

BI Documentation: Maven Toy Store Analysis

Introduction

This business intelligence (BI) analysis focuses on Maven Toy Store, a leading toy retail chain in Mexico. The dataset encompasses extensive sales and inventory data, including product details, store locations, daily sales transactions, and stock levels across multiple outlets.

Project Overview

As a BI consultant recently engaged by Maven Toys, the role is to uncover significant trends and patterns within their data. This analysis aims to support the company's expansion strategy by providing actionable insights for informed decision-making.

Deliverable

A Power BI dashboard or report featuring data-driven insights and strategic recommendations.

Dataset Overview

The dataset comprises four core tables:

1. **Sales Table:** Contains 829,262 unique sales transactions recorded from January 2017 to September 2018.
 2. **Inventory Table:** Provides details of stock availability at each store.
 3. **Stores Table:** Includes data on 50 toy stores across 29 cities in Mexico.
 4. **Products Table:** Lists product IDs, names, costs, and selling prices.
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Objectives of the Analysis

The primary goal of this analysis is to generate actionable insights into Maven Toy Store's overall sales performance and profitability by evaluating:

1. Store location performance
2. Seasonal sales trends
3. Product profitability and sales effectiveness

Based on these findings, recommendations will be provided to optimize business strategies.

Key Business Questions

1. Which product categories yield the highest profits, and how do these trends vary across different store locations?

2. Are there identifiable seasonal sales patterns?
 3. What is the company's current market reach in terms of store distribution and geographic presence?
 4. What is the total inventory value, and how long can it sustain current sales levels?
 5. Which stores perform best and worst in terms of revenue and profitability?
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Tools and Methodologies

Tool Used: Microsoft Power BI

The following BI techniques and concepts were applied:

- **Data Cleaning & Transformation** using Power Query
 - **Data Modeling** to establish structured relationships between tables
 - **DAX Implementation** for advanced calculations and metrics
 - **Data Visualization** for interactive and insightful dashboards
 - **Comprehensive Project Documentation** for clear reporting of insights
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Data Processing

Data Importation and Cleaning

Importation Process:

- Data was ingested using Power BI's Excel connector.

Cleaning Steps:

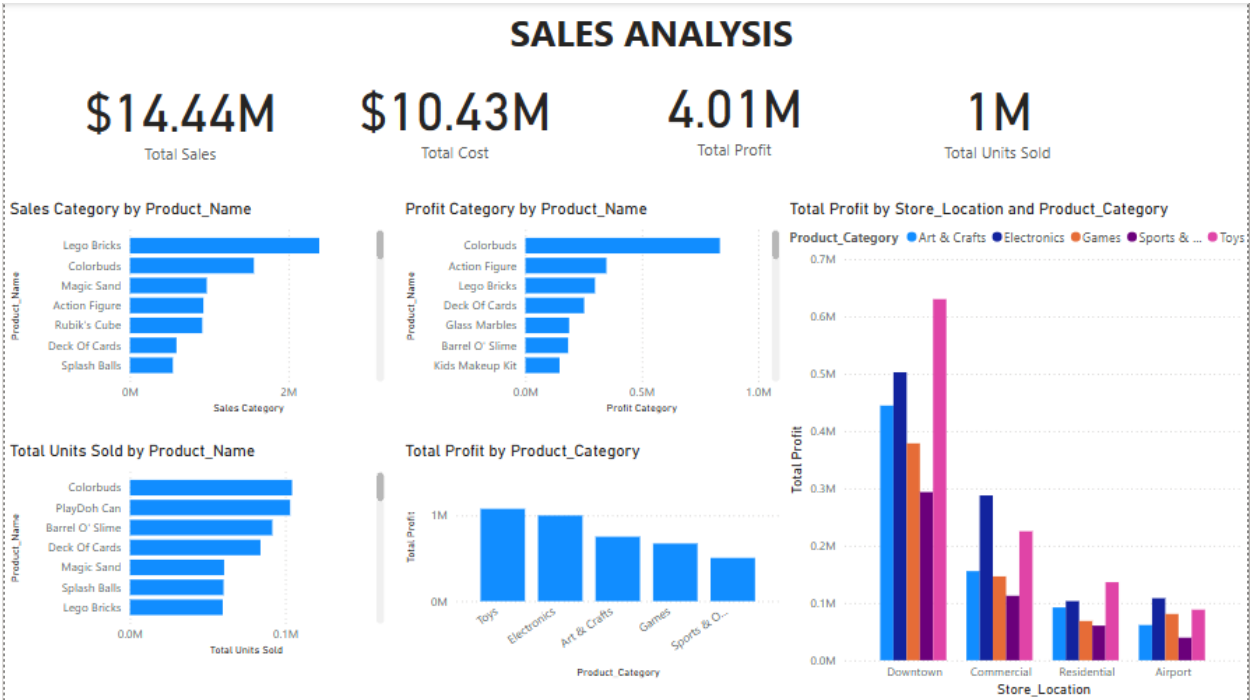
- Promoted headers for consistent column naming.
- Converted ID columns from whole numbers to text (as they serve as unique identifiers rather than numerical values).
- Added calculated fields for **total product cost**, **total product price**, and **profit** in the sales dataset.
- Corrected data types to ensure consistency.
- Trimmed redundant store names in the Stores Table for clarity.
- Created a **Dates Table** using CALENDARAUTO() to facilitate temporal analysis, extracting year, quarter, month, and day attributes.

