

PhonePe CASE STUDY BY

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Popularity

PhonePe is one of the most widely used digital payments platforms in India, with millions of active users across the country. PhonePe's popularity stems from its early adoption of UPI, enabling fast, secure, and seamless digital payments. Its user-friendly interface supports a wide range of services, including bill payments, insurance, and investments, appealing to a broad audience. Widely accepted by merchants, the app offers cashback incentives and strong security features, building user trust. Backed by Walmart's Flipkart, PhonePe has also benefited from strategic partnerships and an expanding ecosystem, further enhancing its reach. This combination of convenience, security, and comprehensive services has made it one of India's leading digital payment platforms.

Impact

It has revolutionized the way users conduct financial transactions through its Unified Payments Interface (UPI), enabling real-time bank-to-bank transfers, bill payments, and mobile recharges. PhonePe supports a vast ecosystem of merchants, from small businesses to large enterprises. PhonePe made digital payments accessible to all, including rural areas, fostering financial inclusion. With UPI integration, it eliminated the need for credit cards or wallets, enabling direct bank transfers through mobile devices. Beyond payments, PhonePe evolved into a comprehensive platform, offering bill payments, insurance, and investments, providing users with a one-stop financial management solution and promoting digital financial literacy.

Relevance



Essential Digital Payment Solution: PhonePe is crucial for users in India seeking fast, reliable, and secure digital transactions, leveraging UPI integration with the banking system to ensure trust and efficiency.

Enhancing Financial Inclusion: The platform promotes financial inclusion, especially in rural areas, by allowing users to conduct digital transactions without dependence on traditional banking systems.

Streamlined Payments and Partnerships: PhonePe simplifies cashless payments through its QR code feature for small businesses and partners with major e-commerce platforms to enhance online shopping experiences.

Core Features and Functionalities

- UPI-based Payments: The core feature allows users to make real-time payments directly from their bank accounts without needing to load money into a wallet.
- Mobile Recharges and Bill Payments: PhonePe offers a wide range of utility bill payments such as electricity, water, gas, and mobile recharges.
- Insurance Services: The platform provides users with the option to buy insurance policies for health, life, and vehicles.
- Investment Options: It includes investment services like mutual funds, gold purchases, and fixed deposits.
- PhonePe Wallet: In addition to UPI, PhonePe offers a wallet feature that allows users to store money and make payments.
- Credit Card Payments: PhonePe supports credit card bill payments, allowing users to manage their finances better.
- PhonePe Switch: This feature is a mini-app ecosystem within PhonePe that connects users to various third-party services such as food delivery, travel bookings, and more.

Contributions to Success:

- The UPI integration and real-time payment capabilities are at the heart of user engagement.
- Features like investment services, bill payments, and add value to both individual users and businesses, increasing the platform's stickiness.
- Its seamless user experience, combined with the trust of direct bank integration, has made it a go-to platform for both daily users and businesses.

Real World Problems

Cashless Economy

- Problem: Reliance on Cash Transactions
 Many people in India still rely heavily on cash, hindering the transition to a digital economy.
- Solution: Seamless Digital
 Payment Services
 PhonePe provides a seamless platform for digital payments, enabling cashless transactions and supporting India's push towards a cashless economy.

Financial Inclusion

- Problem: Financial Exclusion of Small Businesses
 Small businesses face difficulties accepting digital payments, limiting their access to the formal financial system.
- Solution: Enabling Digital
 Payments for Small Businesses
 PhonePe helps small businesses
 accept digital payments,
 promoting financial inclusion
 and integrating more merchants
 into the formal economy.

Simplifying Payments

- Problem: Complexity of Traditional Bank Transfers Traditional bank transfers are cumbersome, requiring users to remember lengthy account numbers and details.
- Solution: Simplified UPI-Based Money Transfers PhonePe UPI-based system simplifies money transfers, eliminating the need for long account numbers and making transactions faster and easier.

