



# Project Plan

## Dreams LTD

# Main Objective:

A business analyst company, Dreams Ltd, has been instructed to identify trends in sales for business intelligence purposes.

It has created a reporting system of 'items sold' in order to get an accurate drilldown of the most profitable vs least profitable items.

The analysis will allow the customer company to streamline their stock across the brand, to suit the needs and requirements of the customers in different segments, such as: products, revenue, profit and location.

# Setting the Scene

Sales analytics is the mining of data to evaluate the performance of sales business against its goals. It provides valuable insights about the top performing and underperforming products, the problems in selling and market opportunities, sales forecasting, and sales activities that generate revenue.

## Why Are Sales KPIs Important?

*Key Performance Indicators* are metrics used to track the performance of a business against it's goals. With a clear overview of the business, we can predict their future sales or guide their team members and organization to the right direction.

## Identifying the Data We Want to Track

We have tonnes of metrics to track data, but we need to analyse the right sales data to generate meaningful insights that positively impact the marketability of the worst performing items. Furthermore, using trend analysis we are able to find the best-selling or top-selling products with their average profit margins showing marketing predictions for the future.

# Understanding the Problem Domain

To assist a customer company that specializes in the sales of Furniture, Technology and Office Supplies to identify trends in sales a dashboard was created showing different inputs of data. The data that was used was gathered from the company in the period between 2014 and 2017 and supplied to us by the Babington Team.

The creation of a dashboard, filtering and slicing data assisted us to analyse and conduct studies of the aspects necessary to identify groups of items that should be removed or replaced by the customer company. It also assists in decision making and controlling the deliveries of products in the different regions of the country by showing profits and projections for the next years.

The continuing use of the dashboard to analyse different datasets will evidently mean that the dashboard's design, structure and input fields will become more detailed and at the same time more user-friendly to the customer company.

Mastering and managing

# Data Understanding

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Talysson Oliveira



# Resume of data:

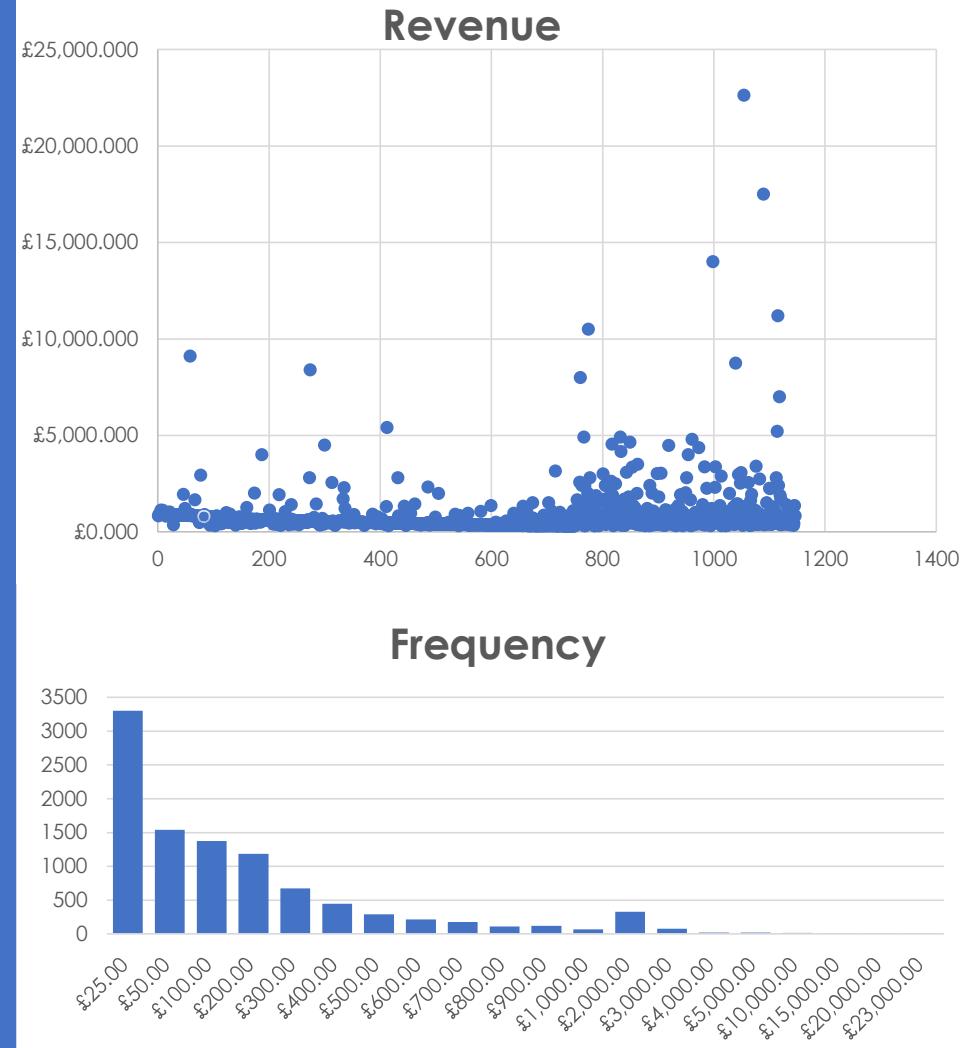
|                    | <b>Consumer</b>       | <b>Corporate</b>    | <b>Home Office</b>  | <b>Total of Costumer</b> | <b>Quantity of Items</b> | <b>Revenue</b>        | <b>Profit</b>       | <b>Profit Ratio</b> |
|--------------------|-----------------------|---------------------|---------------------|--------------------------|--------------------------|-----------------------|---------------------|---------------------|
| <b>2014</b>        |                       |                     |                     |                          |                          |                       |                     |                     |
| Furniture          | £ 85,358.53           | £ 44,867.54         | £ 25,750.23         | 288                      | 1601                     | £ 155,976.30          | £ 5,446.95          | 3.5%                |
| Office Supplies    | £ 85,078.55           | £ 48,928.46         | £ 18,411.40         | 512                      | 4573                     | £ 152,418.41          | £ 22,578.52         | 13.4%               |
| Technology         | £ 94,153.12           | £ 34,396.33         | £ 45,272.80         | 249                      | 1381                     | £ 173,822.26          | £ 21,373.23         | 16.2%               |
| <b>Total</b>       | <b>£ 264,590.20</b>   | <b>£ 128,192.33</b> | <b>£ 89,434.44</b>  | <b>598</b>               | <b>7555</b>              | <b>£ 482,216.96</b>   | <b>£ 49,398.70</b>  | <b>11.8%</b>        |
| <b>2015</b>        |                       |                     |                     |                          |                          |                       |                     |                     |
| Furniture          | £ 94,409.93           | £ 45,418.15         | £ 30,147.22         | 289                      | 1772                     | £ 169,975.30          | £ 2,874.04          | 4.1%                |
| Office Supplies    | £ 79,735.81           | £ 34,823.64         | £ 22,575.76         | 502                      | 4702                     | £ 137,135.21          | £ 25,056.60         | 12.8%               |
| Technology         | £ 92,223.96           | £ 47,670.07         | £ 22,495.55         | 275                      | 1486                     | £ 162,389.58          | £ 33,410.08         | 16.7%               |
| <b>Total</b>       | <b>£ 266,369.69</b>   | <b>£ 127,911.86</b> | <b>£ 75,218.53</b>  | <b>573</b>               | <b>7960</b>              | <b>£ 469,500.08</b>   | <b>£ 61,340.72</b>  | <b>11.7%</b>        |
| <b>2016</b>        |                       |                     |                     |                          |                          |                       |                     |                     |
| Furniture          | £ 100,360.88          | £ 77,261.34         | £ 21,279.21         | 356                      | 2193                     | £ 198,901.44          | £ 6,959.95          | 3.9%                |
| Office Supplies    | £ 86,269.33           | £ 54,231.25         | £ 43,439.40         | 545                      | 5946                     | £ 183,939.98          | £ 35,061.23         | 16.1%               |
| Technology         | £ 110,233.69          | £ 75,613.77         | £ 40,516.72         | 291                      | 1698                     | £ 226,364.18          | £ 39,773.99         | 13.4%               |
| <b>Total</b>       | <b>£ 296,863.90</b>   | <b>£ 207,106.36</b> | <b>£ 105,235.34</b> | <b>640</b>               | <b>9837</b>              | <b>£ 609,205.60</b>   | <b>£ 81,795.17</b>  | <b>13.0%</b>        |
| <b>2017</b>        |                       |                     |                     |                          |                          |                       |                     |                     |
| Furniture          | £ 110,148.15          | £ 60,365.06         | £ 44,445.94         | 400                      | 2426                     | £ 214,959.15          | £ 3,402.44          | 4.1%                |
| Office Supplies    | £ 113,470.16          | £ 92,685.78         | £ 40,033.82         | 634                      | 7671                     | £ 246,189.75          | £ 39,773.49         | 12.8%               |
| Technology         | £ 108,166.92          | £ 88,464.97         | £ 74,982.98         | 387                      | 2361                     | £ 271,614.86          | £ 50,651.86         | 16.2%               |
| <b>Total</b>       | <b>£ 331,785.22</b>   | <b>£ 241,515.80</b> | <b>£ 159,462.73</b> | <b>695</b>               | <b>12458</b>             | <b>£ 732,763.75</b>   | <b>£ 93,827.80</b>  | <b>11.6%</b>        |
| <b>Grand Total</b> | <b>£ 1,159,609.01</b> | <b>£ 704,726.34</b> | <b>£ 429,351.04</b> | <b>801</b>               | <b>37810</b>             | <b>£ 2,293,686.40</b> | <b>£ 286,362.39</b> | <b>12.0%</b>        |

