

Project Design Phase

Solution Architecture

Date	15 February 2025
Team ID	LTVIP2025TMID48331
Project Name	ToyCraft Tales: Tableau's Vision into Toy Manufacturer Data
Maximum Marks	4 Marks

Solution Architecture:

1. Data Sources Layer :

ToyCraft collects data from multiple sources:

- ❑ Sales platforms like Flipkart and Amazon
 - ❑ Inventory systems from warehouses
 - ❑ Customer feedback via online reviews and surveys
 - ❑ Production data from ERP tools like SAP or Oracle
- This ensures that all critical business operations are tracked.
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2. Data Ingestion Layer :

Tools such as Talend or Tableau Prep are used to automate data collection. APIs and scheduled scripts regularly pull new sales records, stock updates, and customer feedback into the system, ensuring up-to-date information.

3. Data Storage Layer :

All collected data is securely stored in scalable cloud storage like Google BigQuery, Snowflake, or AWS S3. These platforms allow efficient querying and high-speed processing of large datasets.





4. Data Processing & Transformation Layer :

Data is cleaned and organized for analysis. Operations include:

- ❑ Removing duplicates or nulls
 - ❑ Joining datasets (e.g., linking toy ID from sales and inventory)
 - ❑ Calculating key performance metrics like average daily sales or low-stock alerts
- This makes the data ready for visualization.
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5. Visualization & Reporting Layer :

Using Tableau, interactive dashboards are created:

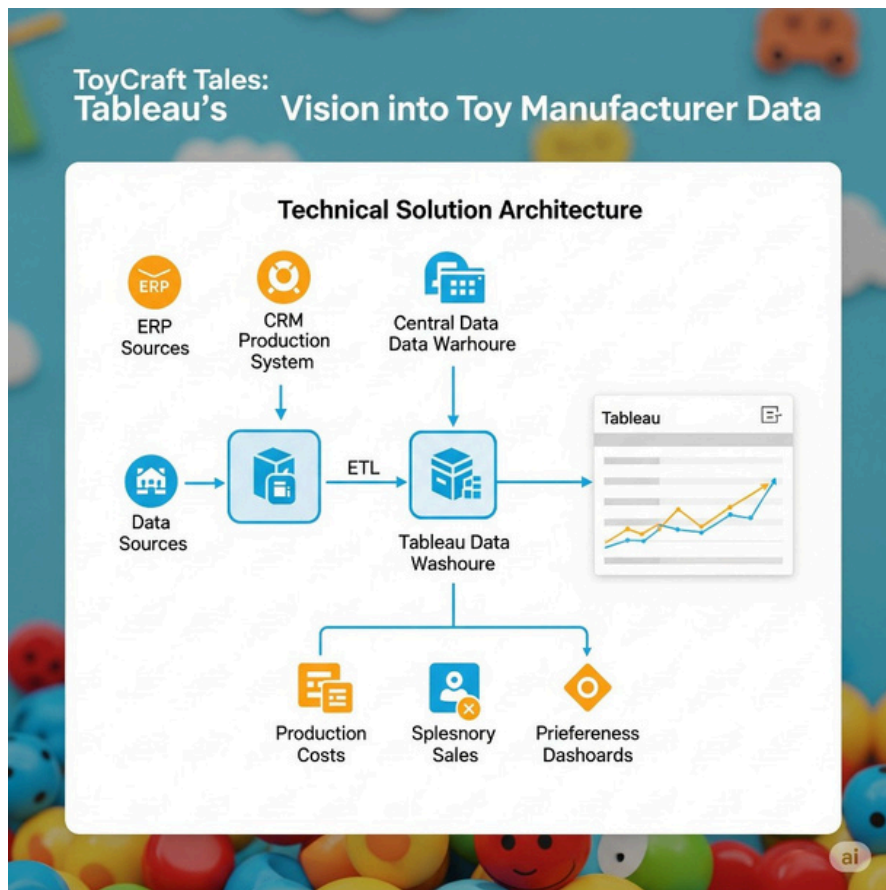
- ❑  *Top Performing Toys by Region*
- ❑  *Real-Time Inventory Dashboard*
- ❑  *Customer Sentiment from Reviews*
- ❑  *Sales vs. Production Forecast*

These dashboards help decision-makers monitor performance and spot issues quickly.

Example:

- ❑ Let's say ToyCraft wants to understand why a best-selling toy is suddenly underperforming.
- ❑ The sales data from Flipkart shows a 40% drop in the past two weeks.
- ❑ Inventory data reveals that the toy is out of stock in North India.
- ❑ Customer reviews indicate complaints about availability and delayed shipping.
- ❑ The Tableau dashboard clearly highlights this trend through red alerts on the sales-performance chart and a map showing stockouts.

As a result, the management team uses this insight to immediately shift stock from South India to North and work with logistics to fix the delivery gap — all in real time, thanks to the solution's architecture.



Example - Solution Architecture Diagram:

