Sales Analysis with Excel

Contents

1.1	Adde	ed columns:	. 2
1.2	Gene	eral Observations	. 2
1.2.1	Sa	ales through time:	. 2
1.2.2	. Pr	oportion of sales in 2017 in each large group:	. 2
1.2.3	В Ву	/ Region, orders not returned:	. 3
1.2.4	Ву	/ Category, orders not returned:	. 3
1.2.5	Б Ву	/ Segment, orders not returned:	. 3
1.2.6	Ca	ategories sales, not returned orders only:	. 4
1.2	2.6.1	Sales FURNITURES Profitability FURNITURES	. 4
1.2	2.6.2	Sales OFFICE SUPPLIES Profitability OFFICE SUPPLIES	. 4
1.2	2.6.3	Sales TECHNOLOGY Profitability TECHNOLOGY	. 4
1.2.7	' Se	egment sales by category, not returned orders:	. 5
1.2	2.7.1	Sales FURNITURES Profitability FURNITURES	. 5
1.2	2.7.2	Sales OFFICE SUPPLIES Profitability OFFICE SUPPLIES	. 5
1.2	2.7.3	Sales TECHNOLOGY Profitability TECHNOLOGY	. 5
1.3	Deep	o Dive:	. 6
1.3.1	De	etailed analysis Furniture sales	. 6
1.3	3.1.1	Tables review:	. 6
1.3	3.1.2	Bookcases review:	. 6
1.3.2	. De	etailed analysis Office supplies	. 7
1.3	3.2.1	Overall Office supplies profitability for 2017	. 7
1.3	3.2.2	Part of E L and S in overall sales for 2017	. 7
1.3	3.2.3	What If Analysis	. 7
1.3	3.2.4	Recommendation:	. 7
1.3.3	B De	etails analysis Technology	. 8
1.3	3.3.1	Overview of Machines sales in 2017	. 8
1.3.4	Di	scount policy	. 9
1.3	3.4.1	General view	. 9
1.3	3.4.2	Discount rates and profit impact	. 9
1.3	3.4.3	Discount rates across large groups	. 9
1.3.5	Re	eturns Policy	10
1.3	3.5.1	Returns by large groups of customers	10
1.3	3.5.2	West returns study	10
1.4	Reco	ommendations review	13

1.1 Added columns:

		R	S	T		U		V		W	Х		Υ	Z	AA	AB
~	Sale	S 🔻	Quantity 💌	Discount % 💌	Pro	ofit 💌	Un	discounted price 💌	Un	nit price 💌	Margin 💌	Dis	count#	Profit/loss 💌	Returned 💌	Year 💌
	\$	261.96	2	0%	\$	41.91	\$	261.96	\$	130.98	16%	\$	-	PROFIT	No	2016
	\$	731.94	3	0%	\$	219.58	\$	731.94	\$	243.98	30%	\$	-	PROFIT	No	2016
	\$	14.62	2	0%	\$	6.87	\$	14.62	\$	7.31	47%	\$	-	PROFIT	No	2016
	\$	957.58	5	45%	\$	-383.03	\$	1,741.05	\$	348.21	23%	\$	783.47	LOSS	No	2015
	\$	22.37	2	20%	\$	2.52	\$	27.96	\$	13.98	29%	\$	5.59	PROFIT	No	2015
	\$	48.86	7	0%	\$	14.17	\$	48.86	\$	6.98	29%	\$	-	PROFIT	No	2014
	\$	7.28	4	0%	\$	1.97	\$	7.28	\$	1.82	27%	\$	-	PROFIT	No	2014
	\$	907.15	6	20%	\$	90.72	\$	1,133.94	\$	188.99	28%	\$	226.79	PROFIT	No	2014
	\$	18.50	3	20%	\$	5.78	\$	23.13	\$	7.71	45%	\$	4.63	PROFIT	No	2014
	\$	114.90	5	0%	\$	34.47	\$	114.90	\$	22.98	30%	\$	-	PROFIT	No	2014

Undiscounted price: =[@Quantity]*[@[Unit price]]

Unit price: =(IF([@[Discount %]] <> 0,[@Sales]/(1-[@[Discount %]]),[@Sales]))/[@Quantity]