## A review of the original Model

Analysing the database provided, with 9975 rows we were able to draw several conclusions from 2014 to 2017, a total of 1,859 items with an enormous difference in value between them.

Regarding the frequency of orders value, we can see the majority sales is between £0 to £300, which means **81%** of the database.

The total amount of sales across all regions was £ 2,293,686.40, which is £ 573,421.60 average per year.

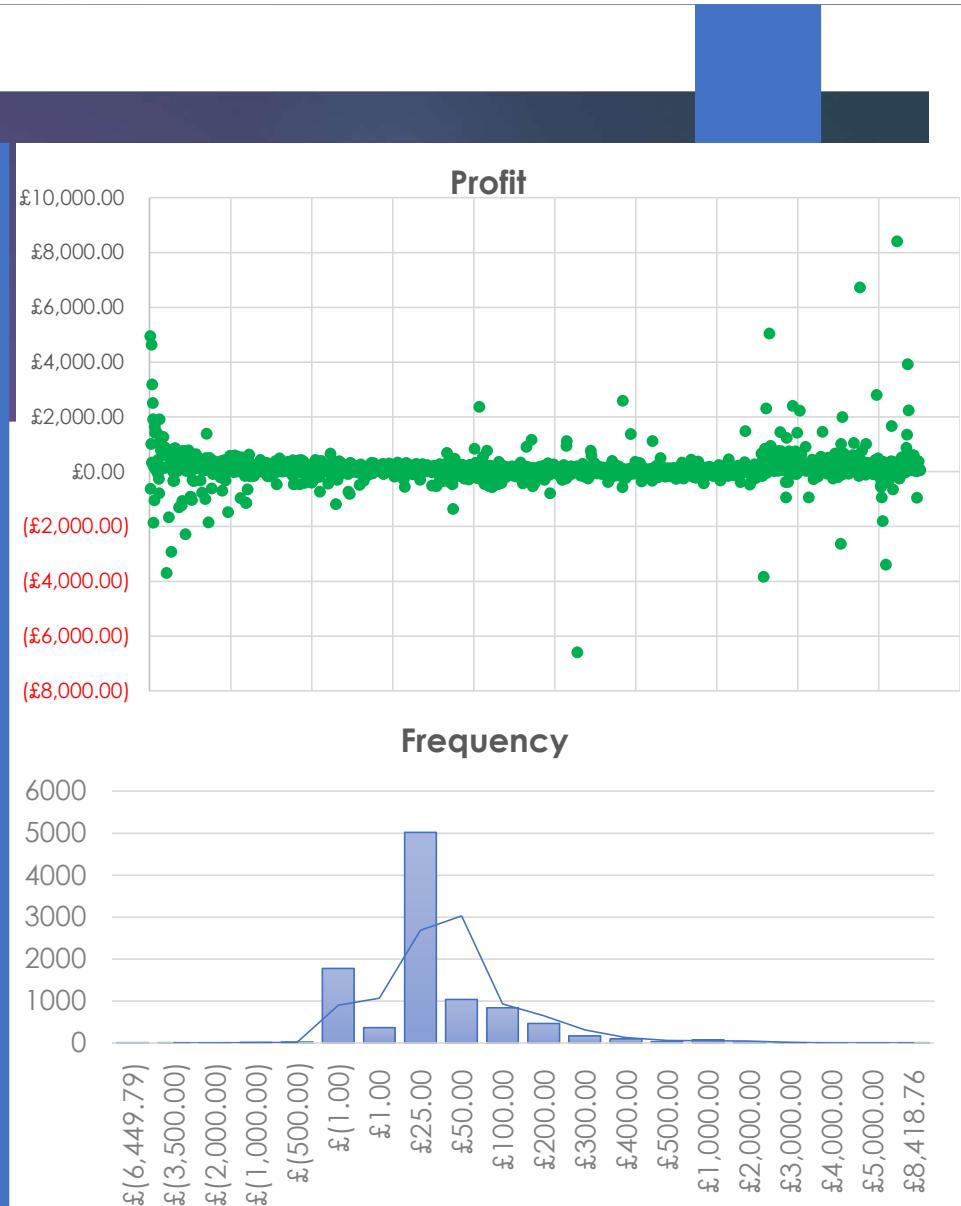


## A review of the original Model

Observing the graphs on the side we can see that a good part of the profits were negative.

