



MSIS 670 - Contoso Analysis



Project Objectives

We developed a BI system for Contoso that:

- focuses on financial analysis involving sales/profit of stores across geographic areas
- identifies current stores or products that are performing well
- identifies areas which are underperforming
- evaluates performance across brands and manufacturers
- analyzes the effectiveness of various promotions

The system assists Contoso in strategizing for future business growth.

BI System for Contoso - Overview

The BI system leverages data from sales details from 2007 to 2009, geographical and store details, product categories, channels, and product details.

The system is based on Tableau and depicts the business insights via dynamic dashboards that include worksheets like:

- sales/profits by location, product categories, product class, channels
- sales/profits over time
- promotional impacts on sales/profits, and seasonal impact

Product Performance Analysis

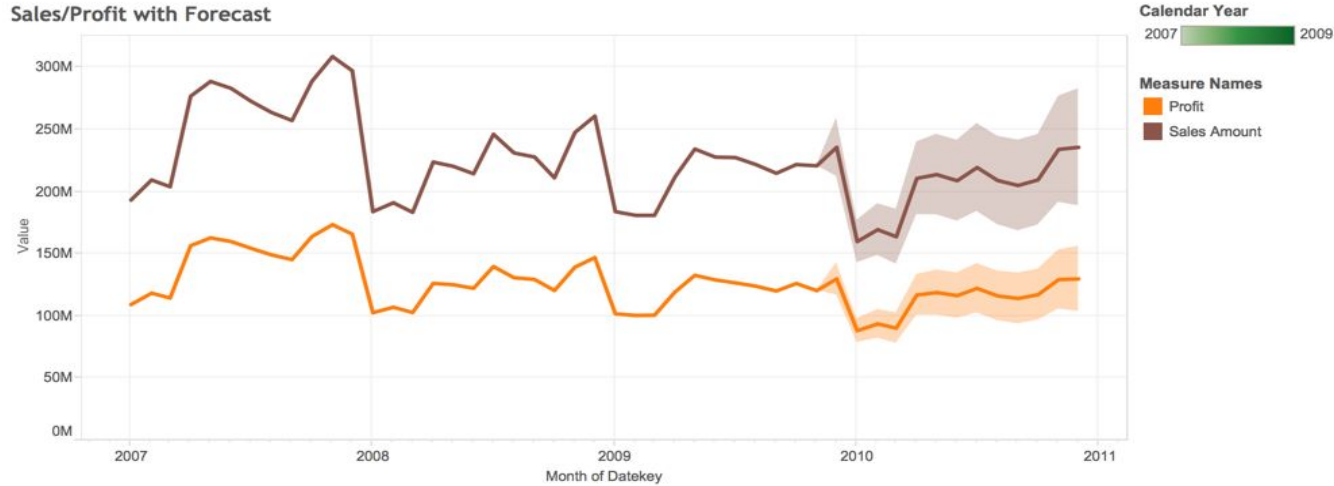
Sales and Profits are closely correlated, hence the other analysis mostly leverages sales amount.

Analyzing the sales and profits across the three years for various product categories reveals that Cameras which accounted for a major portion of the sales and profits are on the decline. The next two larger categories of Computers and TV products is holding steady.

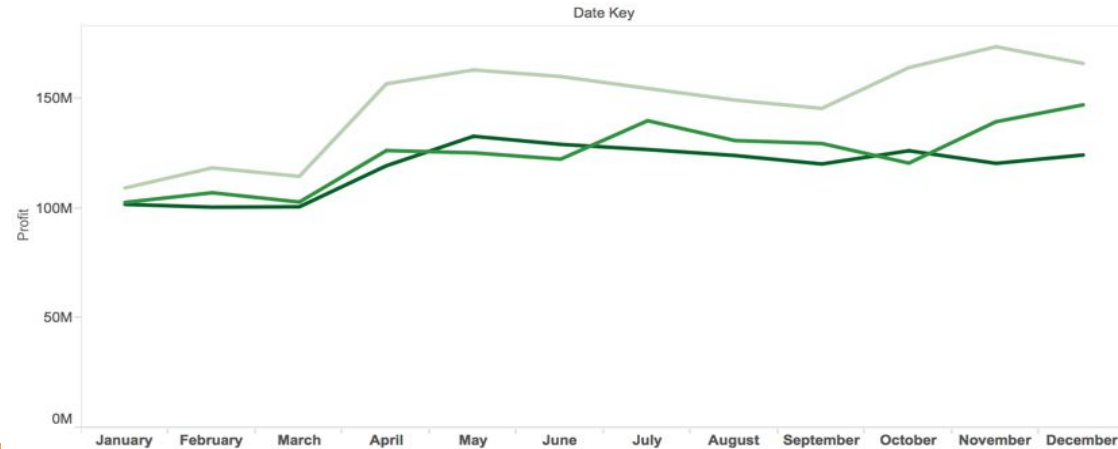
The global analysis of sales across products reveals that regular and deluxe class products are declining in North America and Europe while economy product sales are on the rise. This may be indicative of broader market challenges in North America and Europe. The sales of all class of goods is on the rise in Asian countries particularly in China.

