

IAS: Office Supply Analytics

Team Outliers

Aniket Sanghvi

Suraj Gupta

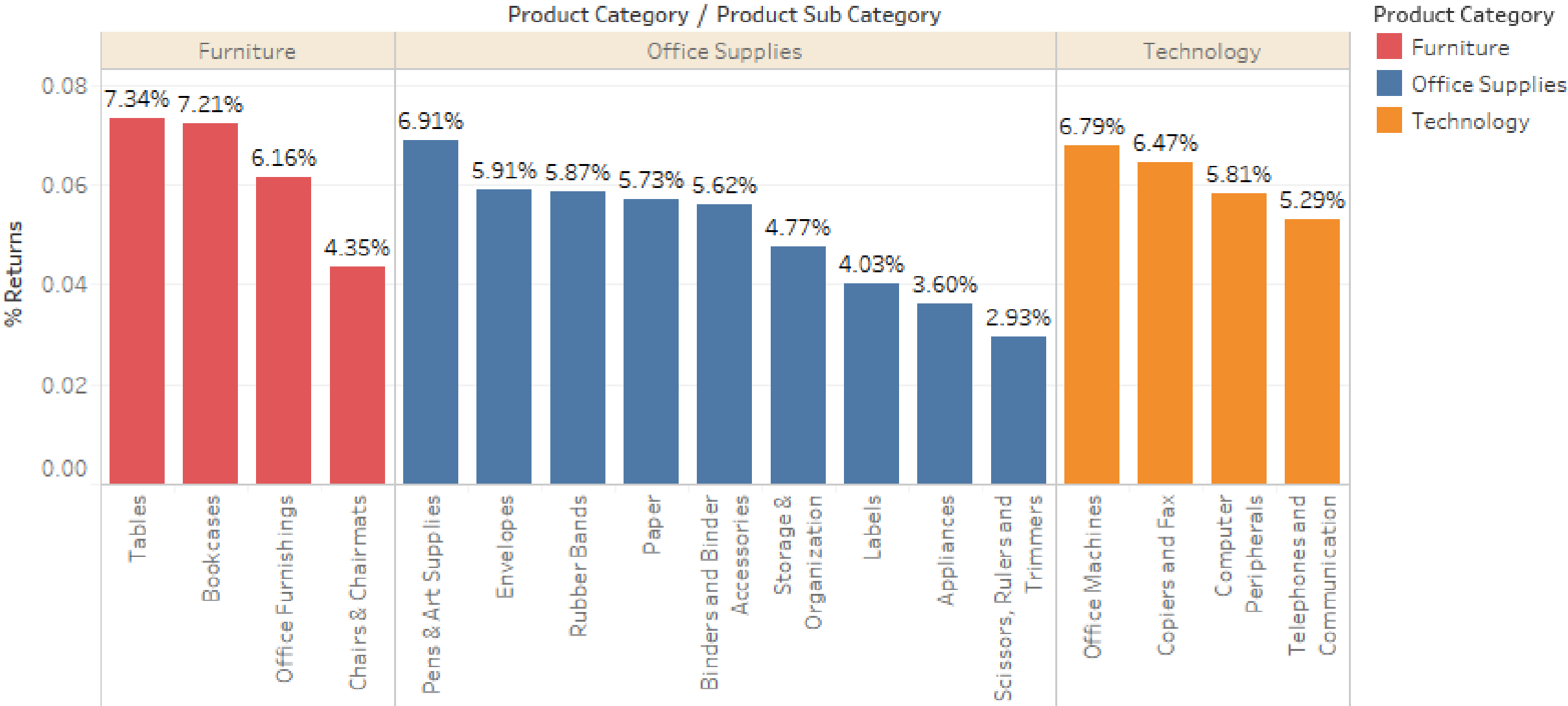
Tina Sharma

Uma Sankar Kasaraneni

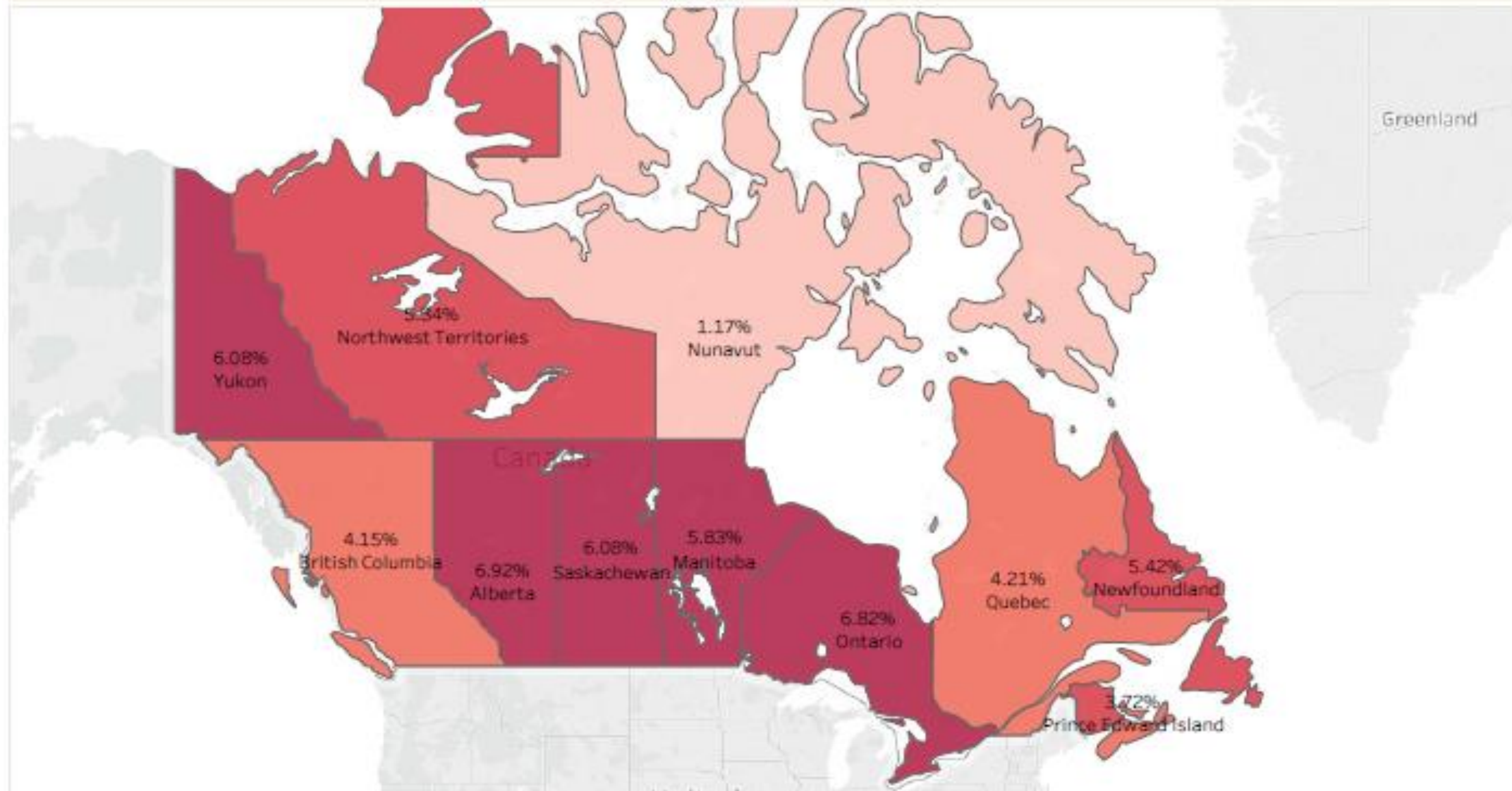
Product profiling on returned
products

Products/regions that need
immediate action?

Top Products Returned



Return Rate by States



Which managers should be concerned?

