



Source: Fortunes



IMT 576 - Team Mumbai Indians

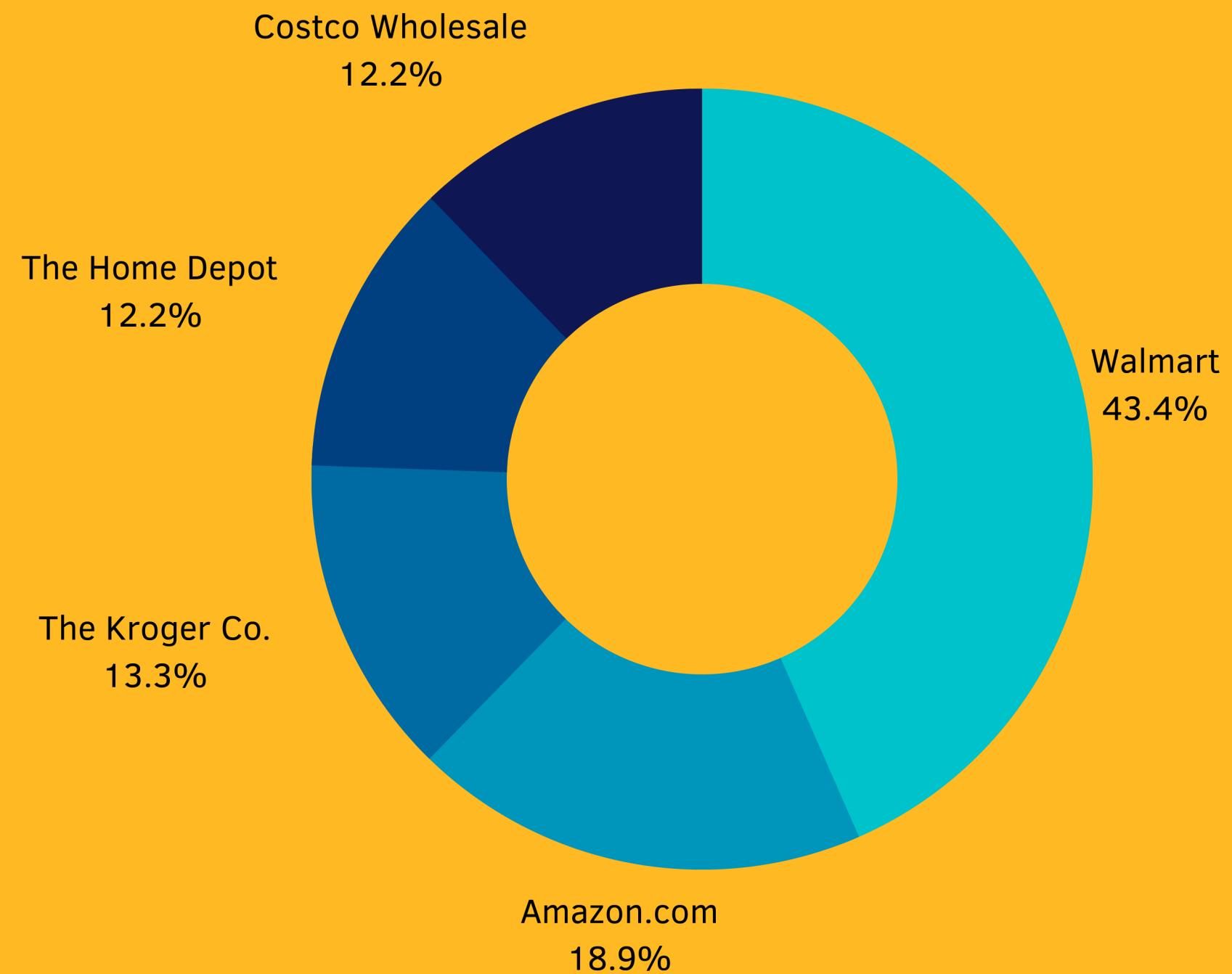
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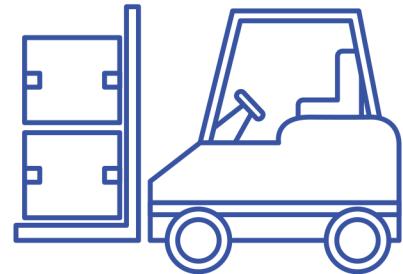
# Company Overview

## Retailers in the USA



- Walmart Inc. is an American multinational retail corporation that operates a chain of hypermarkets, department stores, and grocery stores
- Walmart is at the number one position in the Fortune 500 list of companies.
- Largest private employer in the world with 2.2 million employees.
- Walmart's Mission : "Walmart Inc. helps people around the world save money and live better - anytime and anywhere - in retail stores and through eCommerce."

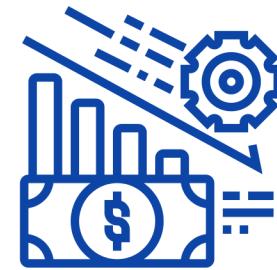
# Strategic Goals



■ **Automate Supply Chain**



■ **Widen reach of the company**



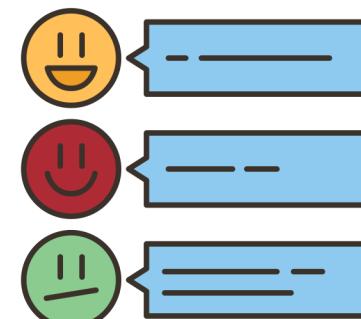
■ **Low cost and affordable products**



■ **Availability of skilled employees**



■ **Infrastructure to support data**



■ **Unsatisfactory Customer Experience**



# Current State of Business Intelligence at Walmart

# Key Decisions Walmart should use BI for

- Keeping track of steps in the supply chain
- Using BI to Analyze Demand and Make Product Recommendation
- Using KPI Analysis and BI to Increase Sales at Specific Locations
- Developing Effective Marketing Strategies through BI and Competitor Analysis at Walmart

# Areas of Opportunity

- Boosting Online Presence and Sales with BI
- Enhancing Product Quality with BI
- Understanding Local Demand for Global Expansion at Walmart

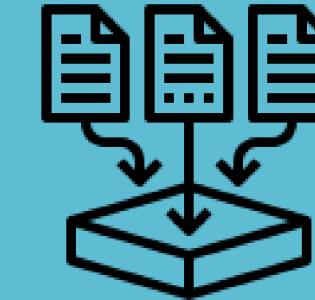
# Potential Challenges

- Ensuring Data Accuracy
- Acquiring and Integrating Data
- Data definitions across geographic locations

# Data Warehousing - Strategic Goals

**What Data Warehousing can achieve for Walmart**

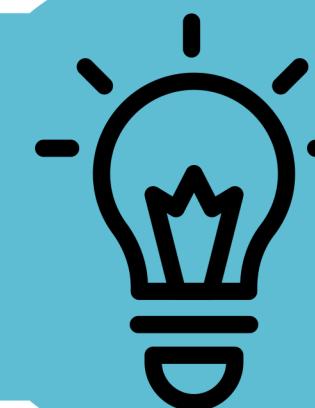
Collecting data from many varied sources, and integrating them into a single system.



