WALMART'S DATA-DRIVEN EVOLUTION

Walmart ·¦·

HOW WALMART LEVERAGED BUSINESS INTELLIGENCE FOR GROWTH

INDEX

PROBLEM STATEMENT

In the face of rapidly evolving consumer preferences, Walmart is confronted with the challenge of delivering a consistently personalized and relevant customer experience. As customer tastes and preferences change, the company needs to find innovative ways to engage and retain its diverse customer base.

INTRODUCTION

Walmart, often regarded as a retail behemoth, is a global leader in the world of commerce. With a storied history dating back to its founding in 1962 by Sam Walton, this American multinational corporation has grown to become one of the largest and most influential retail chains worldwide. Walmart operates a diverse portfolio of retail formats, including hypermarkets, discount stores, supercenters, and e-commerce platforms, serving millions of customers every day.

Known for its commitment to delivering everyday low prices and an extensive assortment of products, Walmart has successfully penetrated numerous markets, spanned the United States, and reached across borders into key international regions. Its relentless focus on innovation, supply chain efficiency, and leveraging technology to enhance the shopping experience has allowed Walmart to maintain its competitive edge.

Walmart's influence extends beyond retail; it plays a pivotal role in shaping global supply chains, fostering economic growth in communities, and addressing sustainability challenges. With a dedication to corporate social responsibility and philanthropy, the company actively engages in initiatives to combat hunger, promote sustainability, and support local communities.

This introduction offers a glimpse into the multifaceted world of Walmart, a company that has evolved and adapted to the changing retail landscape while leaving an indelible mark on the way we shop and live today. This abstract sets the stage for a deeper exploration of Walmart's history, challenges, successes, and its ongoing impact on the world of business and commerce.

CHALLENGE FACED BY THE COMPANY

Evolving Inventory Management

- Walmart's extensive product catalog and numerous store locations make inventory management a complex task.

- Striking the right balance between having enough stock to meet customer demand and avoiding overstock situations is crucial.

- Utilizing advanced inventory tracking systems and data analytics helps

Walmart optimize stock levels in real-time.SOLUTION

- Use BI tools to analyze historical sales data and predict future demand more accurately.

- Implement real-time inventory tracking using RFID technology and integrate it with BI dashboards to monitor stock levels.

- Create alerts in BI systems to notify when inventory levels fall below or exceed threshold.

Creation of a dashboard using Power BI to show insights about Their inventory management in the previous years. Following is the dashboard:

About Dataset and Implementation

To address these challenges, we used a Walmart survey dataset. This dataset provides valuable insights into Walmart's database, encompassing a wide range of data sources, including order id,order date etc.

