

KMS SUPERSTORE ANALYSIS

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Introduction

These data comes from a Utiva capstone project (a training class on data analysis). It contains information about a sales order for a superstore. It includes orders, order date, the shipping mode, etc.

The next step after obtaining the data was to clean it up.

Below are the case study to guide through the capstone project.

Case 1: Which product category had the highest sales?

Case 2: What are the Top 3 and Bottom 3 Regions with regards to Sales?

Case 3: What was the total sales of appliances in Ontario?

Case 4: Advise the management of KMS on what to do to increase the revenue from the bottom 10 customers

Case 5: KMS incurred the most shipping cost using which shipping method?

Case 6: Who are the most valuable customers and what do they purchase?

Case 7: If the delivery truck is the most economical but the slowest shipping method and Express Air is the fastest but the most expensive one, do you think the company appropriately spent shipping costs based on the Order Priority?

Case 8: Which small business customer had the highest sales?

Case 9: Which corporate customer made the most number of orders in 2009-2012

Case 10: Which consumer customer was the most profitable one?

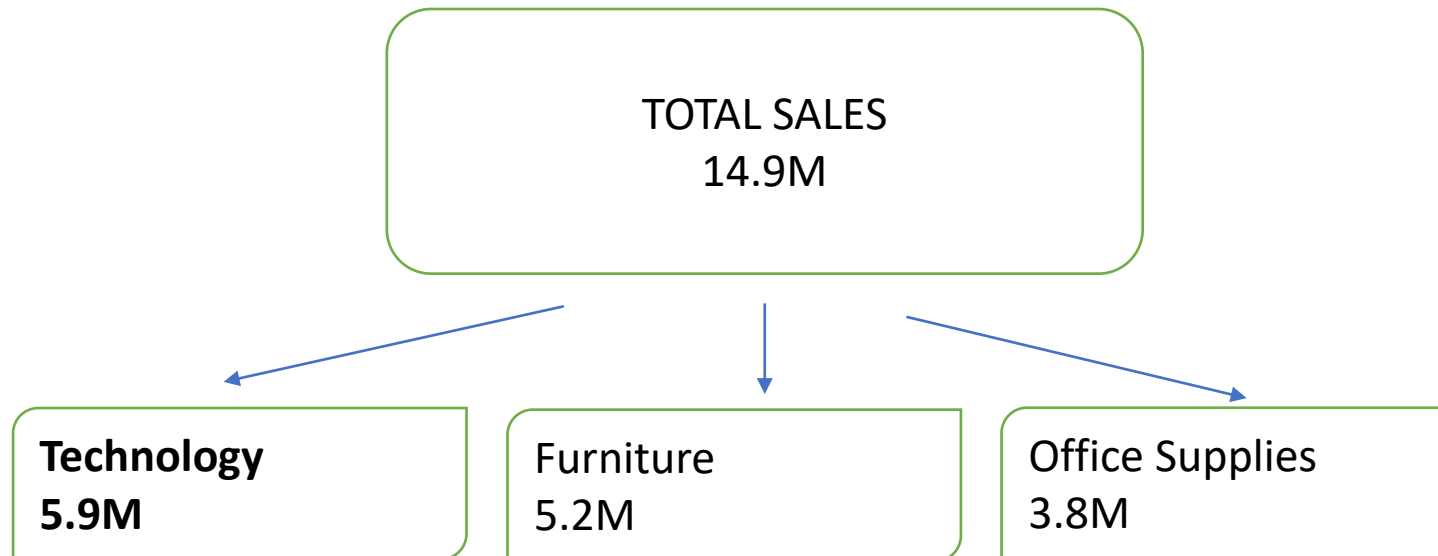
Case 11: Which customer returned items and what segment do they belong?

Analyze Data

The cleansed data was used to create pivot tables and charts that summarized the merged datasets into more manageable groupings. The charts were then used to build a dashboard.