Perform analysis on the data and obtain valuable insights from it.

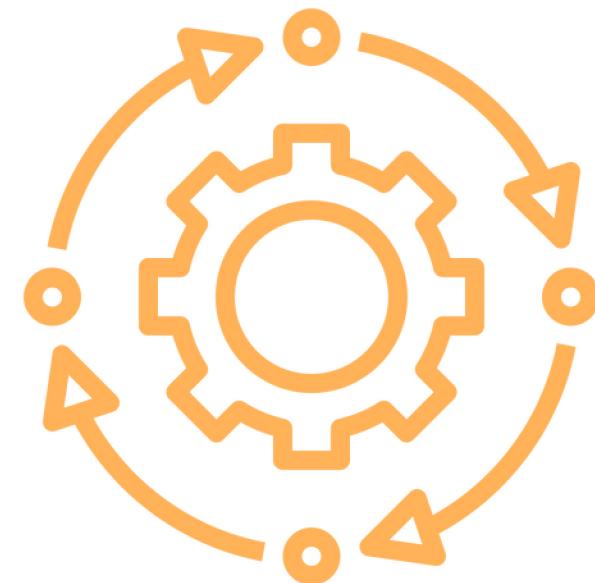


Making informed decisions from the insights gathered.

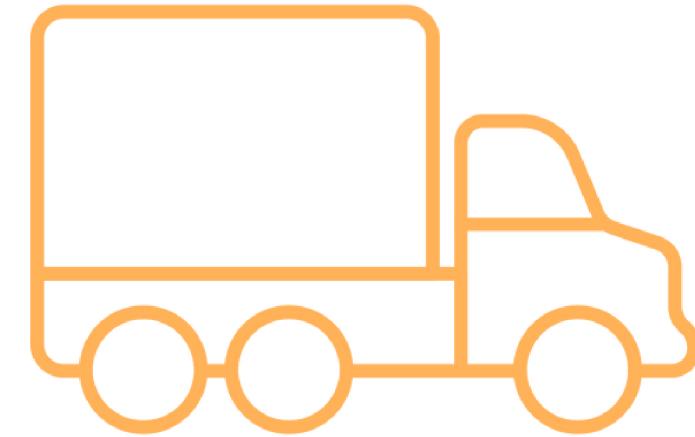




# Operational problems that a DWH solves



Using different technologies to process data



Solving sourcing and delivery related issues. Also, packing and picking optimization



Improving and enhancing customer experience

# Real-time data access

Use of real-time vendor inventory management system

Enables them to reduce their stock of a certain product in the absence of strong sales.

Provides automated alerts, so, when particular metrics fall below a set threshold in any department, the relevant team is alerted so that they can find a fast solution

# Functional use case of a data warehouse



Walmart Pharmacy



Walmart uses simulations on the data obtained from its pharmacy



Find out how many prescriptions are filled in a day



Determine the busiest times of the day and month



Staff that department accordingly

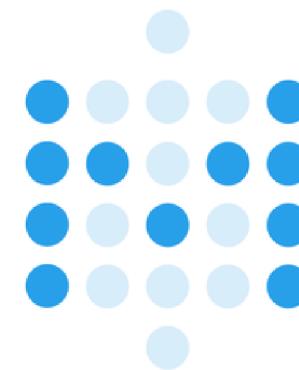
**Which  
applications will  
be vital for  
Walmart, for BI**