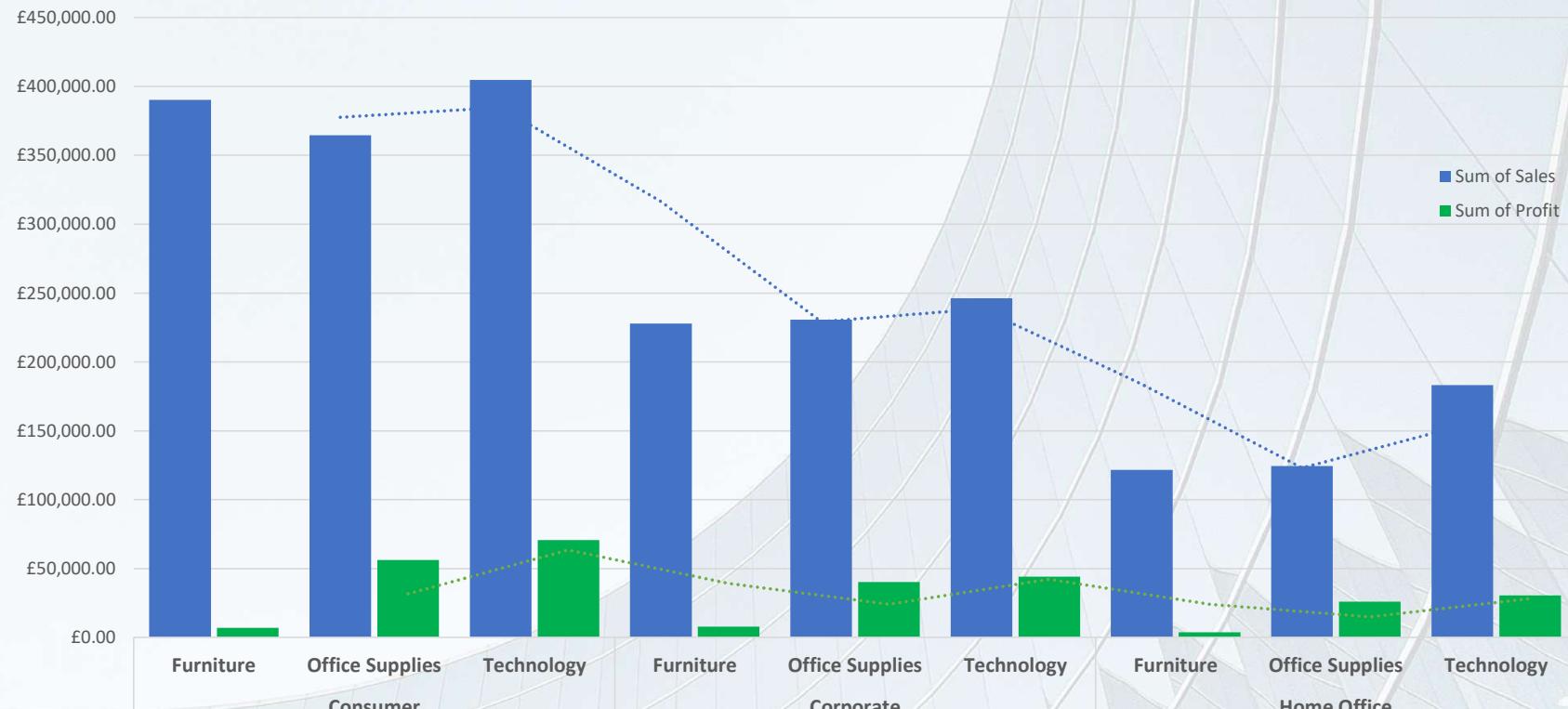
Sales between £0 to £300 corresponds only 23% of the company's **total value revenue** with a profit margin of **13%**. Whereas 82% of these sales were positive, with an average profit of **31%**. The other 18% had an average loss of **72%**, reaching up to **275%** of loss per sale.

Sales above £300, remaining only 19% of total revenue frequency, corresponds to 76% of **total value revenue** with an average profit margin of **9%**. Being that 75% of these sales were positive and had an average profit of **22%** and the other 25% of the sales had a loss of **27%**, reaching up to **255%** of loss per sale.



# Data Analysis

In the chart below, we can see the number of orders per department.



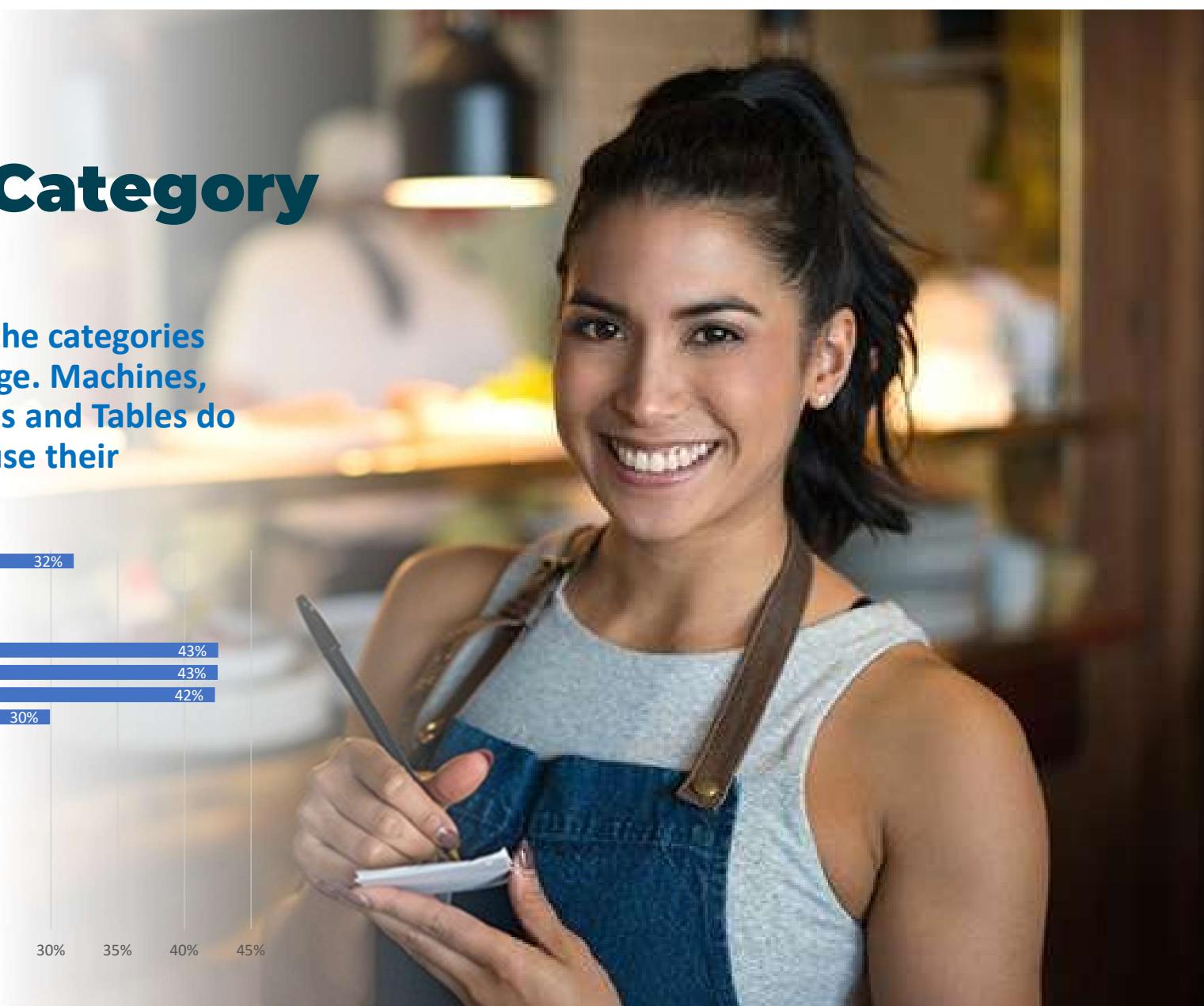
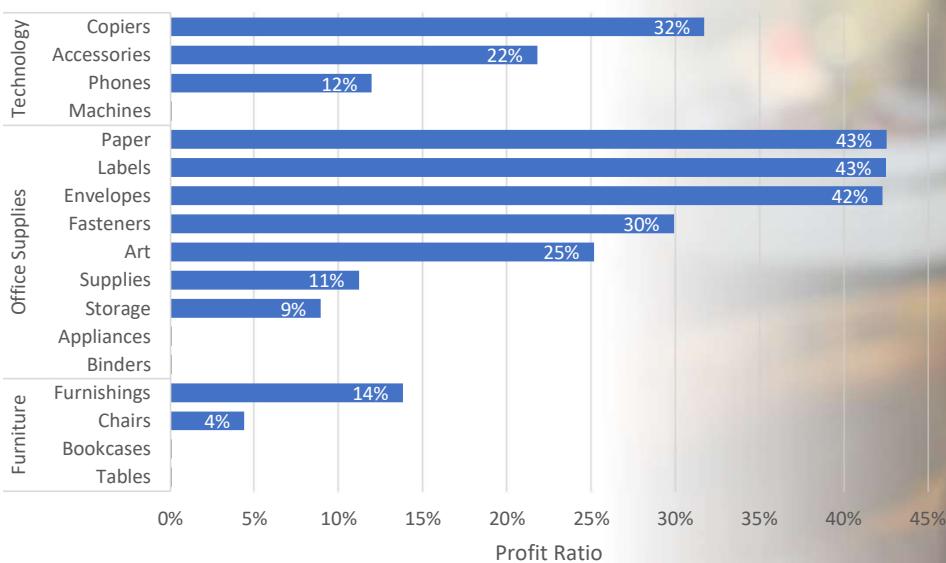
# Profit

