Project Report

Date	24 July 2025
Team ID	PNT2025TMID10592
Project Name	I Revolution: A Data-driven Exploration of Apple's iPhone Impact in India
Maximum Marks	4 Marks

1. INTRODUCTION

1.1 Project Overview

Project Title: iRevolution: A Data-Driven Exploration of Apple's iPhone Impact in India

Smartphones have changed the way people live, work, and connect with each other. Among the top smartphone brands, Apple's iPhone has become a major product worldwide. With India being one of the fastest-growing markets for smartphones, this project explores how the iPhone has affected the Indian market and society.

The main goal of this project is to understand how the iPhone has influenced **consumer choices, market growth, and social behaviour** in India. Using data from market reports, surveys, and economic sources, we analyse this impact with the help of **Tableau**, a powerful data visualization tool.

This project looks at:

- **Business Impact**: iPhone sales, market share, revenue, and its effect on industries.
- **Social Impact**: Changes in communication, media usage, and access to technology due to iPhone use.

Project Highlights:

- Collect and prepare data related to iPhone usage and market trends.
- Create **interactive charts and dashboards** using Tableau.
- Review past research and identify areas that need further study.
- Test performance using data filters and calculated fields.
- Publish final dashboards and visual stories on Tableau Public.

This project provides **useful insights** for companies like Apple and others in the smartphone market. It helps them understand how Indian users interact with the iPhone and how it is shaping business and society in the country.

1.2 Purpose

The purpose of this project is to analyze and visualize iPhone product data to help both customers and companies make informed decisions.

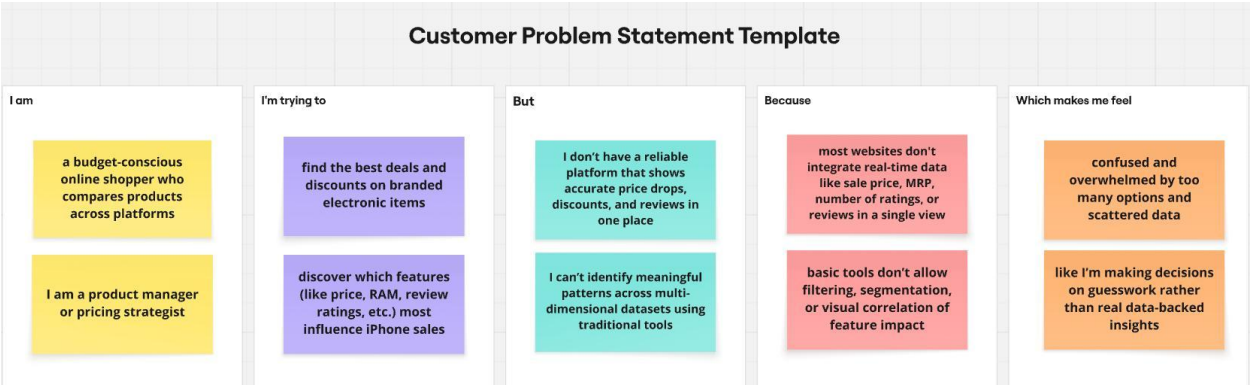
For customers**,** the project highlights critical insights such as discount trends, user ratings, reviews, RAM options, and pricing variations, helping them to compare iPhone models, identify the best value deals, and make smart purchases.

For companies (like smartphone brands, e-commerce platforms, or retailers), the project offers valuable insights into consumer preferences, pricing effectiveness, and feature demand. This helps companies optimize their pricing strategies, inventory planning**,** and targeted marketing based on real user behavior and product performance.

Through **interactive dashboards**, the project provides a comprehensive view of how product features, price, and perception affect market performance**.**