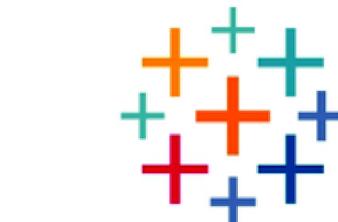
**Google  
Big Query**



**amazon  
REDSHIFT**



**Metabase**



**+ tableau**



**Azure Synapse Analytics**

# Challenges of using a DWH

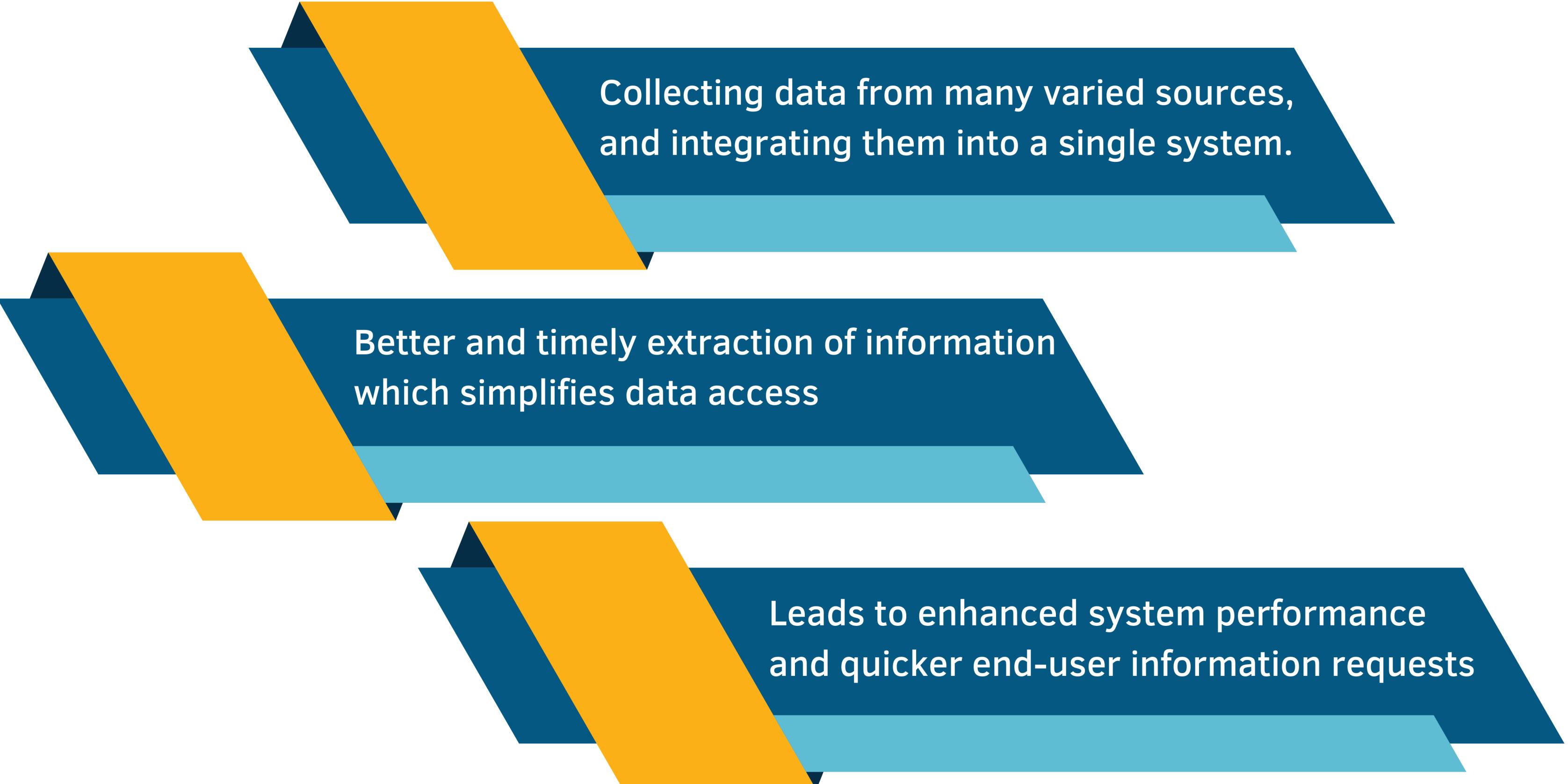


Focusing on traditional internal record-oriented data and ignoring the value of external data and of text, images, etc.

Focusing on ad hoc data mining and periodic reporting instead of alerts

Overlapping and confusing definitions from disparate data sources

# Benefits of using a DWH



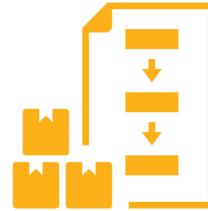
Collecting data from many varied sources,  
and integrating them into a single system.