Real World Problems

Bill Payments and Recharges

- Problem: Inconvenience of Physical Bill Payments and Recharges Paying bills and recharges physically is time-consuming and inconvenient.
- Solution: Integrated Platform for Bill Payments and Recharges PhonePe provides a single platform for paying bills and making recharges digitally, removing the hassle of physical transactions.

Investment Options

- Problem: Limited Access to Investment Tools
 Many users have limited access to diverse investment opportunities.
- Options

 PhonePe allows users to invest in mutual funds, fixed deposits, and digital gold, enabling convenient portfolio management within the app.

Insurance

- Problem: Complexity in Managing and Purchasing Insurance
 Managing and purchasing insurance products can be complex and overwhelming.
- Solution: Simplified Insurance Services
 PhonePe simplifies insurance by offering health, life, and vehicle policies, streamlining the purchase and claims process through the app.

Real World Problems

Consumer Lending

- Problem: Difficulty in Accessing Quick Personal Loans Obtaining personal loans from traditional lenders can be slow and inflexible.
- Solution: Fast and Flexible
 Consumer Lending
 PhonePe provides personal
 loans based on user profiles,
 offering quicker and more
 flexible access to credit
 compared to traditional banks.

Gold Investments

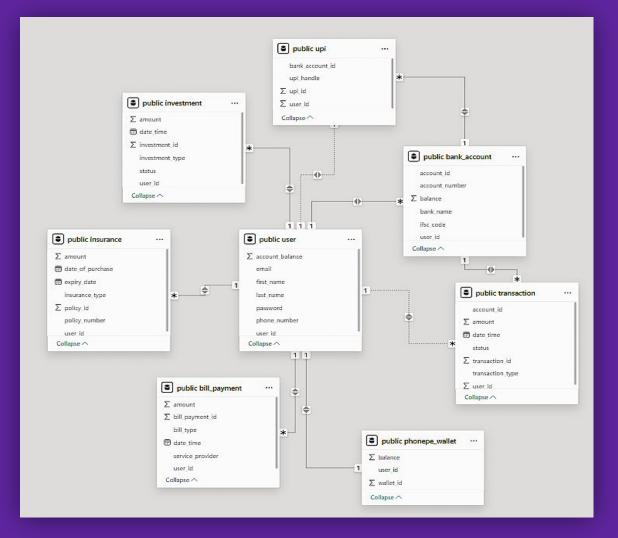
- Problem: Difficulty Managing Physical Gold Investments Managing physical gold investments can be challenging.
- Solution: Digital Gold Investments PhonePe allows users to invest in digital gold, enabling easy buying, selling, and management of gold holdings for convenient diversification.

Design Schema

Table Name	Related Table	Relationship Type	Foreign Key	Description
bank_account	user	Many-to-One	user_id	Each bank account is linked to one user.
transaction	user	Many-to-One	user_id	Each transaction is made by one user.
transaction	bank_account	Many-to-One	account_id	Each transaction involves one bank account.
bill_payment	user	Many-to-One	user_id	Each bill payment is made by one user.
investment	user	Many-to-One	user_id	Each investment belongs to one user.
insurance	user	Many-to-One	user_id	Each insurance policy is owned by one user.
phonepe_wallet	user	One-to-One	user_id	Each user has one PhonePe wallet.
upi	user	Many-to-One	user_id	Each UPI handle belongs to one user.
upi	bank_account	Many-to-One	bank_account_id	Each UPI handle is linked to one bank account.

ER-Diagram

- Users connect to Bank Account, Transaction, Bill Payment, Investment, Insurance, UPI, and Wallet.
- Transaction involves payments from users to billers, or for investment/insurance.



Revenue and Profit Growth Strategies for PhonePe

Objective: Increase profit by 25% through internal analysis (expenses, customer behavior, revenue strategies).



PhonePe CURRENT STATUS ANALYSIS

Revenue Streams:

- Transaction Fees: Fees from platform transactions.
- Merchant Payments:
 Commissions from merchant transactions.
- Advertisements: Revenue from ads on the platform.
- Partnerships: Income
 from brand partnerships.