Dashboard: Sales/Profits Trends

Sales/Profit with Forecast



Profit Trends

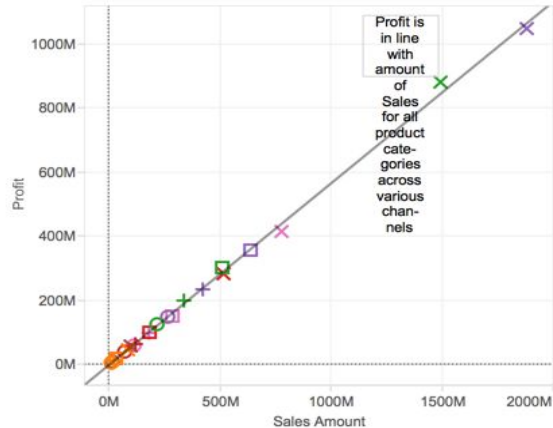


Product Performance Analysis

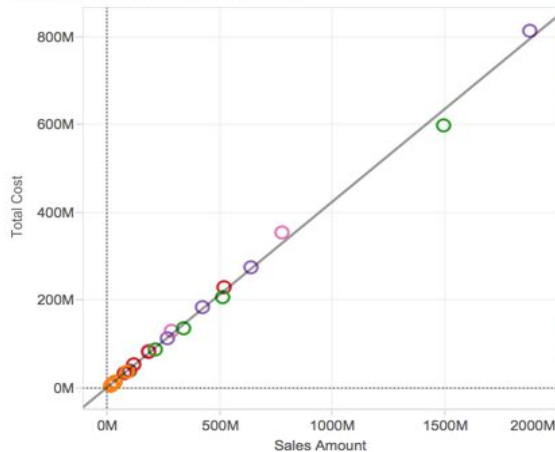
- Sales and Profit are declining from 2007 to 2009 and even forecasted to decline further and recover to 2009 levels

Dashboard: Sales Correlations across Products and Channels

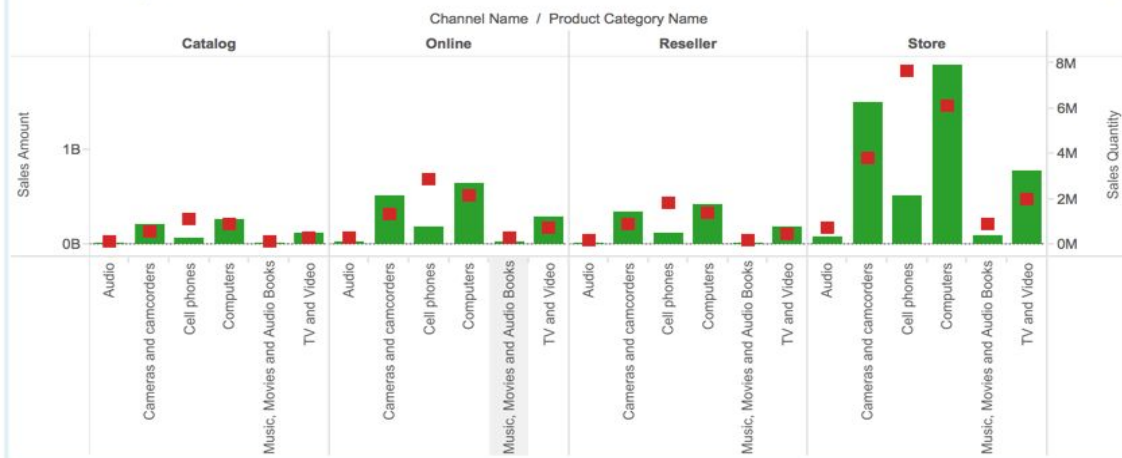
Correlation - Sales/Profit for Product Category and Channel



Correlation - Sales/Total Cost



Sales Quantity relation to Sales

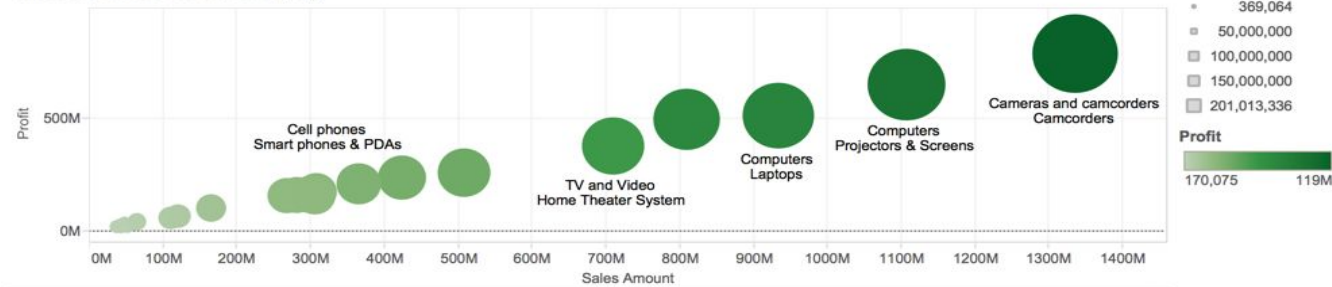


Product Sales Analysis

- Correlation of sales and profits across product categories and channels indicates that the profit margins are similar.
- In addition the total cost and sales are correlated indicating no particular product category enjoys specific cost advantages.
- Relationship of sales to sales quantity highlights categories that require significant sale volume to generate enough sales amount like cell phones and audio products.

Dashboard: Product Category Performance

Sales Contribution by Category



Heat Map of Sales by Category

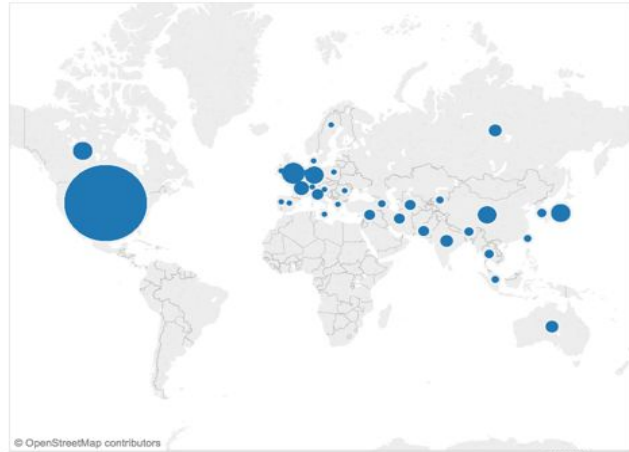


Product Sales Analysis

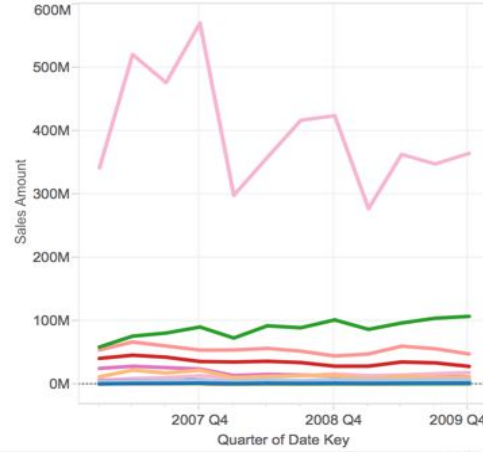
- Cameras/Camcorders and Computers account for a large portion of the sales and hence the overall profit.
- Heat Map analysis of sales across categories indicates:
 - Product categories with declining sales and profits are
 - Cameras and Camcorders (all subcategories)
 - Projectors
 - Desktops
 - Product categories with improving sales
 - Laptops

Dashboard: Global Sales

Sales by Country



Quarterly Sales across Countries



Continent Name



Region Country Name



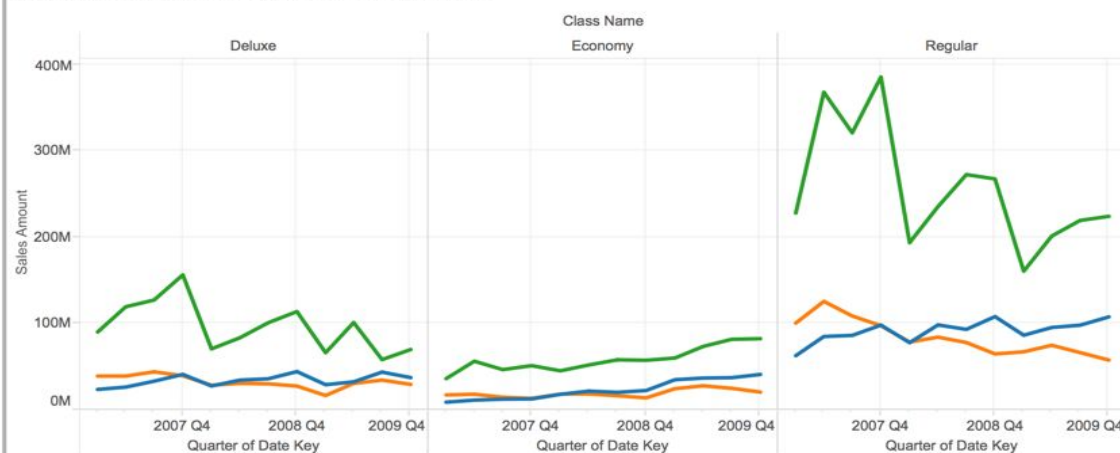
Sales Amount



Product Sales Analysis

- The global map depicts overall contribution of sales across regions
- Sales across countries indicates sales declining in United States whereas they are increasing in China
- Quarterly sales by product class indicates a decline of “Regular” and “Deluxe” products in North America and Europe while an increase in demand of “Economy” products