Return Rate by Managers and Region

Manager	Region	
William	Alberta	6.92%
	Saskatchewan	6.08%
	Yukon	6.08%
	Northwest Territories	5.34%
	British Columbia	4.15%
Erin	New Brunswick	5.73%
	Newfoundland	5.42%
	Nova Scotia	4.58%
	Quebec	4.21%
	Prince Edward Island	3.72%
Sam	Ontario	6.82%
	Manitoba	5.83%
Chris	Nunavut	1.17%

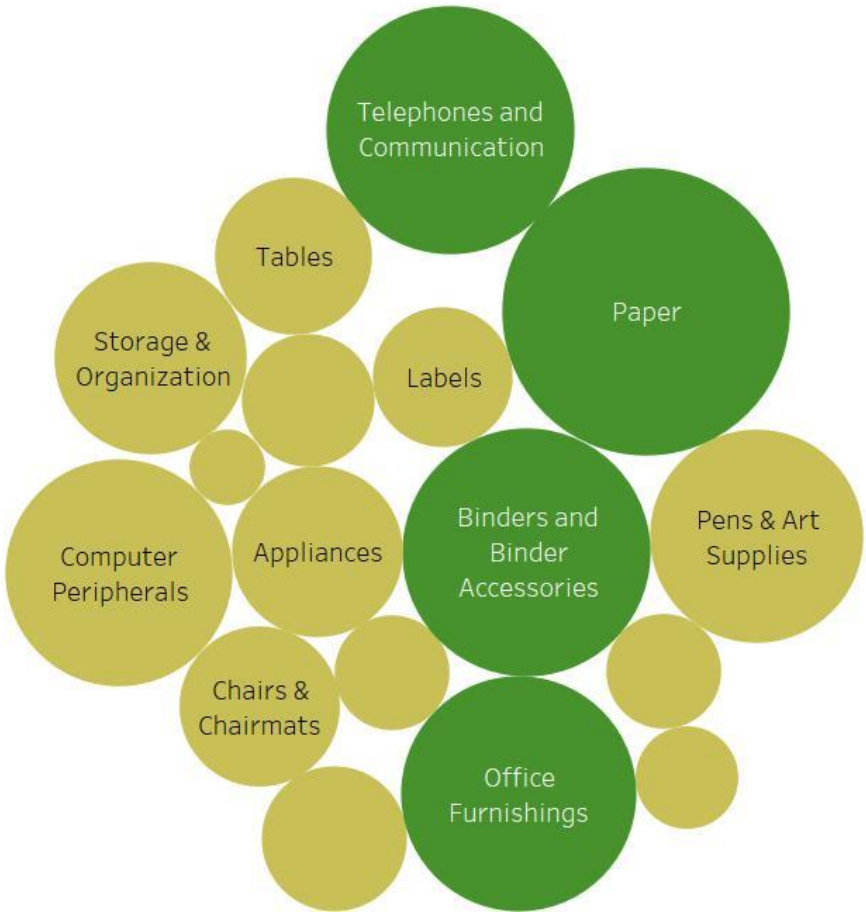
Top 2 Products Returned by Region and Product Category

Manager	Province	Product Sub Category	
Chris	Nunavut	Paper	5.67
Erin	New Brunswick	Office Machines	13.99
		Labels	14.80
	Newfoundland	Chairs & Chairmats	63.83
		Scissors, Rulers and Trim..	22.07
	Nova Scotia	Pens & Art Supplies	12.39
		Binders and Binder Acces..	6.80
	Prince Edward Island	Office Machines	15.52
		Labels	13.33
Sam	Quebec	Chairs & Chairmats	8.97
		Pens & Art Supplies	6.27
	Manitoba	Bookcases	10.58
		Telephones and Communi..	10.80
	Ontario	Bookcases	12.82
		Copiers and Fax	14.48
	Alberta	Tables	21.11
		Paper	10.43
William	British Columbia	Envelopes	8.22
		Rubber Bands	11.46
	Northwest Territories	Office Machines	13.01
		Copiers and Fax	20.37
	Saskatchewan	Tables	12.46
		Pens & Art Supplies	9.63
	Yukon	Copiers and Fax	31.08
		Tables	14.31

