E-Commerce Platform: TATA NEU

Domain: E-commerce Super App (Multi-category retail + services)

A. Product Dissection

1. Platform Selection:

Popularity: Tata Neu, launched by Tata Digital in April 2022, is India's first-ever super app integrating a wide range of Tata-owned brands under one digital ecosystem. With over 60 million+ downloads, it gained mass attention via IPL campaigns and strategic loyalty programs like NeuCoins. The app caters to shopping, travel, finance, and healthcare, making it a pioneer in unified digital commerce in India.

Impact: Tata Neu aims to disrupt the Indian e-commerce space by merging products and services across Tata Group's verticals—from groceries (BigBasket), electronics (Croma), healthcare (1mg), travel (AirAsia India), fashion (Westside, Tata CLiQ), and luxury hospitality (Taj Hotels). It brings these offerings under one digital platform, encouraging cross-category transactions and maximizing customer lifecycle value.

Relevance: In a market where users juggle multiple apps, Tata Neu solves app fatigue by offering a "one app for everything" experience. Backed by Tata's reputation and massive ecosystem, it blends e-commerce, loyalty rewards, content, and financial services, becoming highly relevant for both urban and semi-urban consumers looking for convenience, rewards, and trusted service. Its features are aligned with modern digital user expectations: integration, personalization, and instant access.

2. **Core Features and Functionalities of Tata Neu**

1. Multi-Brand Shopping Hub
Description: Tata Neu combines various Tata-owned verticals—such as BigBasket (groceries), Croma (electronics), 1mg (pharmacy), Westside (fashion), Tata CLiQ (e-commerce), and Taj Hotels (hospitality)—into a single unified platform.
Contribution to Success: This integration addresses user fatigue from managing multiple apps. By offering everything from essentials to luxury in one app, it drives more frequent usage, increases transaction value, and deepens customer engagement across categories.

2. NeuCoins Loyalty System
Description: With every purchase, users earn **NeuCoins**, which can be redeemed across all Tata Neu-integrated brands.
Contribution to Success: This cross-brand rewards system encourages repeat purchases and builds a closed-loop loyalty ecosystem. It increases lifetime customer value and makes Tata Neu the preferred choice for high-frequency and high-value shoppers.

3. NeuPass Membership
Description: A free premium membership offering benefits such as extra NeuCoins, early access to offers, exclusive discounts, and priority service.
Contribution to Success: This incentivizes customers to stay within the Tata Neu ecosystem, increases their order frequency and size, and strengthens emotional loyalty to the app.

4. Tata Pay & Financial Services
Description: Tata Neu integrates **Tata Pay** for UPI transactions, bill payments, credit card services, loans, and insurance—all within the app.
Contribution to Success: This financial integration makes Tata Neu not just a shopping app but also a daily-use utility app. It increases user engagement, supports higher transaction frequency, and enables customer stickiness.

5. User-Friendly Super App Interface
Description: The app's interface has been revamped for intuitive navigation, personalized home screens, and faster responsiveness.
Contribution to Success: A smoother user experience reduces app abandonment, increases conversion rates, and improves app store ratings, leading to organic growth and better user retention.

6. Personalized Product Recommendations
Description: Based on user behavior, browsing patterns, and purchase history, the app delivers customized product suggestions.
Contribution to Success: Personalization enhances relevance, improves shopping satisfaction, and drives higher conversion rates and average order values (AOV).

7. In-App Content and Discovery (Stories)
Description: Tata Neu includes lifestyle content, tech recommendations, product guides, and brand storytelling via its Stories feature.
Contribution to Success: This non-transactional engagement boosts time spent in-app, improves brand recall, and creates emotional connections that extend beyond just shopping.

8. Real-Time Order Tracking
Description: Users can live-track deliveries from various services, including groceries, electronics, and pharmacy.
Contribution to Success: Real-time tracking increases user trust, reduces post-order anxiety, and improves the overall post-purchase experience, which leads to higher customer satisfaction and repeat usage.

9. Seamless Cross-Brand Integration

Description: The app allows users to switch between services like BigBasket, 1mg, and Croma with a unified checkout, shared wallet, and centralized rewards system.

Contribution to Success: This makes the user journey seamless and frictionless, encouraging multi-category purchasing and enhancing retention by offering convenience and consistency.

3. Real-World Problems Tata Neu Aims to Solve

1. Fragmented Digital Shopping Experience

In India, users often juggle multiple apps for groceries, fashion, electronics, medicine, travel, and bill payments, resulting in a disjointed and inefficient digital experience.

Solution: Tata Neu addresses this by offering a super app experience, consolidating various Tata-owned services like BigBasket, Croma, 1mg, Westside, Tata CLiQ, AirAsia, and Taj Hotels into one cohesive platform. This simplification boosts user convenience, app engagement, and customer satisfaction.