Quarterly Sales across Regions for Product Class



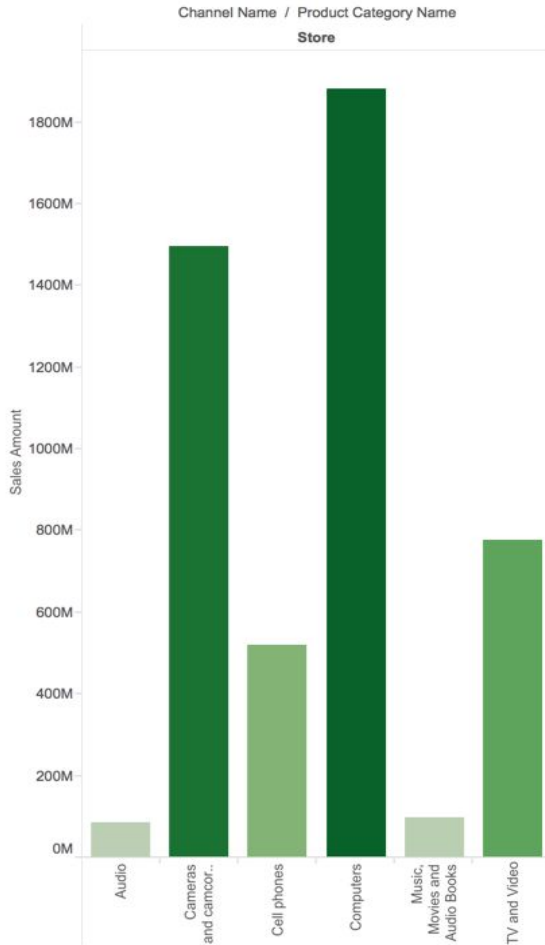
Store and Channel Analysis

The sales analysis across channels indicates a decline in Store channel product sales. This is particularly the case across all major product categories that contribute to overall sales and profit. The Online channel sales however are on the rise across all product categories.

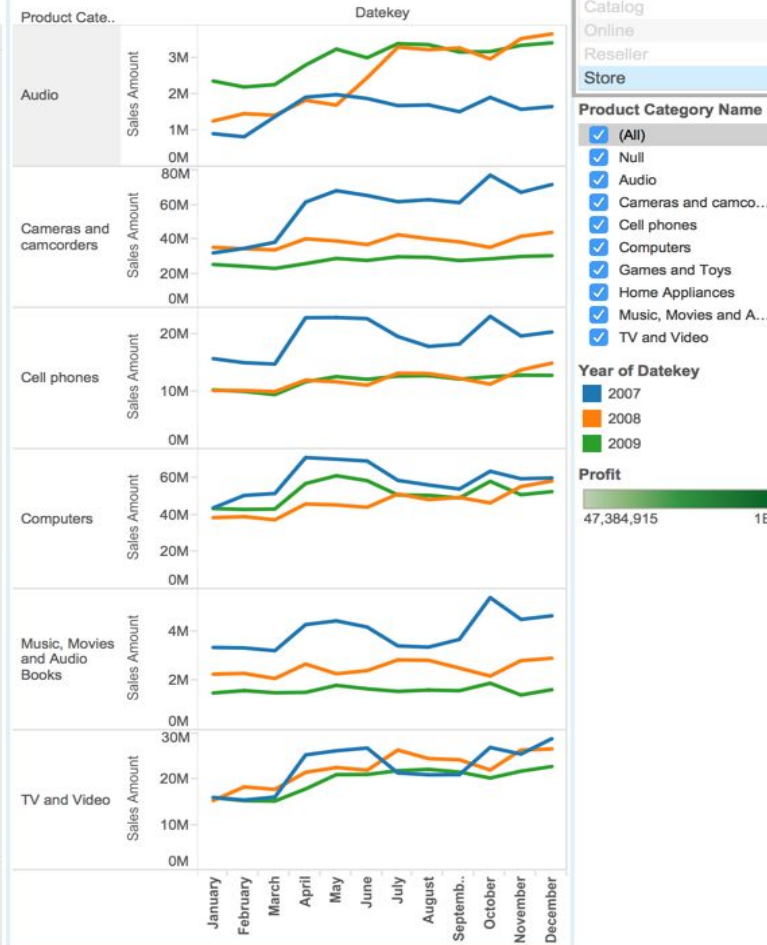
Even globally the rise in sales is mostly driven by Online channel sales. Internationally Contoso does not have a large number of stores or store driven sales.