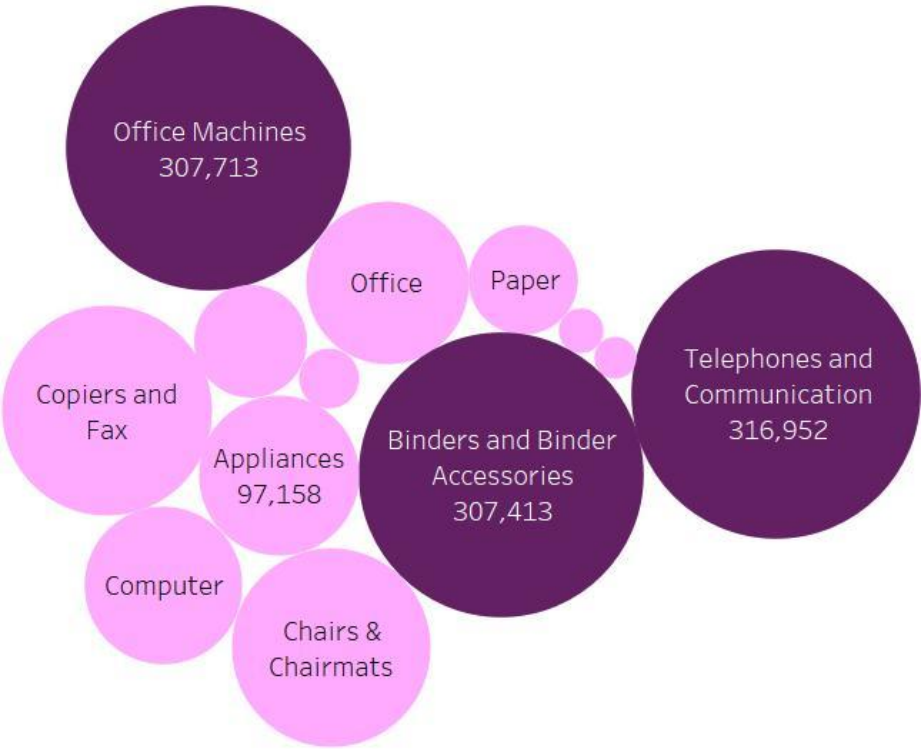
Top products that drive profit
Ways to improve profit?

Top products

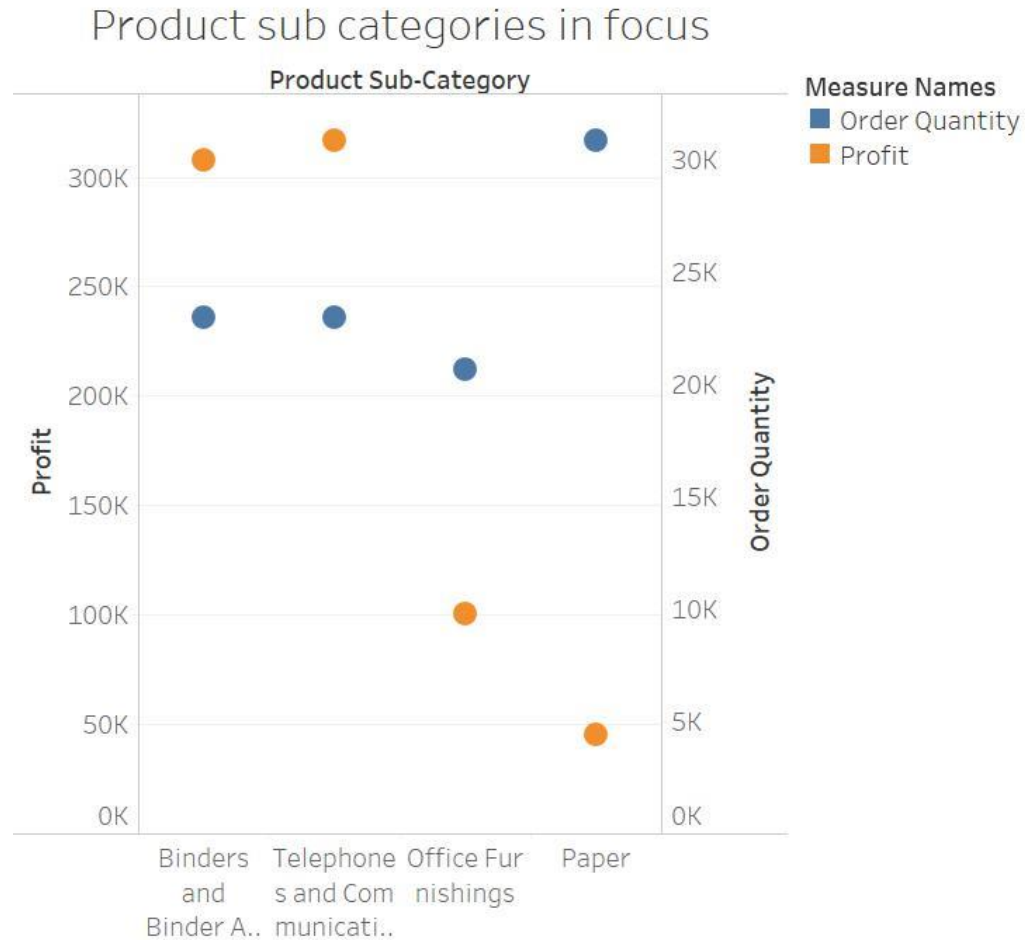
By Numbers (Qty)



