

Objective

Played the role of a BI Analyst for a fictitious chain of retail toy store in Mexico called Maven Toys. The Task is to analyze the sales & inventory data of the company collected from these stores spread across Mexico

About Data

The sales & inventory data provided is for the period of 2017-2018. There are some additional data provided along with daily sales transaction data & current inventory level data of each store (**as on 01/10/2018**) which includes product data and store data

(Note: Data is available only till Quarter 3 of 2018)

Please find below the data dictionary of above-mentioned datasets along with its relationship among each other for further references:

Stores Data:

Field	Description
Store_ID	Store ID
Store_Name	Store name
Store_City	City in Mexico where the store is located
Store_Location	Location in the city where the store is located
Store_Open_Date	Date when the store was opened

Inventory Data:

Field	Description
Store_ID	Store ID
Product_ID	Product ID
Stock_On_Hand	Stock quantity of the product in the store (inventory)

Product Data:

Field	Description
Product_ID	Product ID
Product_Name	Product name
Product_Category	Product Category
Product_Cost	Product cost (\$USD)
Product_Price	Product retail price (\$USD)

Daily Sales Transaction Data:

Field	Description
Sale_ID	Sale ID
Date	Date of the transaction
Store_ID	Store ID
Product_ID	Product ID
Units	Units sold

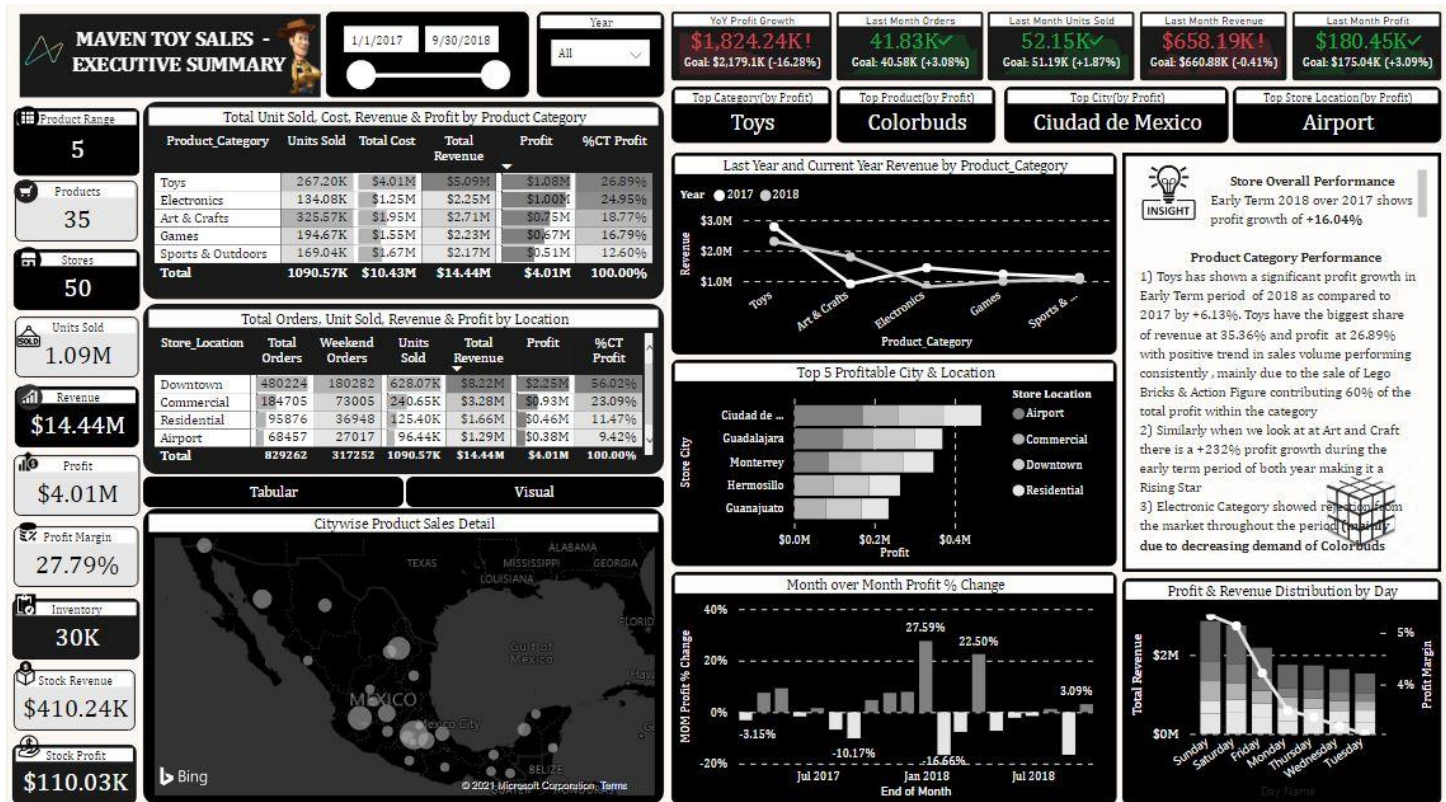
Link to Dataset: https://gimgoa-my.sharepoint.com/:f/g/personal/sarthak_agarwal20b_gim_ac_in/EtDNeIQPg-pPrc0QkP5L-3gBTpAK4g41Bj8cv4kSS4fM3w?e=aLiaMU