Better and timely extraction of information  
which simplifies data access

Leads to enhanced system performance  
and quicker end-user information requests

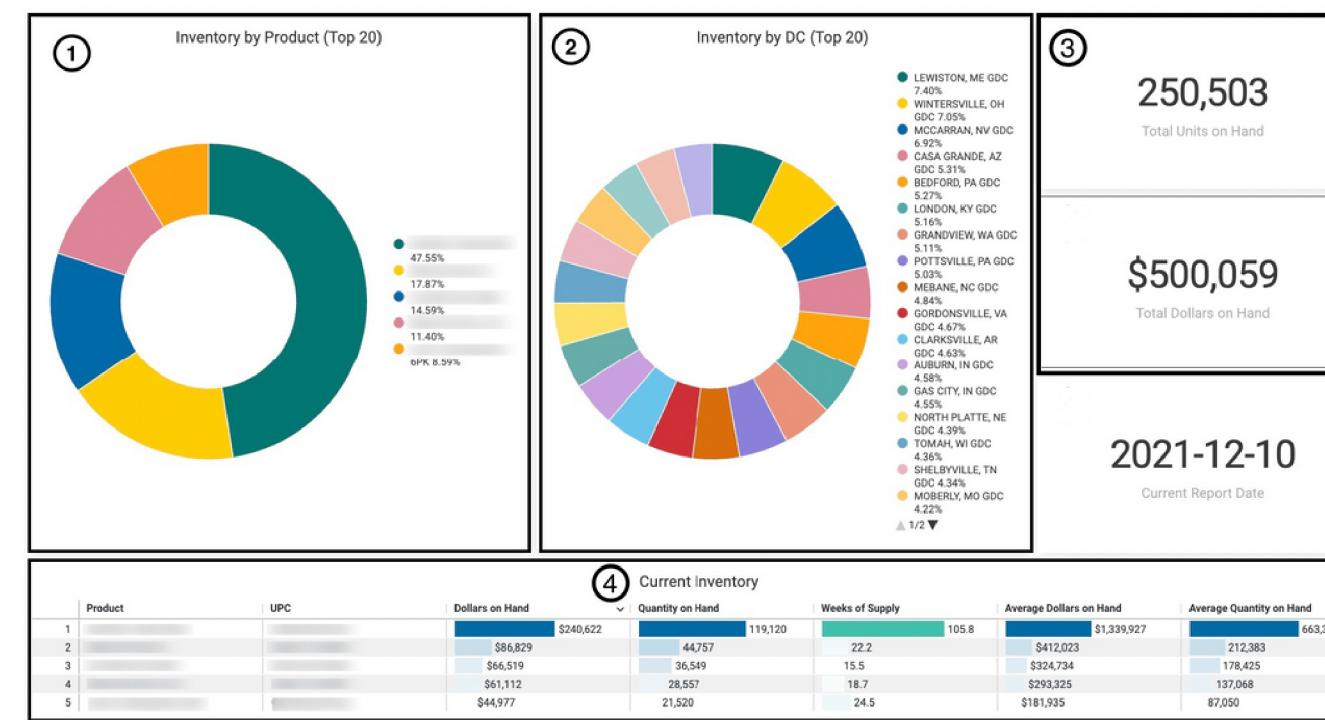
# Data Visualization

## Automate Supply Chain



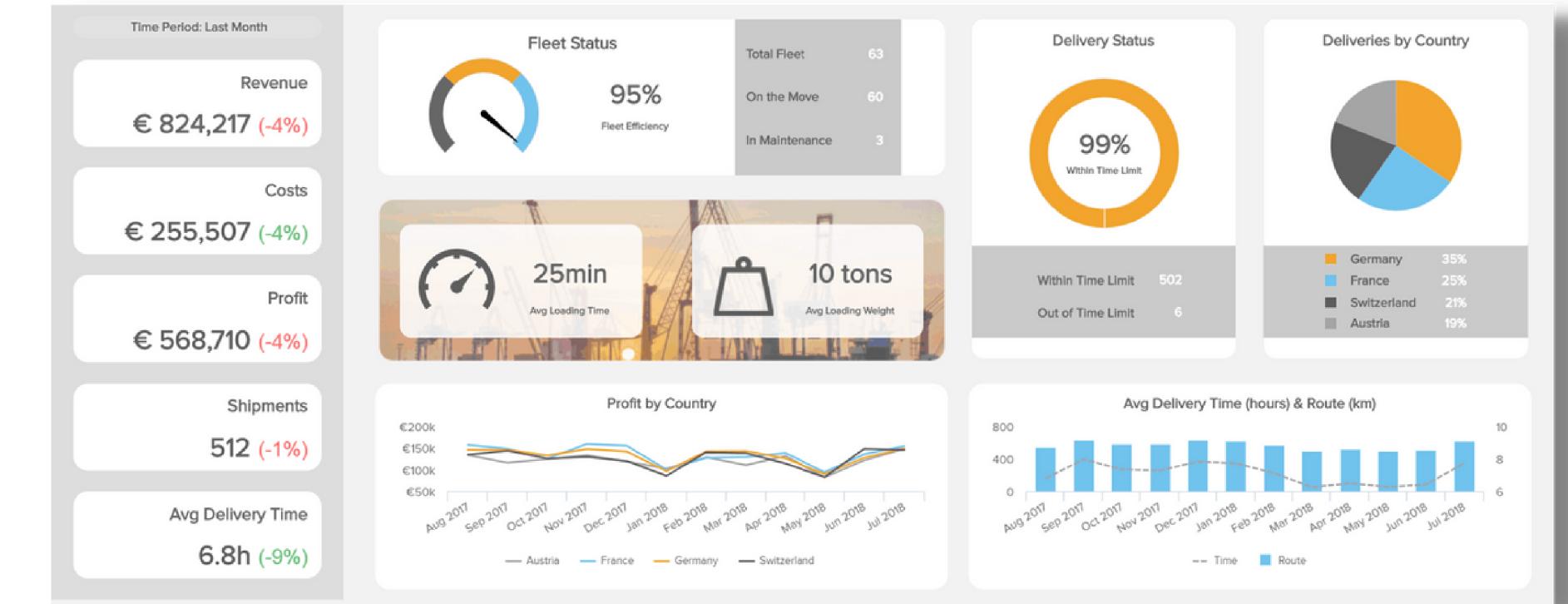
### Inventory Management

- Visualize inventory levels at various locations to help Walmart identify low stock products that require restocking.



### Logistics Optimization

- Displaying shipping routes and delivery schedules, helping Walmart identify the most efficient way to transport products.