2. Weak and Isolated Loyalty Programs

Traditional loyalty programs are brand-specific and rarely encourage cross-platform spending, making them less impactful.

Solution: Tata Neu's NeuCoins are a unified rewards system that can be earned and redeemed across all Tata brands within the app. This encourages ecosystem-wide usage and increases customer retention through tangible, versatile rewards.

3. Poor Integration Between Shopping and Payments

Users often experience unreliable or inconsistent payment flows across e-commerce platforms, leading to friction and abandoned carts.

Solution: With Tata Pay seamlessly embedded, Tata Neu offers smooth, secure payment options - UPI, cards, EMIs, wallet, and bill payments - enhancing checkout reliability and customer trust.

4. Lack of Personalization and Relevance

Generic browsing experiences often reduce user engagement and lead to fewer conversions.

Solution: Tata Neu leverages data science and machine learning to deliver personalized recommendations, curated home screens, and contextual offers. This enhances relevance, improves conversion rates, and boosts average order value.

5. Low Perceived Value in Loyalty Systems

Many loyalty points systems fail to deliver meaningful value, leading to customer disengagement.

Solution: Tata Neu increases loyalty impact through NeuPass and bonus NeuCoins, offering additional perks, exclusive deals, and higher reward rates - driving repeat purchases and deeper brand affinity.

6. Low Retention in Multi-Brand Environments
When brands operate under a shared platform, customers often engage with just one or two, limiting cross-selling opportunities.
Solution: Tata Neu solves this through cross-brand integration - a unified checkout flow, common cart, consistent design, and shared loyalty benefits - making it natural for users to explore and buy from multiple Tata brands.

7. Affordability Barriers at Checkout
High cart values often deter purchases when users lack sufficient funds or payment flexibility.
Solution: Tata Neu integrates Tata Neu HDFC credit cards, personal loans, and buy now, pay later (BNPL) options to provide users with spending flexibility, leading to higher transaction volumes and improved affordability.

8. Low User Engagement Beyond Purchases
Many e-commerce platforms fail to retain users once the transaction is complete.
Solution: Tata Neu keeps users engaged through in-app lifestyle content, articles, shopping guides, and brand stories, offering continuous value even outside the buying journey and extending time spent on the app.

Together, these solutions reflect how Tata Neu strategically addresses real consumer pain points in the Indian digital ecosystem. Its integrated approach, personalized experience, and reward-focused model not only solve practical issues but also establish a strong emotional and functional connection with users, laying the foundation for long-term growth and loyalty.

B. Database Management & Schema Design for Tata Neu

Schema Design Overview:

Given Tata Neu's structure as a **super app** that integrates multiple verticals (retail, grocery, healthcare, travel, electronics, and finance), its database schema must support scalability, security, and real-time data operations across brands.

This schema is designed to:

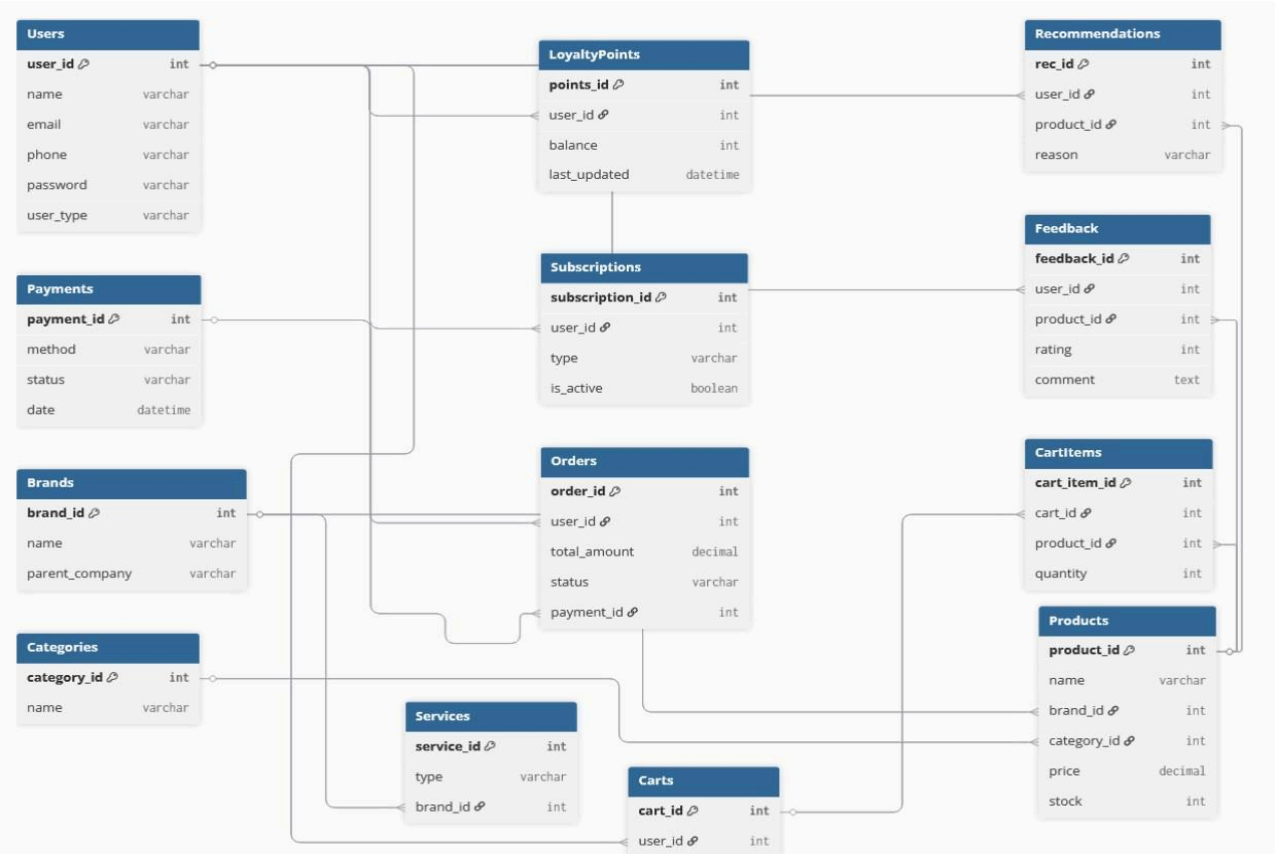
- Capture user behavior, transactions, product metadata, payments, and loyalty points.
- Maintain clean **entity relationships**.
- Allow personalized recommendations, real-time order tracking, and cross-brand purchases.