The overall insights from our research and visualization that are provided below can help with certain questions.

Case 1: Which product category had the highest sales?

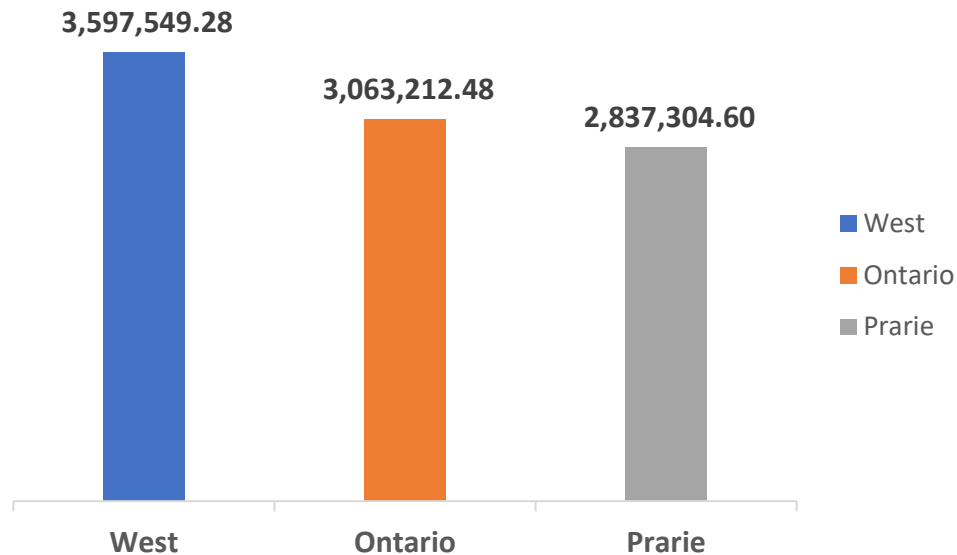


- The product category (technology) had the highest sales. It amounts to \$5,984,248.18, which accounts for 40% of the total sales.
- The product sub-category within the technology category that generated the highest sales was office machines, with sales of over 2 million.
- This technology category made more sales and was also profitable.
- Although furniture made similar sales to technology, it was the least profitable, and the quantity sold was also low.
- Office supplies made the least sales but sold more in quantity. Because they are relatively inexpensive, office supplies will sell the most in terms of quantity.

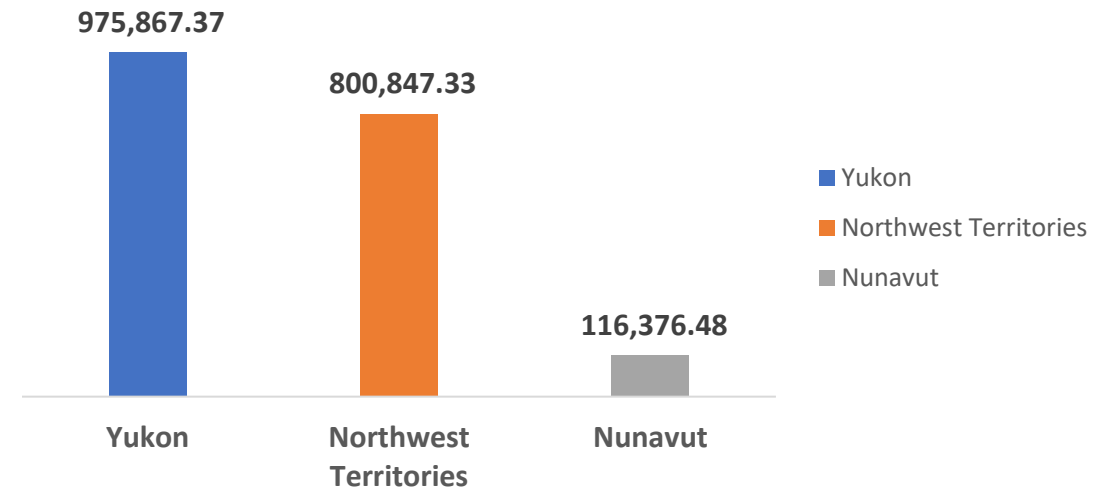
Case 2: What are the Top 3 and Bottom 3 Regions with regards to Sales?