Order ID	Order Date	Ship Date	Customer Name	City	State	Category	Product Name
CA-2013-138688	Thursday, June 13, 2013	Monday, June 17, 2013	Darrin Van Huff	Los Angeles	California	Labels	Self-Adhesive Address Labels for Typewriters by Universal
CA-2013-121755	Wednesday, January 16, 2013	Sunday, January 20, 2013	Eric Hoffmann	Los Angeles	California	Binders	Wilson Jones Active Use Binders
CA-2013-101343	Thursday, July 18, 2013	Tuesday, July 23, 2013	Ruben Ausman	Los Angeles	California	Storage	Eldon Base for stackable storage shelf, platinum
CA-2012-135545	Saturday, November 24, 2012	Friday, November 30, 2012	Kunst Miller	Los Angeles	California	Accessories	Verbatim 25 GB 6x Blu-ray Single Layer Recordable Disc, 3/Pack
CA-2013-109806	Wednesday, September 18, 2013	Monday, September 23, 2013	Jim Sink	Los Angeles	California	Phones	Panasonic Kx-TS550
US-2013-125969	Thursday, November 7, 2013	Monday, November 11, 2013	Lindsay Shagiari	Los Angeles	California	Chairs	Global Task Chair, Black
CA-2011-118962	Friday, August 5, 2011	Tuesday, August 9, 2011	Chad Sievert	Los Angeles	California	Paper	Xerox 1913
CA-2012-137946	Saturday, September 1, 2012	Tuesday, September 4, 2012	Doug Bickford	Los Angeles	California	Copiers	Hewlett Packard LaserJet 3310 Copier
CA-2014-140963	Wednesday, June 11, 2014	Saturday, June 14, 2014	Michelle Tran	Los Angeles	California	Labels	Alphabetical Labels for Top Tab Filing
CA-2014-163405	Monday, December 22, 2014	Friday, December 26, 2014	Bradley Nguyen	Los Angeles	California	Art	Newell 317
US-2013-139486	Wednesday, May 22, 2013	Friday, May 24, 2013	Logan Haushalter	Los Angeles	California	Accessories	Imation 16GB Mini TravelDrive USB 2.0 Flash Drive
CA-2013-113243	Tuesday, June 11, 2013	Sunday, June 16, 2013	Olvera Toch	Los Angeles	California	Labels	Avery 473
CA-2013-161669	Friday, November 8, 2013	Sunday, November 10, 2013	Eudokia Martin	Los Angeles	California	Supplies	Acme Preferred Stainless Steel Scissors
CA-2013-161669	Friday, November 8, 2013	Sunday, November 10, 2013	Eudokia Martin	Los Angeles	California	Labels	Avery 486
CA-2013-130477	Tuesday, April 9, 2013	Saturday, April 13, 2013	Logan Currie	Los Angeles	California	Storage	Fellowes Neat Ideas Storage Cubes
CA-2013-130477	Tuesday, April 9, 2013	Saturday, April 13, 2013	Logan Currie	Los Angeles	California	Paper	Xerox 1931
CA-2014-106964	Thursday, December 18, 2014	Sunday, December 21, 2014	Hallie Redmond	Los Angeles	California	Binders	GBC Plastic Binding Combs
CA-2011-146969	Thursday, September 29, 2011	Monday, October 3, 2011	Arthur Prichep	Los Angeles	California	Furnishings	Luxo Professional Combination Clamp-On Lamps
CA-2011-146969	Thursday, September 29, 2011	Monday, October 3, 2011	Arthur Prichep	Los Angeles	California	Machines	Star Micronics TSP800 TSP847IIU Receipt Printer
CA-2014-100013	Friday, November 7, 2014	Wednesday, November 12, 2014	Zuschuss Carroll	Los Angeles	California	Envelopes	#10- 4 1/8" x 9 1/2" Security-Tint Envelopes
CA-2014-100013	Friday, November 7, 2014	Wednesday, November 12, 2014	Zuschuss Carroll	Los Angeles	California	Art	SANFORD Liquid Accent Tank-Style Highlighters
US-2011-151925	Monday, September 26, 2011	Saturday, October 1, 2011	Kean Takahito	Los Angeles	California	Chairs	Leather Task Chair, Black
CA-2013-100468	Monday, November 25, 2013	Monday, December 2, 2013	Alyssa Tate	Los Angeles	California	Phones	iKross Bluetooth Portable Keyboard + Cell Phone Stand Holder + Brush for Apple iPhone 5S
CA-2013-100468	Monday, November 25, 2013	Monday, December 2, 2013	Alyssa Tate	Los Angeles	California	Furnishings	DAX Value U-Channel Document Frames, Easel Back
CA-2014-103611	Saturday, September 13, 2014	Tuesday, September 16, 2014	Jessica Myrick	Los Angeles	California	Furnishings	Eldon Image Series Desk Accessories, Burgundy
US-2011-157385	Wednesday, November 23, 2011	Friday, November 25, 2011	Sanjit Chand	Los Angeles	California	Chairs	Safco Contoured Stacking Chairs
CA-2011-156349	Thursday, May 26, 2011	Monday, May 30, 2011	Marina Lichtenstein	Los Angeles	California	Bookcases	Sauder Inglewood Library Bookcases