Data Modeling

Effective data modeling structures raw data into an analytical framework, allowing seamless relationship-building between tables. In this project, Power BI automatically identified table relationships, forming a **star schema model**:

- **Fact Table:** Sales Table, Inventory
- **Dimension Tables:** Products, Stores, and Dates

REPORT



STORES ANALYSIS

50

No of Stores

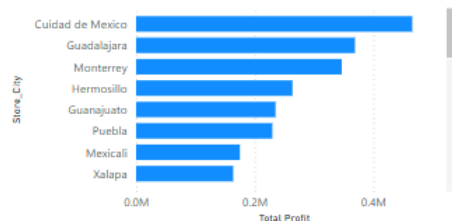
35

No of Products

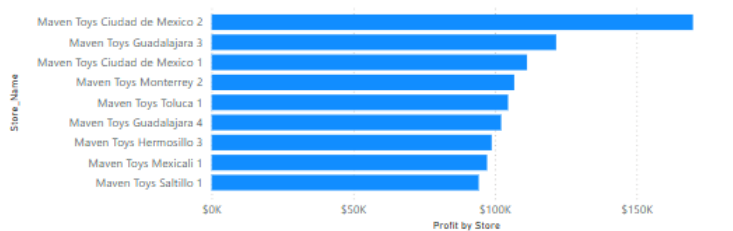
1M

Total Units Sold

Total Profit by Store_City



Profit by Store by Store_Name



Store_Location	Art & Crafts	Electronics	Games	Sports & Outdoors	Toys	Total
Airport	\$61,441	\$108,197	\$80,768	\$39,393	\$88,250	\$378,049
Commercial	\$155,461	\$287,574	\$146,296	\$112,499	\$225,034	\$926,864
Downtown	\$444,320	\$502,490	\$378,421	\$293,468	\$630,029	\$2,248,728
Residential	\$92,132	\$103,176	\$68,508	\$60,358	\$136,214	\$460,388
Total	\$753,354	\$1,001,437	\$673,993	\$505,718	\$1,079,527	\$4,014,029