- The West (3.9 million, 24.12%), Ontario (3.06 million, 20.54%), and the Prairie (2.8 million, 19.02%) are the top three regions with regards to sales. These top three regions represent 64% of the total sales in all regions.
- The bottom 3 regions with regards to sales are Yukon (975,867, 6.54%), the Northwest Territories (800,847, 5.37%), and Nunavut (116,376, 0.78%). These represent 13% of the total sales in all regions.
- There is a huge disparity between the cities with the highest and lowest sales. The marketing strategy must target the top five cities.
- In the top 5 cities, the product category technology generated the highest profit and sales in these regions.

Top 3 Regions with regards to sales



Bottom 3 regions with regards to sales

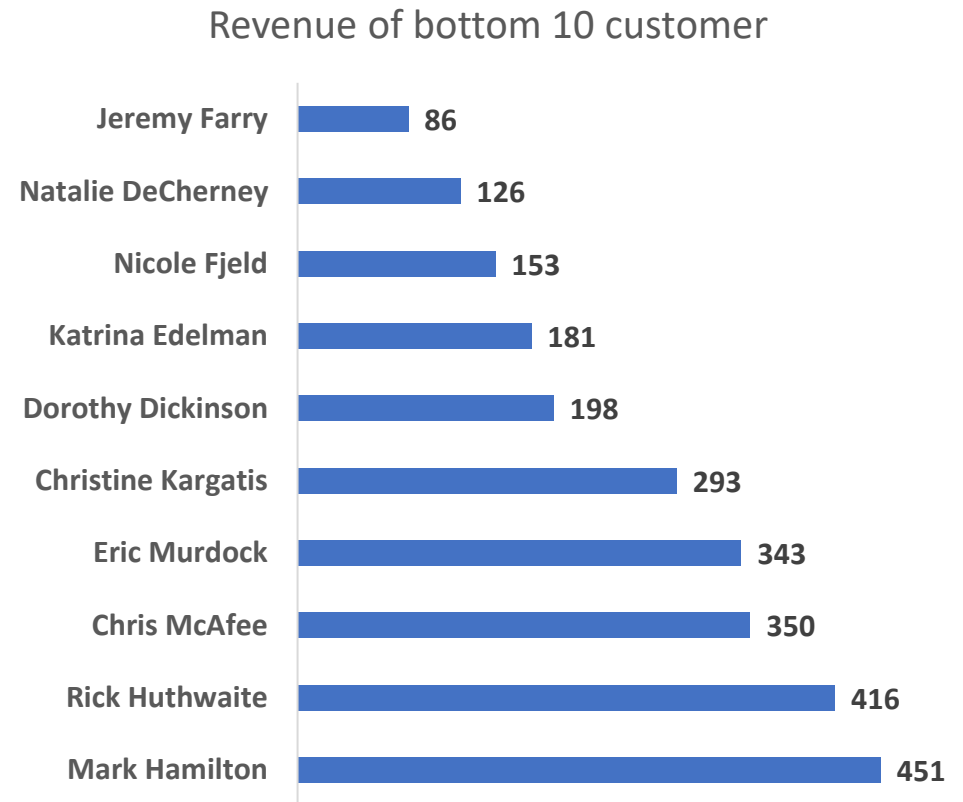


Case 3: What was the total sales of appliances in Ontario?

The total sales for appliances in Ontario is 202,346. Ontario represents 27% of the total sales of appliances in the company.

Advise the management of KMS on what to do to increase the revenue from the bottom 10 customers?