The image displays a screenshot of a list of names and numbers, which is depicted in a table format .The table includes various columns, such as "Order ID," "Order Date," "Ship Date," "Customer Name," "City," "State . Category," and "Product Name." Each column is labeled at the top of the table, with the corresponding content displayed in the cells below. The table presents a list of orders, including details such as the order ID, date, customer name, location, category, and product name. The information is organized in rows, with each row representing a specific order. The content within the table appears to be well-structured and aligned, providing a clear overview of the listed names and numbers.

The image presents a dashboard containing various pieces of information. The dashboard is displayed against a black background, and it is filled with different types of charts and graphs.

Starting at the top left corner of the image, there is a map showing the locations of cities around the world. This map occupies a relatively small portion of the dashboard.

Moving to the middle right section of the image, there is a chart labeled "Profit by Category." This chart displays the profit for different categories of products. Each category is represented by a different color.

Below the chart on the left side, there is a bar graph labeled "Loss by State." This graph showcases the amount of loss experienced by different states. The bars represent each state, and their lengths vary according to the different levels of loss.

In the bottom left section of the image, there is a pie chart showing the distribution of sales by category. Each category is represented by a different color slice, illustrating the proportion of sales it contributes.

Adjacent to the pie chart, there is another pie chart, which incorporates different colors and numbers. This chart represents an additional aspect of sales or revenue.

Towards the bottom right corner of the image, there is a section labeled "Profit on Product Infographic." This section provides an overview of the profit earned for various products.

Additionally, there are several text elements throughout the image. These texts include labels such as "Year," "City," "Profit by State," and "Sum of Sales." They serve to provide more context and identify the different parts of the dashboard.

Overall, the dashboard contains a wealth of information regarding profit, loss, sales, and other related metrics. The various charts and graphs provide visual representations of these data points, allowing for a comprehensive understanding of the depicted information.

Improved Customer Experience

By using BI to understand Inventory, we can enhance the inventory. They shall be able to offer personalized recommendations and promotions, leading to increased customer loyalty and repeat business. Therefor we can,

- Use BI tools to analyze historical sales data and predict future demand more accurately.

- Implement real-time inventory tracking using RFID technology and integrate it with BI dashboards to monitor stock levels.

Create alerts in BI systems to notify when inventory levels fall below or exceed threshold
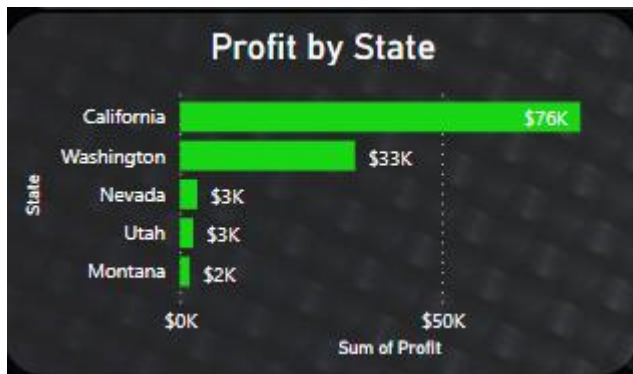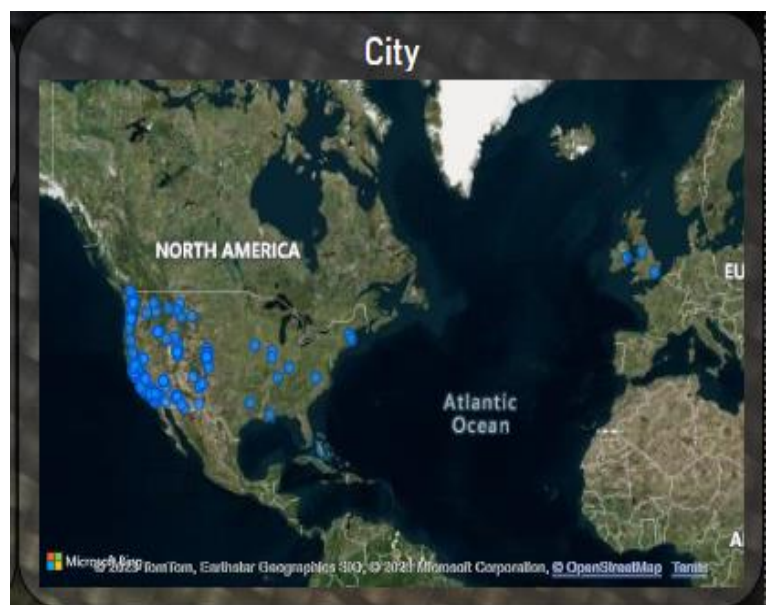