By Profits (\$\$\$)



Top 4 products: by Profit and Quantity



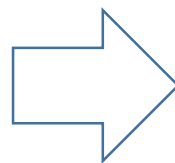
Targeting these products, how do we increase profits?

- Reduce Costs
- Increase profit margin

Highest Order Qty
& Highest priority

Quantities ordered

Customer Segment	Order Priority	Product Sub-Category			
		Binders and Binder Accessories	Office Furnishings	Paper	Telephones and Communication
Consumer	Critical	798	636	1,348	604
	High	1,081	801	1,264	1,089
	Not Specified	871	932	965	777
	Medium	683	752	1,269	890
	Low	736	900	1,196	886
Corporate	Critical	1,721	1,353	2,014	1,808
	High	1,585	1,638	2,129	1,700
	Not Specified	1,489	1,257	2,638	1,560
	Medium	2,159	1,803	1,851	1,822
	Low	1,576	1,520	2,500	1,639
Home Office	Critical	1,190	1,085	1,571	1,077
	High	1,098	1,362	1,564	1,254
	Not Specified	1,439	910	1,386	989
	Medium	998	811	1,811	1,137
	Low	1,195	1,021	1,631	1,121
Small Business	Critical	654	884	950	674
	High	1,006	684	1,345	1,188
	Not Specified	1,006	609	1,275	931
	Medium	902	869	1,391	903
	Low	805	821	773	920



Increase profit
margins

Profit margins

Customer Segment	Order Priority	Product Sub-Category			
		Binders and Binder Accessories	Office Furnishings	Paper	Telephones and Communication
Consumer	Critical	0.3700	0.5119	0.3748	0.5970
	High	0.3781	0.5297	0.3763	0.5800
	Not Specified	0.3695	0.5164	0.3771	0.5894
	Medium	0.3697	0.5403	0.3761	0.5626
	Low	0.3770	0.5214	0.3704	0.5789
Corporate	Critical	0.3736	0.5053	0.3769	0.5919
	High	0.3754	0.5256	0.3736	0.5827
	Not Specified	0.3730	0.5160	0.3747	0.5859
	Medium	0.3767	0.5403	0.3723	0.5756
	Low	0.3769	0.5313	0.3726	0.5811
Home Office	Critical	0.3740	0.5235	0.3755	0.5708
	High	0.3746	0.5120	0.3746	0.5907
	Not Specified	0.3745	0.5131	0.3787	0.5585
	Medium	0.3740	0.5396	0.3740	0.5607
	Low	0.3765	0.5511	0.3753	0.5858
Small Business	Critical	0.3731	0.5313	0.3723	0.5772
	High	0.3722	0.5496	0.3770	0.5725
	Not Specified	0.3707	0.5457	0.3733	0.6138
	Medium	0.3765	0.5097	0.3740	0.5712
	Low	0.3727	0.5247	0.3742	0.5942

Will increasing price of some products increase profits?