Dashboard: Channel/Product Category Analysis - Store

Sales by Channel/Product Category



Sales Seasonality

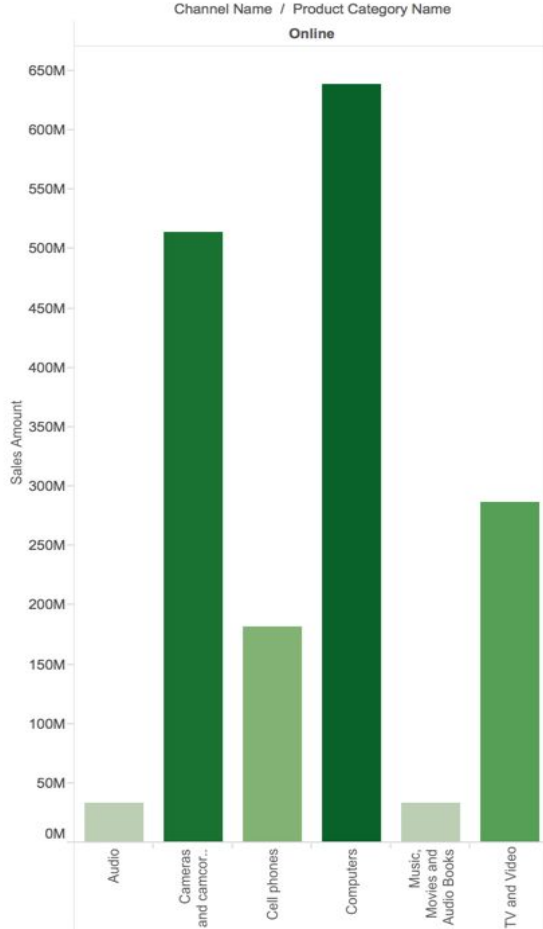


Store / Channel Analysis

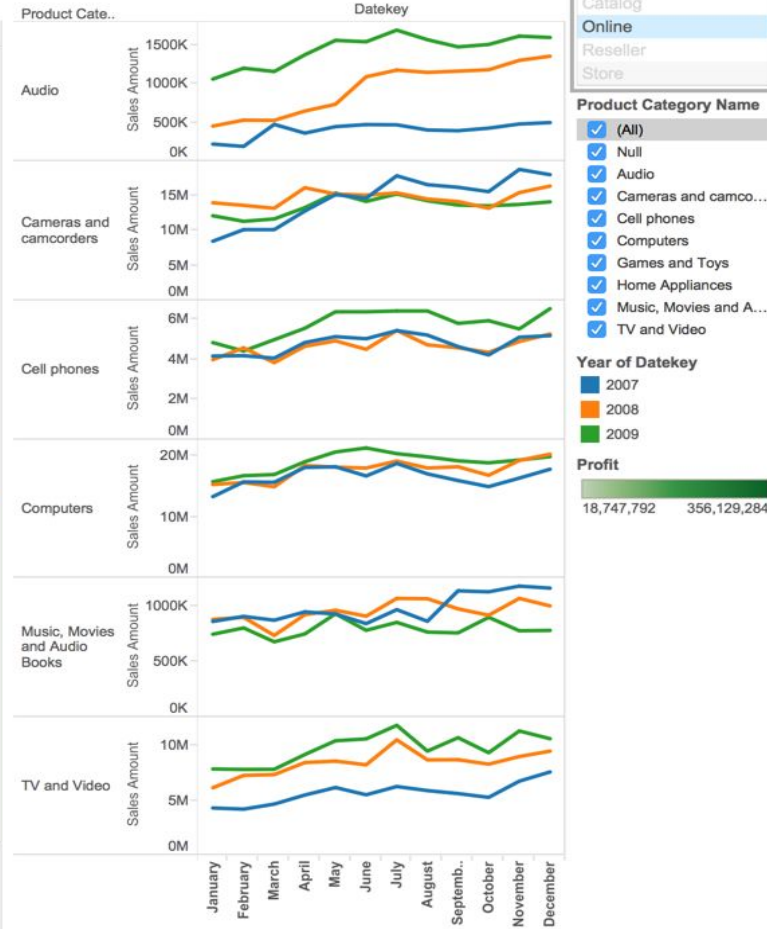
- The dashboard depicts the seasonality of sales across years and product categories
- The "Store" channel sales have been declining for major product category like Cameras whereas Computers sales are steady

Dashboard: Channel/Product Category Analysis - Online

Sales by Channel/Product Category



Sales Seasonality

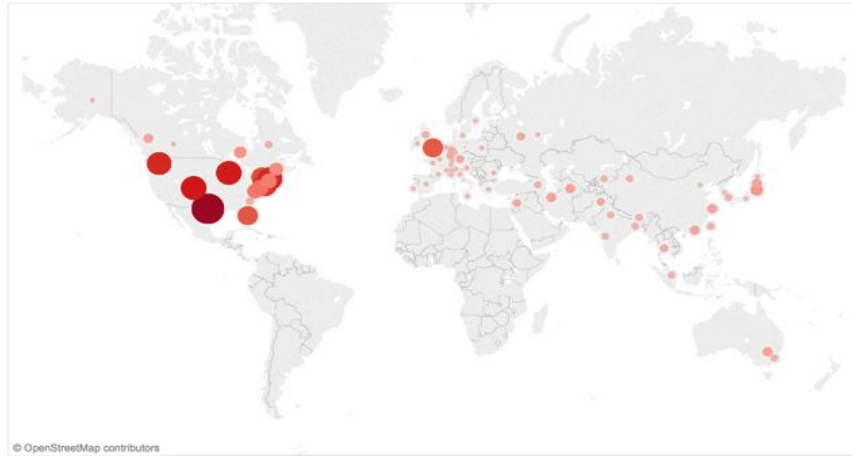


Store / Channel Analysis

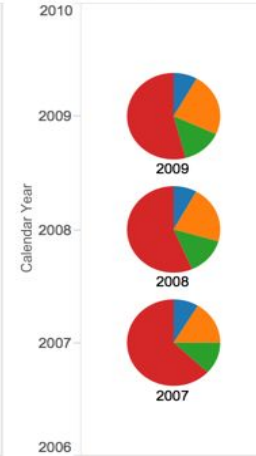
- The "Online" channel sales are increasing or steady across all product categories over the last 3 years