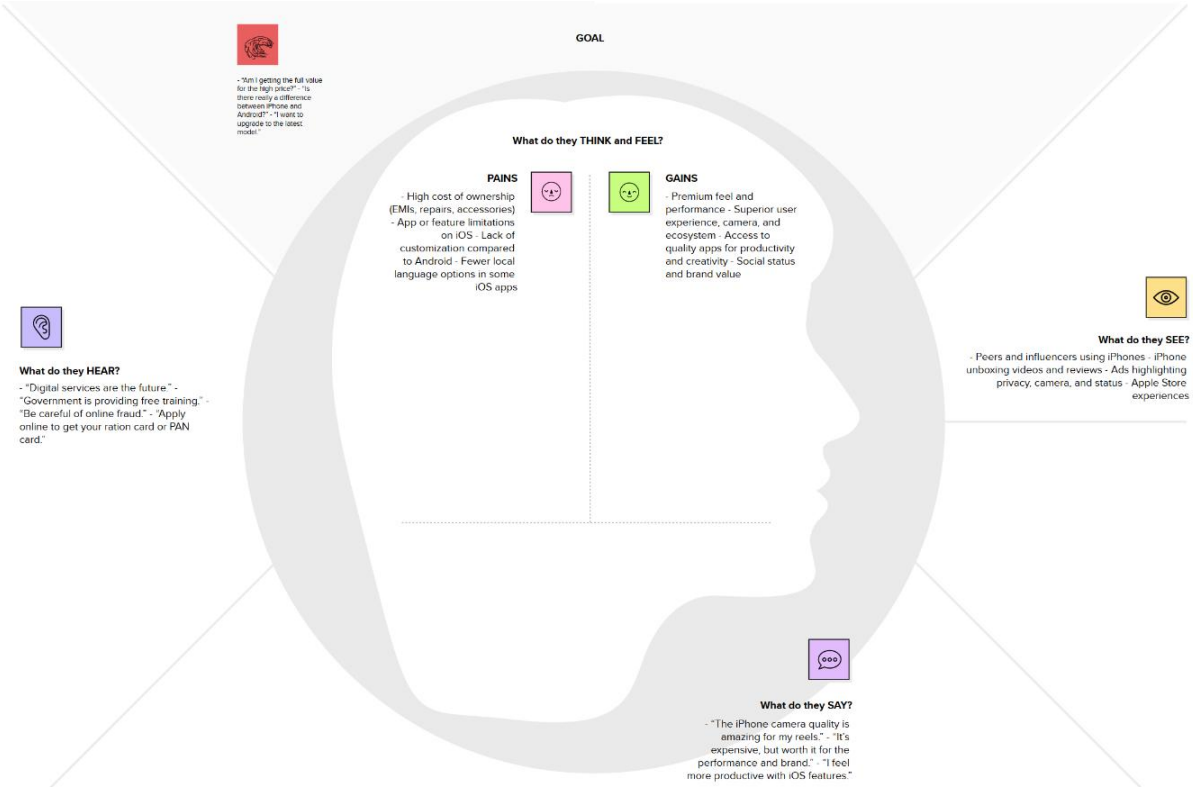
2. IDEATION PHASE

2.1 Problem Statement



Problem Statement	I am (Customer)	I'm trying to	But	Because	Which makes me feel
PS-1	a budget-conscious online shopper who compares products across platforms	find the best deals and discounts on branded electronic items	I don't have a reliable platform that shows accurate price drops, discounts, and reviews in one place	most websites don't integrate real-time data like sale price, MRP, number of ratings, or reviews in a single view	confused and overwhelmed by too many options and scattered data
PS-2	I am a product manager or pricing strategist	discover which features (like price, RAM, review ratings, etc.) most influence iPhone sales	I can't identify meaningful patterns across multi-dimensional datasets using traditional tools	basic tools don't allow filtering, segmentation, or visual correlation of feature impact	like I'm making decisions on guesswork rather than real data-backed insights