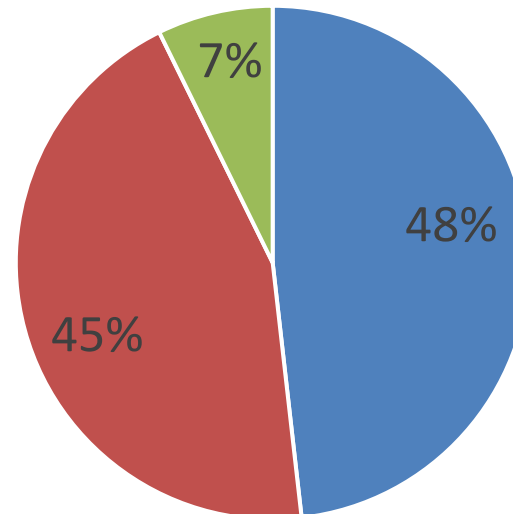
- Offer discounts on some items or services.
- Add complementary products or services.
- Reach out to bottom-line consumers and get their feedback or complaints, as well as learn about their pain points and issues while ordering products. Take note of the reasons and plan to work on them internally. When the problem is rectified, provide feedback so the consumer understands you are looking out for their best interests.
- The customers with the lowest revenue are in the office supplies category.
- Check with the departments to determine if there have been any complaints concerning the purchase and sale of office supplies.
- Conduct an online and offline poll to learn about their order problems.
- There may be unresolved concerns in the department that have not yet been brought to management's attention. The management should elevate the matter to the appropriate quarters, which can assist with the internal problems.



Case 5: The shipping method with the most shipping cost?

- The shipping method (delivery truck) has the highest shipping cost. It represents 48% of the total shipping cost.
- It has the highest shipping cost and one of the lowest order quantities compared to express air.
- Regular air made the highest sales and profit, as it sold more in quantity.
- The product category with the highest shipping cost for delivery trucks is furniture. It sold more in quantity and generated more sales compared to furniture and office supplies but made a profit loss.
- When compared to delivery trucks, the furniture category shipped by regular and express air generated sales and made profits. This could be because of the expenditures or issues incurred when shipping through a delivery truck. Furniture had the highest order returns for delivery trucks and the largest profit loss.
- When comparing regular and express shipping costs, the furniture category has the highest (49%) cost.

■ Delivery Truck ■ Regular Air ■ Express Air



Case 5: The shipping method with the most shipping cost?

Sometimes, customers might return orders in the furniture category due to the following reasons:

The shipped product does not match the description presented during the order process, or it is of poor quality. Make sure every product listed has high-quality images and descriptions.

- Poor packaging

- Accidents: the item delivered may have been damaged upon arrival or may not have fit in the recipient's home (though shipping insurance can help limit losses).