Note: We have used data from multiple tables for our analysis which are linked to each other using Primary Key & Foreign Key mechanism. This was done in order to reduce the excess memory usage with the aim of optimizing the Dashboards ETL.

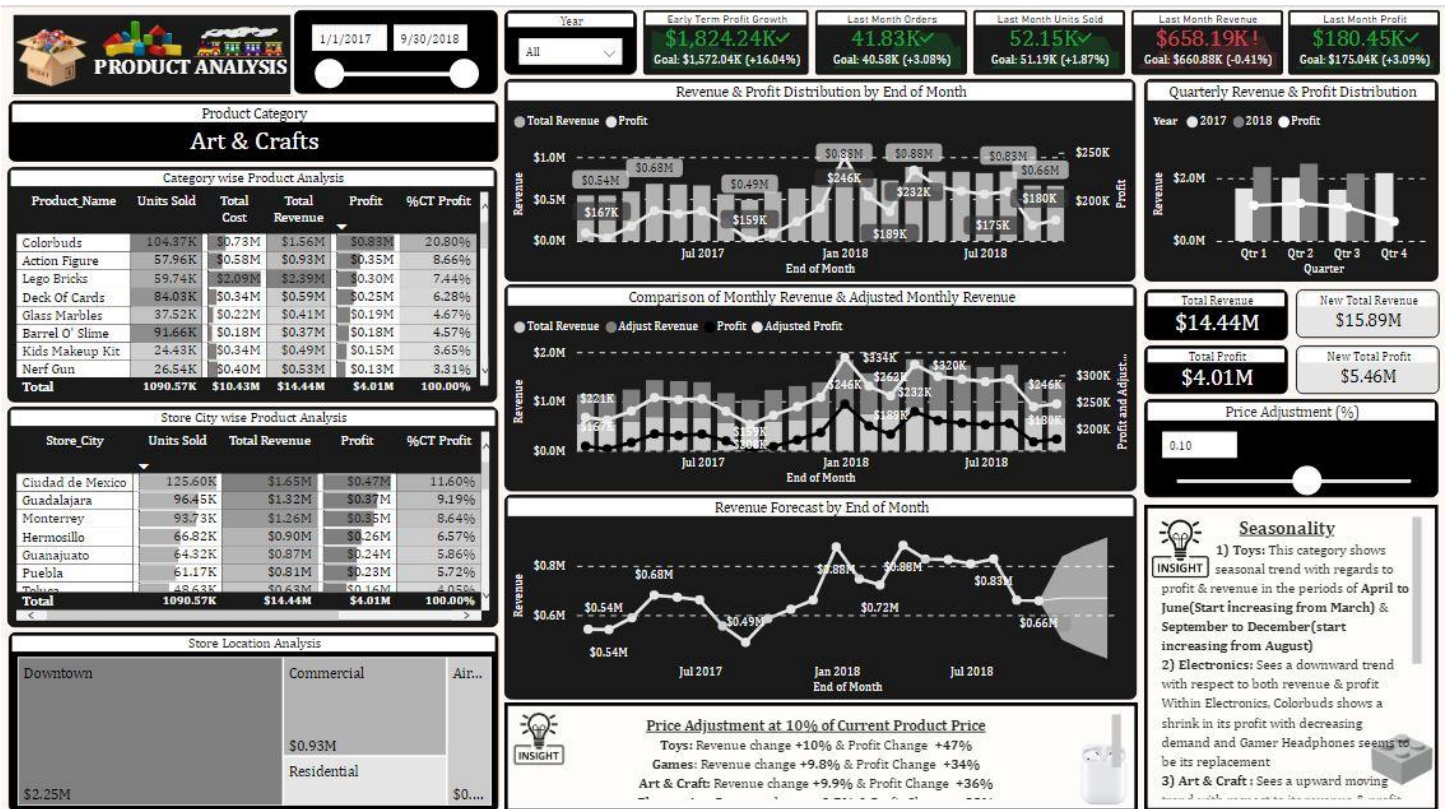
Key Insights & Recommendations

- 1) Art & Craft product showed the highest profit growth by +232% during the Q1-Q3 period of 2018 when compared to Q1-Q3 period of 2017-**Need more marketing**
- 2) Stores at Airport accounts for 6% of the total stores, which is contributing 9.54% of total revenue & 9.42% of total profit share compared to other locations. The revenue & profit per store is almost 2x higher as compared to other locations-**Location for expansion**
- 3) Lego Bricks is the highest revenue generating product with a very low profit margin of 12.50% where as Colorbuds is the second highest revenue generating product with profit margin of 53.37%-**Pricing/Costing strategy reconsideration**
- 4) Sales revenue & profit shows seasonality trend which picks up in September and reach its peak in December(due to Christmas). Similarly, with peak in April(due to Easter) gradually descending till June. Also, it is lowest in the month of August