Key Entities, Attributes, and Relationships:

Table Name	Columns (Attributes)	Relationships
Users	user_id (PK), name, email, phone, password, user_type	One-to-Many → Orders, Subscriptions, Recommendations, Feedback, Carts
Orders	order_id (PK), user_id (FK), total_amount, status, payment_id (FK)	Many-to-One → Users Many-to-One → Payments
Products	product_id (PK), name, brand_id (FK), category_id (FK), price, stock	Many-to-One → Brands, Categories One-to-Many → Recommendations, Feedback, CartItems
Brands	brand_id (PK), name, parent_company	One-to-Many → Products, Services
Categories	category_id (PK), name	One-to-Many → Products
Payments	payment_id (PK), method, status, date	One-to-Many → Orders
LoyaltyPoints	points_id (PK), user_id (FK), balance, last_updated	One-to-One → Users
Subscriptions	subscription_id (PK), user_id (FK), type, is_active	One-to-One → Users

Services	**service_id (PK), type, brand_id (FK)**	**Many-to-One → Brands**
Recommendations	**rec_id (PK), user_id (FK), product_id (FK), reason**	**Many-to-One → Users, Products**
Feedback	**feedback_id (PK), user_id (FK), product_id (FK), rating, comment**	**Many-to-One → Users, Products**
Carts	**cart_id (PK), user_id (FK)**	**One-to-One → Users;** **One-to-Many → CartItems**
CartItems	**cart_item_id (PK), cart_id (FK), product_id (FK), quantity**	**Many-to-One → Carts, Products**

ER Diagram :