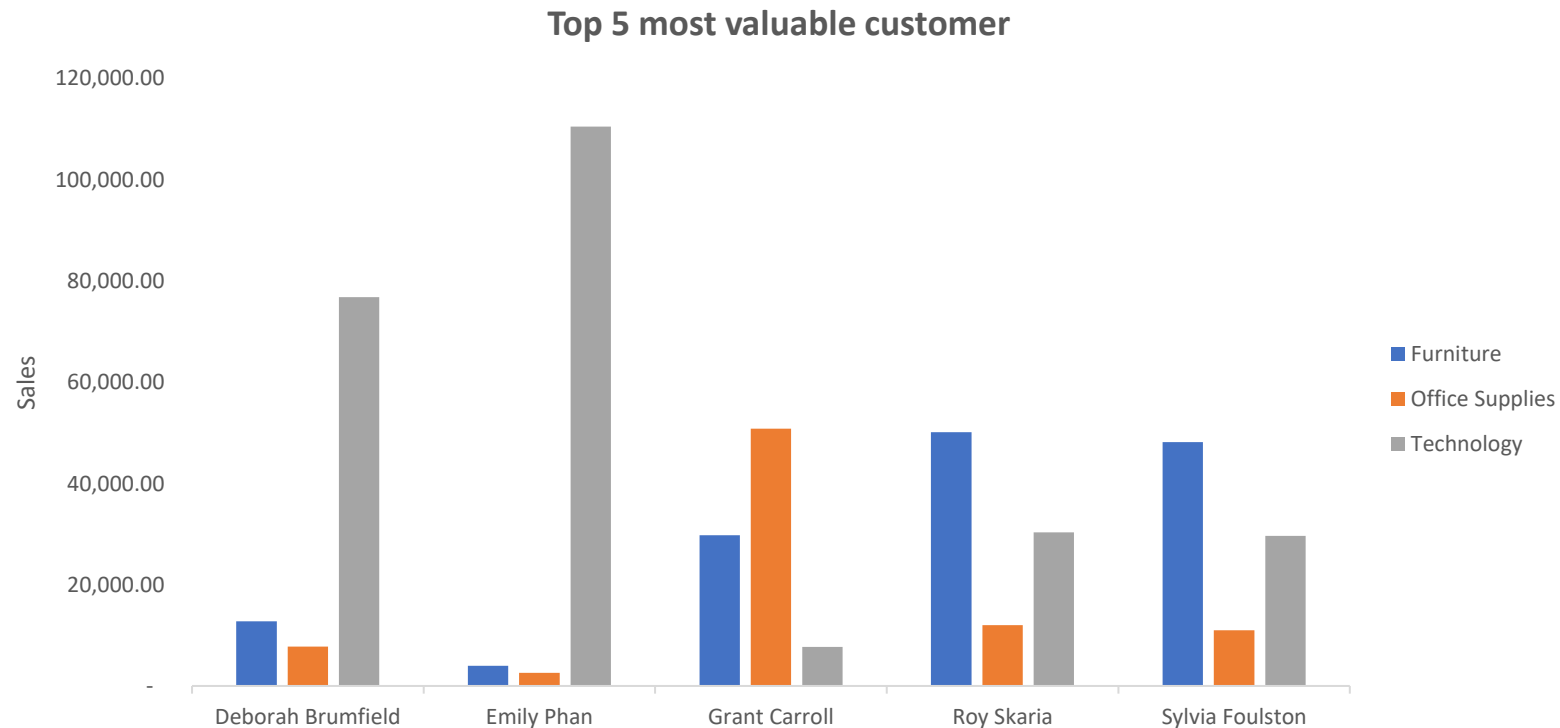
- Errors in the order process can result in the shipment of the wrong products and could trigger a chargeback. Double-checking against invoices and packing slips can help minimise the shipment of the wrong furniture.

Make sure to get every order right the first time to avoid multiple errors that could lead to returns or billing errors.

- Do more furniture shipping through regular and express air until the delivery truck shipping issues are fixed to avoid more profit losses.

Case 6: Who are the most valuable customers and what do they purchase?

- The most valuable customers purchase office supplies due to how cheap they are.
- The highest profit is earned from the technology category.
- The product category with the most profitable customer is Technology.
- The category with the highest sales among profitable customers is Technology.
- Emily Phan was the most profitable customer and generated more sales than others.



Case 7: If the delivery truck is the most economical but the slowest shipping method and Express Air is the fastest but the most expensive one, do you think the company appropriately spent shipping costs based on the Order Priority?

The company did not do enough to minimise costs due to the following reasons:

- 1) From the table above, the delivery trucks moved a small amount of goods but had the highest cost per order.
- 2) The Regular Air moved the largest amount of goods but incurred the lowest cost per order
- 3) The Express Air moved the lowest amount of goods with a low cost/order

Conclusion:

- 1) As the general level, the delivery mode with the lowest cost or order should move the largest goods, as seen below:
- 2) In order of priority, the critical and high orders should be shipped with the goods using the fastest mode of delivery, regardless of cost. While, Medium, Low and not specified order be moved with goods with the lowest cost/order.