Dashboard: Channel Analysis across Regions

Global Sales by Channel



Total Sales By Channel



Channel Name

- ☐ (All)
- ☐ Null
- ☐ Catalog
- ☐ Online
- ☐ Reseller
- ☒ Store

Sales Amount

- 1,215,382
- 100,000,000
- 200,000,000
- 300,000,000
- 400,000,000
- 538,191,642

Profit



Year of Datekey

- 2007
- 2008
- 2009

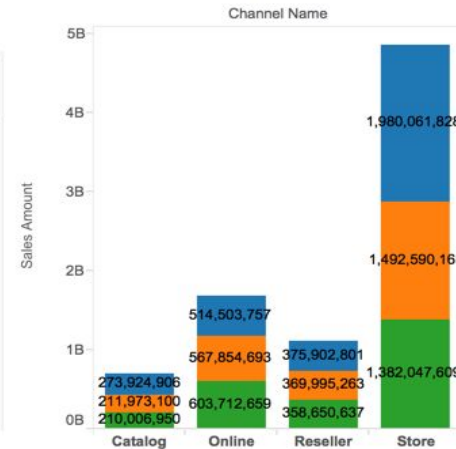
Store / Channel Analysis

- Overall the pie chart and bar chart below indicate sales growing in Online channel and decreasing in Store channel
- The global sales view indicates that store sales are mostly happening in North America and have a lesser contribution from other regions
- Channel Sales across regions also indicates the contribution of Online sales towards total sales from China

Channel Sales across Regions

Region Coun..	State Province Name	Store Type			
		Catalog	Online	Reseller	Store
Armenia	Armenia				
Australia	Molonglo				
	New South Wales				
Bhutan	Thimphu District				
Canada	Alberta				
	British Columbia				
	Ontario				
	Quebec				
China	Beijing				
	GuangDong				
	Hong Kong				
	Shanghai				
	Xinjiang				
Denmark	Staden Kobenhavn				
France	Alpes-Maritimes				

Sales by Channel across years



Brand Analysis

Based on our analysis of brands, it appears Fabrikam Inc, has made the largest profit, with Contoso following second.

Based on class type, regular, economy and deluxe, the regular class brings in the most profit.

Digital SLR cameras top the % margin. Fabrikam also has the highest dollars in returns, but brings in the most revenue on their regular class items.

Percent margin and profits are directly linked, showing where Contoso can make improvements.

Promotions Analysis

There were in total 9 promotional initiatives taken across 3 year timespan 2007, 2008 and 2009.

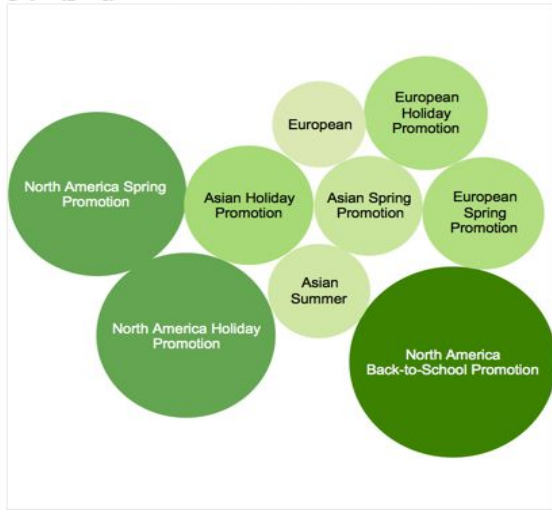
North-American Back to school promotion contributes most overall in terms of sales, revenue generation and profit with least overall contribution from its European counterpart.

Promotions in Quarter 1 and Quarter 4 have gained the most momentum in overall analysis with Store revenue the highest. Whereas Cameras & Camcorders and Computers have been the biggest contributors overall.