C. Revenue and Profit Growth Strategies:

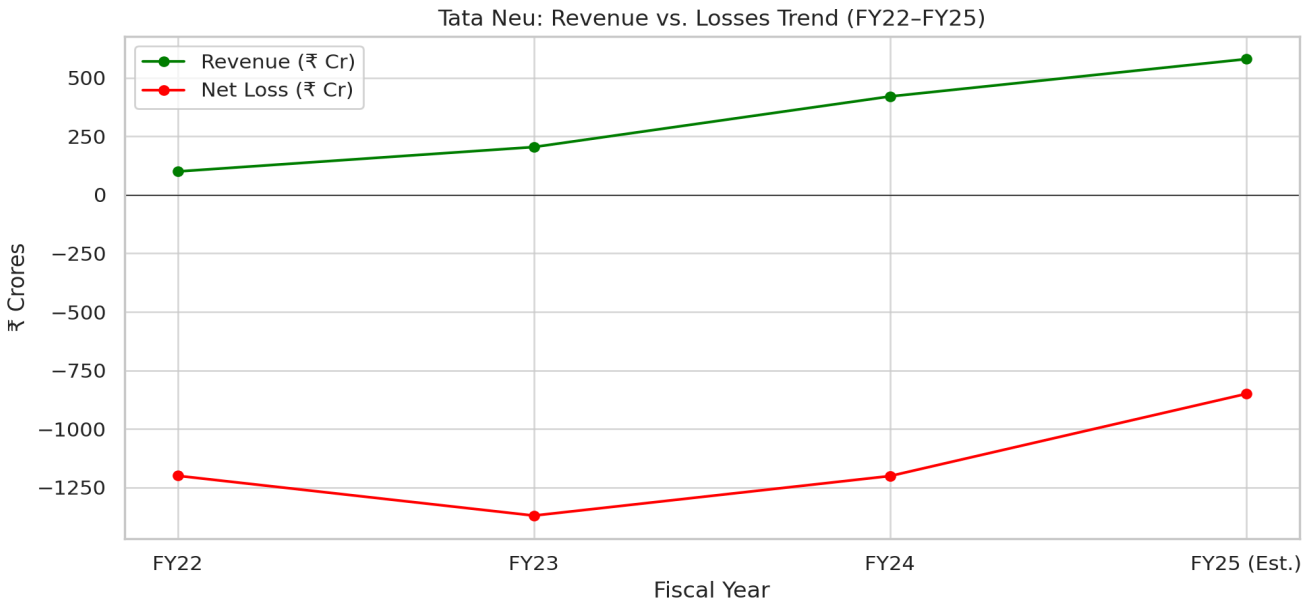
Question: After completing the product dissection and schema design steps for the chosen platform, conduct a comprehensive case study on the above-chosen industry. Your goal is to identify and propose strategies to increase the **profit of the industry by at least 25%**.

Objective

To develop a comprehensive, data-driven strategy that increases Tata Neu's profitability by at least 25% by optimizing internal operations, improving user retention, expanding market share, and leveraging data science across the platform.

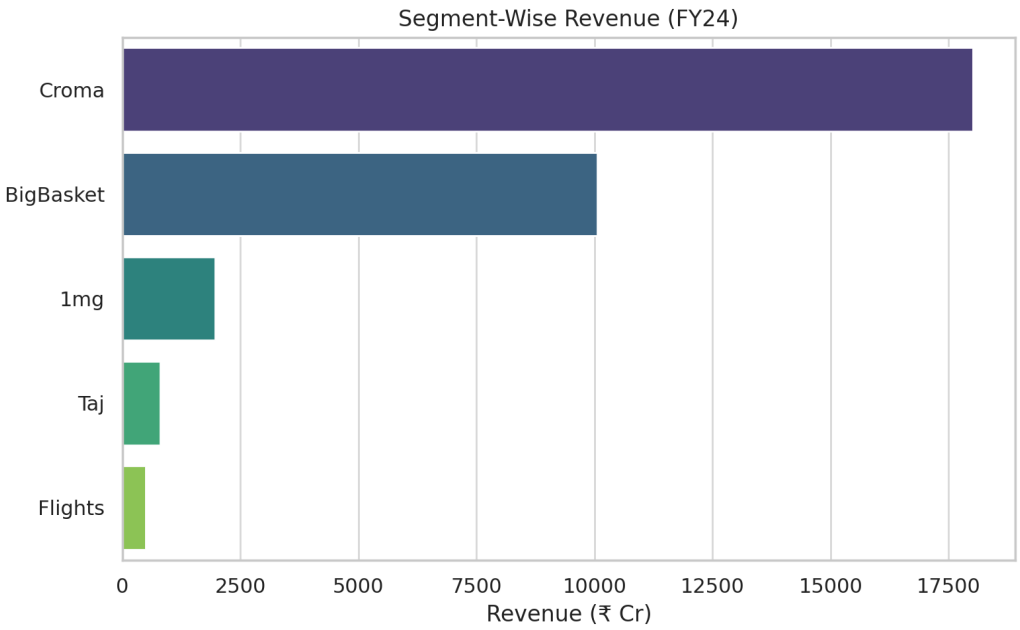
I. Current Financial Status (FY24 as Reference)

- **Gross Merchandise Value (GMV):** ₹37,355 Cr across Tata Neu-integrated platforms.
- **Revenue (Standalone – Tata Digital):** ₹420.5 Cr in FY24 (vs. ₹204.35 Cr in FY23).
- **Net Loss (Standalone):** ₹1,201 Cr in FY24 (vs. ₹1,370 Cr in FY23).
- **NeuCard Holders:** 1.18 million users.
- **NeuPass Membership:** 116.4 million users.
- **Transacting Users (FY24):** 20.76 million.
- **Top Performing Verticals by Revenue:** Croma (₹18,009 Cr), BigBasket (₹10,062 Cr), 1mg (₹1,968 Cr).
- **Profitability Status:** Tata Neu (Tata Digital) remains unprofitable, although losses are shrinking year-over-year. Key drivers include high CAC, operational costs, and fragmented platform engagement.