Major Expenses:

- Technology Infrastructure:
 Cloud servers, data
 protection.
- Payment Processing Fees:
 To banks and card networks.
- Marketing Costs:
 Acquisition campaigns, promotions.
- Employee Salaries: IT, operations, and support teams.

Customer Acquisition & Retention:

- Channels: Digital marketing, social media, cashback, app store optimization.
- Customer Insights: Transaction frequency, app usage, spending patterns.
- Retention Metrics: Net
 Promoter Score (NPS),
 customer lifetime value (CLTV).
- Churn Analysis: Identify and reduce PhonePe customer churn.

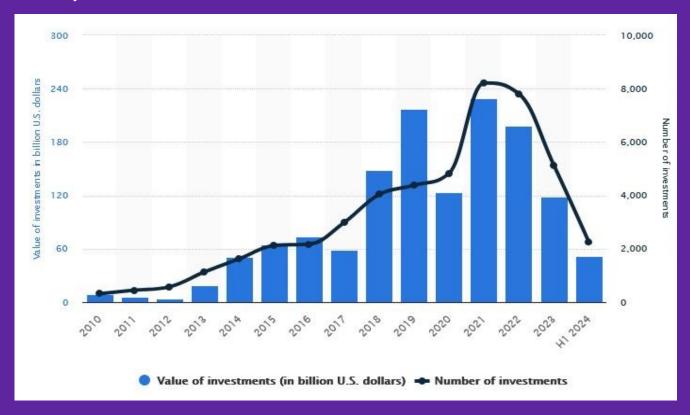
	CATEGORY	FOCUS AREA	MEASURE	CONTRIBUTION
	Internal Management	Operational Efficiency	Big Data and Cloud Optimization, AI/ML for automation	3.5%
			Cost control via audit and negotiation	1%
FOCUS AREAS FOR INCREASING PhonePe's PROFIT BY 25%		Employee Productivity	oductivity Continuous training and performance metrics	
	Product strategy	Launch new products	Market research for new opportunities (e.g., health insurance).	1 %
		Product Optimization	Removing underperforming products, launching supplementary offers	1%
	Market Expansion	Geographic Expansion	Enter new domestic and international markets	5%
		Market Penetration	Improve customer experience in existing markets	2%
	Post-Sales Management	Customer Satisfaction	Collect feedback, provide enhanced support	1%
		Customer Retention	Loyalty programs, personalized follow-ups	1%
	Branding and Marketing	Brand Awareness	Digital marketing, SEO, influencer partnerships	1%
		Referrals & Reviews	Encourage word of mouth and positive reviews	1%
		Community Engagement	Sponsor local events	1%
	Company Expansion	IP0	Access capital, enhance brand credibility, attract more users	4.5%

DEFINING STRATEGIES TO INCREASE PROFIT

Category	Strategy	Details		
Optimize Expenses	Cost Reduction	- Negotiate better terms with partners. - Implement Cloud infrastructure and Al automation. - Utilize data-driven decision-making.		
	Efficiency Improvements	- Leverage data analytics to optimize processing channels and transitions.		
Enhance Revenue Streams / Market Expansion	Upselling and Cross-Selling	- Develop strategies to increase average order value through supplementary product recommendations.		
	New Revenue Streams	- Introduce new products, services, or premium features that meet customer needs.		
	Pricing Strategies	- Use dynamic pricing based on demand, competition, and customer behavior.		
Improve Customer Satisfaction and Retention	Personalized Experiences	- Offer personalized recommendations and cashback rewards to enhance customer satisfaction.		
	Autopay and One-Click Services	- Implement services that ease payment and transaction processing.		
	Customer Feedback	- Continuously gather and act on customer feedback to improve products and services.		