Total Profit by Store_Location



Profit by Store by Store_Location



INVENTORY ANALYSIS

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No of Stores

35

No of Products

\$300K

Sum of Inventory Value

1M

Total Units Sold

29.74K

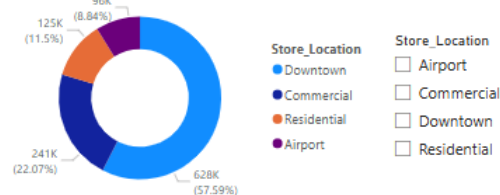
Sum of Stock_On_Hand

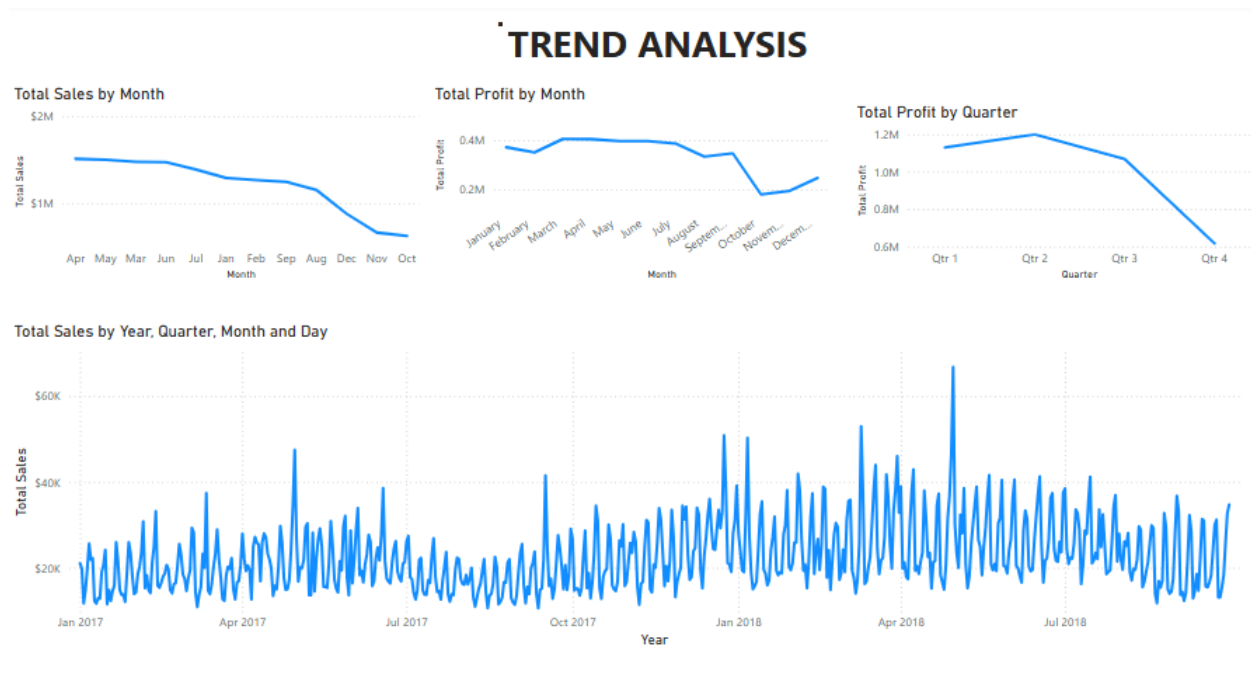
Product_Name	Sum of Inventory Value
Action Figure	\$6,134
Animal Figures	\$8,342
Barrel O' Slime	\$2,551
Chutes & Ladders	\$2,547
Classic Dominoes	\$1,926
Colorbuds	\$8,101
Dart Gun	\$9,304
Deck Of Cards	\$10,925
Dino Egg	\$6,484
Dinosaur Figures	\$24,969
Etch A Sketch	\$4,418
Foam Disk Launcher	\$3,407
Gamer Headphones	\$9,549
Glass Marbles	\$4,762
Hot Wheels 5-Pack	\$1,500
Jenga	\$541
Kids Makeup Kit	\$8,478
Lego Bricks	\$39,119
Magic Sand	\$26,889
Mini Basketball Hoop	\$2,104
Mini Ping Pong Set	\$6,808
Monopoly	\$2,896
Mr. Potatohead	\$3,538
Nerf Gun	\$18,168
PlayDoh Can	\$4,237
PlayDoh Claymat	\$11,446
Total	\$300,210