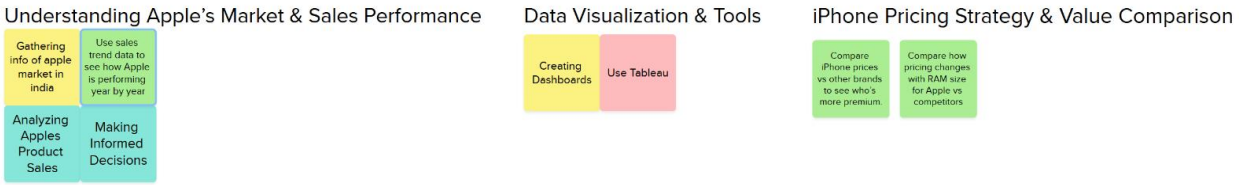
2.2 Empathy Map Canvas



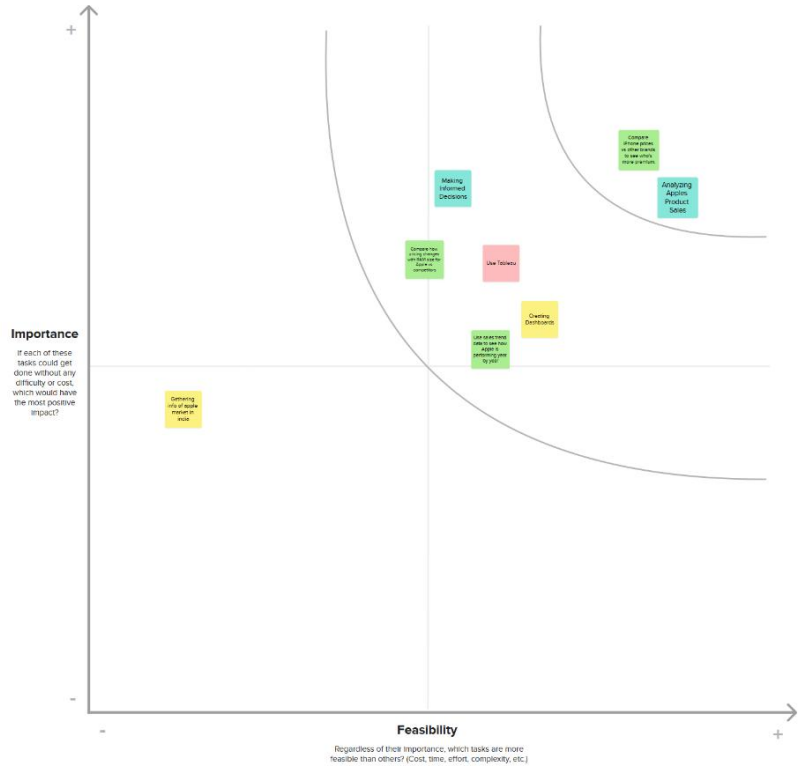
2.3 Brainstorming

1 Brainstorm

2 Group Ideas



3 Prioritize



3. REQUIREMENT ANALYSIS

3.1 Customer Journey map

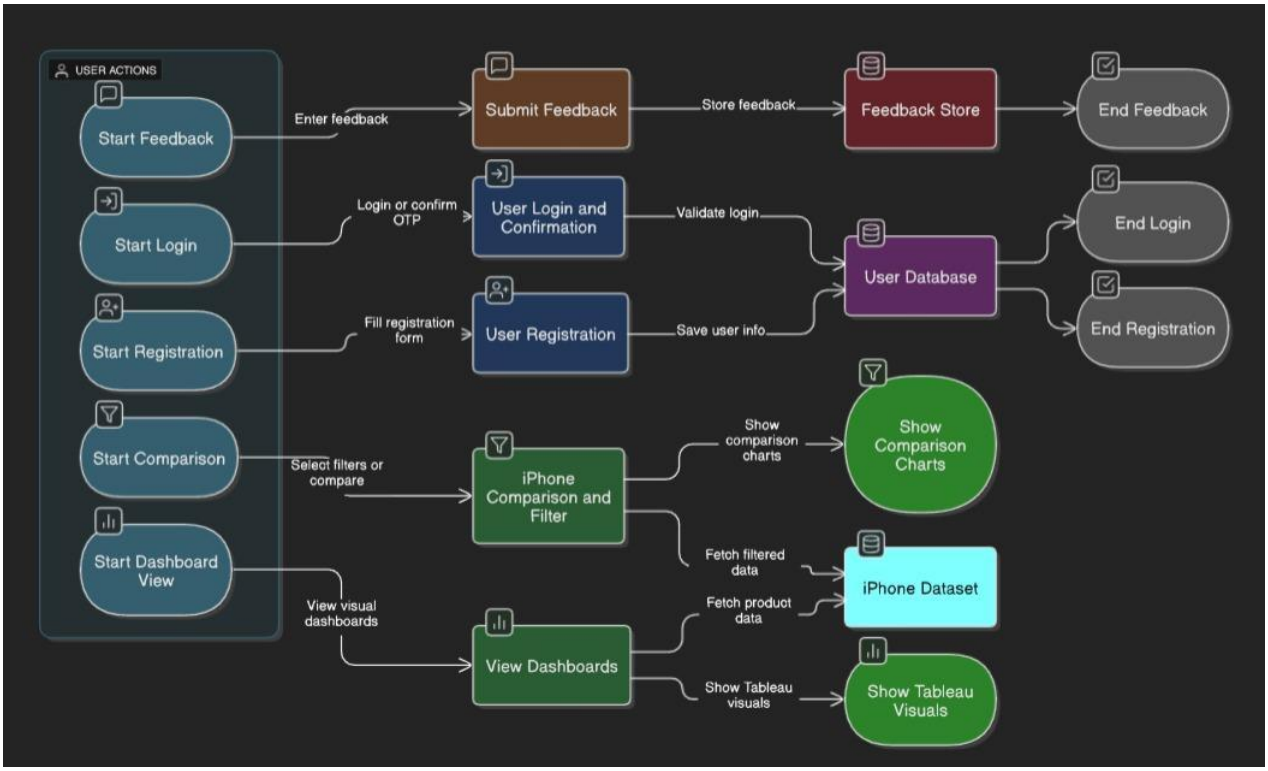
Scenario: [Existing experience through a product or service]	Entice How does someone become aware of this service?	Enter What do people experience as they begin the process?	Engage In the core moments in the process, what happens?	Exit What do people typically experience as the process finishes?	Extend What happens after the experience is over?
Experience steps What does the person (or people) at the center of this scenario typically experience in each step?	*Spots a catchy reel or ad on social media.* Notices ers about comparing iPhones easily. Gets interested and wants to know more.	Opens the iRevolution website. Sees the homepage with clear comparison options.	Applies filters like RAM, price range, and ratings. Compares 2-3 iPhone models side by side. Sorts products by "Most Value for Money" and explores details. Reads integrated reviews and sees visual trends.	Shortlists the best iPhone based on smart filters. Leaves the site satisfied with a clear choice.	Receives a reminder about price drops or offers. Shares iRevolution link with friends on WhatsApp.
Interactions What interactions do they have at each step along the way? • **People:** Who do they see or talk to? • **Places:** Where are they? • **Things:** What digital touchpoints or physical objects do they use?	**People:** Influencers, friends **Places:** Tech YouTube, Instagram **Things:** Product review video, blog post	**People:** iRevolution chatbot/FAQ **Places:** Landing page **Things:** Search bar, login form	**People:** None (self-service interface) **Places:** Smart dashboard **Things:** Price graphs, filters, review analytics	**People:** None **Places:** Checkout redirect **Things:** External link to Flipkart/Amazon	**People:** Revolution notification system **Places:** Mobile app, Email **Things:** Coupons, price alert, wish list
Goals & motivations At each step, what is a person's primary goal or motivation? ("Help me..." or "Help me avoid...")	Help me find something new and valuable Help me feel inspired to try Help me avoid wasting time	Help me easily access what I'm looking for Help me understand what to do next	Help me stay interested Help me get clear value Help me feel in control and confident	Help me wrap up with clarity Help me not lose progress	Help me remember this experience Help me reconnect when needed Help me share or recommend it
Positive moments What steps does a typical person find enjoyable, productive, fun, motivating, delightful, or exciting?	Saw an exciting teaser Found a relatable testimonial Friend shared a recommendation	Smooth and quick onboarding Welcoming message or support	Learned something new Made noticeable progress Got encouraging feedback	Clearly saw final result Received thank-you message	Got reminder or follow-up Shared with a friend
Negative moments What steps does a typical person find frustrating, confusing, angering, costly, or time-consuming?	Confused about how the platform works. Too many irrelevant search results.	Confusing UI and unclear instructions Too many irrelevant results	Slow loading overwhelming filters Too many or untimely notifications	No confirmation after checkout, unclear success feedback Redirects feel abrupt	No post-action update, no engagement to return hard to share
Areas of opportunity How might we make each step better? What ideas do we have? What have others suggested?	Short intro videos, influencer reviews, SEO boosts FAQs and tutorials for first-timers	Clear UI, chatbot for help, quick Google/ LinkedIn signup Onboarding walkthrough	Gamified dashboard personalized alerts, Fast Performance Smart filters, AI-based suggestions	Smooth checkout, real-time impact confirmation, thank-you popups Action tracker and success badges	Easy social sharing, follow up emails, referral rewards, user stories Create a community or forum, send personalized insights

3.2 Solution Requirement

FR No.	Non-Functional Requirement	Description
NFR-1	**Usability**	The website should be user-friendly, responsive, and easy to navigate for users of all ages.
NFR-2	**Security**	Ensure secure login, encrypted passwords, and protected access to user data and Tableau content.
NFR-3	**Reliability**	The system should run consistently with minimal downtime and accurate dashboard rendering.
NFR-4	**Performance**	Dashboards and web pages should load within 3 seconds under standard load conditions.
NFR-5	**Availability**	The website and dashboards should be accessible 24/7 with minimal maintenance time.
NFR-6	**Scalability**	The solution should support scaling up to accommodate more users, products, or new dashboards.

FR No.	Functional Requirement (Epic)	Sub Requirement (Story / Sub-Task)
FR-1	User Registration	Registration through Form Registration through Gmail
FR-2	User Confirmation	Confirmation via Email Confirmation via OTP
FR-3	Admin Panel	Manage users View analytics Moderate content and flag reports
FR-4	Submit Feedback	Users can write feedback or report their frustrations
FR-5	Data Visualization Dashboard	Integrates interactive Tableau dashboards to show: • iPhone sales trends (monthly/quarterly) • Profit analysis • Top-selling models • Sales by region (city/state-wise) • Customer feedback summary
FR-6	Filter Feature	Allow users to filter products by RAM, Price Range, Brand, Star Rating, Discount %
FR-7	User Login & Logout	Secure login and logout system for registered users

3.3 Data Flow Diagram



3.4 Technology Stack

Table-1 : Components & Technologies:

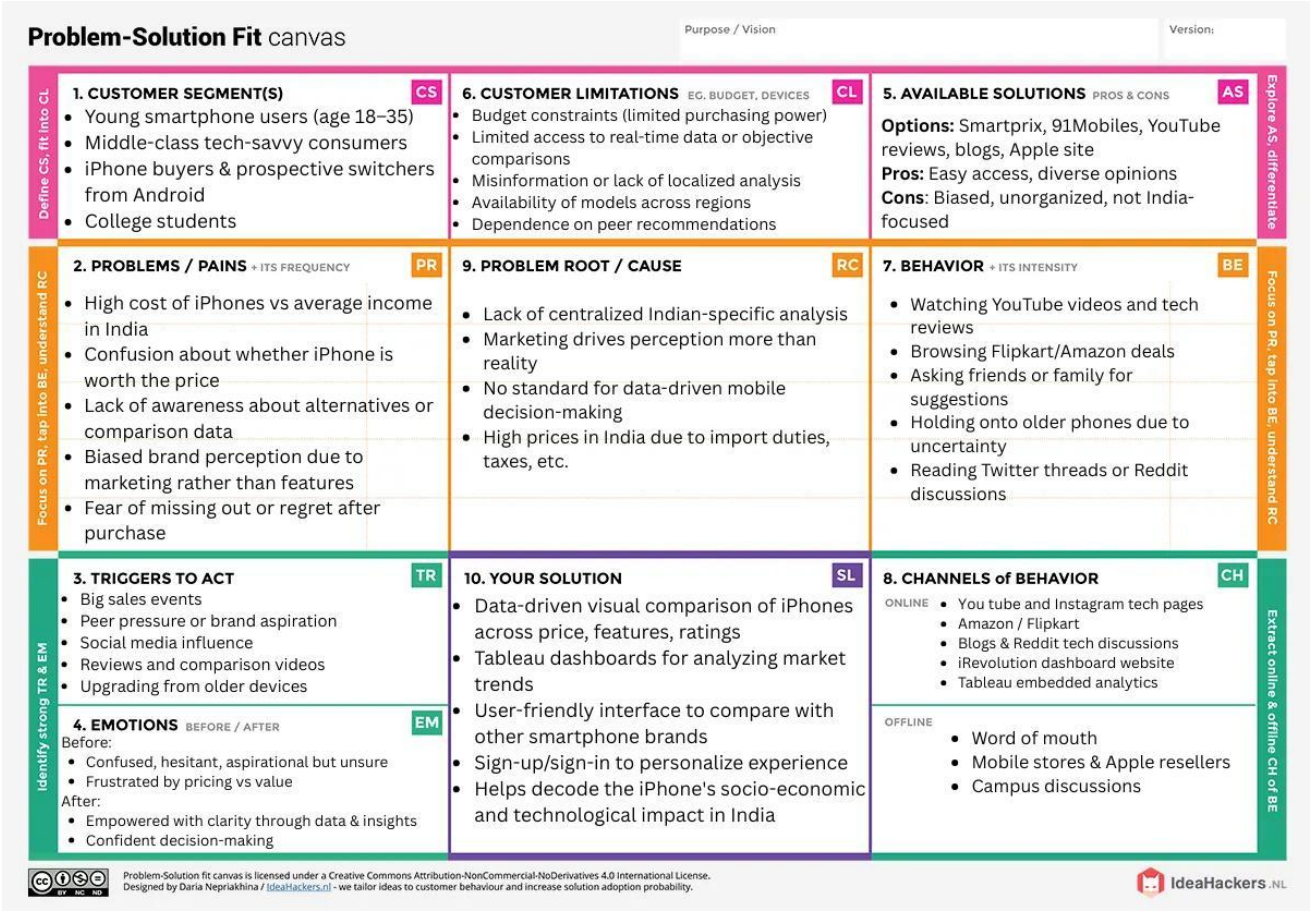
S.No	Component	Description	Technology
1.	User Interface	Website interface with dashboards and comparison tools	HTML, CSS, JavaScript, Bootstrap
2.	Application Logic-1	Data cleaning, preprocessing, and logic building	Tableu Prep Builder, Tableu Public
3.	Application Logic-2	Business logic for comparing iPhone & other brands	Excel Formulas
4.	Application Logic-3	Connecting Tableau dashboards to cleaned data	Table Public 2025.2
5.	Database	structured data storage	MySQL
6.	File Storage	Storing project dataset files	Local Filesystem
7.	Machine Learning Model	Predict iPhone demand/price trend	Future Scope
8.	Infrastructure	Hosting Tableau dashboards + static site	Tableau Public + GitHub Pages

Table-2: Application Characteristics:

S.No	Characteristics	Description	Technology
1.	Open-Source Frameworks	Tableau Public, Bootstrap for UI	Tableau Public, Bootstrap
2.	Security Implementations	No sensitive data; publicly accessible dashboards	Not Required
3.	Scalable Architecture	Easily extendable with more data/models later	Modular CSV + Tableau dashboard setup
4.	Availability	Hosted via Tableau Public (cloud availability)	Tableau Public (Free Cloud Hosting)
5.	Performance	Optimized visuals, filtered views in Tableau	**Tableau Filters, Extracts**