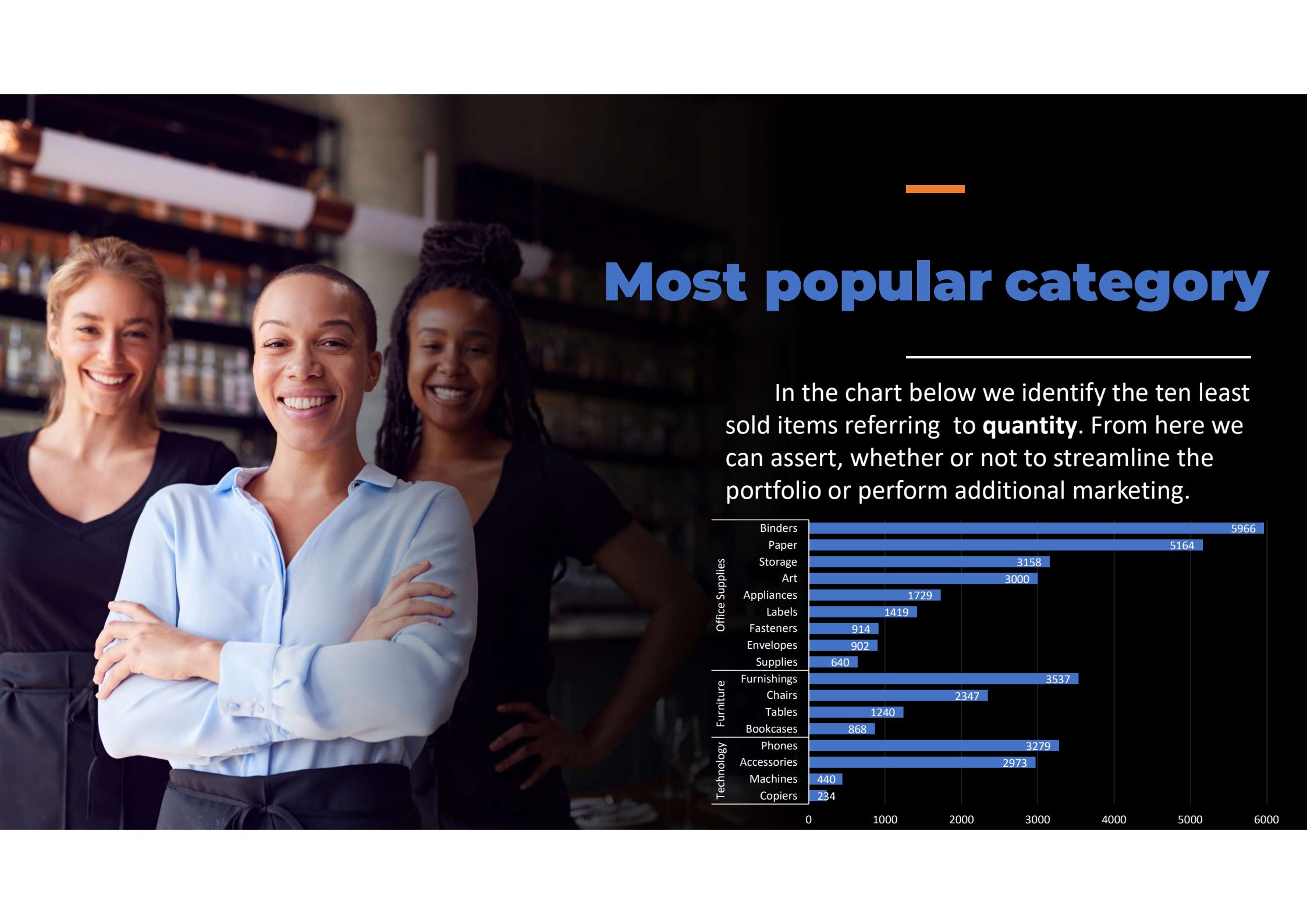
Having an overview of the chart below, we were able to identify which category has the most profit is Office Supplies.



# Bestselling Category

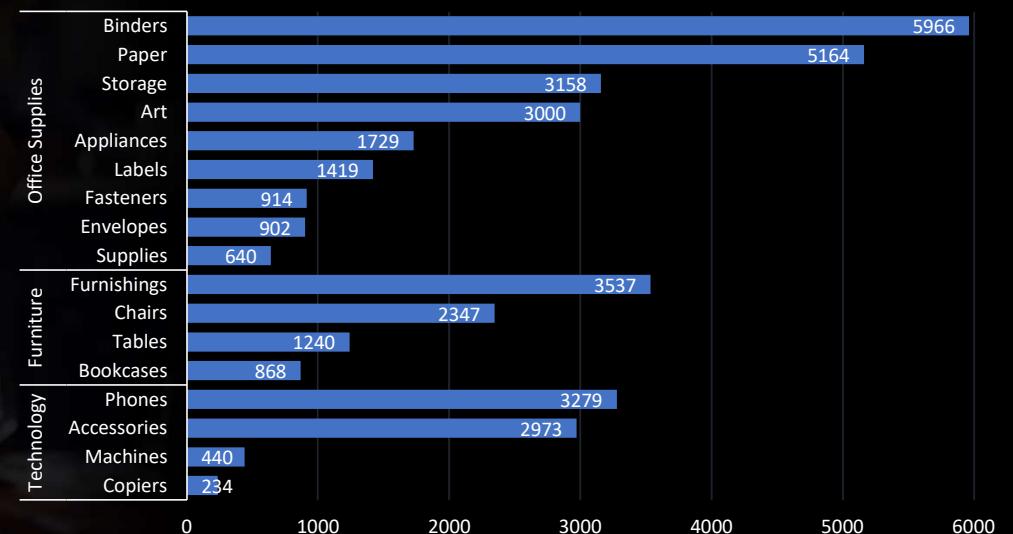
We can see in the graph the categories with the more profit percentage. Machines, Appliances, Binders, Bookcases and Tables do not appear on the chart because their averages are negative.