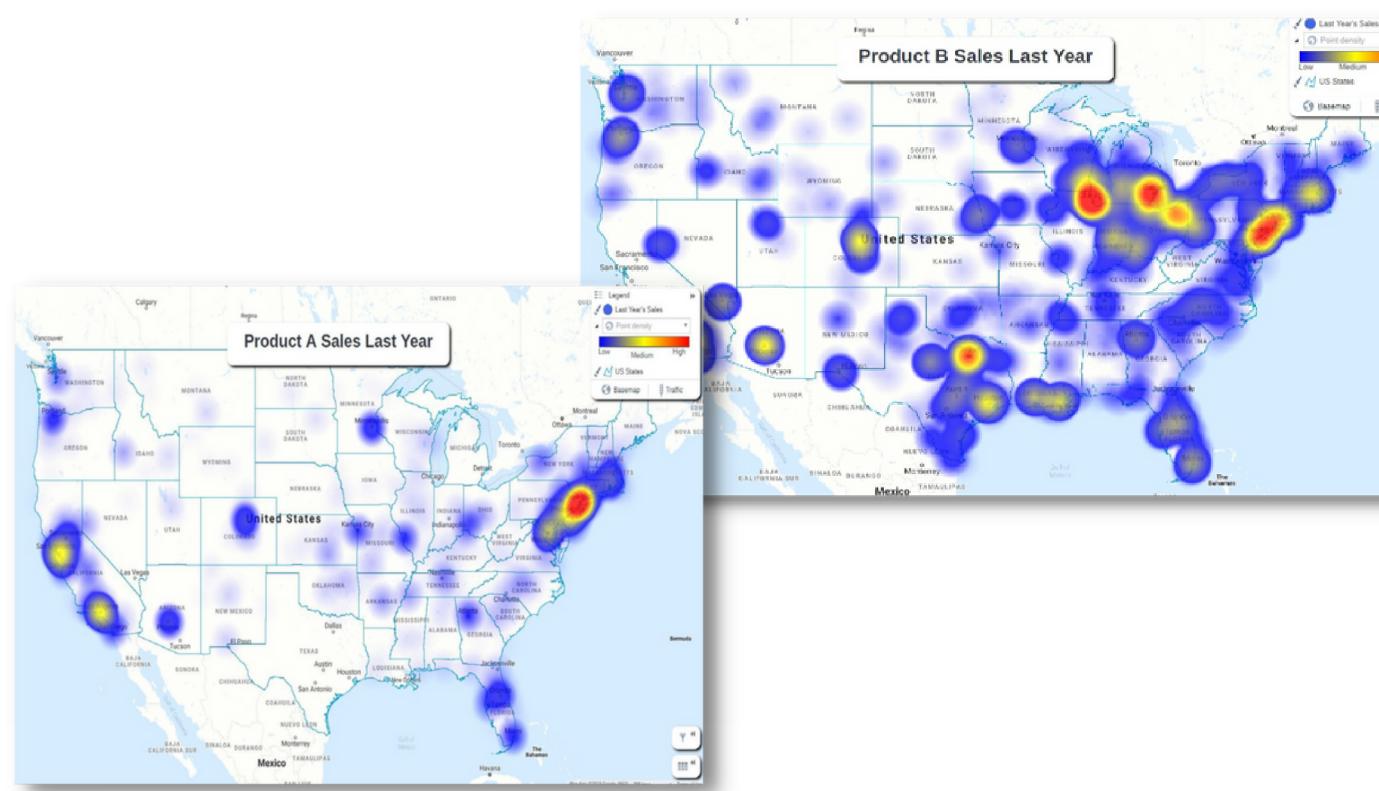
# Data Visualization

Widen reach of the company



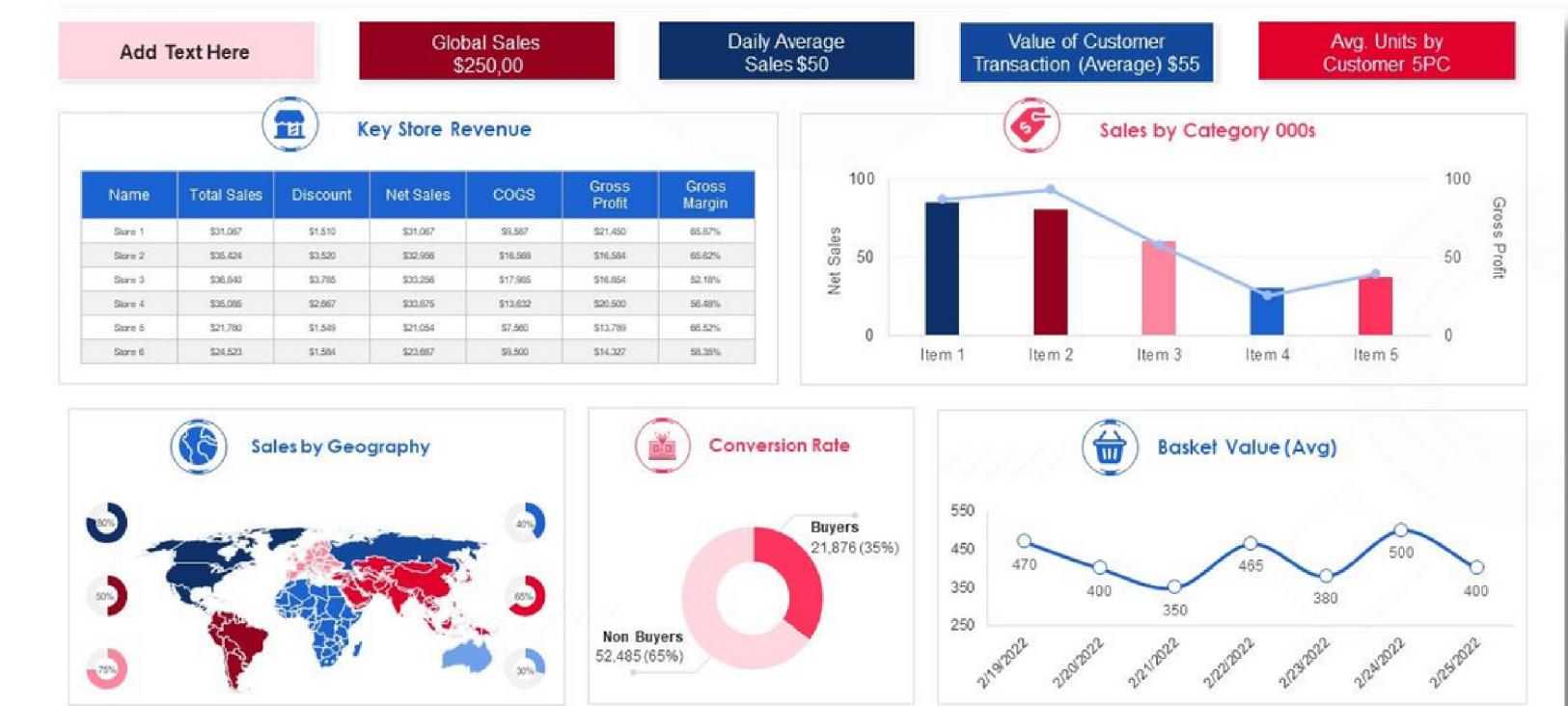
## Sales Analysis

- Analyze across different regions and demographics to optimize product placement and develop targeted products



## Customer Analytics

- Analyze purchase history and browsing patterns, to develop promotions to attract new customers