4. PROJECT DESIGN

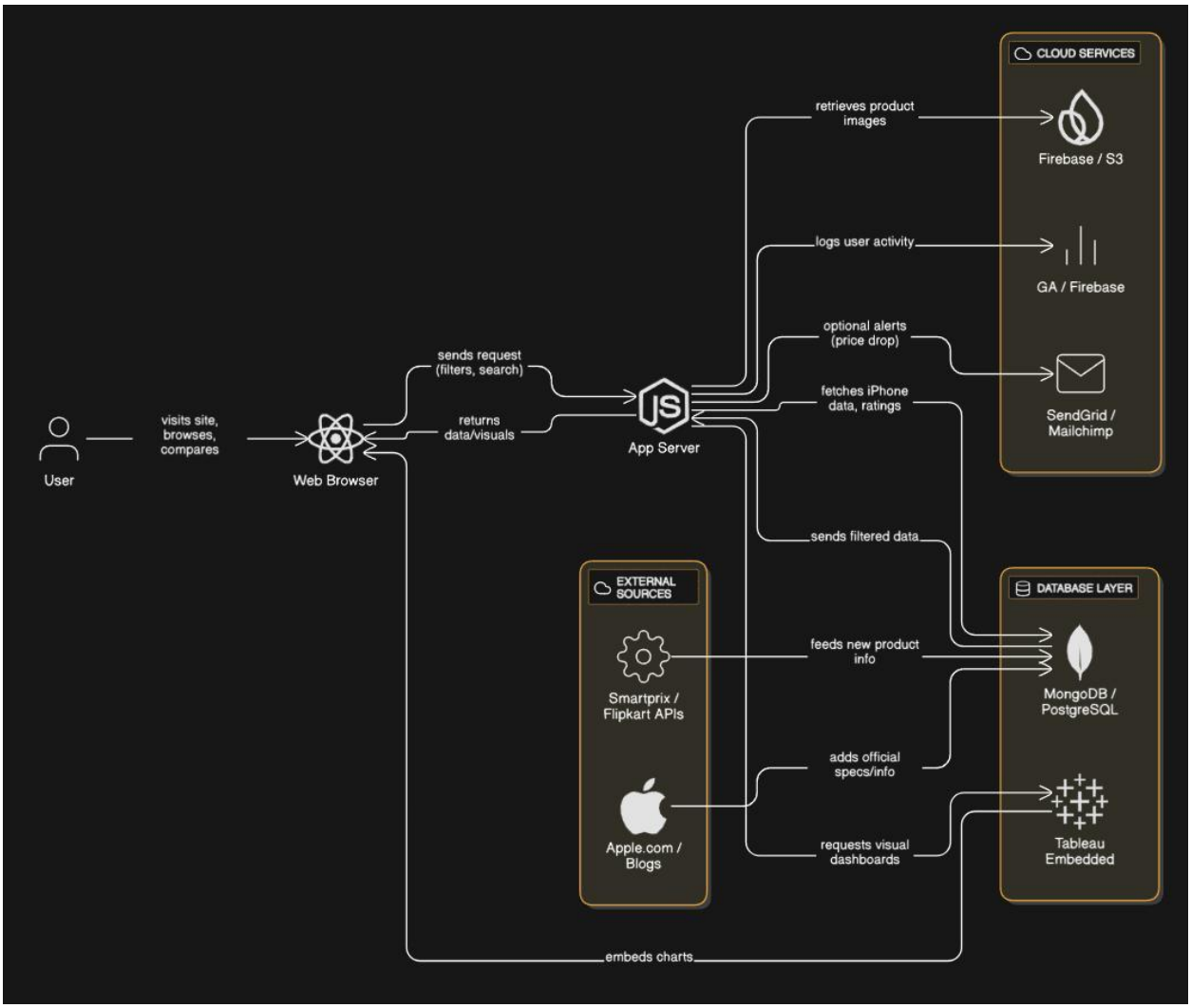
4.1 Problem Solution Fit



4.2 Proposed Solution

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	There is a lack of accessible, data-driven insights for Indian consumers to make informed decisions about iPhones compared to other brands. Additionally, brands lack a clear understanding of user behaviour, market trends, and regional preferences, limiting their ability to serve customers effectively.
2.	Idea / Solution description	iRevolution is a website-based platform featuring dashboards and interactive visualizations built using Tableau. It analyzes iPhone impact in India based on price, specifications, reviews, and ratings. The site also includes user login/signup, iPhone comparisons with other brands, and smart tools for customer exploration and decision-making.
3.	Novelty / Uniqueness	This project is unique because it brings together real data, easy-to-understand visuals, and user-friendly tools to help people explore and compare iPhones in India. It shows things like prices, reviews, and usage trends in a clear way using Tableau. Unlike scattered blogs or biased videos, our platform gives one place to see everything with Indian context.
4.	Social Impact / Customer Satisfaction	Helps consumers—especially in tier-2/3 cities— make better buying decisions. Improves transparency, digital literacy, and financial awareness. Enables smartphone companies to better tailor products and marketing strategies for Indian users.
5.	Business Model (Revenue Model)	We can earn money through ads, affiliate marketing with online stores like Amazon or Flipkart, and premium features for users who want detailed comparisons or trend reports. We can also offer data insights to mobile companies or retailers to help them understand what users want.
6.	Scalability of the Solution	Our website can easily be expanded to include more mobile brands, new features, and support for regional languages. As more users visit, we can handle the growth using cloud services and make updates without much cost.

4.3 Solution Architecture



5. PROJECT PLANNING & SCHEDULING

5.1 Project Planning

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-1	Data Collection	SCRUM 1	Collect data from source	2	High	Kavya
Sprint-1		SCRUM 2	Load Data into Tableu Prep	1	High	Kavya
Sprint-1	Data Preparation	SCRUM 3	Handle Missing Values	2	Medium	Kavya
Sprint-1		SCRUM 4	Handle Categorical Values	2	Medium	Kavya
Sprint-1		SCRUM 5	Handle Inconsistencies	1	Medium	Kavya
Sprint-1		SCRUM 6	Join Tables and create Final Output file	2	High	Vedant
Sprint-2	Data Visualization	SCRUM 7	Create Bar chart	3	Medium	Kavya
Sprint-2		SCRUM 8	Line chart	3	Medium	Kavya
Sprint-2		SCRUM 9	Scatter Plot	3	Medium	Kavya
Sprint-2		SCRUM 10	Highlight table	3	Medium	Kavya
Sprint-2		SCRUM 11	Lolipop chart	3	Medium	Kavya
Sprint-2		SCRUM 12	Pie chart	3	Medium	Kavya

Sprint	Functional Requirement (Epic)	User Story Number	User Story / Task	Story Points	Priority	Team Members
Sprint-2		SCRUM 12	Area chart	2	Medium	Kavya
Sprint-2		SCRUM 13	Donut chart	2	Medium	Kavya
Sprint-2		SCRUM 14	Word cloud	2	Medium	Kavya
Sprint-3	Dashboard	SCRUM 15	Dashboard Design	3	High	Kavya
Sprint-4	Story	SCRUM 16	Create a Story	3	High	Kavya

Project Tracker, Velocity & Burndown Chart: (4 Marks)

Sprint	Total Story Points	Duration	Sprint Start Date	Sprint End Date (Planned)	Story Points Completed (as on Planned End Date)	Sprint Release Date (Actual)
Sprint-1	20	4 Days	19 July 2025	22 July 2025	20	22 July 2025
Sprint-2	20	4 Days	23 July 2025	26 July 2025	20	26 July 2025
Sprint-3	20	2 Days	27 July 2025	28 July 2025	20	28 July 2025
Sprint-4	20	2 Days	29 July 2025	30 July 2025	20	30 July 2025