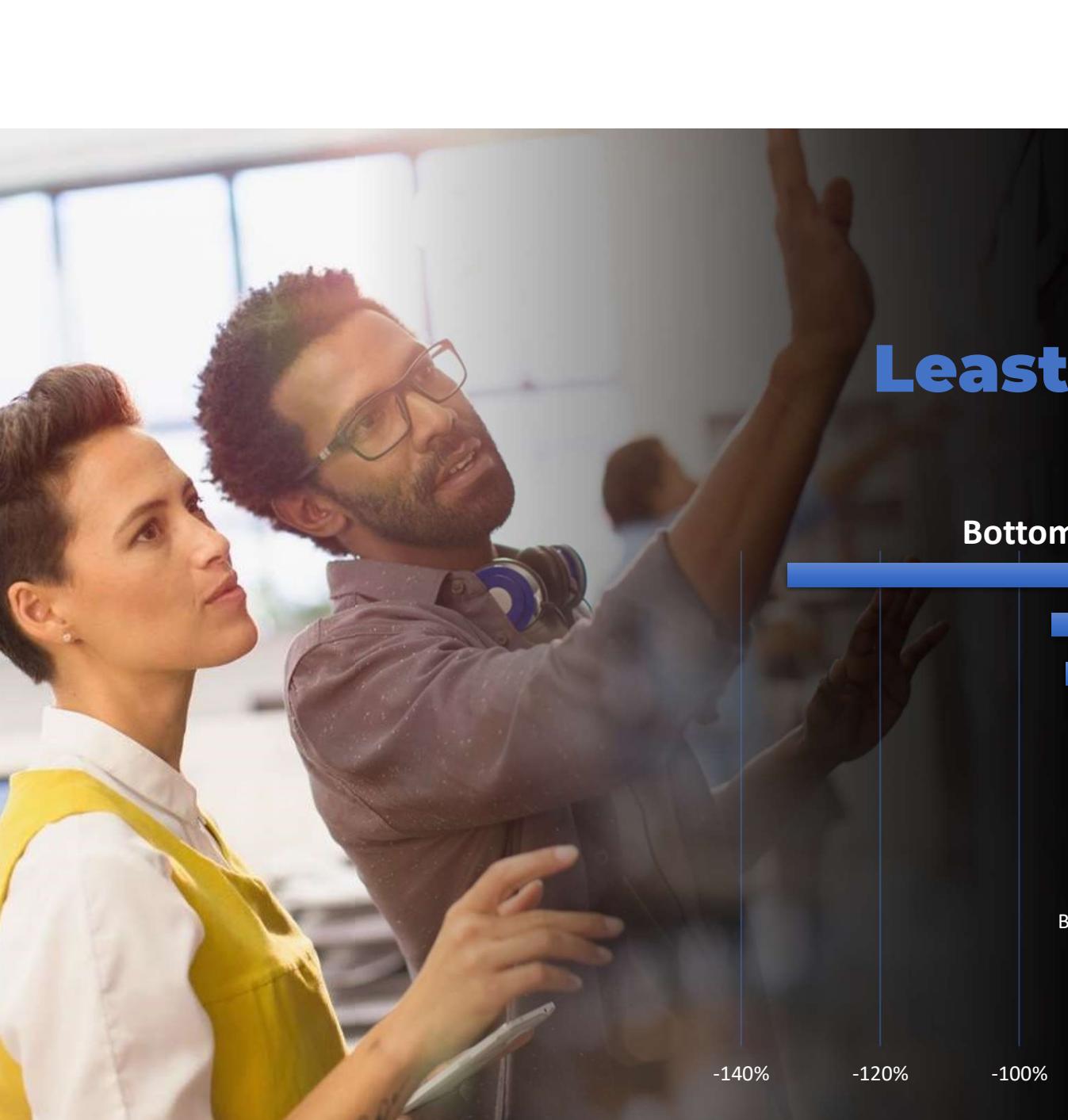


A photograph of three professional women of different ethnicities and styles standing in an office environment. They are all smiling and appear to be in a positive, collaborative atmosphere.

# Most popular category

In the chart below we identify the ten least sold items referring to **quantity**. From here we can assert, whether or not to streamline the portfolio or perform additional marketing.



A photograph of two people, a man and a woman, looking up at a whiteboard in an office setting. The man, wearing glasses and a brown shirt, has his arm raised. The woman, wearing a yellow vest over a white shirt, is pointing at the whiteboard with a pen. The whiteboard has some faint markings.

# Least profitable items

## Bottom 10 Least profitable items in the portfolio

Zebra GK420t Direct Thermal/Thermal Transfer Printer

Cubify CubeX 3D Printer Double Head Print

Brother MFC-9340CDW LED All-In-One Printer, Copier Scanner

Epson TM-T88V Direct Thermal Printer - Monochrome - Desktop

Sauder Forest Hills Library with Doors, Woodland Oak Finish

Lexmark MarkNet N8150 Wireless Print Server

Okidata MB491 Multifunction Printer

BoxOffice By Design Rectangular and Half-Moon Meeting Room Tables

Bevis Rectangular Conference Tables

GBC DocuBind P400 Electric Binding System

-140%

-120%

-100%

-80%

-60%

-40%

-20%

0%

Analysing the ten items with the lowest profit we can filter four sub-categories, that are Tables, Machines, Binders, and Supplies. We achieved similar a scenario where these items are not in the sales portfolio of the company and considering the profit margin that these items represent of prejudice. What if we substitute or remove them? We can see below the analysis:

| Customer Name | Order Date | Ship Mode    | Segment     | Region  | Sub-Categori | Product Name  | Sales      | Quantit | Discount | Profit     | Profit Rat |
|---------------|------------|--------------|-------------|---------|--------------|---|------------|---------|----------|------------|------------|
| Karen Daniels | 25/11/16   | Standard     | Consumer    | East    | Machines     | Cubify CubeX 3D Printer Double Head Print                 | £4,499.985 | 5       | £0.70    | -£6,599.98 | -146.7%    |
| Becky Martin  | 04/11/17   | Same Day     | Corporate   | South   | Machines     | Cubify CubeX 3D Printer Triple Head Print                 | £7,999.980 | 4       | £0.50    | -£3,839.99 | -48.0%     |
| Tracy Hopkins | 26/07/14   | Standard     | Consumer    | Central | Binders      | GBC DocuBind P400 Electric Binding System                 | £2,177.584 | 8       | £0.80    | -£3,701.89 | -170.0%    |
| Dan Campbell  | 17/04/17   | Standard     | Home Office | West    | Machines     | Lexmark MX611dhe Monochrome Laser Printer                 | £2,549.985 | 5       | £0.70    | -£3,399.98 | -133.3%    |
| Peter Fuller  | 07/12/17   | Standard     | Corporate   | Central | Binders      | Ibico EPK-21 Electric Binding System                      | £1,889.990 | 5       | £0.80    | -£2,929.48 | -155.0%    |
| Skye Norling  | 15/12/15   | First Class  | Consumer    | East    | Machines     | Cubify CubeX 3D Printer Double Head Print                 | £1,799.994 | 2       | £0.70    | -£2,639.99 | -146.7%    |
| David Bremer  | 19/11/17   | First Class  | Consumer    | Central | Binders      | Fellowes PB500 Electric Punch Plastic Comb Binding Machir | £1,525.188 | 6       | £0.80    | -£2,287.78 | -150.0%    |
| Rose O'Brian  | 28/01/15   | Second Class | Consumer    | South   | Tables       | Chromcraft Bull-Nose Wood Oval Conference Tables & Base   | £4,297.644 | 13      | £0.40    | -£1,862.31 | -43.3%     |
| Joseph Airdo  | 08/04/16   | Standard     | Consumer    | Central | Binders      | GBC DocuBind P400 Electric Binding System                 | £1,088.792 | 4       | £0.80    | -£1,850.95 | -170.0%    |

Scenario Manager

Scenarios:

- Scenario 1

Changing cells: \$R\$1857:\$R\$1867

Comment: Created by Talysson Oliveira on 29/07/2022  
Modified by Talysson Oliveira on 29/07/2022

Show Close

Scenario Values

Enter values for each of the changing cells.

|    |           |   |
|----|-----------|---|
| 1: | \$R\$1857 | 0 |
| 2: | \$R\$1858 | 0 |
| 3: | \$R\$1859 | 0 |
| 4: | \$R\$1860 | 0 |
| 5: | \$R\$1861 | 0 |