Guesstimates

1. What will be the percentage increase in global FinTech investments over the next five years?

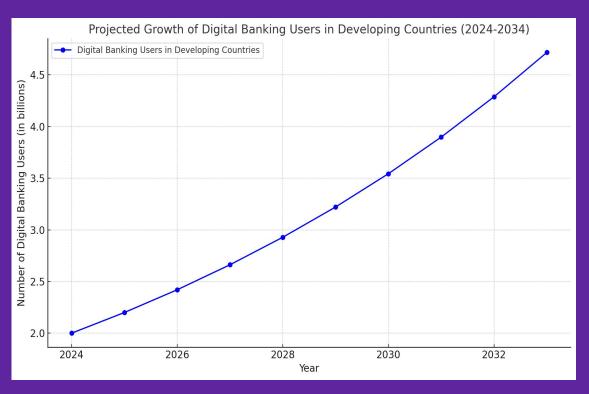


Guesstimate Answer

Step	Details	Calculation
Global Investment Data	What is the investments and number of investors	\$6-7 trillion per year.
Financial Services Sector Investment	10-15 % of total global investments	Finance Investments=6.5trillion×0.12= 780 billion
Share of FinTech in the Financial Services	FinTech companies represent a growing share, FinTech investments accounted for ~25-30% of total financial investments.	FinTech Investments in 2021=780 billion×0.3= 230 billion approx
Investment trends	Trend in investment is decreasing from 2021 to 2024 H1 because of corona and rate hikes to control inflation.	From \$230 billion in 2021 to \$45-55 billion in H12024
Investments Status	Gradual recovery expected from 2024 due to rate cuts and monetary easing growth possible up to 10-12 % annually for the next five	Future FinTech Investment (2029)= 230 billion×(1+0.11)5 = 380 billion
Estimated trends in Investments	Investment levels will likely increase steadily by 2029 aiming for a market size over \$380 billion by 2030	Percentage Increase = (380-230 *100)/230 ≈ 65 %

2. How many people will adopt digital banking services in developing countries over the next decade?

Hint: This question requires an estimation of the number of new users of digital banking solutions in regions where traditional banking infrastructure is less prevalent.

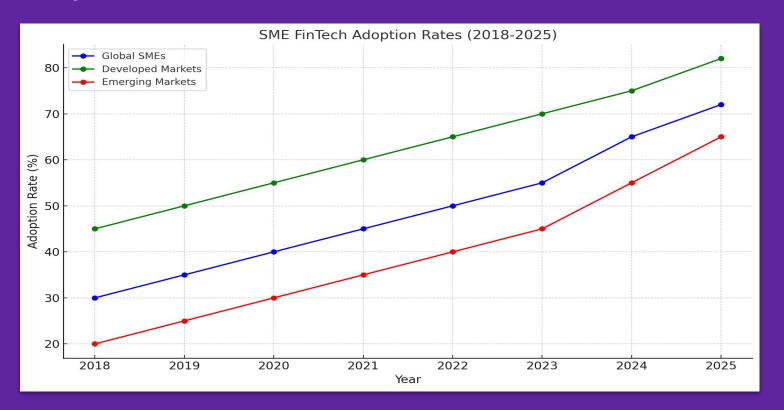


Guesstimate Answer

Step	Details	Calculation
Population Estimation	Assume a population in developing countries	6 billion
Current digital penetration	Estimate 40 % of the population is using digital gadgets and infrastructure	Digital users = 6 billion *0.4 = 2.5 billion approx
Current Adoption of Digital Banking	assume that around 70-80 % of the population in digital users utilise digital banking services	Digital Banking users = 2.5 billion*0.8 = 2 billion
Projected Growth Rate	annual growth rate of 8-10 %	Current year new users = 2 billion * 0.1 = 200 million a year
Future Adoption Over 10 Years	Assuming same numbers from current Digital Banking users for 10 years	Upcoming customers = 2 billion ×(1+0.1)×10 = 4 billion approx

3) What percentage of small and medium-sized enterprises (SMEs) will use FinTech solutions for their financial needs by 2025?