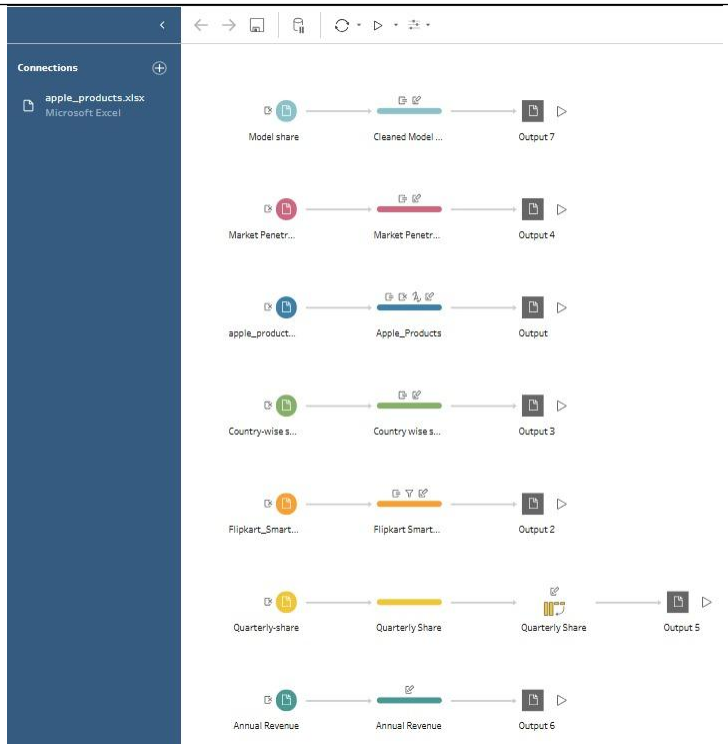
Velocity:
Imagine we have a 10-day sprint duration, and the velocity of the team is 20 (points per sprint). Let's calculate the team's average velocity (AV) per iteration unit (story points per day)

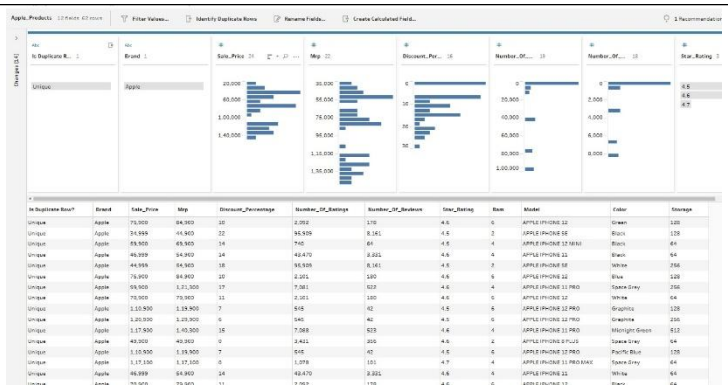
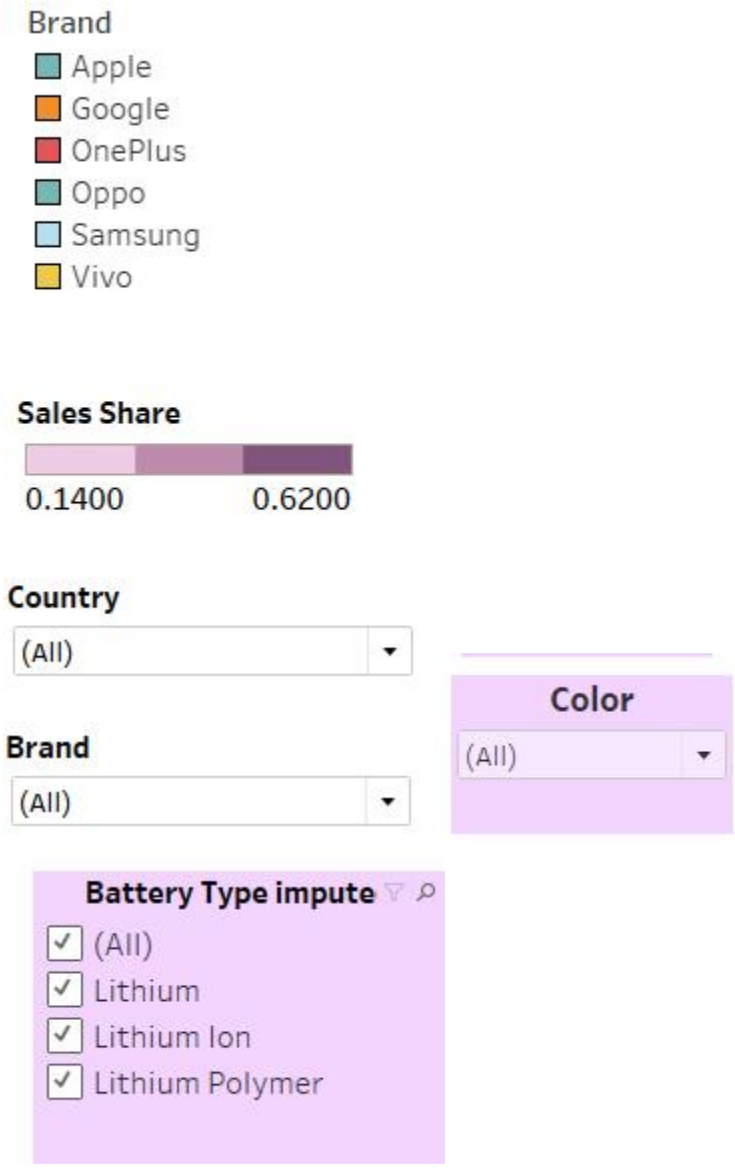
Velocity=Number of Sprints / Total Story Points Completed

