, Profit and Quantity to determine top 10 products based on quantity. The table can be filtered as per Product Category to look for maximum profit generating categories or categories with highest inventory units.

Before we proceed to create a bid, let us perform a SWOT Analysis of our company and the inventory in question.

1. Strengths:
   1. Large number of stores across the country in urban areas.
   2. Distribution centers to store inventory.
   3. Loyal customers and legendary reputation.
   4. Loyalty and reward program such as SYW.
   5. Multiple Retail Channels.
   6. Good quality goods.
2. Weaknesses:
   1. Increased competition and aggressive pricing.
   2. Struggle to increase market share.
   3. Cost conscious and price sensitive customers.
3. Opportunities:
   1. Sell branded and high quality products for prices lower than competitors.
   2. Higher profit margin.
4. Threats:
   1. Almost all major retailers implementing Off price initiatives and opening discount stores.
   2. Lackluster customer response to new products.
   3. Dynamic and agile market, new technologies, need to be updated with market and consumer requirements.

**Creating a Bid to Purchase Inventory**:

Given limited data about vendor relations, customer information, historic sales data or cost associated with inventory management; I have developed three use cases to consider in making a bid to the vendor. Each use case has associated risks and ways to mitigate risks when making a bid to purchase inventory.

Assumptions:

* 1. Time Period: One year
  2. Dealing with the same vendor

1. Case 1: Let us assume we make a bid to purchase the entire inventory of the vendor. We make a bid as per the asking price of the vendor which is $1,203,997 and assume that we will be able to sell all the products in the inventory.

Risks:

1. I can’t sell the entire inventory, I lose my investment.
2. Competitor has lower prices or better products.
3. Products become obsolete, newer or more efficient products replace products in my inventory.
4. Changes in laws, policies, occurrence of events directly or indirectly affecting my business.

Mitigating Risks:

1. Aggressive promotional and marketing strategies to ensure I sell inventory even if product prices are lowered and I don’t make any profit.
2. Thorough research and analysis of my competitors to understand their prices, strategies, strengths and weaknesses.
3. Lookout for new products or innovations which may replace products in our inventory and accordingly conduct flash sales or large discounts before new product is introduced in the market.
4. Insuring our inventory in case of any catastrophic events.

In this case, cost to purchase like I mentioned before is $1,203,997.

1. Case 2: We make a bid to purchase the entire inventory, but establish payment terms with the vendor. We only pay half the cost as down payment and the rest can be paid in equal payments over a year with interest or when we have generated significant profit. Although, vendor might increase the asking price since we would only be paying for half the inventory, we can negotiate a payment term that can significantly cut down risk for us.

Risks:

1. Additional costs to set up contracts and draw up legal payment structure.
2. If I sell the entire inventory, I must repay more with interest, which costs more than purchasing the entire inventory upfront.
3. There is no guarantee we will make a profit.

Mitigating Risks:

1. Our risk is significantly reduced when we don’t have to commit to the full cost.
2. We can analyze sales for first six months and accordingly make changes to product prices affecting our profit margin.
3. If we do sell the entire inventory before the end of the year, our costs are reduced.

The cost of purchase for this case is $1,313,356 assuming we repay until the end of the year.

1. Case 3: This time we will not purchase the entire inventory. Instead, we compute the profit for each product based on the quantity of each product, it’s suggested retail price and the list price. Then we sort the profit from largest to smallest and only purchase products which account for top 50% of the profit of the entire inventory. This way, we are purchasing products with the largest profit margins and reducing our inventory size.

Risks:

1. The vendor does not wish to be left with products with low retail value and expects buyers to purchase the entire inventory.
2. Vendor may increase asking price.

Mitigating Risks:

a. We could negotiate with the vendor and pay higher than asking price because we are only buying products with high profit margin.

In this case, we will be purchasing products with large profit margins and consisting of half the number of products in the inventory. After analyzing data for the given retail price, quantities and list price I have determined that negotiating this deal with the vendor will almost the same profit as it would have if we had purchased the entire inventory. At the same time, our cost is lower than the cost of purchasing the entire inventory. Here is a comparison:

Purchasing Entire Inventory:

Cost : $1,203,997

Profit: $800,018

Purchasing Inventory as per Case 3:

Cost: $1,088,755

Profit: $714,085

(Assuming no changes in the retail price or vendor asking price)

Therefore, I would recommend bidding for the inventory as per Case 3. The vendor may or may not increase the asking price, but we can offset that by having greater control over our profit margins.

**Retail and Pricing Strategy**

* To implement a successful retail strategy, we should analyze lots of information and try to understand customer’s needs. Breaking down all the data to its atomic level will help us discover new patterns or matches that may not be visible at the high level.
* One of our greatest strength is our retail channel. There are multiple ways customers can interact and shop with us. It is our job to make sure we provide our customers with a memorable and easy shopping experience. To understand how our product must be sold or allocated to a store we should understand our customer’s needs and requirements.
* SYW is an innovative method to encourage customers to shop with us and understand their shopping behavior and requirements.
* As an Off Price division, our goal is to provide high quality and branded products at low prices. According to a recent survey, a majority of consumers still prefer to shop at the store. Men prefer the instant transaction that takes place – exchange of goods for money. Whereas women prefer to look, feel and try a product before making a purchase. These are some very basic nuances we can use to our advantage to compete with other retailers.
* One of the innovative ways to predict customer needs is using an algorithm known as Association Rules. Collecting daily transaction data from customers and using this algorithm to look for combination of products purchased which have generated the highest revenue. Association rules determines the probability of a customer to purchase complementary products based on past purchasing behavior.
* It is also important to ensure that customers are encouraged to embrace omnichannel retail. Customers can browse and peer compare products online before making a purchase in the store or just pick up the product in store the same day. Historic sales data can give us a good idea of forecasting our inventory requirements considering different factors such as seasonality, trend and irregularity.
* Lastly, retail strategy must synergize with pricing strategy which we will discuss next.