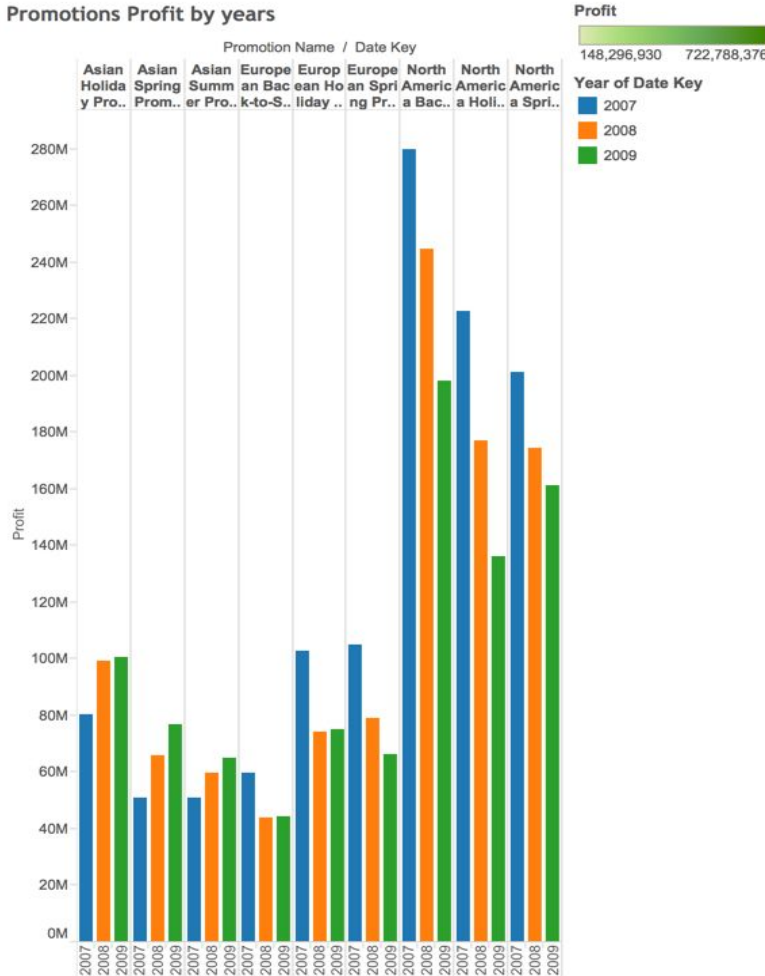
Asian Spring Promotions provides the greatest % discount but does not do well in terms of sales or profit.

Dashboard: Promotions Financial Contribution

Overall promotion contribution of Promotions to



Promotions Profit by years

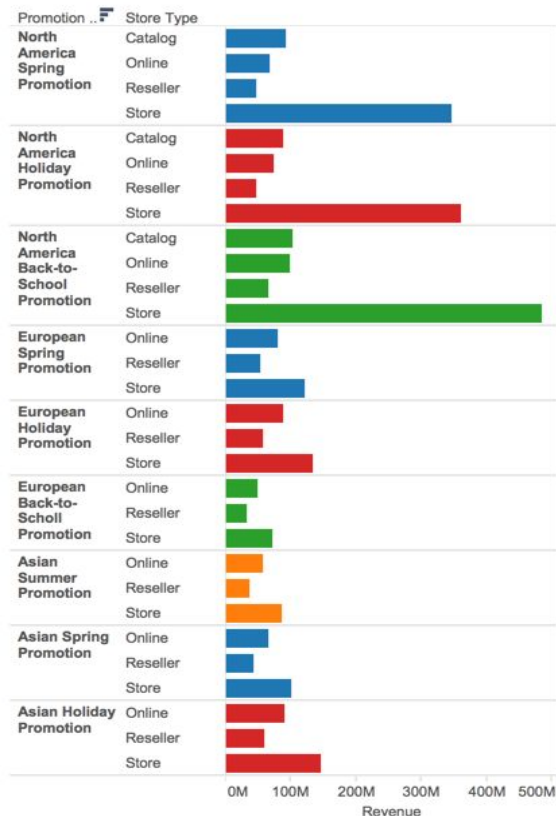


Promotions Analysis

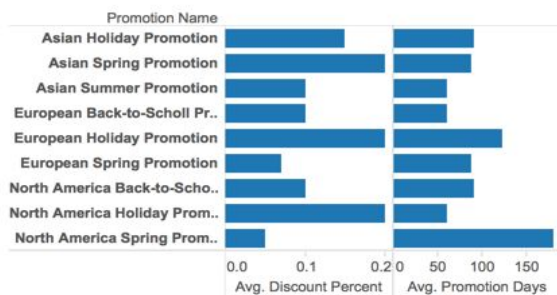
- The dashboard depicts overall financial contribution made by the different promotions.
- Overall contribution includes contribution by both Sales and Profit.
- By profit by years we can analyse that profits have been declining in all promotions other than the Asian ones. With European promotions in most jeopardy.
- North American promotions have contributed the largest contribution to the bottom line.