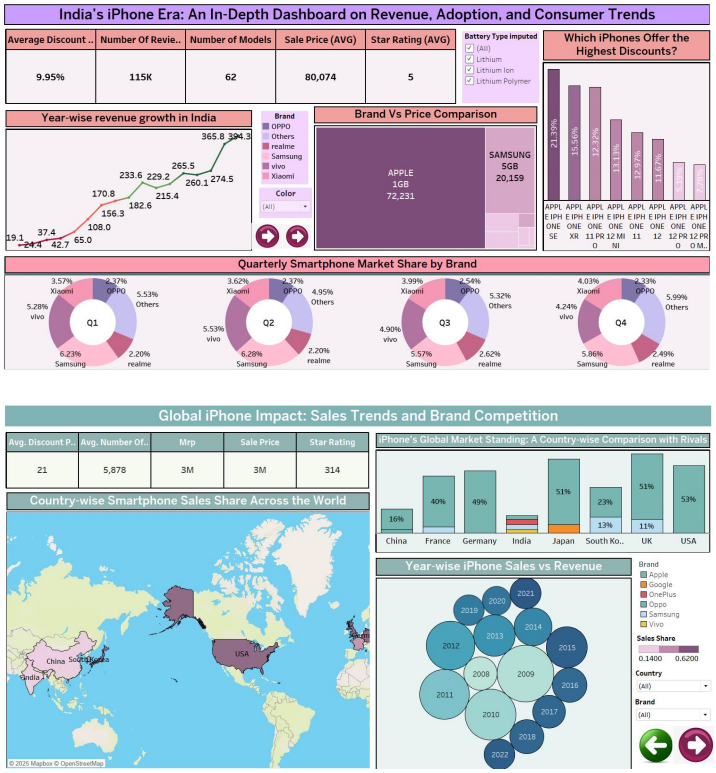
Velocity=420+20+20+20 =480 =20 story points per sprint

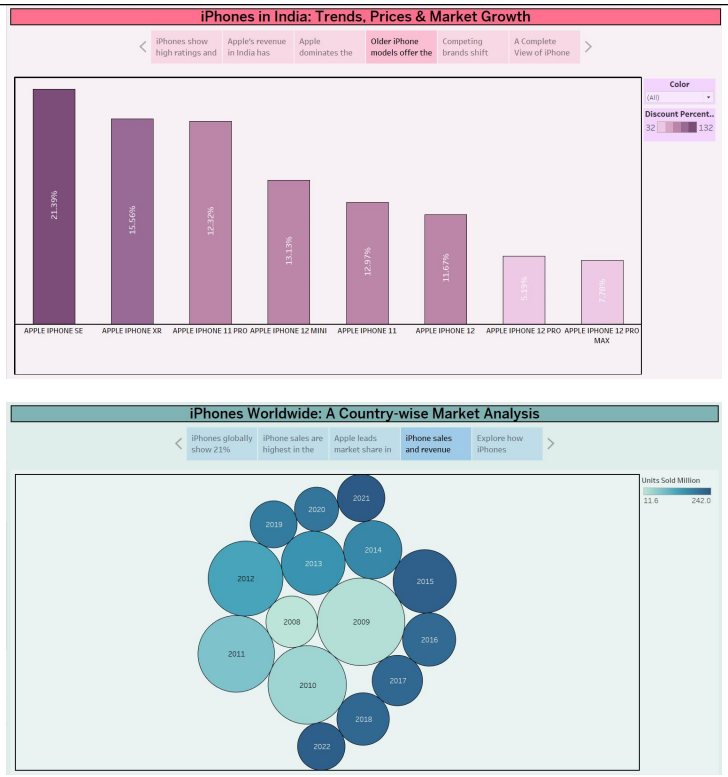
6. FUNCTIONAL AND PERFORMANCE TESTING

6.1 Performance Testing

S.No.	Parameter	Screenshot / Values
1.	Data Rendered	

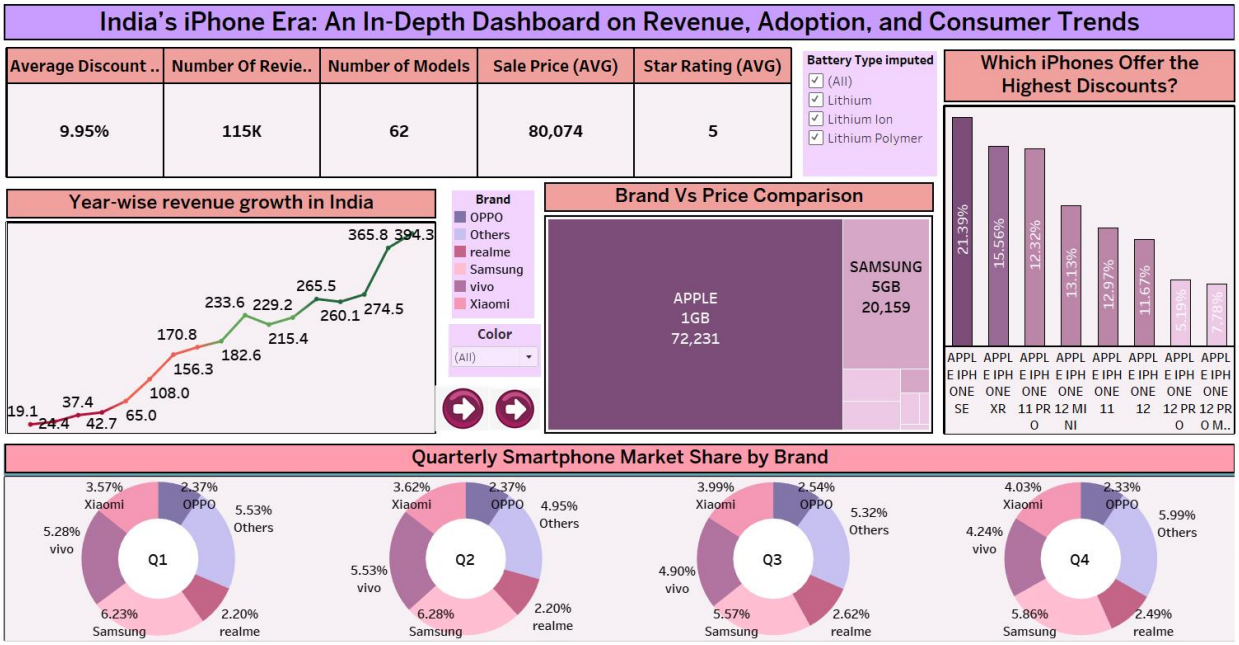
2.	Data Preprocessing	
3.	Utilization of Filters	