 $\begin{aligned} &\text{Margin: =IF}([@[Discount \%]]=0,[@Profit]/[@Sales],([@Profit]+([@[Unit price]]*[@Quantity])-[@Sales])/([@[Unit price]]*[@Quantity])) \end{aligned}$

Discount amount: =IF([@[Discount %]]<>0,[@[Unit price]]*[@Quantity]*[@[Discount %]],0)

Profit/Loss: = IF([@Profit]>0,"PROFIT", "LOSS")

Returned: = = IFERROR(INDEX(Returns!Table5[#Data], MATCH([@[Order ID]], Returns!Table5[Order

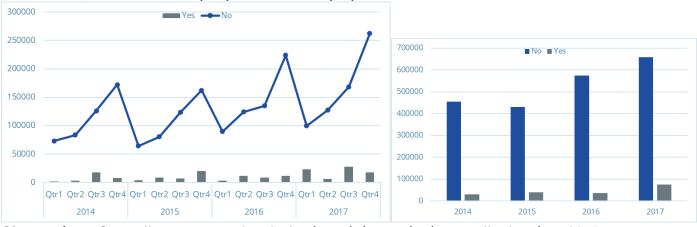
ID],0),MATCH("Returned",Returns!Table5[#Headers],0)),"No")

Year: =YEAR([@[Order Date]])

1.2 General Observations

1.2.1 Sales through time:

Global sales, orders returned (Yes) / not returned (No)



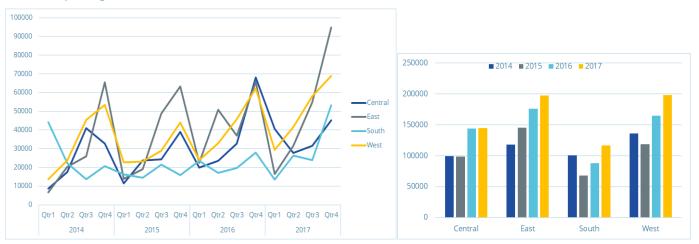
Observations: Generally, we can see that the business is increasing its overall sales since 2015. Strong seasonality in the yearly sales cycle, peak on Q4. Significant increase in returns in 2017

1.2.2 Proportion of sales in 2017 in each large group:



Observations: Central and South region are of lesser importance, Segments are approx. balanced the Home Office category is half the Consumer category.

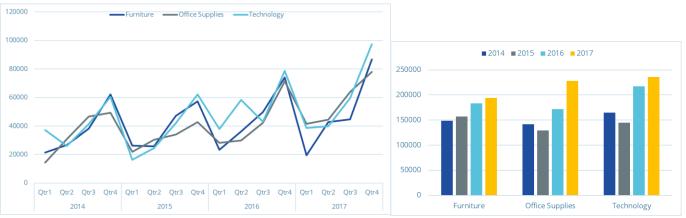
1.2.3 By Region, orders not returned:



Observations:

All regions are growing, however Central has stalling year on year between 2016 and 2017. South has the lowest revenue.

1.2.4 By Category, orders not returned:



Observations:

Growth is best for Office supplies. 3 categories contribute approximately equally to the revenue in 2017.

1.2.5 By Segment, orders not returned:



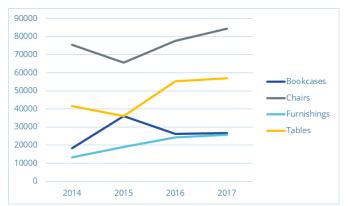
Observations:

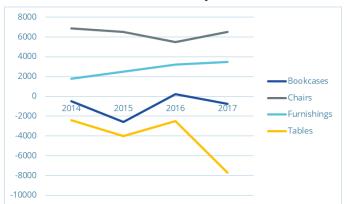
Seasonality confirmed. Consumer and corporate segments have little growth, Home Office is growing but still the smallest segment.

1.2.6 Categories sales, not returned orders only:

1.2.6.1 Sales FURNITURES

Profitability FURNITURES

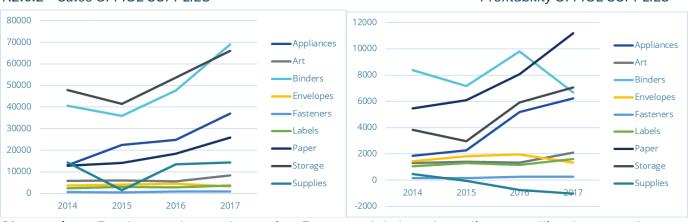




Observations: Growth has reduced in all categories, stalled on bookcases. Bookcases are at a loss for the company, and Tables are very underpriced. Chairs and Furnishings are more and more profitable.