Revenue Sources:

- Product Sales (via BigBasket, Croma, Tata CLiQ, Westside, 1mg)
- Travel & Hospitality (Taj Hotels, AirAsia)
- Financial Services (Tata Pay, NeuCards)
- Advertising and Brand Partnerships



Major Expenses:

- Platform development & cloud infrastructure
- Logistics & fulfillment
- Marketing & advertising
- Personnel & customer service
- Vendor partnerships

Customer Metrics:

- CAC (Customer Acquisition Cost): High due to aggressive advertising
- AOV (Average Order Value): Varies across verticals, higher in electronics, lower in groceries
- Retention Rate: Growing but limited cross-brand engagement

II. Strategic Focus Areas:

1. Internal Efficiency Optimization (~8%)

- **AI-Driven Inventory Management:** Use demand forecasting to reduce overstocking and wastage—critical for BigBasket and 1mg.
- **Logistics Streamlining:** Centralize warehousing and implement route optimization for last-mile delivery.
- **Cloud Cost Management:** Utilize server auto-scaling and renegotiate infrastructure costs with vendors like AWS/GCP.
- **RPA & Chatbots:** Expand automation for customer support and return processes to reduce service costs.

2. Product & Experience Strategy (~5%)

- **High-Margin Product Prioritization:** Improve search ranking for high-margin items on BigBasket, Westside, and Croma.
- **Combo & Cross-Vertical Bundles:** Offer curated cross-brand packs (e.g., Taj Stay + Westside Outfit + NeuCard cashback).
- **Dynamic Pricing:** Use real-time demand and customer segmentation to adjust prices and boost per-order profitability.

3. Market Expansion (~4%)

- **Tier 2 & 3 City Penetration:** Partner with regional sellers and kirana stores for fulfillment. Use vernacular localization to enhance adoption.
- **Global NRI Pilot:** Enable overseas access to curated India-specific products (targeting USA, UAE, UK) with premium shipping.
- **ONDC Integration:** Increase the low-cost seller base and tap new inventory pools.

4. Customer Retention & Engagement (~4%)

- **NeuPass Plus:** Launch a paid premium loyalty tier with exclusive cashback, concierge service, and priority support.
- **Behavioral Retargeting:** Use abandoned cart and dwell-time analytics to send hyper-personalized nudges.
- **Feedback Loops:** Roll out automated NPS & review workflows to identify service gaps and improve post-purchase experience.

5. Financial Services Monetization (~2%)

- **NeuCard Expansion:** Promote EMI offers and exclusive partner deals (e.g., 1mg, Taj, Croma) to drive usage.

- **Microfinance & BNPL:** Launch short-term lending (₹1k–₹5k) for essentials with low risk and high usage frequency.
- **In-App Spend Tracking:** Add budgeting tools to help users manage expenses and retain engagement within the ecosystem.

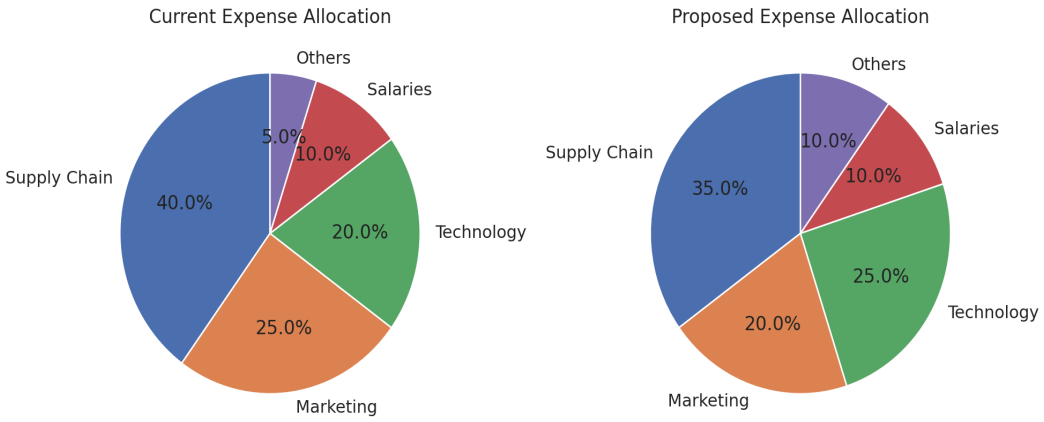
6. Brand Building & User Acquisition (~2%)

- **Influencer Marketing:** Build campaigns around Tata Lifestyle journeys (e.g., #NeuEveryday: BigBasket breakfast → Westside attire → Taj getaway).
- **Referral Amplification:** Double NeuCoin rewards for referrals, and gamify challenges with weekly goals.
- **SEO + YouTube Funnel:** Invest in organic search optimization and branded utility content.

