

# Solution Architecture

## IRevolution: A Data-Driven Exploration Of Apple's iPhone Impact In India Using Tableau

### 1. High-Level Architecture Overview

This system analyzes market, sales, and user-behavior data to evaluate iPhone impact in India and visualize insights using Tableau.

Data Sources → Data Ingestion → Data Storage → Data Processing → Analytics → Visualization → Insights

### 2. Architecture Components

#### A. Data Sources

- 1 Sales datasets (retailers, market reports)
- 2 Pricing history
- 3 Customer reviews
- 4 Social media sentiment
- 5 Market share reports
- 6 Import/export statistics

#### B. Data Ingestion Layer

- 1 APIs (market research platforms)
- 2 Web scraping scripts
- 3 CSV/Excel uploads
- 4 Database connectors
- 5 Technology options: Python, REST APIs, ETL tools

#### C. Data Storage Layer

- 1 Cloud storage (AWS S3 / Azure Blob)
- 2 Relational DB (MySQL / PostgreSQL)
- 3 Data warehouse (Snowflake / BigQuery)
- 4 Stores raw and processed datasets
- 5 Maintains historical trends

#### ***D. Data Processing Layer***

- 1 Remove duplicates
- 2 Normalize currencies/prices
- 3 Handle missing values
- 4 Categorize regions & demographics
- 5 Tools: Python (Pandas), SQL, ETL pipelines

#### ***E. Analytics Layer***

- 1 Market share growth
- 2 Regional adoption rates
- 3 Price vs demand correlation
- 4 Sentiment analysis of reviews
- 5 Competitor comparison

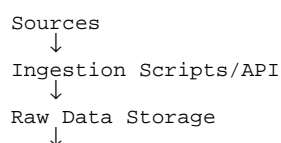
#### ***F. Visualization Layer (Tableau Dashboard)***

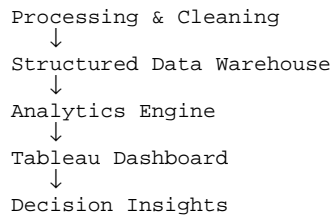
- 1 Sales trends over time
- 2 Geographic adoption heat maps
- 3 Customer sentiment graphs
- 4 Market share comparison charts
- 5 Price distribution analysis
- 6 Filters: Year, Region, Model, Price range

#### ***G. Insight & Reporting Layer***

- 1 Strategic insights
- 2 Business recommendations
- 3 Market predictions
- 4 Exportable reports

### ***3. Data Flow Diagram (Conceptual)***





#### **4. Key Architecture Features**

- 1 Scalable data pipeline
- 2 Real-time or batch processing options
- 3 Interactive visualization
- 4 Modular design (easy to add new data sources)
- 5 Cloud-ready architecture

#### **Summary**

This architecture collects iPhone-related data, cleans it, analyzes it, visualizes it, and generates insights about market impact in India.