Hint: This question involves predicting the adoption rate of FinTech services among SMEs, including payments, lending, and financial management tools.



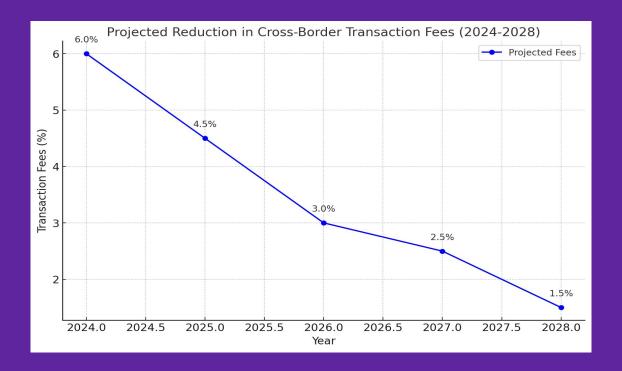
Guesstimate Answer

Step	Details	Calculation
SMEs Globally	Estimate Total Number of SMEs Globally	400-500 million SMEs
Estimation of current adoption	Estimate Current Adoption of FinTech Services by SMEs, 40-50 % of SMEs	Current users = 500 million*0.5 = 250 million
Historical Adoption Trends of FinTech by SMEs	Estimated 2018 to 2023 , the global adoption of FinTech by SMEs has seen 10-15% year-on-year growth .	Fintech users = 250 million*0.1= 25 million per year
Future Trends and Growth Factors	Increasing Demand for Digital Solutions, Government and Regulatory Support,FinTech Innovation would increase it further to 15%-20 %	Upcoming growth and users = 250 million*0.2 = 50 million approx per year
Projected Adoption Rate by 2025	FinTech solutions by SMEs is projected to be around 70-75 % globally .In developed markets, the rate could reach 80-85 %.In emerging markets, it could rise to 60-70 %.	Upcoming SMEs count = 250 million + 50 million*2 = 350 million approx (70%-75%)

4. What will be the average transaction value of mobile payments in the next three years?

Step	Details	Calculation
Mobile Payment User Base	Global smartphone users (2023)	6.8 billion
Mobile Penetration	Current mobile payment penetration (2023)	40% of smartphone users total mobile payment users in 2023: 6.8 billion×40%= 2.72 billion user
Growth Rate	Assuming a growth rate of 10% per year	2024 : 2.72 billion × 1.10 = 3 billion 2025 : 3 billion × 1.10 = 3.3 billion 2026 : 3.3 billion × 1.10 = 3.6 billion
Estimate Average Transaction Frequency per User	transaction frequency grows by 5 % annually	2024: 100 transactions × 1.05 = 105 per user 2025: 105 transactions × 1.05 = 110 per user 2026: 110 transactions × 1.05 = 115 per user
Estimate the Baseline Average Transaction Value	Current average transaction value (2023): 30 the transaction value grows by 2% per year	2024 : 30 × 1.02 = 30.6 2025 : 30.60 × 1.02 = 31 2026 : 31 × 1.02 = 32

5) How much will blockchain technology reduce the costs of cross-border transactions in the next five years?



Guesstimate Answer

Step	Details	Calculation	
Current Cross-Border Transaction Costs			
Key Cost-Saving Factors Using Blockchain	- Fewer intermediaries - Real-time settlements - Lower foreign exchange (FX) conversion costs.	Blockchain reduces fees by cutting out middlemen and using digital currencies.	
2024-2025 (Initial Adoption Phase)	- Slow adoption of blockchain technology in selected sectors, like Financial services, remittances, e commerce. - Fees begin to drop in certain industries.	Projected fees: 6% → 4.5 %	
2026-2027 (Broader Adoption Phase)	- Broader adoption of blockchain for travel, healthcare More industries are starting to use it.	Projected fees: 4.5 % → 2.5 %- 3 %	