Regressing profit against unit price

Product	Change in price	Change in (\$)profit per order
Paper	1	1.08
Office furnishings	1	6.34
Office machines	1	- 3.25
Binder and Binder accessories	1	-1.02
Telephones and Communications	1	-4.69

*Assuming profits and unit prices are in USD(\$)

Top products that drive profit
Ways to improve profit?

Sales by Manager and Product

Product Sub-Category	Manager			
	Chris	Erin	Sam	William
Binders and Binder Acce..		227,703	360,999	
Chairs & Chairmats		254,359	603,913	664,116
Copiers and Fax				504,570
Office Machines		464,794	480,244	1,041,532
Paper	4,062			
Tables		452,660	604,278	744,449
Telephones and Commu..		425,517	549,975	897,036

Top Product Categories by Manager and Customer Segments

Customer..	Product Sub Cat..	Manager			
		Chris	Erin	Sam	William
Consumer	Appliances	11,520			
	Chairs & Chairma..	14,224	62,653	79,612	
	Office Machines				79,644
	Storage & Organ..	807			
	Tables		74,521	79,610	49,347
	Telephones and ..		50,548	60,381	31,494
Corporate	Chairs & Chairma..	16,804	53,411	171,046	89,778
	Copiers and Fax	12,028			
	Office Machines		63,187		116,860
	Scissors, Rulers ..	9,621			
	Tables		70,205	163,863	
	Telephones and ..			153,235	118,766
Home Office	Binders and Bind..			140,383	
	Bookcases	4,462			
	Chairs & Chairma..			149,949	54,325
	Office Furnishings	5,738			
	Office Machines		78,473		84,524
	Tables		108,637		44,636
Small Business	Telephones and ..	7,258	44,700	107,643	
	Binders and Bind..				60,871
	Chairs & Chairma..		51,459		
	Copiers and Fax		64,137		41,143
	Paper	948			
	Pens & Art Suppl..	278			
	Storage & Organ..	3,601		65,883	
	Tables			68,222	44,810
	Telephones and ..		38,728	73,826	

Profit by Manager and Customer Segments

Customer..	Product Sub Cat..	Manager			
		Chris	Erin	Sam	William
Consumer	Appliances	761			
	Chairs & Chairma..	3,424	12,667	11,481	
	Office Machines				8,506
	Storage & Organ..	-147			
	Tables		-7,239	-8,171	1,632
	Telephones and ..		8,587	7,012	6,202
Corporate	Chairs & Chairma..	-52	12,410	17,379	9,103
	Copiers and Fax	-548			
	Office Machines		14,107		3,192
	Scissors, Rulers ..	-1,760			
	Tables		-6,563	-16,169	
	Telephones and ..			26,490	22,998
Home Office	Binders and Bind..			49,924	
	Bookcases	441			
	Chairs & Chairma..			24,404	6,772
	Office Furnishings	428			
	Office Machines		8,051		21,186
	Tables		-12,597		-4,207
Small Business	Telephones and ..	694	9,402	20,226	
	Binders and Bind..				24,322
	Chairs & Chairma..		-934		
	Copiers and Fax		15,910		4,377
	Paper	36			
	Pens & Art Suppl..	42			
	Storage & Organ..	-1,060		7,441	
	Tables			-9,442	11,773
	Telephones and ..		6,597	16,259	

