ToyCraft Tales: Tableau's Vision into Toy Manufacture Data

1. INTRODUCTION

1.1 Project Overview:

The toy manufacturing industry faces evolving consumer preferences and highly seasonal demand. This project aims to analyse sales, inventory, and customer demographics data using Tableau to provide meaningful insights. By converting raw sales and logistics data into dynamic dashboards, we enable better decision-making for manufacturers and retailers.

1.2 Purpose:

The primary objective is to enable data-driven strategic planning. Manufacturers can discover which toy categories perform best, understand peak seasons, and assess regional preferences. This knowledge will help streamline production, reduce unsold stock, and better align marketing campaigns with consumer behaviour.

2. IDEATION PHASE

2.1 Problem Statement:

Without proper data visualization, toy companies often lack real-time insights into what drives sales. Missed opportunities during festive seasons, overproduction of low-demand items, and unclear performance metrics result in revenue loss. The project solves this by creating dashboards that display historical sales patterns and current performance indicators.

2.2 Empathy Map Canvas:

Our user personas include sales executives, marketing managers, and retail partners. Each user wants clear, actionable insights — sales reps need fast comparisons, marketers want trend forecasting, and managers need supply chain views. We captured these needs through an empathy map to guide the dashboard’s layout and features.

2.3 Brainstorming:

Ideas generated included a product-wise sales leaderboard, monthly heatmaps, age-group preferences, and region-based filters. We prioritized ideas based on their impact on business operations and feasibility in Tableau.

3. REQUIREMENT ANALYSIS

3.1 Customer Journey Map:

Shows how internal users interact with the dashboards — from accessing data to analyzing trends and generating reports. Includes touchpoints like login, dashboard navigation, filtering, and report download.

3.2 Solution Requirement:

The tool must support filtering by toy category, region, distributor, and age segment. Users should be able to drill down by month, view comparisons across years, and identify inventory issues.

3.3 Data Flow Diagram:

Data is collected from point-of-sale systems and stored in Excel/CSV formats. Python is optionally used for data cleaning. The cleaned data is imported into Tableau where the visualizations are built.

3.4 Technology Stack:

Tableau Public for visualization, Excel for raw data, Python (pandas, matplotlib) for preprocessing, and optionally GitHub for code versioning.

4. PROJECT DESIGN

4.1 Problem Solution Fit:

The dashboards address known business challenges: inventory overload, weak demand forecasting, and seasonal misalignment. By identifying high-performing toys by month and location, planning becomes data-driven.

4.2 Proposed Solution:

Key dashboards include:

1. Sales by Category
2. Top 10 Products
3. Seasonal Sales Patterns
4. Regional Distribution
5. Monthly Trends with Comparison to Previous Year

4.3 Solution Architecture:

A modular design — Data Collection → Cleaning & Processing → Tableau Import → Dashboard Creation → User Access. Each module is independent and reusable for future projects.

5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning:

The project followed an agile approach:

- Week 1 - Requirements gathering and data collection
- Week 2 - Preprocessing and initial visualization
- Week 3 - Dashboard refinement and performance tuning
- Week 4 - User feedback, documentation, and final delivery