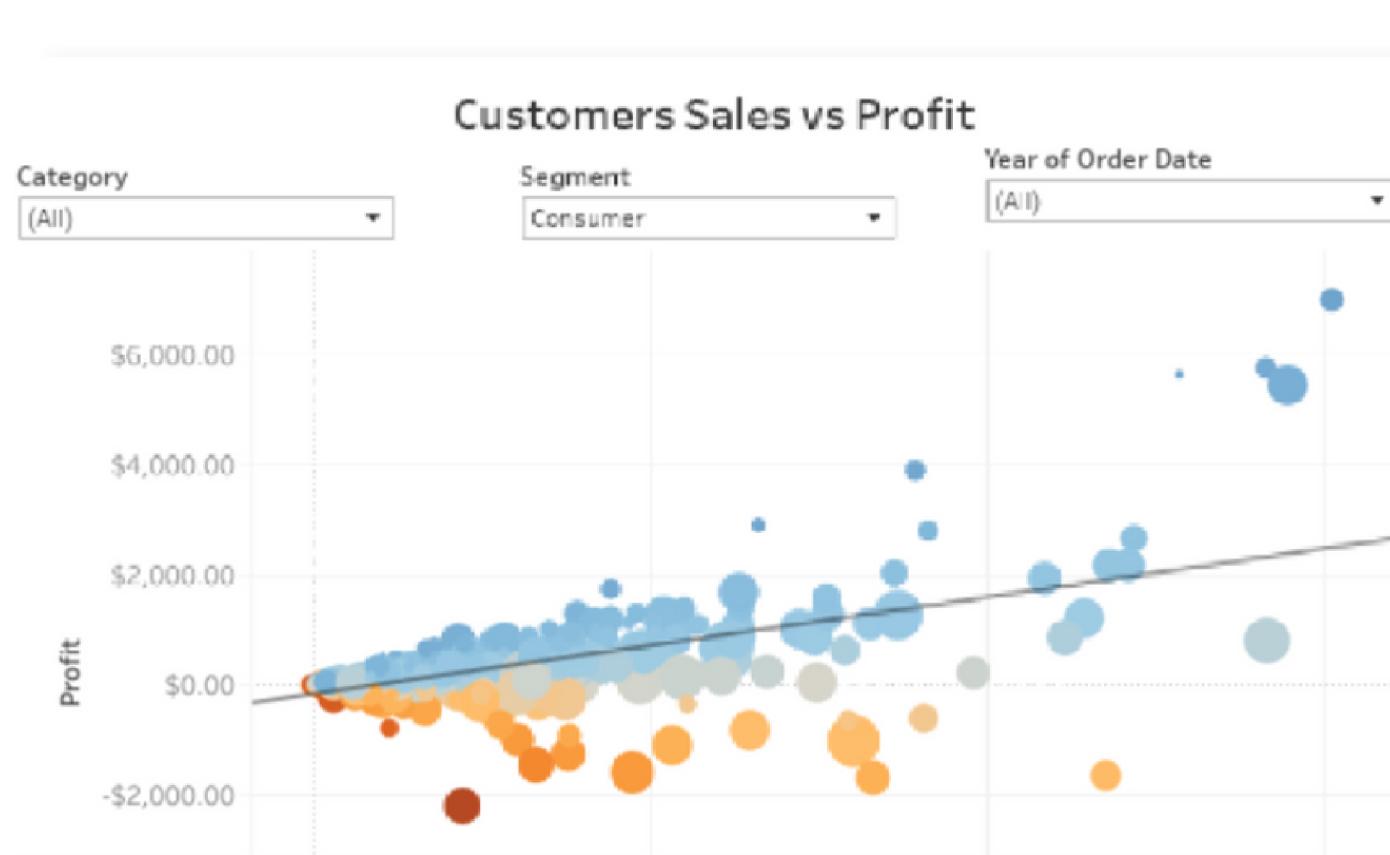
# Data Visualization

Low cost and affordable products



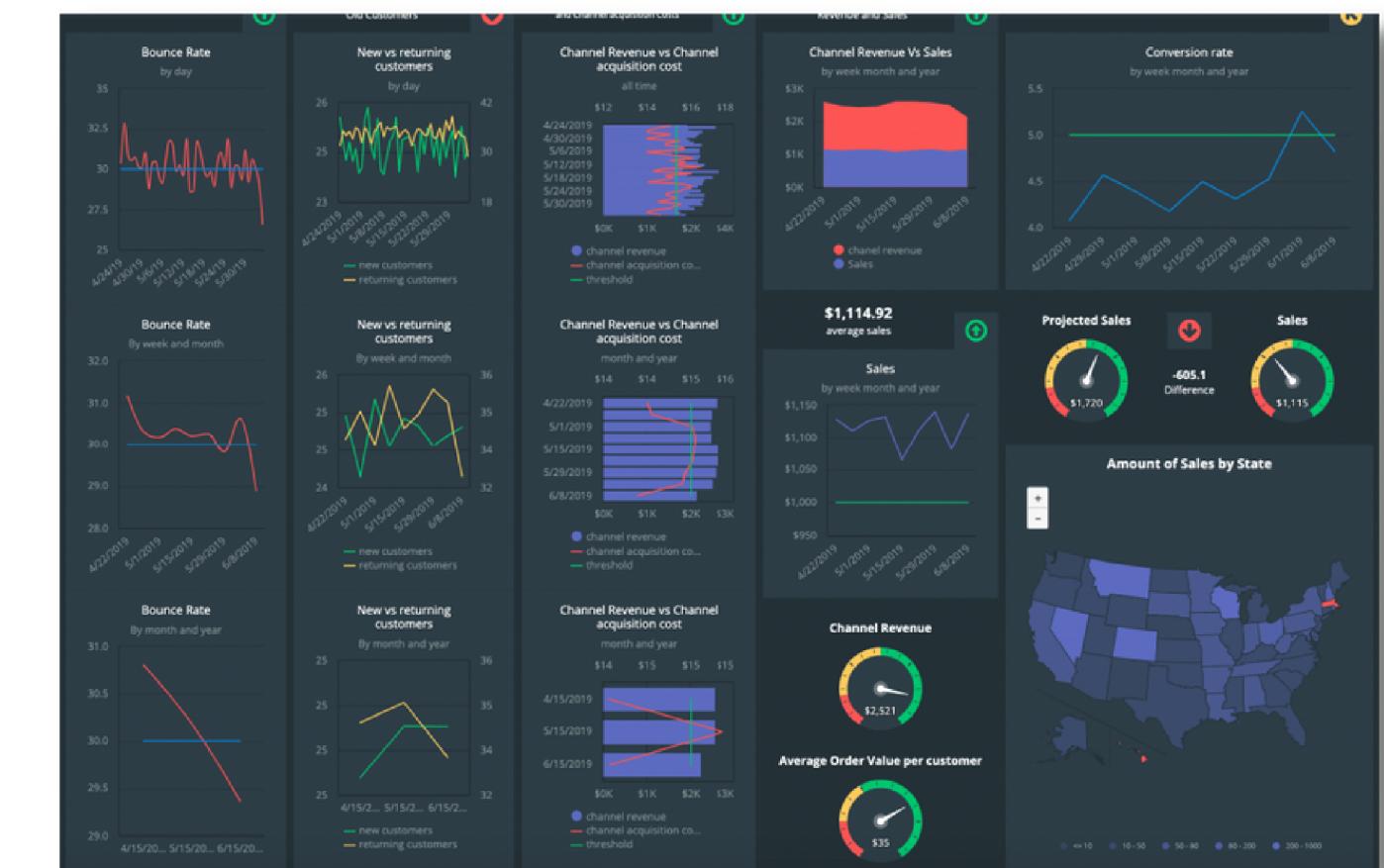
## Pricing Analysis

- Identify which products are priced competitively, and which products may need to be adjusted to remain affordable



## Cost Optimization

- Identify areas where costs can be optimized to keep prices low



# Applications of Data Mining



## Customer Segmentation

- Improved customer satisfaction
- Increased sales and revenue
- Enhanced operational efficiency



## Market Basket Analysis

- Improved inventory management
- Enhanced sales and revenue
- Improved product placement



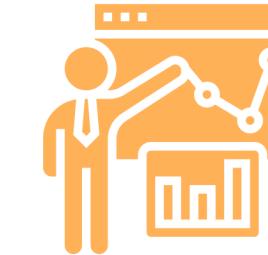
## Fraud Detection

- Improved security and reduced losses
- Enhanced customer trust and confidence
- More efficient use of resources