2028 (Widespread Adoption)	- Widespread use of blockchain for cross-border transactions. Government and public sector, energy and utilities market trades. - Minimal reliance on traditional financial systems.	Projected fees: 2.5%-3% → 1.5%
Overall Cost Reduction	- Total reduction in cross-border fees from 2024 to 2028. - Blockchain's full potential realized	Estimated fee reduction: From 6% to 1.5% by 2028

Scenario Based Questions

Scenario 1

A fintech company offers a mobile payment app where users can link their bank accounts and make payments. The company wants to analyse the retention of users who signed up for the app in the past six months to understand how often they continue using it after the initial download.

Question 1

How would we perform a cohort analysis to calculate the monthly retention rate for users who signed up in different months?

Step 1: Data Collection

User ID	Sign-up Date	Transaction Dates
1	2024-01-05	2024-01-15, 2024-01-25, 2024-02-05, 2024-03-10
2	2024-01-12	2024-01-18, 2024-02-08
3	2024-01-20	2024-01-25, 2024-02-15
4	2024-01-25	2024-02-10
5	2024-01-30	2024-01-30, 2024-03-05
6	2024-02-03	2024-02-10, 2024-02-28, 2024-03-20, 2024-04-12
7	2024-02-10	2024-02-15, 2024-03-05
8	2024-02-18	2024-02-25, 2024-03-18
9	2024-02-25	2024-03-10
10	2024-03-01	2024-03-10, 2024-04-15, 2024-05-18
11	2024-03-07	2024-03-12, 2024-04-02
12	2024-03-18	2024-03-20, 2024-04-12
13	2024-03-27	2024-04-05, 2024-05-02, 2024-06-15
14	2024-04-01	2024-04-10, 2024-05-05, 2024-06-25
15	2024-04-12	2024-04-20

Step 2: Define Cohorts

Cohort Month	Cohort Size	Users in Cohort		
January 2024	5	1, 2, 3, 4, 5		
February 2024	4	6, 7, 8, 9		
March 2024	4	10, 11, 12, 13		
April 2024	3	14, 15, 16		
May 2024	3	17, 18, 19		
June 2024	3	20, 21, 22		
July 2024	4	23, 24, 25, 26		

Step 3. Tracking Metrics (Retention Rate)

We'll calculate the monthly retention rate for each cohort. Retention is tracked by checking whether users made transactions in subsequent months after signing up. Here's how to calculate the retention rate for each month

Cohort	Sign-ups	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Jan 2024	5	80%	60%	40%	20%	20%	20%
Feb 2024	4	100%	75%	50%	25%	25%	-
Mar 2024	4	100%	75%	50%	50%	-	-
Apr 2024	3	100%	66%	66%	-	-	-
May 2024	3	100%	66%	-	-	-	-
Jun 2024	3	66%	-	-	-	-	-
Jul 2024	4	-	-	-	-	-	-

Step 4: Analysis of Retention Patterns

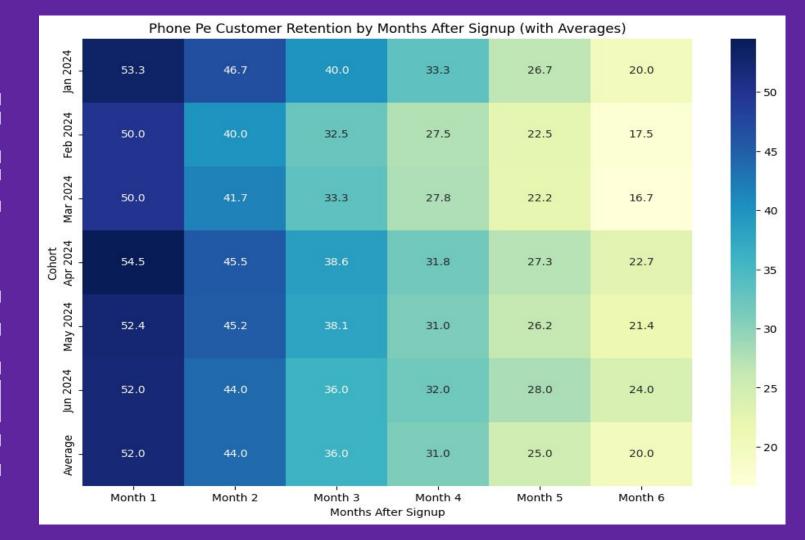
Retention Pattern	Observation	Explanation	
High Initial Retention	Retention in the first month ranges from 80% to 100% across all cohorts.	Strong initial engagement due to the novelty of the app, effective onboarding, and possibly incentives that encourage users to make their first transaction after sign-up.	
Gradual Drop-Off	Retention decreases to 40-50% by the third month across cohorts.	This gradual decline is common in user behaviour. Early adopters may drop off if they no longer see value in repeated use or if they face issues during the second or third transaction.	
Retention Challenges in Month 4	By the fourth month, retention falls to as low as 20%.	This significant drop could suggest users are not finding long-term value in the app, or competitors are attracting them with better offers, services, or user experience.	

Step 5: Actionable Insights

- Retention Trends: Analysing the retention patterns reveals that while the retention rates are high
 in the first month, they start to decline significantly by the second month. This suggests the
 need for targeted retention strategies after initial onboarding. Implement re-engagement
 strategies after the first month to bring users back. This could involve personalized push
 notifications, targeted offers, or loyalty programs to incentivize continued use.
 Continue engaging users through offers, discounts, or loyalty programs to maintain retention.
- **Long-Term Retention**: There are cohorts where retention stabilises after the third month, particularly for users who signed up in February and March.
- Regular Repeat Transactions: Encouraging users to make more frequent transactions by sending reminders or special offers at the right time can further improve usage.
- **Feedback:** Collecting user feedback to identify the cause and address it through product improvements or service enhancements.

Let's take a dataset of Phone Pe for cohort retention analytics

Cohort	New Users	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Jan 2024	1500	800	700	600	500	400	300
Feb 2024	2000	1000	800	650	550	450	350
Mar 2024	1800	900	750	600	500	400	300
Apr 2024	2200	1200	1000	850	700	600	500
May 2024	2100	1100	950	800	650	550	450
Jun 2024	2500	1300	1100	900	800	700	600



Question 2:

If we find that retention drops significantly after the first month, what are some possible reasons for this behaviour, and how can the company address this drop-off?

Possible Reasons for Retention Drop

- Insufficient Onboarding Experience
- 2. Lack of Value
- 3. Complex User Interface
- 4. Limited Features
- 5. User Engagement
- 6. Competition

Strategies to Address the Drop-off

- 1. Enhance Onboarding Experience
- 2. Regular Notifications
- 3. Offer Incentives
- 4. Personalised Communication
- 5. Gather User Feedback
- 6. Feature Expansion
- 7. Performance Optimization

Scenario 2

The fintech company is testing two different loan approval notification designs. Version A is a simple approval message, while Version B includes additional loan details (e.g., repayment options, interest rate, and payment reminders). They want to see which design leads to more loan acceptance.

Question 1

How would we structure an A/B test to measure the impact of these notification designs on loan acceptance rates?

A/B Testing for Fintech Loan Approval Notification Designs

A fintech company is testing two different loan approval notification designs to understand which leads to more loan acceptance.

- Version A: Simple approval message.
- Version B: Detailed message with repayment options, interest rate, and payment reminders.

A/B Testing Structure

Hypothesis Formation

• Hypothesis: Adding more details to the loan approval notification (Version B) will lead to higher loan acceptance rates compared to a simple approval message (Version A)

Step 1: Create Variants

- Version A (Control): Simple loan approval message.
- Version B (Variant): Detailed loan approval message with additional information (repayment options, interest rate, payment reminders).