Dashboard: Promotions across Store Types

Promotion Revenue across stores



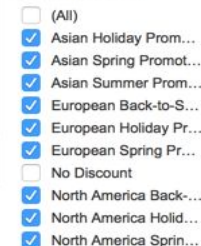
Discount %/Promotion Days



Quarter of Start Date



Promotion Name

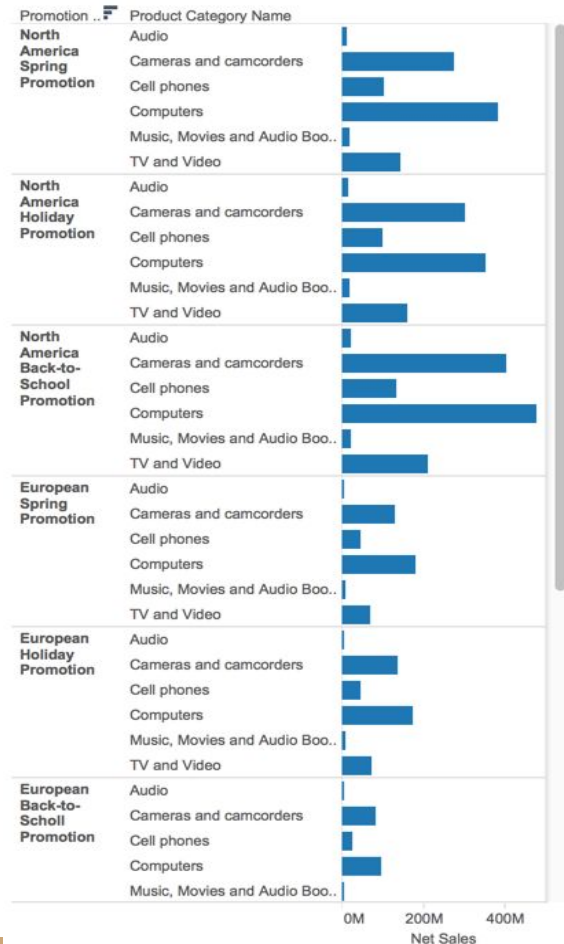


Promotions Analysis

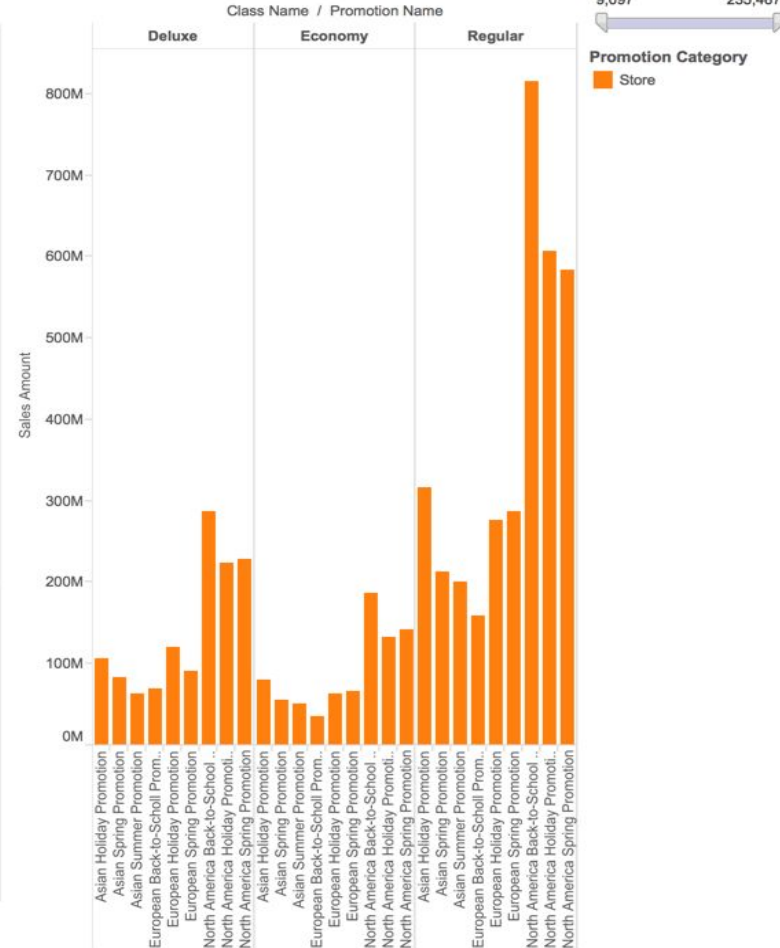
- The dashboard depicts financial contribution made by the different promotions across store types
- Revenue generation by all 9 promotions have been at their peak in Quarter 1 and Quarter 4
- Discount by promotional days shows higher discount percentages in Asian promotions and North American holiday promotions

Dashboard: Promotions across Product Categories and Class

Product Sales across promotions



Sales by Product Class and Promotion



Promotions Analysis

- The dashboard depicts financial contribution made by the different promotions across product categories and class
- Cameras & camcorders and computers had the most number of sales in all promotions.
- Comparison of sales by class shows regular sales performance to be greater than either economy or deluxe classes.
- North American promotions have contributed the largest contribution to the bottom line.

Limitations

- No Customer Data available for deeper analysis on customer preferences and needs.
- For promotions the data is high level. Fine grained promotional periods will be helpful to analyze the specific impact on sales.
- Not enough information to leverage data around individual stores.
- No international geo codes for cities. Had to manually input 30 geocodes for international states/provinces.
- Need to account for macro trends and related industry business environment for a recommendation to the business that is effective.

Conclusion/Recommendations

- Economy products sales are on the rise and Contoso can push for more of sales of these products
- Grow overseas sales particularly in China
- Focus more on Online vs Store channel sales
- Concentrate sales efforts on more Contoso brand items for Economy and continue selling Fabrikam for both Computers and Cameras -- online
- More Promotions needed by increasing discounts for North America and Europe since sales are declining in stores
- Online promotions can be boosted across all regions during holiday seasons

Tableau Link: https://public.tableau.com/views/UMB_MSIS670_FinalProject_Group3_20151211/FinalProjectAnalysisforContosoCompany-byGroup3?:embed=y&:display_count=yes&:showTabs=y