**Pricing Strategy**

* Why should a customer buy our product? What is that we can provide which other retailers can’t? Answer to these questions will help us decide on a pricing strategy.
* I think it is important the derive value from our products and services. Customer should not make a purchase just for the brand and quality, but also for the value or memories associated with the product.
* In the current market, we must be agile and leverage all data to make quick and efficient decisions.
* For the Off Price division, I would recommend a pricing strategy such as ‘status quo’, where our prices are similar to our competitors. However, when these products are introduced in the market they should be priced higher than the suggested retail price. Every retailer wants to keep their prices as low as possible, but that shouldn’t undermine the value of the product.
* We would rather decrease the price of a product after it’s introduction than attempt to increase after a few months to drive revenue.
* Lastly, I believe a large portion of our products deal with home improvements and accessories. These products can be sold in a bundle with other complementary products.
* Appealing and understanding the consumer psychology is very important when pricing products. A customer is likely to purchase products in a bundle than each product in the bundle individually.
* Consider a personal hygiene bundle – Toothbrush, Toothpaste, Shampoo, Soap, Face Wash. If this bundle costs average or higher than average the cost of the products individually, a customer will not hesitate to purchase the bundle.
* Selling products in a bundle has other advantages too. We can sell products

with the bundle, which would otherwise not be sold individually.

To conclude, pricing and retail strategies must be aligned with each other to ensure favorable outcomes.

**Competitive Pricing Analysis**

Some of the direct competitors to Kmart are – Walmart, Target, Macy’s and Amazon. According to the website mbskool.com ([click here](http://www.mbaskool.com/brandguide/lifestyle-and-retail/9202-kmart.html)), both Walmart and Kmart offer comparable prices and have large customer base. But, Walmart has the edge over Kmart over it’s supply chain systems. Factors such as logistics, storage, utilities have a direct impact on product prices. Below is a chart comparing Kmart Off Price values with Amazon and Walmart for similar products in the inventory:

Prices represented for Amazon and Walmart are as close to Kmart as possible, because, some of the products were sold in different quantities and were priced differently on Amazon and Walmart.

**Allocation Strategy**

Top 10 products by quantity are:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Top 10 Products By Quantity | | | | | | |
| Product Name | Profit | Quantity | Profit Per Unit | Profit as Percent of Total Profit | Cumulative Profit | Percent of Quantity as Total Quantity |
| black dress jewelry organizer w/ lace | $93,637.44 | 29,280 | $3.20 | 61% | 78% | 48% |
| black dress jewelry organizer | $25,609.58 | 12,012 | $2.13 | 17% |
| Mesh Metal Trash Can - Silver | $8,316.26 | 6,936 | $1.20 | 5% | 22% | 52% |
| 24-pack traditional wood clothespins | $6,113.75 | 6,126 | $1.00 | 4% |
| curved wood suit hanger- ebony | $4,980.00 | 4,980 | $1.00 | 3% |
| The Can Glove™ Wearable Can Cozy | $4,722.09 | 5,910 | $0.80 | 3% |
| 6-pack Soft touch w/ clips PDQ | $3,231.90 | 5,670 | $0.57 | 2% |
| 15-Pack Velvet Touch, Blk PDQ | $3,188.64 | 5,694 | $0.56 | 2% |
| 4-pack cedar & lavender blocks | $2,816.58 | 4,710 | $0.60 | 2% |
| Cedar Sachet with Draw-String | $979.08 | 4,920 | $0.20 | 1% |
| Total | $153,595.33 | 86238 |  | 100% | 100% | 100% |

Sorting products on Profit values from largest to smallest, we can observe that first two products account for 78% of overall profit and are only 48% of total inventory.

With that in mind, our strategy should focus on fair distribution of products as well as the ability to concentrate on key markets and accounts. Some other things to keep in mind are to account for replenishments and safety stock to avoid stock outs or over stocking a product. Allocation plan can be set up as per demand of a product or group of products across stores.

* Assuming no previous availability of our products in the store, we can use past sales to determine sales of similar products.
* We have generic sales data of more than 800 stores of Kmart. By sorting stores as per unit sales we can make the following observations:
  + Computing sales contribution of each store towards the total sales, we can find the smallest group of stores with cumulative distribution of sales which account for largest percent of sales.
  + Although the numbers in the excel sheet(Store Info) analysis may be confusing, the idea is to find the smallest group of stores that account for a large proportion of sales and we can use that proportion to determine the quantity of product that should be allocated from the total inventory.
  + For example, if the top 20 stores as per sales account for 20% of total sales and the next 100 stores account for the same or less proportion of sales, we can easily determine what quantity of our product we should allocate to the group of stores.
  + Product 1
    - Quantity Available: 29,280
    - Amount to be allocated to top 20 stores: 20% of 29,280 = 5856.

There are factors to consider before allocating products to stores or group of stores. We have the analyze the market, customer requirements, forecast future demand for the product after 6 months of sales, maintain safety stock, establish reorder and replenishment timelines. Combining all the factors will prepare us for possible mishaps and prevent loss.

Lastly, the complete process of purchasing inventory to allocating it to our stores must be performed meticulously and consider factors that may affect us directly or indirectly.