Product_Name	Sum of Stock_On_Hand
Action Figure	614
Animal Figures	835
Barrel O' Slime	1282
Chutes & Ladders	255
Classic Dominoes	241
Colorbuds	1159
Dart Gun	776
Deck Of Cards	2738
Dino Egg	649
Dinosaur Figures	2272
Etch A Sketch	402
Foam Disk Launcher	379
Gamer Headphones	637
Glass Marbles	795
Hot Wheels 5-Pack	376
Jenga	181
Kids Makeup Kit	606
Lego Bricks	1118
Magic Sand	1922
Mini Basketball Hoop	234
Mini Ping Pong Set	974
Monopoly	207
Mr. Potatohead	709
Nerf Gun	1212
PlayDoh Can	2129
Total	29742

Store_City	Airport	Commercial	Downtown	Residential	Total
Aguascalientes			68,642.00		68,642.00
Campeche		58,091.00	88,248.00		146,339.00
Chetumal			67,940.00		67,940.00
Chihuahua		69,605.00	77,263.00		146,868.00
Chilpancingo			66,558.00		66,558.00
Ciudad Victoria			83,088.00		83,088.00
Cuernavaca			56,811.00		56,811.00
Cuidad de Mexico	169,856.00	90,385.00	111,296.00	94,021.00	465,558.00
Culiacan			63,959.00		63,959.00
Durango			62,673.00		62,673.00
Guadalajara	121,571.00	75,752.00	102,178.00	69,429.00	368,930.00
Total	378,049.00	926,864.00	2,248,728.00	460,388.00	4,014,029.00