OK Cancel

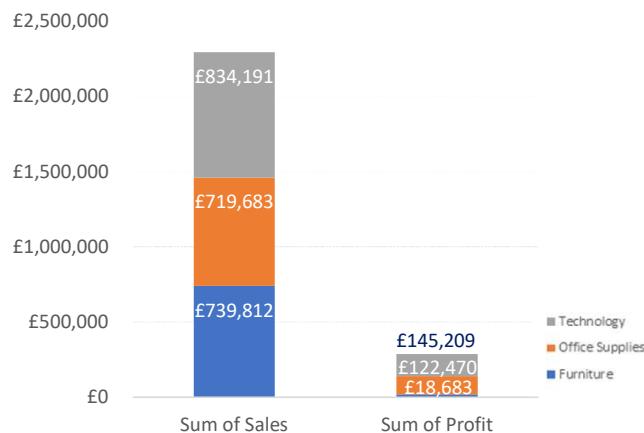
Scenario Summary

|                 | Current Values: | Scenario 1 |
|-----------------|-----------------|------------|
| Changing Cells: | \$R\$2          | £0.00      |
|                 | \$R\$3          | £0.00      |
|                 | \$R\$4          | £0.00      |
|                 | \$R\$5          | £0.00      |
|                 | \$R\$6          | £0.00      |
|                 | \$R\$7          | £0.00      |
|                 | \$R\$8          | £0.00      |
|                 | \$R\$9          | £0.00      |
|                 | \$R\$10         | £0.00      |
|                 | \$R\$11         | £0.00      |
|                 | \$R\$12         | £0.00      |
| Result Cells:   | \$S\$2          | Negative   |
|                 | \$T\$2          | 0.0% 0.0%  |

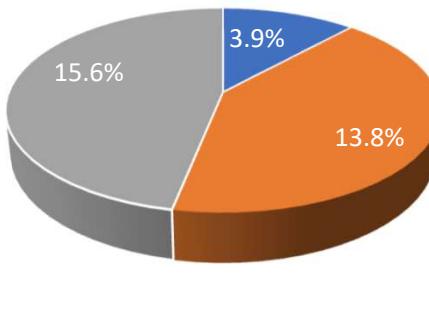
Notes: Current Values column represents values of changing cells at time Scenario Summary Report was created. Changing cells for each scenario are highlighted in grey.

## • Scenario Actual

Total Sales and Profit

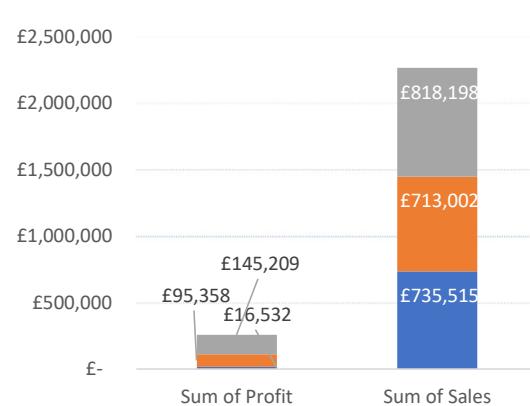


## • Profit Ratio

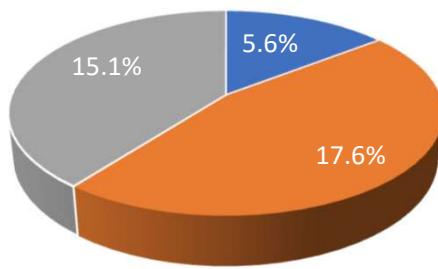


## • Expectations Removing 10 items

Total expect Sales and Profit



## • Profit Ratio



We were able to analyse that removing only these 10 items despite the **total sales value decreasing** the percentage of **profit increases** in relation to the current value.

A more in-depth analysis identified 348 sales where the profit was less than the total sales, and 229 items sold for less than the value of the item itself. In other words, the profit value is less than 100% in relation to the sale value.

Altogether, £54,025.04 of loss in addition to the value of the merchandise, i.e., each of these items has more than 100% negative loss.

Chart Profit before changes

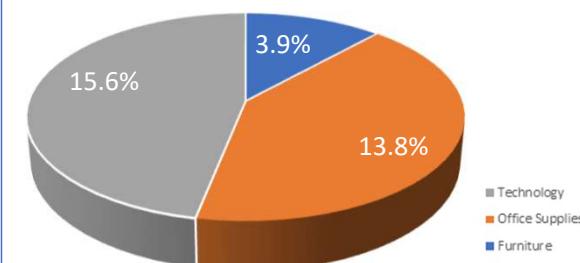
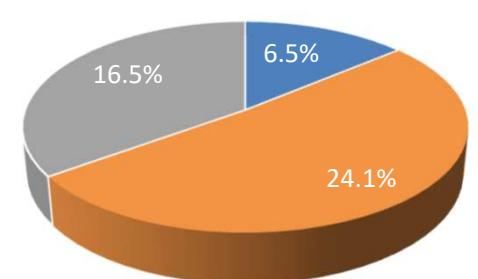