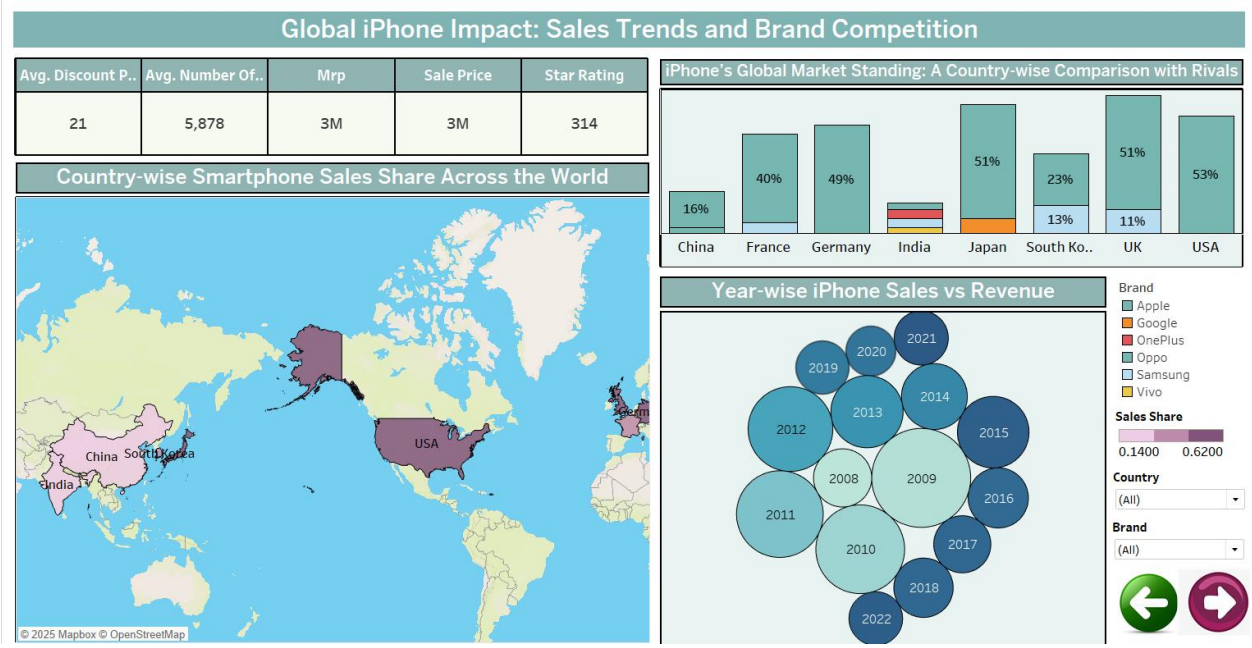
4.	Calculation fields Used	Storage → TRIM(SPLIT([Storage], "Gb", 1)) Discount Percentage→ ([Mrp]-[Sale_Price])/[Mrp]*100 Brand → IF CONTAINS(UPPER([Model]), "IPHONE") THEN "Apple" ELSEIF CONTAINS(UPPER([Model]), "GALAXY") THEN "Samsung" ELSEIF CONTAINS(UPPER([Model]), "PIXEL") THEN "Google" ELSEIF CONTAINS(UPPER([Model]), "ONEPLUS") THEN "OnePlus" ELSEIF CONTAINS(UPPER([Model]), "VIVO") THEN "Vivo" ELSEIF CONTAINS(UPPER([Model]), "OPPO") THEN "Oppo" ELSE "Other" END
5.	Dashboard design	

6	Story Design	

7. RESULTS

7.1 Output Screenshots





8. ADVANTAGES & DISADVANTAGES

Advantages:

1. **User-Friendly Dashboards**
   Easy-to-understand visualizations built in Tableau, suitable for both technical and non-technical users.
2. **Real-Time Decision Support**
   Helps users and companies compare iPhone models based on reviews, ratings, RAM, and price trends.
3. **Data-Driven Insights**
   Provides meaningful analysis of market trends, discount patterns, and brand performance.
4. **No Complex Coding Required**
   Can be built using low-code tools (Excel, Tableau), making it beginner-friendly and efficient.
5. **Cost-Effective Deployment**
   Hosted freely on Tableau Public and GitHub Pages – no expensive infrastructure needed.

Disadvantages:

1. **Static Dataset**
   Unless connected to live data sources or APIs, the dashboards reflect only a snapshot in time.
2. **Limited Interactivity**
   Tableau dashboards offer limited user interaction compared to full-fledged web apps.

3. **No Live Price Updates**
   Price and discount comparisons are based on pre-cleaned data, not real-time scraping.
4. **Scalability Limits**
   Handling large datasets or advanced AI analysis would require moving beyond Tableau.

9. CONCLUSION

This project, *iRevolution*, highlights the power of **data visualization** in understanding the growing impact of iPhones in the Indian market. By using **Tableau dashboards**, we transform raw smartphone sales data into meaningful insights about customer preferences, pricing strategies, and brand performance.

The platform not only helps **consumers** make smarter buying decisions by comparing phones across multiple features like RAM, price, and ratings, but also supports **companies** in analyzing market trends and shaping promotional strategies.

Overall, this project demonstrates how **simple, no-code tools** like Tableau and Excel can be used to drive **data-informed storytelling**, market exploration, and customer engagement — all without complex technology overhead.

10. FUTURE SCOPE

- **Integration with Live APIs**

Connect the dashboard to **real-time APIs** (like Amazon, Flipkart, GSM Arena) to dynamically update prices, ratings, and availability.

- **Enhanced Comparison Tool**

Build a smart comparison engine to **recommend iPhones** or alternatives based on a user's budget, preferences (RAM, rating), and review sentiment.

- **Mobile-Friendly Web Version**

Develop a **mobile-responsive website** where users can explore dashboards easily on their smartphones.

- **Sentiment Analysis**

Use **NLP and ML models** to analyze customer reviews for identifying common pain points or satisfaction areas.

- **Advanced Predictive Analytics**

Use **machine learning algorithms** to predict future price trends, model popularity, and brand sales growth.

- **Multi-brand and Region-wise Analysis**

Expand the project beyond iPhones — include Android phones and segment the analysis region-wise (metro vs. rural areas).

11. APPENDIX

Tableau Dashboard Link :
https://public.tableau.com/views/Final_Project_17538973088140/Dashboard3?:language=en-US&:sid=&:redirect=auth&:display_count=n&:origin=viz_share_link

GitHub & Project Demo Link