Order Priority	No of orders	% of orders
Critical	1608	19%
High	1768	21%
Medium	1631	19%
Low	1720	20%
Not specified	1672	20%

Case 8: Which small business customer had the highest sales?

- The small business customer with the highest sales is Dennis Kane. He accounts for 0.5% of the company's overall sales and 2.72 percent of the small business segment.
- Dennis had the highest sales, but the customer with the highest profit in small business segment is Deborah Brumfield.
- Technology in the product category represents the highest sales for Dennis Kane compared to the other categories.
- The small business customer with the highest sales is from the Quebec region.
- He ranked seventh out of 193 small business customers, placing him among the top 10 most profitable customers.
- When compared to other shipping options, he shipped most of its sales via regular air.

Case 9: Which corporate customer made the most number of orders in 2009-2012.

- The corporate customer with the most number of orders is Roy skaria.
- Liz McKendrick was the most profitable in corporate customer.
- Roy skaria had the highest number of sales in the furniture category and a significant profit compared to the other category.
- Office supplies made the least sales but sold more in quantity due to office supplies being a cheap product.
- Express air had the most order quantity by Roy Shakira but generated the highest profit loss among its sales.
- Had a significant loss in profit made in the technology category.
- More order made in the bookcases sub-category.

Case 10: Which consumer customer was the most profitable one?

- Emily Phan was the most profitable customer in the consumer customer segment.
- She also generated the highest sales.
- The technology category made the highest profit (100.67%) of the total profit made by her.
- Office supplies made the least sales but sold more in quantity.
- Office machines in the product sub-category section generated the highest profit of (96.15%), while the least profitable sub-category is bookcases and appliances.
- Made more sales and generated more profit in the Atlantic region.
- Emily Phan made more sales and sold more quantities using the regular ship mode.
The more quantity shipped through the mode, the higher the profit.

Case 11: Which customer returned items and what segment do they belong?

The XLOOKUP function was used to find the number of customers who returned their order and to what segment they belong.

- 572 customers returned goods worth a combined **1,059,949** and a profit of **126,636**.
- **Brad Thomas** is the customer with the maximum number of **order returns (7)**
- Ontario and the West are the two regions with the highest order returns, i.e., over 200 orders, while the least order returns were observed in the Northwest and Nunavut regions, i.e., about 25 orders.
- "Office Supplies" is the category with the highest number of orders returned (307), with over 200 orders returned by both the Furniture and Technology categories.
- In sub-category, "Binder and Binder accessories" has the highest returned among various orders, i.e., about 70 orders, In contrast, scissors ,Rulers and Trimmers were least returned with 5 orders.
- Corporate segment orders were the most returned, and this contributed to 215 orders; in comparison, consumer segment orders were the least returned, at about 98 orders.
- When it came to ship mode, the orders shipped through regular air mode had highest returns, i.e., over 421 orders .

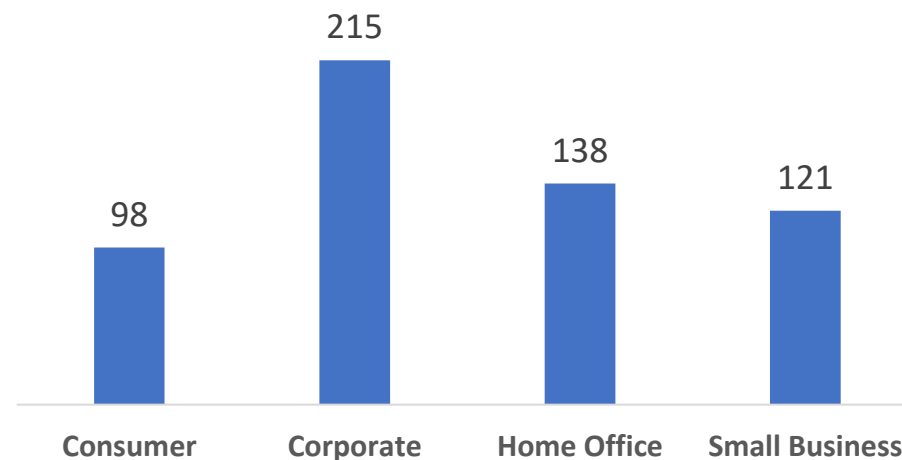
Regions from which orders were returned

Regions	Orders Returned
Ontario	159
West	127
Prairie	116
Atlantic	65
Yukon	40
Quebec	40
Northwest Territories	24
Nunavut	1