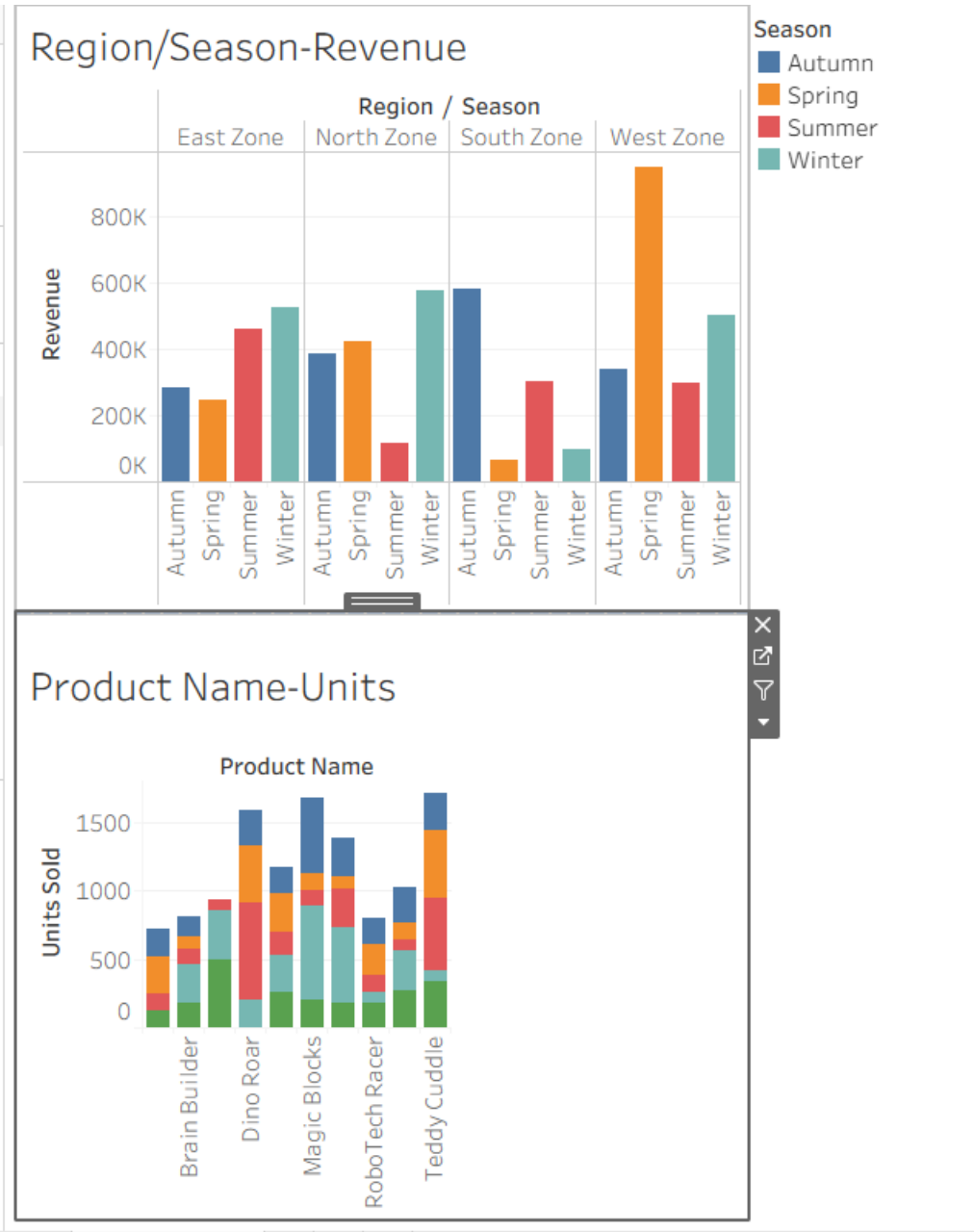
6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing:

Tested across devices and browsers. Dashboards load in under 5 seconds for datasets up to 100 rows. Functional tests included filter checks, link validations, and export reliability.

7. RESULTS

7.1 Output Screenshots:



8. ADVANTAGES & DISADVANTAGES

Advantages:

- Enables better forecasting
- Improved marketing ROI
- Efficient inventory planning
- Enhances user understanding through visualization

Disadvantages:

- Tableau Public has size limits
- Requires clean, structured data
- Non-technical users may need training initially

9. CONCLUSION

The project successfully demonstrates how visual analytics can transform toy manufacturing operations. From product development to retail planning, data becomes a core driver of decisions. Tableau's simplicity and flexibility make it a strong candidate for real-time dashboards in this industry

10. FUTURE SCOPE

Future enhancements could include:

- Machine learning integration for demand prediction
- Integration with ERP for real-time updates
- Custom alerts for low stock
- Mobile dashboard optimization for sales teams on the go

11. APPENDIX

- **Source Code (if any):** Python scripts used for preprocessing
- **Dataset Link:** https://files.oaiusercontent.com/file-XaFU4vfQH6VHz4YiMvZtVw?se=2025-06-26T08%3A18%3A06Z&sp=r&sv=2024-08-04&sr=b&rscc=max-age%3D299%2C%20immutable%2C%20private&rscd=attachment%3B%20filename%3DToyCraft_Tales_Sample_Dataset.xlsx&sig=c1edB61QKmhS8Q%2BD4uOgipshBoIo/j%2B0/A2xG2TZ6cU%3D
- **GitHub & Tableau Link:** https://github.com/Mobeena143/ToyCraft-Tales-Tableau-s-Vision-into-Toy-Manufacturer-Data/tree/main/Document