III. Defining Strategies

1. Optimise Expenses

- **Cost Reduction:**
  - Renegotiate contracts with suppliers and service providers.
  - Streamline logistics using centralized warehousing and route planning.
  - Reduce cloud infrastructure overheads through auto-scaling and vendor negotiation.
- **Efficiency Improvements:**
  - Deploy AI/ML forecasting to reduce wastage in perishables (grocery/pharma).
  - Automate back-office tasks (billing, returns, customer query resolution).
  - Eliminate underperforming or duplicated tools across verticals.



2. Enhance Revenue Streams

- **Upselling and Cross-Selling:**
  - Recommend accessories on Croma, health add-ons on 1mg, and bundled fashion on Westside based on previous purchases.
  - Use behavioral clustering to push bundles during checkout.
- **New Revenue Streams:**
  - Launch Tata Neu Premium with an ad-free experience and concierge services.
  - Add lifestyle subscription boxes (monthly curated products across Tata brands).
- **Pricing Strategies:**
  - Use demand elasticity models to adjust prices dynamically.
  - Introduce location-based pricing or exclusive regional offers.

3. Improve Customer Satisfaction and Retention

- **Personalised Experiences:**
  - Segment users based on value tier (spend, frequency, product mix).
  - Tailor homepage, deals, and loyalty offers to each segment.
- **Loyalty Programs:**
  - Upgrade NeuPass to include tiered benefits (Gold, Platinum).
  - Add exclusive perks like Taj vouchers, partner brand coupons, and early access to sales.
- **Customer Feedback:**
  - Use NLP to analyze negative reviews and customer service chats.
  - Close the loop with personalized follow-ups and corrective offers.

IV. Data-Driven Justifications

- Tata Neu's customer base (20.76M) and NeuPass reach (116.4M) are under-leveraged; boosting cross-brand engagement can increase AOV by 15–20%.
- Tata 1mg's transition from loss to profit in FY24 (~₹22 Cr) after cutting ad expenses and improving margins shows that selective spend reduction works.
- BigBasket and Croma contributed ~₹28,000 Cr in revenue, but high COGS and logistics drag margins. Forecasting and bundling can offset these.
- Tier 2/3 cities account for 60% of India's digital growth—penetrating these will reduce CAC and expand LTV (lifetime value).
- User feedback scores post-return/issue resolution directly influence repurchase rates; automating this improves CSAT.

V. Implementation Roadmap & Resources:

Quarter	Key Actions
Q1	Launch dynamic pricing + inventory optimization pilots. Enable cart nudging.
Q2	Roll out NeuPass Plus, expand NeuCard usage, and launch tier 2 city campaigns.
Q3	Test the NRI delivery model. Integrate the ONDC seller base. Implement BNPL in grocery stores.
Q4	Review feedback data, refine loyalty/reward system, scale up profitable programs.

Resources Required:

- Data Science & ML Engineering Teams
- UI/UX and Product Managers
- Strategic Vendor Partnerships
- Marketing + CRM Teams
- Regulatory & Finance Teams (for lending, KYC)

Conclusion

Through structured, data-backed initiatives targeting efficiency, bundling, market expansion, loyalty, and embedded finance, Tata Neu can achieve a 25% increase in profit. The super-app's unified ecosystem gives it a distinct advantage, but sustained growth depends on disciplined execution and maximizing lifetime customer value.

Part II: Guesstimates

Question 1: What percentage of total retail sales in 2026 will be conducted through e-commerce platforms (India)?

We'll use a demand-side approach, starting from the population and building up using behavioral and demographic assumptions.

a. Total Population (India, 2026)

- Estimated population: 1.43 billion (based on ~1% annual growth from 1.41B in 2025)

b. Internet Penetration (2026)

- Projected to increase to 65%
- Internet Users = 1.43B × 0.65 = ~930 million

c. E-Commerce Awareness & Access

- Assume 75% of internet users are aware of and have access to e-commerce platforms
- E-commerce potential users = 930M × 0.75 = 697.5 million

d. Active Online Shoppers

- Estimate 55% of potential users actively shop online (moderate growth from 50% in 2025)
- Active e-commerce users = 697.5M × 0.55 = ~383.6 million

e. Average Annual Spending per E-commerce Shopper

- Adjusted for inflation and digital consumption growth
- Estimated spend per user = ₹14,000/year
- Total e-commerce sales = 383.6M × ₹14,000 = ₹5.37 trillion

f. Total Retail Sales in India (2026)

- Retail industry CAGR is ~9–10% from ₹95T (2025)
- Estimated 2026 total retail market size = ₹95T × 1.09 ≈ ₹103.55 trillion

g. Calculate E-commerce Share

- E-commerce share = ₹5.37T / ₹103.55T ≈ 5.2%

Final Estimate:

Approximately 5.2% of total retail sales in India in 2026 will be conducted through e-commerce platforms.