1.2.6.2 Sales OFFICE SUPPLIES

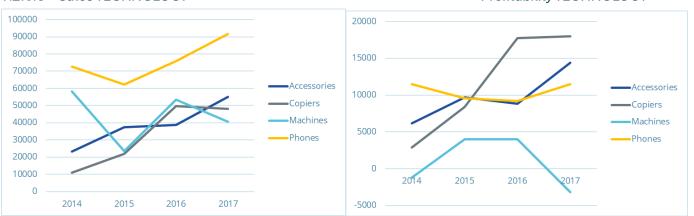
Profitability OFFICE SUPPLIES



Observations: Envelopes sales are decreasing. Fasteners, labels and supplies are stalling. In terms of profitability, Binders and envelopes are less profitable, and Supplies are at a loss

1.2.6.3 Sales TECHNOLOGY

Profitability TECHNOLOGY



Observations: Machines and copiers are selling less. Machines are sold at a loss and profitability of Copiers is stalling.

1.2.7 Segment sales by category, not returned orders:

1.2.7.1 Sales FURNITURES

Profitability FURNITURES



Observations: Furniture sales are decreasing in in the corporate segment, profitability is decreasing everywhere, we are at a loss in Home Office sales.

1.2.7.2 Sales OFFICE SUPPLIES

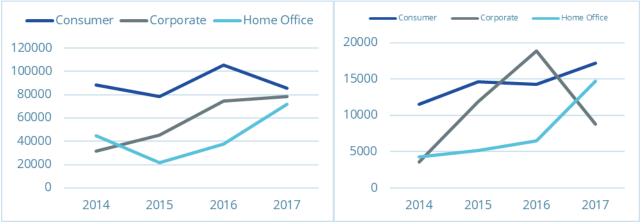
Profitability OFFICE SUPPLIES



Observations: Home Office sales in Consumer and Corporate are increasing, Home Office is stalling and profitability decreasing.

1.2.7.3 Sales TECHNOLOGY

Profitability TECHNOLOGY



Observations: Technology sales are growing in Home Office as well as profitability. Stalling in Corporate with big decrease in profitability. Decreasing in Consumer but good profitability

1.3 Deep Dive:

1.3.1 Detailed analysis Furniture sales

Our general observations above tell us that: Growth has reduced in all categories, stalled on bookcases. Bookcases are at a loss for the company, and Tables are very underpriced. Chairs and Furnishings are more and more profitable. Furthermore, sales are decreasing in in the corporate segment, profitability is decreasing everywhere, we are at a loss in Home Office sales.

1.3.1.1 Tables review:

Sub-Category	Tables								
Returned	No 🏋								
Row Labels 🔻	Sum of Quantity	Sum of Undiscounted price	Sum of Sales	Sum of Profit	Average of Quantity	Average of Sales2	Average of Margin	Average of Profit	Average of Discount %
Central	253	51852.59	38815.617	-3417.952	3.614285714	554.5088143	0.190428571	-48.82788571	0.258571429
East	238	57588.05	35748.903	-10020.085	3.216216216	483.0932838	0.202297297	-135.4065541	0.375675676
South	213	55250.96	41184.818	-4496.6166	4.531914894	876.2727234	0.185531915	-95.67269362	0.215957447
West	403	89771.25	74173.912	1267.2549	4.112244898	756.8766531	0.191326531	12.93117245	0.201020408
Grand Total	1107	254462.85	189923.25	-16667.3987	3.830449827	657.1738754	0.192975779	-57.67265986	0.262110727

As we can see We are losing money via heavy discounts(>26% on average) on tables.

1.3.1.1.1 What if analysis with the scenario manager.

Scenario Summ	Scenario Summary											
	Current Values:	26% discount	24% discount	22% discount	20% discount	18% Discount	16% Discount					
Changing Cells:												
\$G\$15	0.262211073	0.26	0.24	0.22	0.2	0.18	0.16					
Result Cells:												
\$H\$14	-17617.81027	-17055.17441	-11965.91741	-6876.66041	-1787.40341	3301.85359	8391.11059					

1.3.1.1.2 Recommendation:

The results show that if we restrict our discount policy to a max of 18% we will make again significant profits on our Tables sales.