# Challenges to Data Mining success



**System Integration**



**Result Interpretation**



**Data Quality Management**



**Personalization & Privacy Balance**

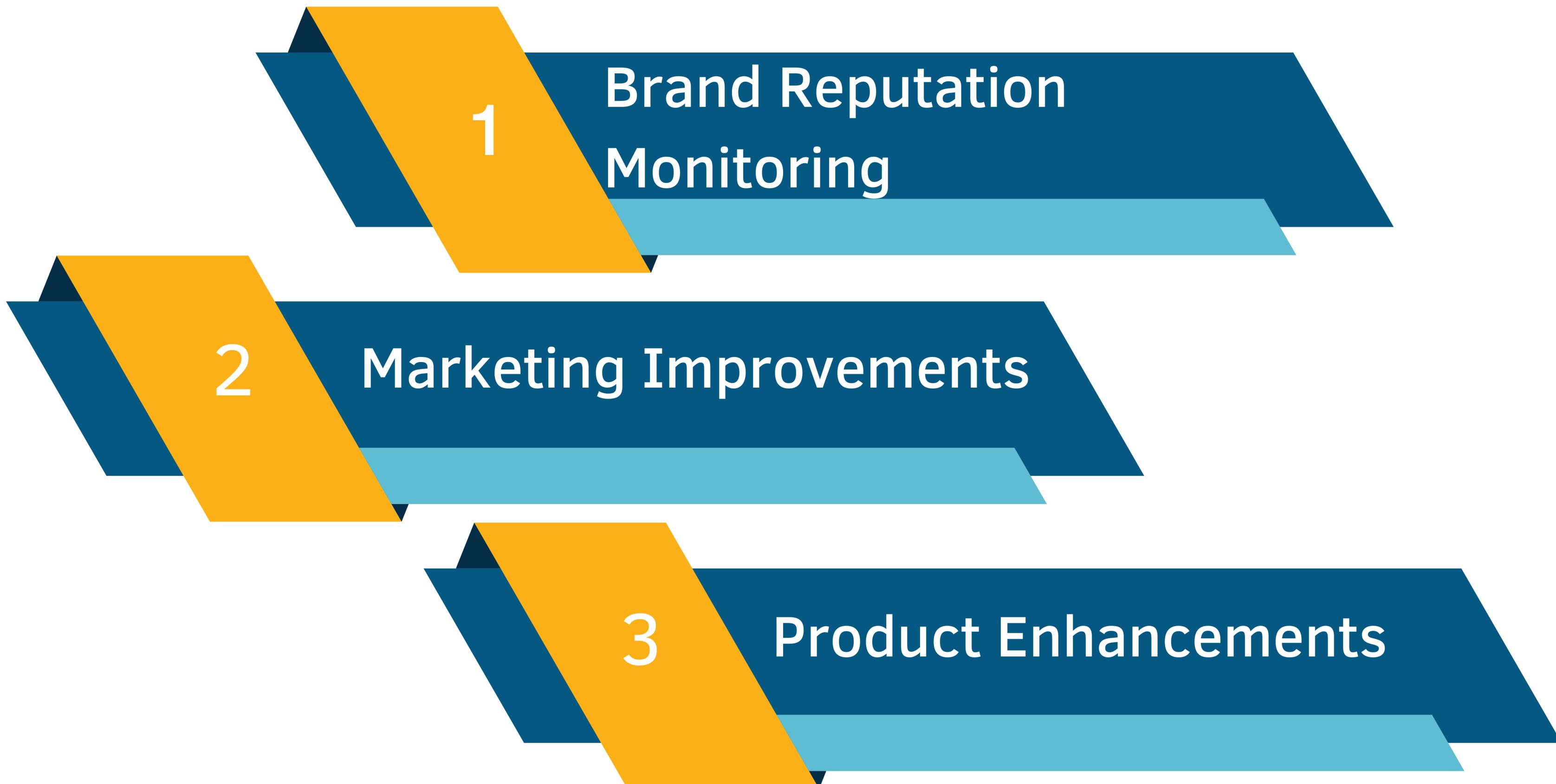


**Privacy & Security**



**Scalability**

# Text and Web Analytics - Strategic Opportunities



# Text and Web Analytics - Operational Solutions



# Text and Web Analytics - Prediction

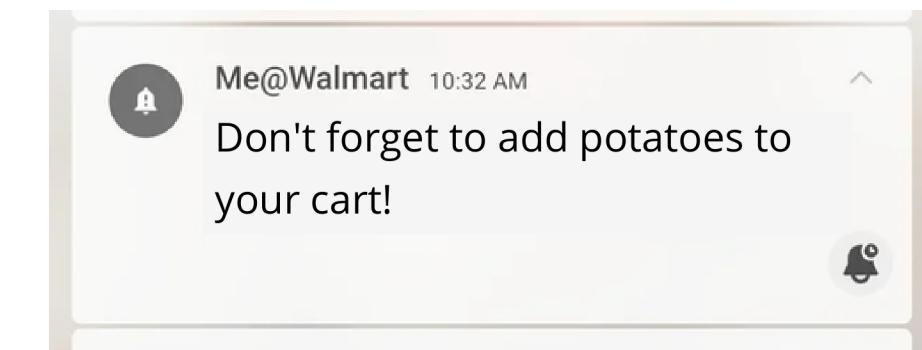
## Personalized shopping experiences

- Understanding customer's web search history
- Providing recommendations for items based on it
- Eg. You are searching for a recipe on Youtube
  - Walmart gives you a notification to add ingredients from that recipe in your order!