Chart Profit after changes



# Dreams

## Year

- Select all
- 2014
- 2015
- 2016
- 2017

## Segment

- Select all
- Consumer
- Corporate
- Home Office

## Category

- Select all
- Furniture
- Office Supplies
- Technology

## Ship Mode

- Select all
- First Class
- Same Day
- Second Class
- Standard

**Talysson Oliveira**  
Data Analyst

Dreams, Main Page

Data updated on 08/09/22, 02:04

£230

Average of Sales

801

Closed Accounts

46.9%

Growth

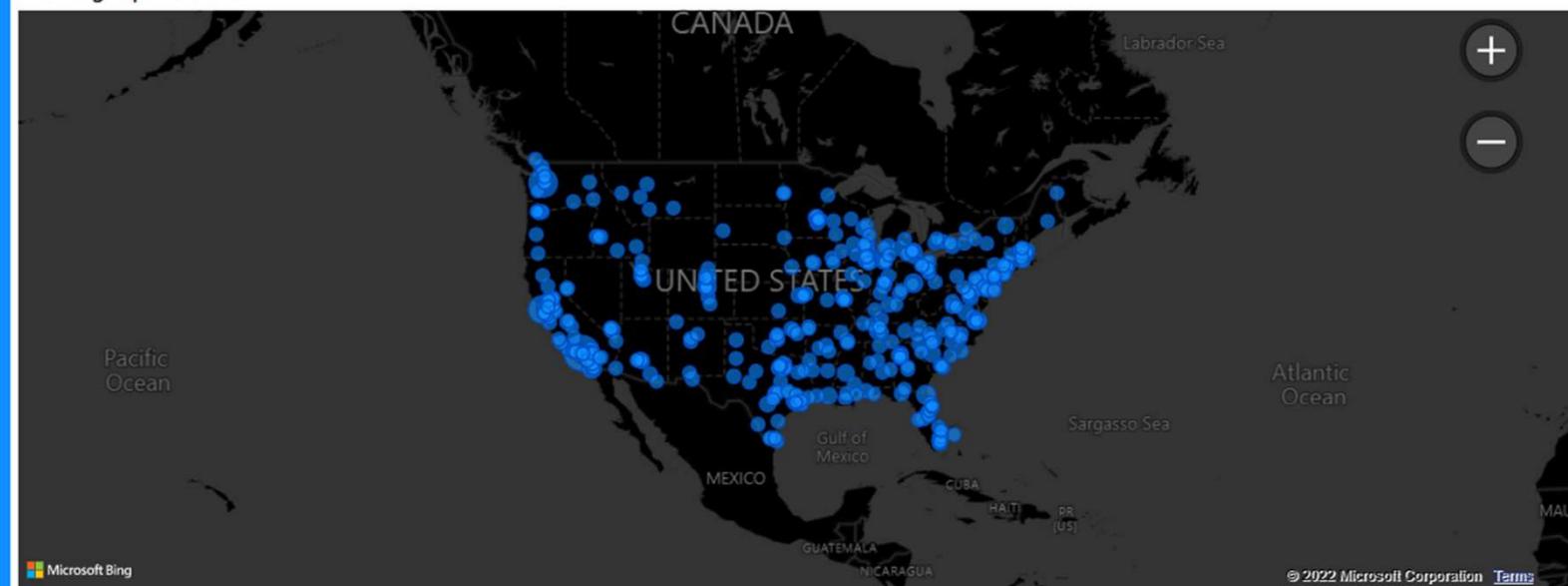
12.0%

Profit Ratio

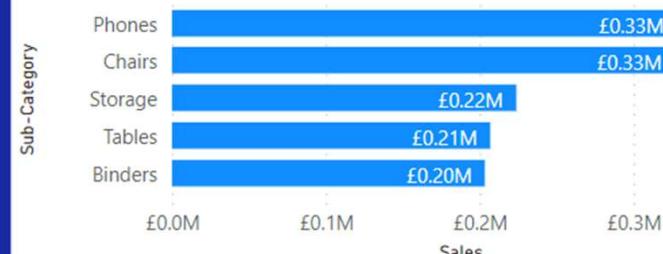
£2.29M

Total Gross Sales

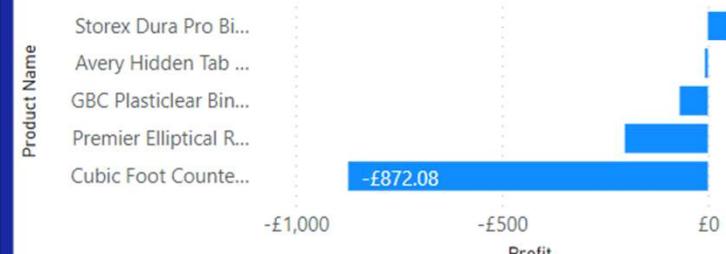
Demographic Sales



Bestselling Categories



Least Rentable Items



# Dreams

## Year

- Select all
- 2014
- 2015
- 2016
- 2017

## Segment

- Select all
- Consumer
- Corporate
- Home Office

## Category

- Select all
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- Office Supplies
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**Talysson Oliveira**  
Data Analyst

**£230**

Average of Sales

**801**

Closed Accounts

**46.9%**

Growth

**12.0%**

Profit Ratio

**£2.29M**

Total Gross Sales

Total Sales by Year



Total Sales by Quarter



Total Sales by Month



# Dreams

## Year

- Select all
- 2014
- 2015
- 2016
- 2017

## Segment

- Select all
- Consumer
- Corporate
- Home Office

## Category

- Select all
- Furniture
- Office Supplies
- Technology

## Ship Mode

- Select all
- First Class
- Same Day
- Second Class
- Standard

**Talysson Oliveira**  
Data Analyst

£230

Average of Sales

801

Closed Accounts

4

AVG Items per Sale

12.0%

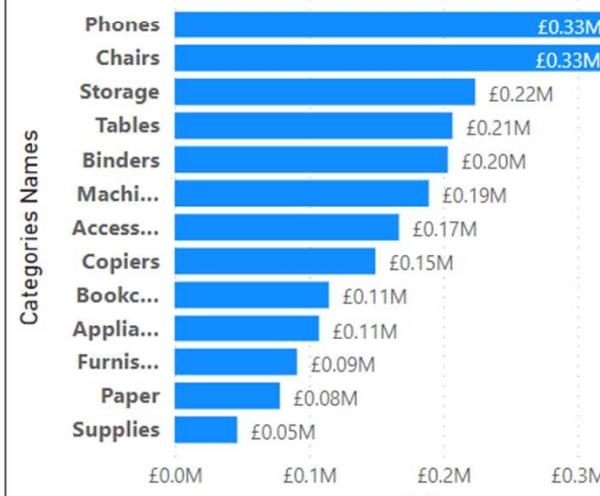
Profit Ratio

£2.29M

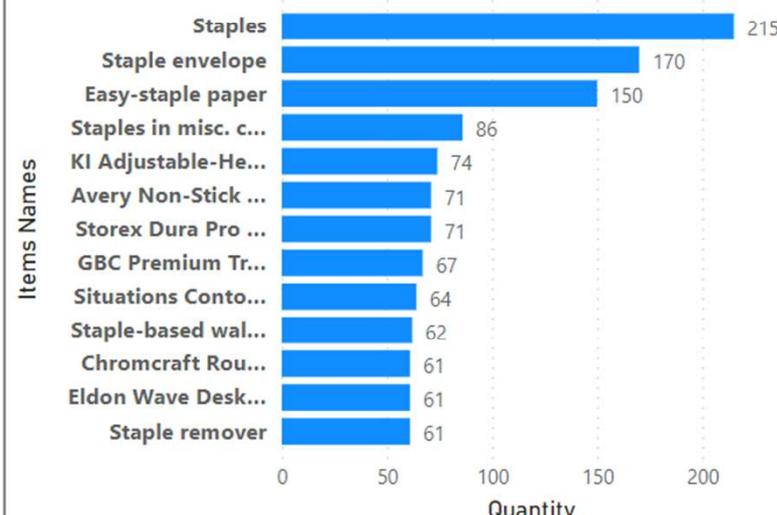
Total Gross Sales

Filters

Topselling Accounting Group



Topselling Accounting Items by Quantity



Category Sub-Category Product Name

| Category        | Sub-Category | Product Name   | Average of Profit Ratio | Sales            | Profit            | Discount     |
|-----------------|--------------|--|-------------------------|------------------|-------------------|--------------|
| Office Supplies | Appliances   | Acco 6 Outlet Guardian Premium Plus Surge Suppressor     | -113.00%                | £289.46          | -£113.77          | 2.40         |
| Office Supplies | Binders      | Acco D-Ring Binder w/DublLock                            | -74.72%                 | £235.18          | -£102.84          | 5.60         |
| Office Supplies | Binders      | Avery Hidden Tab Dividers for Binding Systems            | -99.29%                 | £31.59           | -£7.03            | 4.30         |
| Office Supplies | Binders      | Avery Reinforcements for Hole-Punch Pages                | -75.89%                 | £28.51           | -£16.14           | 4.60         |
| Office Supplies | Appliances   | Cubic Foot Counter Height Office Refrigerator 3.6        | -148.40%                | £2,946.20        | -£872.08          | 1.88         |
| Office Supplies | Binders      | GBC Instant Report Kit                                   | -49.36%                 | £164.99          | £3.23             | 6.40         |
| Office Supplies | Binders      | GBC Plasticlear Binding Covers                           | -98.10%                 | £68.88           | -£68.42           | 5.10         |
| Office Supplies | Binders      | GBC Standard Recycled Report Covers Clear Plastic Sheets | -54.02%                 | £258.72          | -£27.17           | 5.10         |
| <b>Total</b>    |              |  | <b>-74.78%</b>          | <b>£4,828.72</b> | <b>-£1,355.16</b> | <b>48.46</b> |

# Dreams

## Year

- Select all
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- 2015
- 2016
- 2017

## Segment

- Select all
- Consumer
- Corporate
- Home Office

## Category

- Select all
- Furniture
- Office Supplies
- Technology

## Ship Mode

- Select all
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- Same Day
- Second Class
- Standard