Visualization



EXECUTIVE SUMMARY



Product Category

Art & Crafts

Category wise Product Analysis

Product Name	Units Sold	Total Cost	Total Revenue	Profit	%CT Profit
Colorbuds	104.37K	\$0.73M	\$1.56M	\$0.83M	20.80%
Action Figure	57.96K	\$0.58M	\$0.93M	\$0.35M	8.66%
Lego Bricks	59.74K	\$2.09M	\$2.39M	\$0.30M	7.44%
Deck Of Cards	84.03K	\$0.34M	\$0.59M	\$0.25M	6.28%
Glass Marbles	37.52K	\$0.22M	\$0.41M	\$0.19M	4.67%
Barrel O' Slime	91.66K	\$0.18M	\$0.37M	\$0.18M	4.57%
Kids Makeup Kit	24.43K	\$0.34M	\$0.49M	\$0.15M	3.65%
Nerf Gun	26.54K	\$0.40M	\$0.53M	\$0.13M	3.31%
Total	1090.57K	\$10.43M	\$14.44M	\$4.01M	100.00%

Store City wise Product Analysis

Store City	Units Sold	Total Revenue	Profit	%CT Profit
Ciudad de Mexico	125.60K	\$1.65M	\$0.47M	11.60%
Guadalajara	96.45K	\$1.32M	\$0.37M	9.19%
Monterrey	93.73K	\$1.26M	\$0.35M	8.64%
Hermosillo	66.82K	\$0.90M	\$0.26M	6.57%
Guanajuato	64.32K	\$0.87M	\$0.24M	5.86%
Puebla	61.17K	\$0.81M	\$0.23M	5.72%
Total	1090.57K	\$14.44M	\$4.01M	100.00%

Store Location Analysis

Store Location	Units Sold	Total Revenue	Profit	%CT Profit
Downtown	125.60K	\$1.65M	\$0.47M	11.60%
Commercial	96.45K	\$1.32M	\$0.37M	9.19%
Airport	93.73K	\$1.26M	\$0.35M	8.64%
Total	1090.57K	\$14.44M	\$4.01M	100.00%