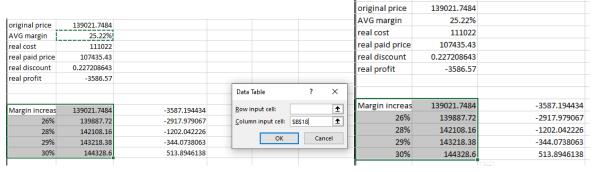
1.3.1.2 Bookcases review:

Sub-Category		1								
Returned	No 🖓	1								
Row Labels 🔻	Sum of Quantity	Sum of Un	discounted price	Sum of Sales	Sum of Profit	Average of Quantity	Average of Sales2	Average of Margin	Average of Profit	Average of Discount %
Central	18	2	32178.87	23663.7384	-1975.2899	3.872340426	503.4837957	0.194468085	-42.02744468	0.234042553
East	24	2	55324.28	42819.976	-934.3072	3.611940299	639.1041194	0.202985075	-13.94488358	0.219402985
South	11	3	11915.45	10899.362	1339.4918	4.214285714	389.2629286	0.188214286	47.83899286	0.1
West	26)	39603.78	30052.279	-2016.7516	3.714285714	429.3182714	0.188	-28.81073714	0.24
Grand Total	80	2	139022.38	107435.3554	-3586.8569	3.783018868	506.7705443	0.194198113	-16.91913632	0.213679245

1.3.1.2.1 Recommendation:

Here we can see that even with the discounts given to customers we are almost even. We can therefore try to increase profit by increasing sales price or reducing cost.

1.3.1.2.2 What if analysis via Goal seek:



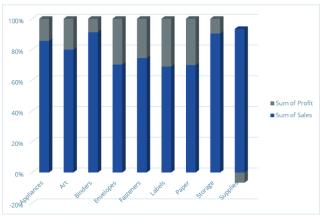
1.3.1.2.3 Recommendation:

We can see that in order to maintain the same order of discount to clients, we need to increase our margin to 30% to start making profit. That will have us raise the sales price of bookcases by 3.8%

1.3.2 Detailed analysis Office supplies

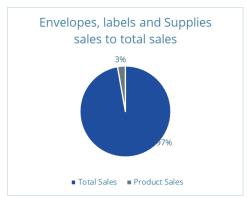
Our general observations above tell us: Envelopes sales are decreasing. Fasteners, labels and supplies are stalling. In terms of profitability, Binders and envelopes are less profitable, and Supplies are at a loss. Home Office sales in Consumer and Corporate are increasing, Home Office is stalling and profitability decreasing.

1.3.2.1 Overall Office supplies profitability for 2017



Envelopes, labels and supplies are very profitable but not growing.

1.3.2.2 Part of EL and S in overall sales for 2017



Upon review, we can see that those products amount for only 3% of the total sales in 2017, so we can reduce the margin to reduce sale price but it will have minimum effect on the overall sales. It might be better to discount them heavily to attract buyers to other items.

1.3.2.3 What If Analysis

Scenario Summa	Scenario Summary											
	Current Values:	20% Discount	30% Discount	40% Discount	50% Discount							
Changing Cells:												
\$B\$28	8%	20%	30%	40%	50%							
Result Cells:												
\$C\$25	\$21,359.64	\$18,573.60	\$16,251.90	\$13,930.20	\$11,608.50							

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

23217 Undiscounted 21034 Paid price 21359.64 With 8% margin 13698.03 Selling at cost

1.3.2.4 Recommendation:

In this what if analysis, the scenario shows us that if we discount up to 40% the Envelopes, Labels and Supplies together, we are still making a profit. Further investigation can be made to see with what other products those are bought with, and we would have a better picture of the discount impact.

Since the sales in Home Office are decreasing for Office supplies, it might be good to target this segment with the discount.