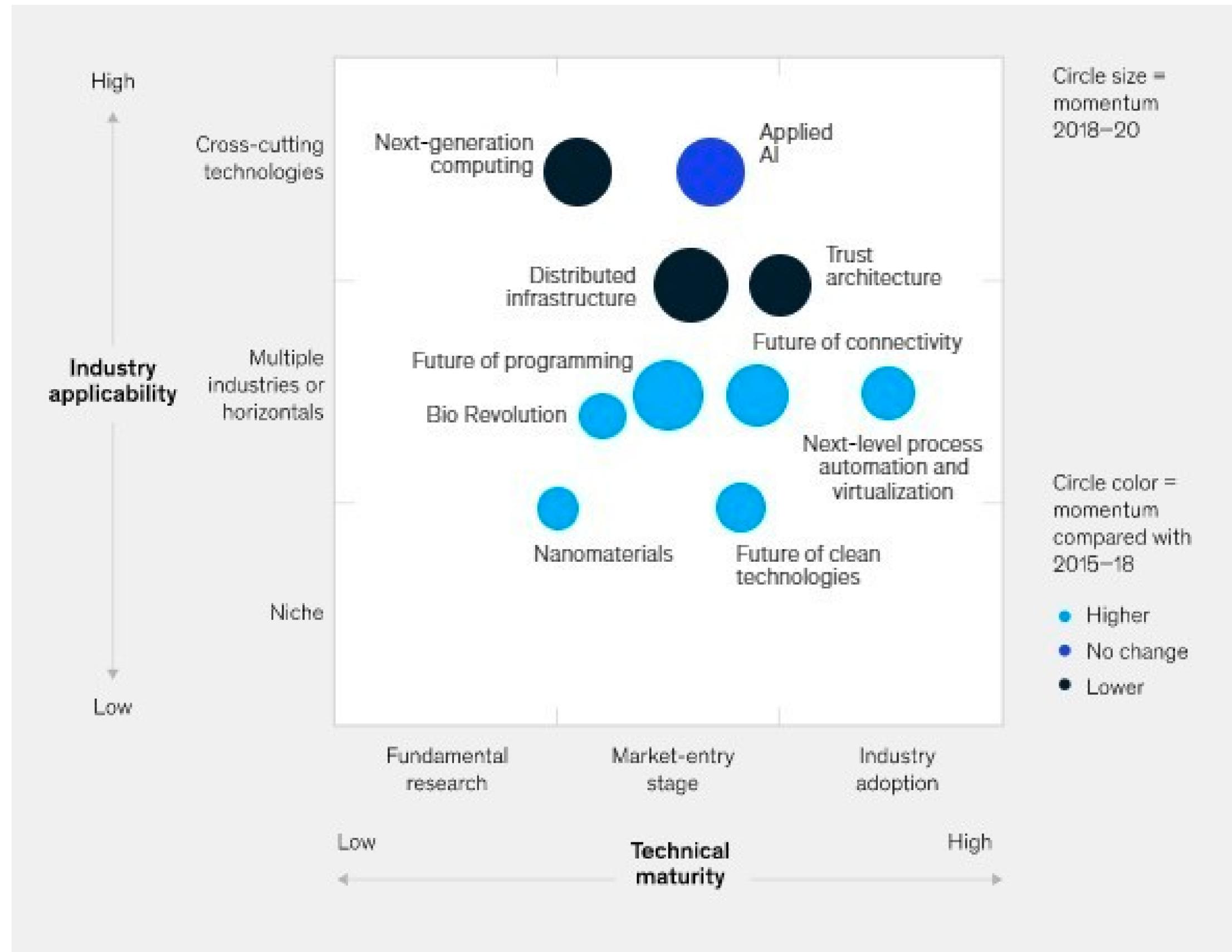


What do you want for dinner?

5 Minutes later



# Emerging Technology Trends



McKinsey  
Technology Trends  
Outlook 2022.  
(2022, August 24).  
McKinsey &  
Company.  
<https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/the-top-trends-in-tech>

# BI trends that will benefit Walmart

1

Artificial Intelligence

2

Alternative Data Sources

# Using alternative sources of data to Go-Global



Gain insights into consumer behavior and market trends

Optimise marketing strategies



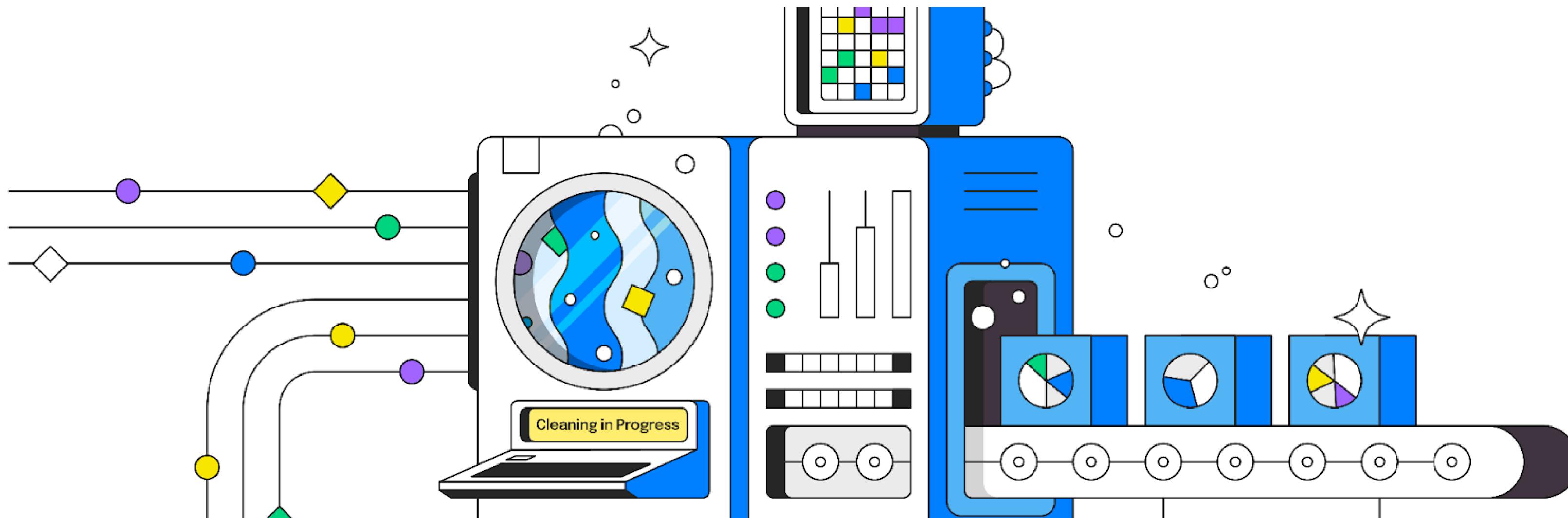
Best Price store in India

# Using AI to automate data cleaning



AI algorithms can use statistical methods to detect anomalies in datasets.

NLP algorithms can be used to clean text data.



# Leveraging clean data across the company



**Smooth and automatic operations of supply chain, globally**

**Using AI + Alternative data sources to test new products**



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# Thank you!