Total Units Sold by Store_Location

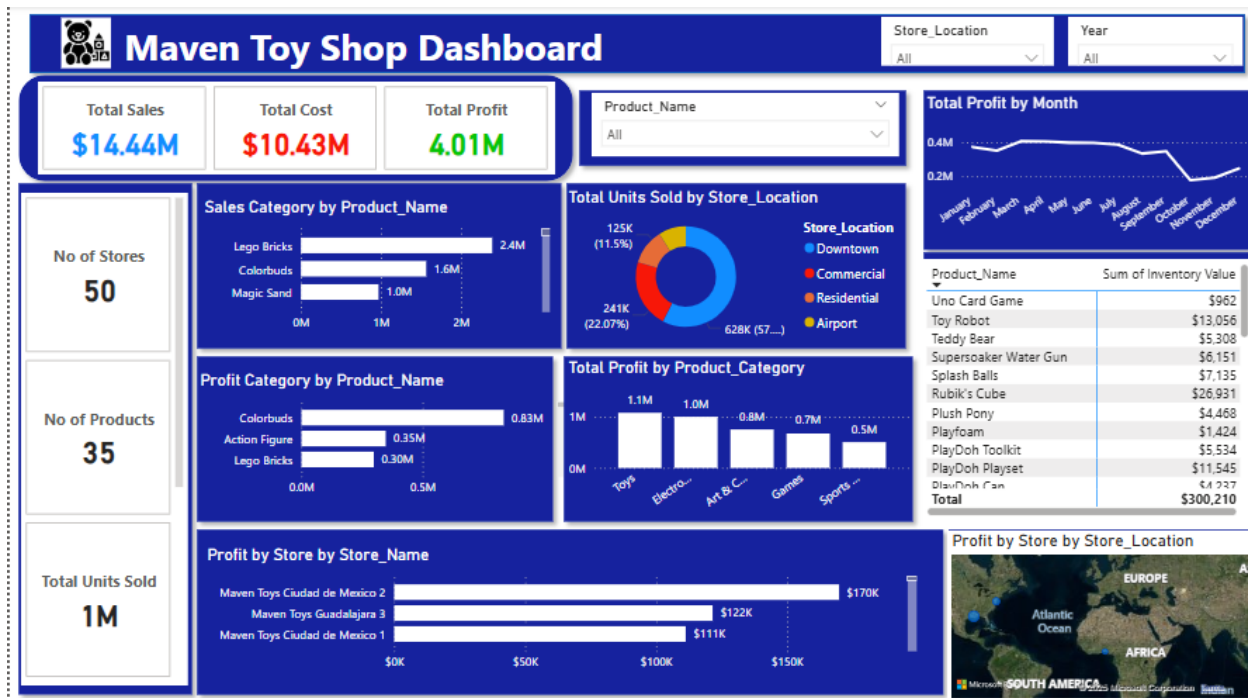




Maven Toy Store BI Analysis Report

This analysis evaluates sales and inventory data from Maven Toy Store, a toy retail chain in Mexico. Using Microsoft Power BI, key insights were derived on product profitability, store performance, seasonal trends, and inventory management. Findings revealed that Toys and Electronics drive the highest profits, with Downtown stores performing best. Sales peak between March and July, while October sees the lowest revenue. Inventory analysis indicates stock will last 15-17 days. Recommendations include optimizing inventory, investing in high-performing locations, and addressing seasonal sales fluctuations to enhance profitability and business growth.

DASHBOARD



[Check the link to the Project](#)

Key Insights and Recommendations

Product Analysis

Which product categories generate the highest profits?

- **Toys** are the most profitable, contributing **\$1.08M (26.89%)** of total profits.
- **Electronics** follow closely with **\$1M (25%)**.
- **Sports & Outdoor** products generate the lowest profit at **\$500K**.

Are these profit trends location-dependent?

- **Electronics** dominate in Airport and Commercial locations.
- **Toys** perform best in Downtown and Residential areas.

Top Performing Products

Highest Profit-Generating Products:

1. **Colorbuds** - \$835K
2. **Action Figure** - \$348K
3. **Lego Bricks** - \$298K
4. **Deck of Cards** - \$252K

5. **Glass Marbles** - \$190K

Most Sold Products:

1. **Colorbuds** - 104K units (23.5%)
 2. **Playdoh Can** - 103K units (23.2%)
 3. **Barrel O'Slime** - 91K units
 4. **Deck of Cards** - 84K units
 5. **Magic Sand** - 61K units
- **Notably, Playdoh Can ranks high in sales volume but not in profitability.**
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Store & Location Analysis

Which locations generate the highest profits?

- **Downtown stores** lead with over **\$2M** in profits.
- **Airport stores** yield the lowest profit at **\$378K**.

Most Profitable Stores:

1. Maven Toys **Ciudad de Mexico 2** - \$170K
2. Maven Toys **Guadalajara 3** - \$121K
3. Maven Toys **Ciudad de Mexico 1** - \$111K
4. Maven Toys **Monterrey 2** - \$107K
5. Maven Toys **Toluca** - \$105K

Least Profitable Stores:

- **Maven Toys Cuernavaca 1** - \$57K
 - **Maven Toys La Paz 1** - \$57K
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Seasonal Trends & Patterns

- **Peak Sales & Profits:** March–July
 - *Highest Sales:* **April** (112K units)
 - *Highest Profit:* **March** (\$406K)

- **Lowest Sales & Profits:** October
 - Sales: 48K units
 - Profit: \$179K
- **Quarterly Trends:**
 - **Q2 (April–June):** Highest sales
 - **Q4 (October–December):** Lowest sales

Yearly Trends:

- **2017:** Sales peaked towards year-end.
 - **2018:** Stronger sales from February–July, with March leading.
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Inventory Analysis

Current Inventory Value & Turnover:

- **Total Inventory Value:** \$300K
 - **Total Stock:** 29,742 units
 - **Average Daily Sales:** 1,709 units
 - **Estimated Inventory Duration:** 15-17 days before restocking is required.
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Summary & Recommendations

Summary of Key Findings:

1. **Downtown stores** are the most profitable.
2. **Toys** lead in profitability, followed by Electronics.
3. **Sales dip in January, February, and October.**
4. **Electronics excel in Airport and Commercial locations, while Toys dominate Downtown and Residential areas.**

Strategic Recommendations:

1. **Expand investment in Downtown stores** to capitalize on high profitability.
2. **Investigate low sales in January and February** to identify and mitigate potential market challenges.

3. **Enhance inventory management** to avoid stock shortages or excesses, ensuring optimal stock levels.
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