1.3.3 Details analysis Technology

General observations: Machines and copiers are selling less. Machines are sold at a loss and profitability of Copiers is stalling. Technology sales are growing in Home Office as well as profitability. Stalling in Corporate with big decrease in profitability. Decreasing in Consumer but good profitability

1.3.3.1 Overview of Machines sales in 2017

■ Technology	\$ 289,839.74	\$	54,207.57	13%	235632.167	40741.8939	Sum of Profit
Accessories	\$ 58,779.47	\$	3,639.73	7%	55139.744	14418.3199	Juin of Front
Copiers	\$ 55,799.33	\$	7,779.89	16%	48019.444	17981.8154	1492,4479
Machines	\$ 64,356.18	\$	23,633.36	31%	40722.819	-3170.7864	
Phones	\$ 110,904.76	\$	19,154.60	16%	91750.16	11512.545	-748.0204
Grand Total	\$ 829,080.38	\$	171,367.19	16%	657713.1913	77712.0009	CEO1 1E34
							6501.1524
Discount:	14%	of to	otal discounts in value				3461.7575
Sales	8%	of to	otal sales in value				J-01./J/J
4.4.01							-7722 4416

1.3.3.1.1 Observation:

We can see that Machines sales amount for 8% of total sales in value, and 14% of total discount in value.

The right column shows us that for 2017, they are the second highest loss by subcategory. Discounting at 31% an item which has a strong proportion of overall sales is weighing a lot on the Company revenue. It could be explained by the sales of associated profitable services (parts, maintenance, warranty...). It could also be that the products on offer don't correspond to demand, which is probably the case since we have seen that sales are decreasing too.

1.3.3.1.2 Recommendation:

Discontinue selling machines and increase our product portfolio on phones and accessories which are growing in sales.

1353.3224 262.7885 1614.4386 11185.6445 7052.4062 -1011.3198 **40741.8939** 14418.3199 17981.8154 -3170.7864 11512.545

77712.0009

35477.6591

6231.1832

2113.9429

6675.2526

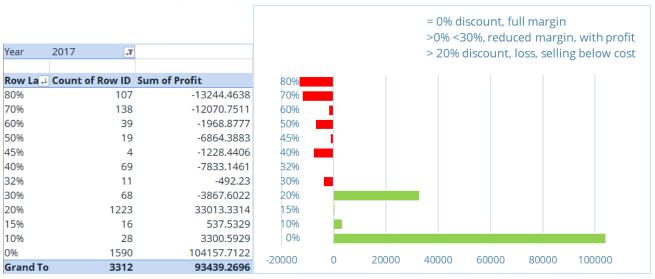
1.3.4 Discount policy

1.3.4.1 General view

Row La ✓	Sum of Sale Ave	erage of Discount %	Sum of Profit
LOSS	154565.7	47%	-53836.193
PROFIT	578649.6	8%	147275.463
Grand Tot	733215.3	16%	93439.2696

Observation: we can see that for 2017, Profits amounted to 2/3 of what they would have been without discounts. On losses, there was an average 47% discount.

1.3.4.2 Discount rates and profit impact



Observations:

We can see here that all the discount rates above 20% have created losses to the business

1.3.4.3 Discount rates across large groups

Grand To		2002			Grand Tot					Grand Tot				1095
0%	274	1033	283	1590		78					286		226	611
10%	25	1	2		10%	1				10%	3	25		
15%	16			16	15%		9 3	4	16	15%				16
20%	204	736	283	1223	20%	63	2 365	226	1223	20%	279	276	240	428
30%	67		1	68	30%	3	9 15	14	68	30%	42	26		
32%	11			11	32%		5 4	1	11	32%	11			
40%	24		45	69	40%	2	3 22	19	69	40%	3	59	7	
45%	4			4	45%		1 1	2	4	45%			4	
50%	15		4	19	50%	1) 6	3	19	50%	8	3	4	4
60%	39		-	39	60%	2	2 8	9	39	60%	39			
70%	7	125	6	138	70%	6	3 41	29	138	70%		65	37	36
80%		107		107	80%	5	5 36	16	107	80%	107			
Per 🚚	Furniture	Office Supplies	Technology	Grand To	Per 🚚	Consume	Corporate	Home Office	Grand	Per 🚚	Central	East	South	West
Row ID	Labels 🔻				Row ID2	Labels	7			Row ID	Labels 🔻			
Year	2017				Year	2017	r			Year	2017			

Observations: We can see that all the 80% discount rates have been applied to Office supplies, and only for the Central region. The 70% discount rate has also mostly been applied to Office supplies, but this time in the other 3 regions. Clearly it shows that to sell the Office Supplies Category, some efforts have had to be made.