Data preparation

Office supply market: Research &
Conclusions

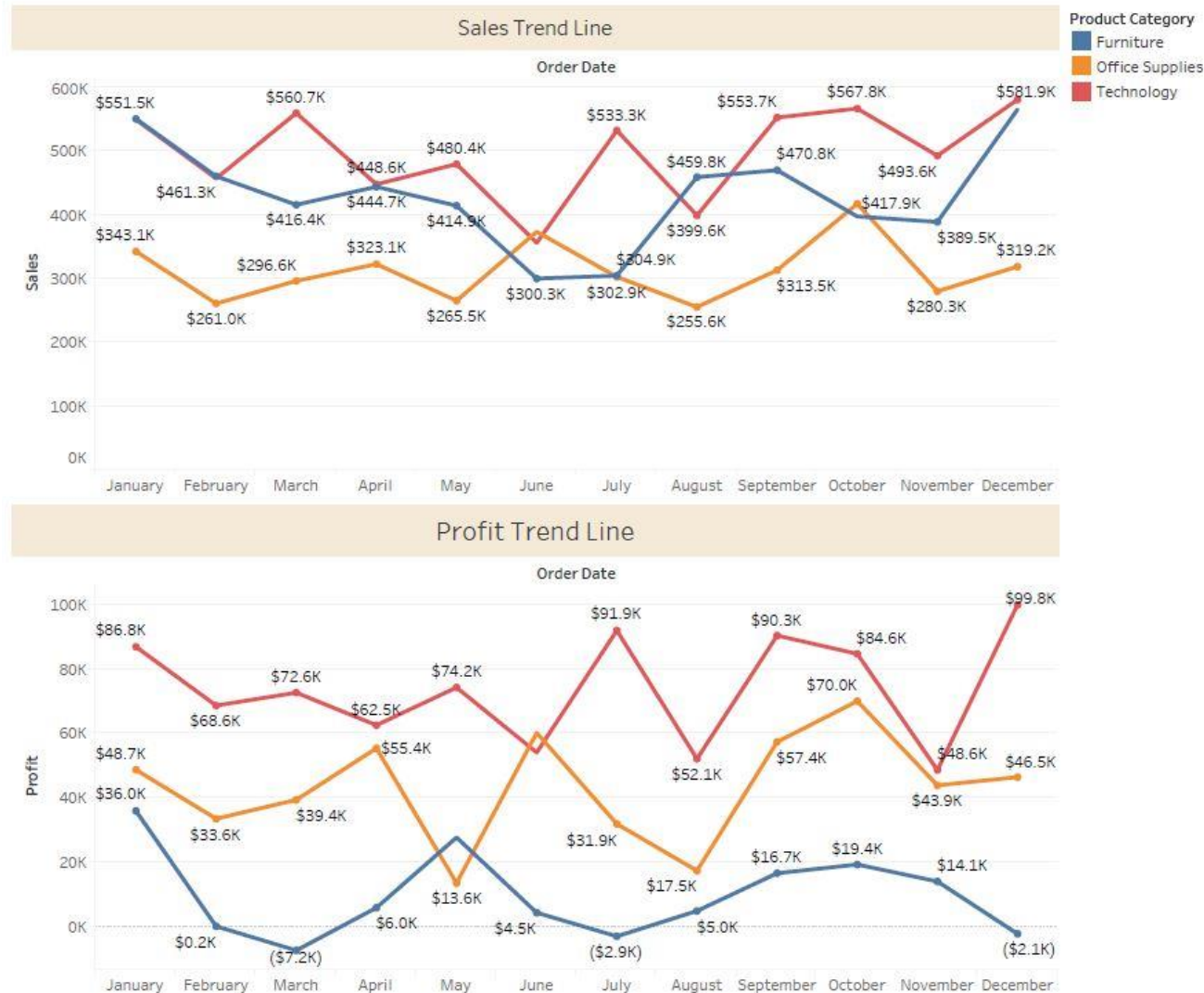
Data Preparation

- Visualized data in Tableau to identify data patterns
- Imported data in SAS
- Determined region to zone data from external sources
- Joined/merged Sales and Product information
- Merged/mapped returns and manager to region data
- Derived Shipping data attribute

Research: Studying the office supply market

- Biggest concern - new trend results in increased competition, technological shifts
- Competition from Corner drug and personal care stores

Conclusions



- Sales are declining in May-Aug, introduce new offers in summer season
- Trends – coupons, discount offers
- Additional factors: Customer service are differentiating areas to boost sales
- Introduce new product lines based on region, product segment

Thank you!