The customers who returned greater than 3 orders

CUSTOMER NAME	ORDERS RETURNED
Brad Thomas	7
Darren Budd	6
Erin Creighton	5
Grant Carroll	4
Olvera Toch	4
Amy Cox	4
Bryan Spruell	4
Aleksandra Gannaway	4

Customer segment with the most returns



Recommendations

- Valuable customers should receive discounts or membership cards with special benefits. This would increase revenue for the company as they purchase more products. Retain customers to grow both customer base and financial performance. Research done by Gartner shows that 80% of a company's profit comes from 20% of its existing (loyal) customers.
- This happens because customers are more likely to return for the company's goods or service if they previously had a positive experience with it. Furthermore, if customers are rewarded with discounts for maintaining a valuable relationship with the superstore, they would be more eager to purchase the company's products/services.
- Focus on the technology sub-category, as well as binders and binder accessories, chairs, and chair mats, as they are the highest-selling and most profitable. To minimise the losses, package them with less profitable items such as storage and organisation, pens, and art supplies. Selling tables, bookcases, rubber bands, scissors, rulers, and trimmers results in massive losses; therefore, the superstore might consider combining them with high-selling or profitable sub-categories like chairs and chair mats, copiers, binders and their accessories, phones, and office supplies.
- Home office customers may be preoccupied with working remotely and are less likely to spend time picking different products for their workspace. Make a home office package that includes products such as tables, technology tools, chairs, copiers, storage, labels, fasteners, and bookcases. Etc

Recommendations

- To make the bundle a success, new products that have not previously been sold in the store could be introduced. A poll could be conducted to determine what these clients require for their workplaces. Then we focus on the must-haves.
- It should simply be a bundle that includes every piece of equipment required to set up an efficient and productive home office. A manual might be prepared to guide the user through the setup process, or an additional assistance package could be purchased to assist them in setting up their office bundles.
- Create promotional email messages to share exclusive content that will assist them with their office or productivity needs.
- This package might also be offered to corporate customers to help them have an all-in-one package to help them set up their office or to design several packages that cater to different departments in a corporate setting as they generate the highest profit among clients in the superstore. These packages are intended to help maintain clients and bring in more corporate customers.
- Consider dropping loss-making products like supplies, bookcases, and tables from the catalogue or switching suppliers and asking for a lower price.

Recommendations

- More than 60% of customers are from the home office and corporate segments. Concentrate on them, especially customers from the west, prairie, Atlantic, and Ontario regions with the highest sales and profits, by offering targeted marketing messages, special promotional emails, flyers, and packages tailored to these customers.
- Improve your customer service with these customers. Create loyalty programmes for this customer base. Give away a free item from our catalogue.
- On return, Every return which is processed should be documented for evaluation. When the period ends, begin to analyse the numbers/reasons to gain an idea of what needs to be improved.

The reasons provided by the customer will also determine the changes that must be made. Some of the reasons could be ;

1. Customer changed their mind—this is unavoidable, but if it this is a frequent return cause. Determine and find the root of this issues and work towards fixing them; also, shift your attention from acquiring more new consumers to retaining existing clients (who are less likely to return items).
2. The incorrect product or size was delivered, highlighting a problem with the pick, pack, and despatch process. A section of the chain order process isn't working properly, and this return reason will enable for an evaluation of each bit of the process to determine what isn't working properly.