Revenue & Profit Distribution by End of Month

Quarterly Revenue & Profit Distribution

Comparison of Monthly Revenue & Adjusted Monthly Revenue

Revenue Forecast by End of Month

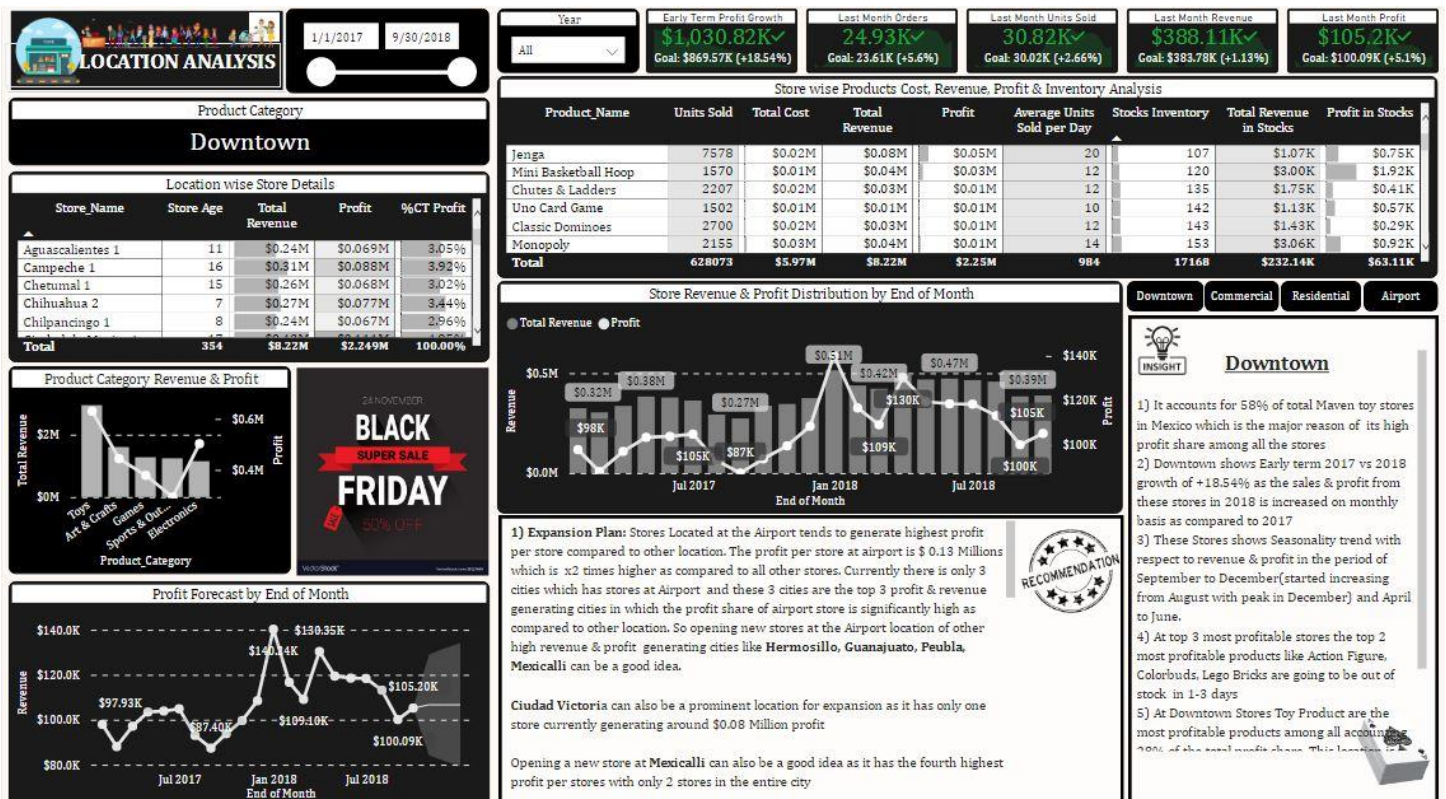
Price Adjustment at 10% of Current Product Price