Question 2: How much will the average online shopper spend annually in 2026 (India)?

We'll follow a demand-side approach using basic assumptions about consumer behavior.

a. Annual Spend Segmentation by Income Group:

- **70% low-income** shoppers → ₹10,000/year
- **25% middle-income** shoppers → ₹20,000/year
- **5% high-income** shoppers → ₹40,000/year

b. Weighted Average Calculation:

- Estimate = (0.7 × 10,000) + (0.25 × 20,000) + (0.05 × 40,000)
  ₹7,000 + ₹5,000 + ₹2,000 = **₹14,000** per shopper per year

Final Estimate:
The average online shopper in India is expected to spend approximately ₹14,000 annually in 2026.

Question 3: What will be the market share of mobile e-commerce (m-commerce) in total e-commerce sales in the next five years?

We'll use a **demand-side estimation** based on device usage patterns and current mobile adoption trends.

a. Current Device Split in E-Commerce (India, 2024)

- Mobile accounts for approximately **70–75%** of all e-commerce sales
- Desktop + tablets = 25–30%

b. User Preference Shift

- Users increasingly prefer mobile apps over desktop websites due to better UX, app-only discounts, and convenience
- Assumption: Mobile usage for e-commerce grows by ~2% annuall

c. Estimate for 2030

- Base share in 2024 = 75%
- Annual increase = 2%
- 5-year increase = 2% × 5 = 10%
- Projected m-commerce share in 2030 = 75% + 10% = **85%**

Final Estimate:

By 2030, mobile e-commerce (m-commerce) is expected to contribute approximately **85%** of total e-commerce sales in India.

Question 4: What is the estimated increase in the number of e-commerce websites in the next three years?

We will use a supply-side approach, starting with the current base and projecting future growth using trend data and assumptions.

a. Current Number of E-Commerce Websites (2024, India)

- As per industry sources and domain registries, India currently hosts around **150,000–200,000** e-commerce websites (including small businesses, D2C brands, and large platforms).
- Conservative baseline: **170,000** websites

b. Annual Growth Rate Assumption

- Estimated annual growth rate: **15%**, considering increasing digital adoption, ease of creating online stores (e.g., Shopify, Dukaan), and government support for MSMEs.

c. 3-Year Compound Growth Formula

- Apply compound growth over 3 years:

  Future Value = *Current×(1+growth rate)^n = 170,000×(1+0.15)^3*

  =170,000 × 1.52 ≈ 258,400

d. Estimated Increase

- Increase in 3 years = 258,400 − 170,000 = **88,400 websites**

Final Estimate:

India is expected to see an increase of approximately **88,000–90,000** new e-commerce websites over the next three years (by 2027), reaching a total of around 2.6 lakh websites.

Question 5: How much will global e-commerce sales grow annually over the next five years?

We'll apply a **top-down approach** using current global sales data and forecasted growth rates from industry reports.

a. Current Global E-Commerce Sales (2024)

- As of 2024, global e-commerce sales are estimated to be around **$6.3 trillion.**

b. Historical and Projected CAGR

- Global e-commerce has grown historically at **9%–11%** CAGR.
- As digital penetration increases and emerging markets grow, we assume a moderate CAGR **of 9.5%** for the next 5 years.

c. Future Value After 5 Years (2029)
Using the compound interest formula:

Future Sales = *Present Sales × (1+r) ^ n = 6.3 trillion × (1+0.095) ^ 5*

= 6.3×1.57 ≈ 9.89 trillion USD

d. Total Growth Over 5 Years

Growth *= 9.89T − 6.3T = 3.59 Trillion USD* increase

e. Average Annual Growth (for 5 years)

Average Annual Growth = *3.59 / 5 ≈ 0.72* (or 720 billion USD per year)

Final Estimate:

Global e-commerce sales are expected to grow by approximately 9.5% annually, adding around **$700–750** billion each year over the next five years.

Part III : Scenario Based Questions

Scenario 1:

The company is launching a subscription service where customers can subscribe to receive products every month at a discounted rate. They want to understand how the retention of subscription customers compares to regular customers who do not subscribe.

Question 1:
How would you compare the retention rates of subscription customers versus non-subscription customers? What metrics would you focus on, and how would you structure the cohort analysis?

- **Hint:** Divide the customers into two cohorts (subscription vs non-subscription) and track retention over multiple months. Look at metrics such as average order frequency, repeat purchase rates, and customer lifetime value (CLV).

Answer:

To evaluate the impact of the subscription model on customer retention, we can follow this cohort analysis approach:

Step 1: Define Two Customer Cohorts

· **Cohort A (Subscribers):** Customers who opted for the subscription service.