Step 2: Random Assignment

- Randomly divide users who are eligible for loan approval into two groups:
 - Group 1: Receives Version A (simple message)
 - Group 2: Receives Version B (detailed message)

Step 3: Isolation

• Ensure the users in both groups are not influenced by external factors, such as ads, customer support interactions, or email reminders, to isolate the impact of the notification designs.

Step 4: Data Collection

Variant	Users	Loan Acceptances
Version A	5,000	1,200
Version B	5,000	1,700

Step 5: Define End Period of the Experiment

 The experiment will run for 4 weeks or until statistically significant results are achieved, ensuring that both versions are displayed to a sufficient number of users to draw reliable conclusions.

Step 6: Analysis

Calculate the loan acceptance rate for both versions.

Since the number of applications accepted have increased from 1200 to 1700, the conversion lift between Version A and Version B is 10%,

- Loan Acceptance Rate:

 Percentage of users who accept the loan offer after receiving the notification.
- 2. Average Loan Amount:

 Average loan amount for users accepting the loan.
- Repayment Behaviour:
 Percentage of users making on-time payments after accepting the loan.

Variant	Users	Loan Acceptances	Acceptance Rate	Average Loan Amount	On-time Repayments
Version A	5,000	1,200	24%	₹50,000	90%
Version B	5,000	1,700	34%	₹55,000	92%

Ouestion 2:

Suppose Version B (detailed notification) results in a 10% increase in loan acceptance rates but requires additional resources to implement. How would we evaluate whether the increase in acceptance rates justifies the added complexity?

To evaluate whether the 10% increase in loan acceptance rates (from 24% for Version A to 34% for Version B) justifies the added complexity of implementing Version B, we need to consider several key factors:

1. Revenue Increase from Higher Loan Acceptance Rates

- Version A (Control):
 - Loan Acceptances: 1,200
 - Average Loan Amount: ₹50,000
 - Total Loan Value: 1,200 × ₹50,000 = ₹60,000,000
- Version B (Detailed Notification):
 - Loan Acceptances: 1,700
 - O Average Loan Amount: ₹55,000
 - o Total Loan Value: 1,700 × ₹55,000 = ₹93,500,000

Revenue Increase:

The additional loan value generated by Version B is:
 ₹93,500,000 - ₹60,000,000 = ₹33,500,000

Thus, Version B results in a ₹33.5 million increase in total loan value.

2. On-Time Repayment Impact

- Version A has an on-time repayment rate of 90%, and Version B has an improved repayment rate of 92%.
- If we consider this repayment rate on the total loan value, the repaid amount for each version would be:
 - Version A: 90% of ₹60,000,000 = ₹54,000,000
 - ∨ersion B: 92% of ₹93,500,000 = ₹86,020,000

Net Increase in Repayment:

• Version B leads to an additional ₹32.02 million in on-time repayments compared to Version A.

3. Cost-Benefit Analysis

To evaluate whether Version B's additional resources are justified, we need to compare the cost of implementation with the financial gains:

- Revenue Gain: The increase in loan acceptances and higher average loan amount in Version B results in a significant ₹33.5 million increase in loan value.
- Cost of Implementation: If the additional resources required to implement Version B (such as more complex design, additional data collection, or customer service resources) cost less than the ₹33.5 million revenue gain, then Version B is clearly worth implementing.

4. Simplifying Version B

If the cost of implementing **Version B** is high, but the financial benefits still seem worthwhile, we might explore simplifying some elements of **Version B**:

 For instance, we could keep key details like repayment options and interest rates but remove less critical information such as payment reminders, which could reduce implementation costs while still retaining most of the impact.

Conclusion

Based on the data, Version B demonstrates a significant increase in loan acceptance rates (from 24% to 34%), and the additional revenue generated (₹33.5 million) likely justifies the increased complexity. However, the company should assess the specific costs of implementing Version B to ensure that the financial gain outweighs these costs. If necessary, simplifying the design of Version B could still deliver benefits while reducing costs.

THANK YOU