1.3.4.3.1 Recommendations:

Office supplies weigh heavily on our margin overall, and especially in the Central region. As seen earlier, we need to either reduce the discounts or the cost to recover some profits. We can also raise the prices/reduce the discounts only in the Central region, that will have a significant impact. Half of discounts have been for our Consumer segment, so we might want to limit the discount in that segment. A further investigation might include shipping to see if that could have an impact, increasing shipping costs for this type of products by example.

1.3.5 Returns Policy

1.3.5.1 Returns by large groups of customers

2017	,T									
Column Labe	els 🔻									
Furniture			Office S	upplies	Techno	logy	Total O	Total Value		
▼ Orders		Value	Orders	Value	Orders	Value				
	616	\$193,952.93	1836	\$228,128.09	571	\$235,632.17	3023	\$657,713.19		
	70	\$ 21,434.34	166	\$ 17,969.08	53	\$ 36,098.64	289	\$ 75,502.06		
al	686	\$215,387.27	2002	\$246,097.18	624	\$271,730.81	3312	\$733,215.26		
	10%	10%	8%	7%	8%	13%	9%	10%		
2017	"T									
Column Labe	els 🔻									
Consumer			Corpora	ite	Home 0	ffice	Total O	Total Value		
✓ Orders		Value	Orders	Value	Orders	Value				
	1528	\$289,655.15	879	\$217,600.57	616	\$150,457.47	3023	\$657,713.19		
	140	\$ 42,249.55	101	\$ 24,247.26	48	\$ 9,005.26	289	\$ 75,502.06		
al	1668	\$331,904.70	980	\$241,847.82	664	\$159,462.73	3312	\$733,215.26		
	8%	13%	10%	10%	7%	6%	9%	10%		
2017	Ţ,									
	els 🔻									
									Total Orders	Total Value
▼ Orders										
						•				\$657,713.19
						•				\$ 75,502.06
al						,				\$733,215.26
	4%	1%	5%	7%	4%	5%	17%	21%	0.08725845	0.10297394
	Column Labe Furniture Orders 2017 Column Labe Consumer Orders	Column Labels Furniture	Column Labels	Column Labels	Column Labels	Column Labels ▼ Furniture	Column Labels ▼ Furniture	Column Labels Value	Column Labels Value	Column Labels

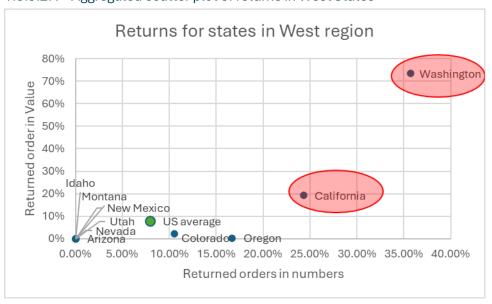
1.3.5.1.1 Observations:

We can see that Returns in technology have a high value compared to other categories.

We can see this same delta for consumer returns. Finally we can see that the West region has a high proportion of returns, when the central region have returns for a very low value.

1.3.5.2 West returns study

1.3.5.2.1 Aggregated scatter plot of returns in West States



Observations: We have illustrated the US average for orders by value / orders by quantity as the green dot. We can see that most states are within the average. California and Washington experience far more returns than the other states.

1.3.5.2.2 Inner State study



Observations: Following directly on the previous graph, we can see that within California and Washington state, Seattle and Los Angeles concentrate a large amount of lost profit for the returned orders they have had.

1.3.5.2.3 Seattle and Los Angeles returns analysis

1.3.5.2.3.1 Average return country wide excluding the WEST region

Returns	-	Orders		Value	Sum of Profit
No			95.53%	95.17%	96.02%
Yes			4.47%	4.83%	3.98%
Grand Tot	al		100.00%	100.00%	100.00%

Observation: This graph is our measure of the global average return percentage for quantities, sales value and profit value. We have removed the West region which is the one we study, and still only cover 2017.