INSIGHT
 Toys: Revenue change +10% & Profit Change +47%
 Games: Revenue change +9.8% & Profit Change +34%
 Art & Craft: Revenue change +9.9% & Profit Change +36%

Seasonality

INSIGHT
 1) Toys: This category shows seasonal trend with regards to profit & revenue in the periods of April to June (Start increasing from March) & September to December (start increasing from August)
 2) Electronics: Sees a downward trend with respect to both revenue & profit. Within Electronics, Colorbuds shows a shrink in its profit with decreasing demand and Gamer Headphones seems to be its replacement
 3) Art & Craft: Sees an upward moving

PRODUCT DRILL-THROUGH ANALYSIS



Product Category

Downtown

Location wise Store Details

Store Name	Store Age	Total Revenue	Profit	%CT Profit
Aguaascalientes 1	11	\$0.24M	\$0.069M	3.05%
Campeche 1	16	\$0.31M	\$0.088M	3.92%
Cheumal 1	15	\$0.26M	\$0.068M	3.02%
Chihuahua 2	7	\$0.27M	\$0.077M	3.44%
Chilpancingo 1	8	\$0.24M	\$0.067M	2.96%
Total	354	\$0.22M	\$2.249M	100.00%

Store wise Products Cost, Revenue, Profit & Inventory Analysis

Product Name	Units Sold	Total Cost	Total Revenue	Profit	Average Units Sold per Day	Stocks Inventory	Total Revenue in Stocks	Profit in Stocks
Jenga	7578	\$0.02M	\$0.08M	\$0.05M	20	107	\$1.07K	\$0.75K
Mini Basketball Hoop	1570	\$0.01M	\$0.04M	\$0.03M	12	120	\$3.00K	\$1.92K
Chutes & Ladders	2207	\$0.02M	\$0.03M	\$0.01M	12	135	\$1.75K	\$0.41K
Uno Card Game	1502	\$0.01M	\$0.01M	\$0.01M	10	142	\$1.13K	\$0.57K
Classic Dominoes	2700	\$0.02M	\$0.03M	\$0.01M	12	143	\$1.43K	\$0.29K
Monopoly	2155	\$0.03M	\$0.04M	\$0.01M	14	153	\$3.06K	\$0.92K
Total	628073	\$5.97M	\$8.22M	\$2.25M	984	17168	\$232.14K	\$63.11K

Product Category Revenue & Profit

Profit Forecast by End of Month

Store Revenue & Profit Distribution by End of Month

1) Expansion Plan: Stores Located at the Airport tends to generate highest profit per store compared to other location. The profit per store at airport is \$ 0.13 Millions which is x2 times higher as compared to all other stores. Currently there is only 3 cities which has stores at Airport and these 3 cities are the top 3 profit & revenue generating cities in which the profit share of airport store is significantly high as compared to other location. So opening new stores at the Airport location of other high revenue & profit generating cities like Hermosillo, Guanajuato, Puebla, Mexicali can be a good idea.

Ciudad Victoria can also be a prominent location for expansion as it has only one store currently generating around \$0.08 Million profit

Opening a new store at Mexicali can also be a good idea as it has the fourth highest profit per stores with only 2 stores in the entire city

RECOMMENDATION

Downtown

INSIGHT
 1) It accounts for 58% of total Downtown toy stores in Mexico which is the major reason of its high profit share among all the stores
 2) Downtown shows Early term 2017 vs 2018 growth of +18.54% as the sales & profit from these stores in 2018 is increased on monthly basis as compared to 2017
 3) These Stores shows Seasonality trend with respect to revenue & profit in the period of September to December (started increasing from August with peak in December) and April to June.
 4) At top 3 most profitable stores the top 2 most profitable products like Action Figure, Colorbuds, Lego Bricks are going to be out of stock in 1-3 days
 5) At Downtown Stores Toy Product are the most profitable products among all accounts 70% of the total profit share. This location is

LOCATION DRILL-THROUGH ANALYSIS