· **Cohort B (Non-Subscribers):** Customers who did not subscribe and purchase occasionally.

Step 2: Track Key Retention Metrics Over Time

Monitor and compare metrics **month over month (MoM)** for both cohorts:

Metric	Purpose
Monthly Retention Rate	% of users active in a given month who also return in the next month
Repeat Purchase Rate	% of users making more than one purchase over a specific time window
Average Order Frequency	Number of orders per user per month
Customer Lifetime Value (CLV)	Total revenue per user over their engagement lifespan
Churn Rate	% of users who stop purchasing/subscribing over time

Step 3: Use a Cohort Analysis Table - Retention rate % (Example)

Month Joined	Cohort Type	Month 1	Month 2	Month 3	Month 4
Jan 2025	Subscribers	100%	80%	70%	65%
Jan 2025	Non-Subscribers	100%	65%	50%	45%

This allows easy visual tracking of how retention drops over time per cohort.

Question 2:
Suppose you find that subscription customers have a 20% higher retention rate after 3 months compared to non-subscription customers. What recommendations would you make to the business based on this finding?

- **Hint:** Consider how the company can capitalise on this insight by encouraging more customers to subscribe, offering promotions, or improving the subscription model.

Answer:

If we find a 20% higher retention rate for subscribers, it suggests that the subscription model is highly effective in customer engagement.

Based on this insight, the company can make the following strategic recommendations:

1. Encourage More Users to Subscribe

- **Promote subscriptions during:**
    - Checkout (as a savings option)
    - Account sign-up (with “first-month free”)

2. Offer Targeted Promotions

- Provide extra NeuCoins or discounted rates for subscribing to certain product categories (e.g., groceries, medicines).
- Bundle services (e.g., subscription + free delivery + exclusive deals).

3. Personalize Communication:

- Use data to **predict which users are likely to benefit** from subscribing and send them personalized emails or app notifications.

Scenario 2:

The company is testing two different landing pages for new users. Version A emphasises discounted products, while Version B highlights the quality and premium nature of products. The company wants to know which version drives more conversions (i.e., purchases).

Question 1:
How would you design an **A/B test** to determine which landing page (Version A or Version B) performs better in terms of conversion rate?

- **Hint**: Define the key metrics (conversion rate), ensure random assignment of users to each version, and run the test over a statistically significant period.

Answer:

To compare **Version A (Discount-focused)** vs **Version B (Premium-quality focused)**, we can follow the following A/B testing stepwise approach:

Step	**Details**
1. Define the Objective	Design two different landing pages to show to two different group of people for comparison.
2. Identify Key Metric (KPI)	Conversion Rate = (Number of Purchases / Number of Visitors) × 100
3. Random User Assignment	Randomly split new visitors into two equal-sized groups: - Group A → Version A - Group B → Version B
4. Control Variables	Keep all other elements (time of day, device type, product catalog, offers, etc.) constant between groups.
5. Test Duration	Run the test until you achieve statistical significance (typically 1–2 weeks depending on traffic volume).
6. Sample Size Calculation	Estimate how many users you need based on baseline conversion rates and desired confidence level (e.g., 95%).
7. Track Data	Collect data on: - Number of visitors per version - Number of purchases - Bounce rate - Time on page
8. Analyze Results	Use statistical tests to compare conversion rates between versions.

A well-controlled A/B test will tell you whether Version A or B leads to better business outcomes. Conversion rate is your main decision metric, supported by the traffic and purchases.

Question 2:
After running the A/B test, you find that **Version B** has a higher conversion rate, but the difference is not statistically significant. What would you do next? Should the company adopt Version B, or continue with Version A?

- **Hint**: Consider sample size, test duration, and whether further testing (e.g., multivariate testing or extending the test period) might be necessary to confirm the result.

Answer:

If Version B shows a **slightly higher conversion rate**, but the difference is **not statistically significant**, here is how one should proceed:

1. Do NOT Rush to Switch

- A non-significant result can be.
- Avoid deploying Version B site-wide until you have more evidence.

2. Increase Sample Size

- Run the test longer or wait until more users are exposed.
- A small difference may become significant with more data.

3. Extend Test Duration

- Ensure the test runs over **different days and traffic patterns**.
- Helps capture weekly trends, shopping habits, and external influences.

4. Run Multivariate or Follow-up Tests

- Try testing with more variations:
    - Version C = Combination of discount + premium look and feel
- Or test different CTAs, images, or price visibility.

5. Use Secondary Metrics

- Even if conversions are similar, Version B might have:
    - Higher average order value (AOV)
    - Lower bounce rate
    - Longer time spent on page

These can influence a long-term switch decision. After all this if the evidence is still inconclusive, stick with the control (Version A) until stronger evidence supports Version B.