1.3.5.2.3.2 LA and Seattle returns by category / segment

Returned orders percentage of total orders. Average 4.47%											
Furniture Office supplies Tech											
Consumer	3	3.65%	8.85%		3.13%						
Corporate	3	3.51%	12.28%		3.51%						
Home Office	4	1.65%	11.63%		3.49%						

Observation: We can see clearly here that the returns for Office Supplies in all 3 segments are much more important than the average, and roughly in the average for the other categories of products.

Returned orders profit percentage of total orders profit. Average 3.98%

netarried or dero pronte per certage or total or dero pronter werage orson								
	Furniture	Office suppl	Tech					
Consumer	0.47%	2.32%	28.41%					
Corporate	0.51%	1.28%	1.27%					
Home Office	0.91%	1.23%	0.30%					

Observation: we can see that We have a major loss of profit for our technology products in the Consumer segment.

1.3.5.2.3.3 LA and Seattle returns in Office Supplies



Observation: further delving into the return of Office Supplies in LA and Seattle, we can see that most product sub-categories have a return rate higher than the average. Comparing this graph with the graph on profitability for the same category, we can see that supplies are not returned but we sell at a loss. We can probably increase the price. The others we have very high profitability but have a lot of returns. We should decrease our margin and make the products more attractive, which could reduce returns.

1.3.5.2.3.4 Technology

Year	2017						
City	(Multiple Items)						
Category	Technology						
	Column Labels 🔻						
	Count of Order ID		Sum of Sales		Sum of Profit	Т	TT Total Sum of Profit
Row Labels 🔻	No	Yes	No	Yes	No	Yes	
Row Labels • Accessories	No 87.18%			Yes 2922.46		Yes 804.4373 #	# 4664.3383
		12.82%	12807.49		3859.901		
Accessories	87.18%	12.82% 16.67%	12807.49 7499.862	2922.46	3859.901	804.4373 # 6719.9808 #	
Accessories Copiers	87.18% 83.33%	12.82% 16.67% 0.00%	12807.49 7499.862 3287.28	2922.46	3859.901 2297.9602 516.9855	804.4373 # 6719.9808 #	# # 9017.941 # # 516.9855

Observations: We can clearly see that Technology returns have a very high profit impact, about half of the profit in tech is lost to the return of copiers. Again, we already know that their sales are decreasing and their profitability is very high. We can here again decrease our margin to make them more attractive to clients, maybe winning against harsh price competition in doing so.

1.4 Recommendations review

	T	T	T	T	
Issue FURNITURES Countrywide	Root cause	Impact	Opportunity	Value unlocks	Comments
Loss recorded in Tables	1. >26% discount vs 19% margin on tables	16,6k\$ loss	Reduce discount to 18% max	Profit return	Amount will depend on sales
2. and Bookcases sales	2. 21% discount versus 19% margin	3,6k \$ loss	Increase margin to 30% (price by 3.8%)	Profit returns, discount policy maintain	Amount will depend on sales
OFFICE SUPPLIES Decreasing sales	8% discounts, 40% margin on Envelopes, labels	Loss of potential ancillary sales	Discount those products to 40% discount to attract to other products	Potential sales if organized properly	Benefit will be measured depending on marketing effort
TECHNOLOGY Machines are second profit loss in all sub categories in all 3 categories	31% discount on item for which a loss of margin impacts high as high value items	Loss of 3.2k\$ in profit	Stop selling machines unless services sold too	Develop our product portfolio in phones which are growing in sales	Explore adding value to those sales via other means? warranty, parts, servicing, subscription
DISCOUNT POLICY Goes up to 80% when anything above 20% brings loss	Weak discount policy: main example: 107 orders at 80% discount all in Central region, and for Office Supplies	Overall resulted in 53k \$ profit loss	Review sales policy for discount overall, and for our Central region in Office Supplies in particular	Keeping within the 20% max discount boundary will change profit to : 147k\$ + 53k\$	Major issue in selling at a loss in Central region for Office supplies.
RETURNS POLICY High returns in the West- La and Seattle	1. High office supplies return	Office supplies returns all above average except supplies(sold at loss anyway)	We can reduce the margin or increase the discount, for most of them who are very profitable	Won't make a major difference since reduced price will probably reduce returns.	Hard to tell the impact and real profit.
	2. High profit loss in consumer technology returns	Loss of 52% of profit (7.7K)	Identify sources of returns for copiers	45% of profit gain (6.6k)	This is critical as the loss is very significant