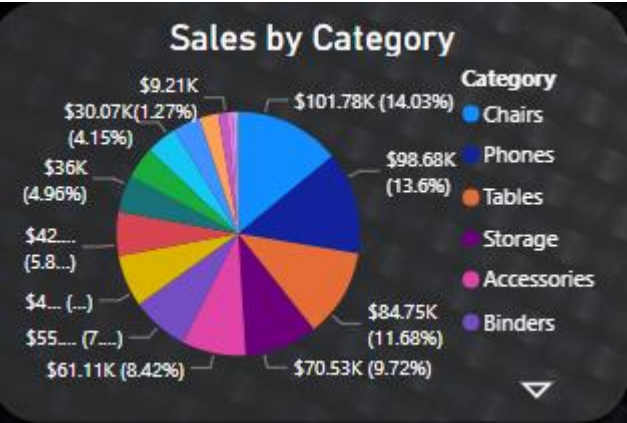
Profit by 5 Top N States
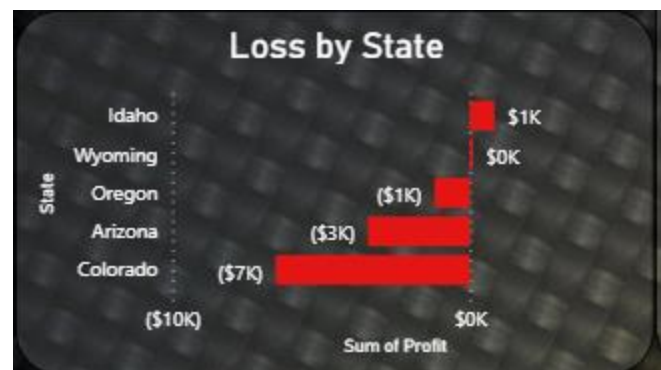
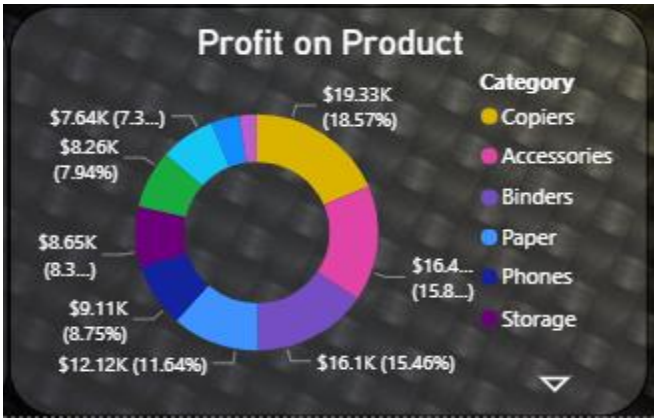Loss By 5 Top N (From Bottom) states

Profit by Category

Map Representations of Cities

Types of categories and it's Sale

Types of products and its Profit

Average Sales of all 5 years (2011-2015)

REFERENCES

- Dataset:
  - Walmart Dataset

- Tools used:
  - Microsoft Power BI Desktop