**Talysson Oliveira**  
Data Analyst

**£230**

Average of Sales

**801**

Closed Accounts

**4**

AVG Items per Sale

**12.0%**

Profit Ratio

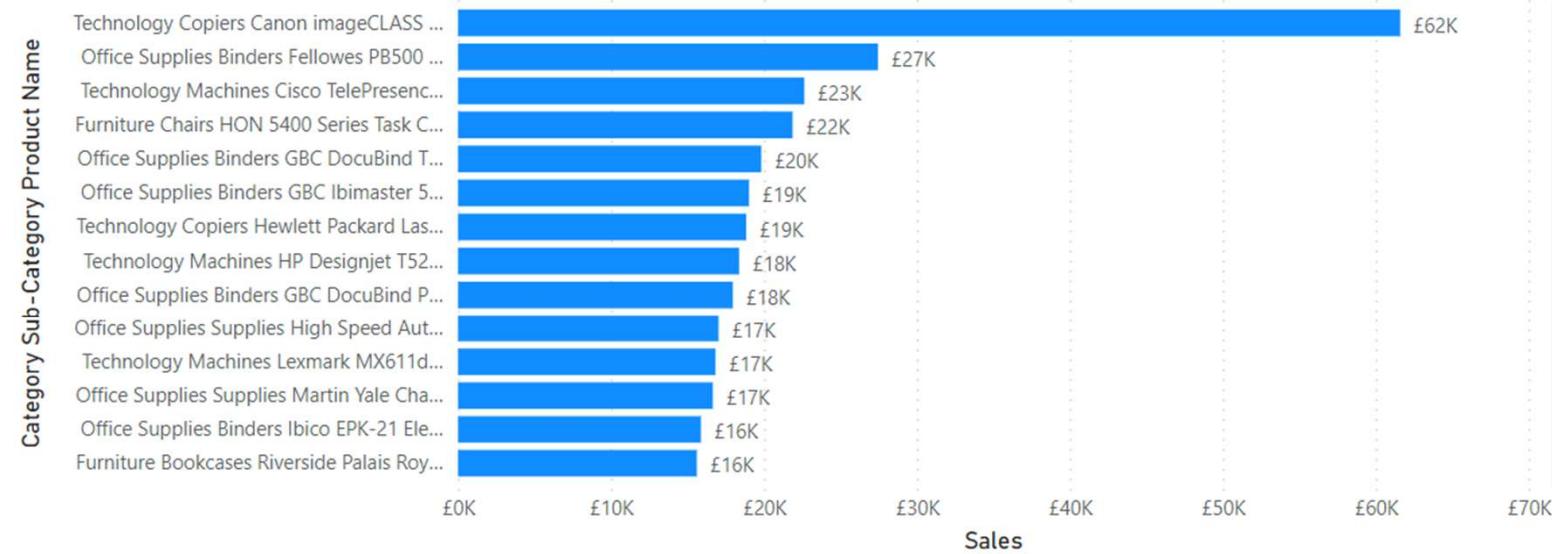
**£2.29M**

Total Gross Sales

## Sales by Ship Mode



## Sales by Category, Sub-Category and Product Name



# Dreams

## Year

- Select all
- 2014
- 2015
- 2016
- 2017

## Segment

- Select all
- Consumer
- Corporate
- Home Office

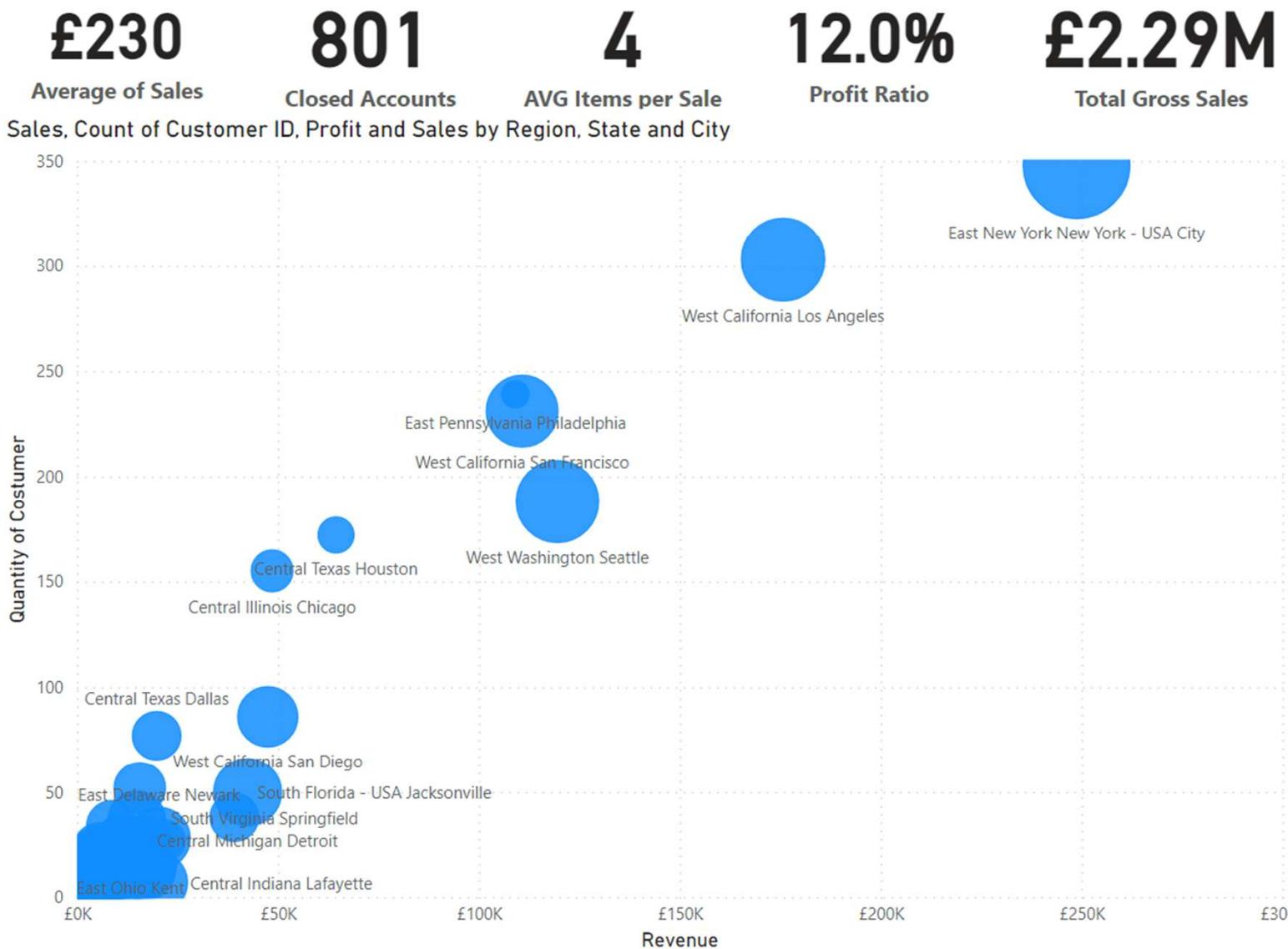
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- Same Day
- Second Class
- Standard

**Talysson Oliveira**  
Data Analyst



# Conclusion

As we've covered in this presentation, various characteristics should be evaluated to be able to take the best action to identify trends in sales and implementing a data warehouse. Armed with the necessary tools, we can get a clear picture of the size of the product we should focus on next.

With slices, filters and clear graphs, we can visualise what the report is showing us so we can take action to make the right decision. We can also visualise the growth of the company during this period and see which outlets sell the most, which products sell the most, and which products have the highest added value. Then came predictions.

Consider that certain items should be kept in the portfolio due to client preference, or because competition also applies to these particular items, or simply because they can attract more clients, and removing those items the profit might increase significantly.

Another factor is that we can't measure profit without cost value, which makes it difficult to make a decision because we can't extract much information from it just by the number of sales and the total value.



# **Talysson Oliveira**

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