

## Lesson 1.4: Platform Economics and Fintech Business Models Quiz

Digital Finance Course

## Question 1

**What is a network effect?**

- A. A product or service becomes more valuable as more people use it
- B. A product becomes cheaper as more units are manufactured
- C. A company's network of suppliers grows over time
- D. The effect of internet bandwidth on application speed

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*[Answer hidden – compile with \solutionstrue to reveal]*

A network effect occurs when the value of a product or service increases for existing users as more people adopt it—e.g., a payment app becomes more useful when more friends join.

## Question 2

**Which type of network effect describes a payment card network where more cardholders attract more merchants?**

- A. Indirect network effect
- B. Supply-side economy of scale
- C. Cross-side (two-sided) network effect
- D. Direct network effect

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Cross-side network effects occur in two-sided markets: cardholders value merchant acceptance, and merchants value cardholder volume. Each side benefits from growth on the other side.

## Question 3

**A P2P payment app becomes more useful as each of your friends joins. This is an example of:**

- A. Economy of scope
- B. Cross-side network effect
- C. Direct (same-side) network effect
- D. Indirect network effect

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Direct network effects occur when users on the same side of the market benefit from each other's participation—more friends on the app means more people you can pay.

## Question 4

**How does a platform business model differ from a pipeline business model?**

- A. Platforms require banking licenses while pipelines do not
- B. Platforms are always more profitable than pipelines
- C. Platforms facilitate interactions between producers and consumers; pipelines control end-to-end production
- D. Pipelines use technology while platforms do not

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Pipeline models control the linear value chain (produce → distribute). Platform models create value by enabling interactions between multiple participant groups without controlling production.

## Question 5

**A fintech spends \$500,000 on marketing in a quarter and acquires 10,000 new customers. What is its Customer Acquisition Cost (CAC)?**

- A. \$5,000
- B. \$50
- C. \$5
- D. \$500

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CAC =  $\$500,000 \div 10,000 = \$50$  per customer. This is the total acquisition spend divided by the number of customers acquired.

## Question 6

A neobank has an Average Revenue Per User (ARPU) of \$8/month, gross margin of 60%, and average customer lifetime of 36 months. What is the Lifetime Value (LTV)?

- A. \$96.00
- B. \$172.80
- C. \$288.00
- D. \$480.00

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$LTV = \$8 \times 0.60 \times 36 = \$172.80$ . LTV combines revenue per user, margin, and retention into a single measure of customer value.

## Question 7

**What LTV/CAC ratio is generally considered healthy for a fintech?**

- A. Greater than 10.0×
- B. Greater than 0.5×
- C. Greater than 1.0×
- D. Greater than 3.0×

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An LTV/CAC ratio above 3.0× is the standard benchmark. Below 1.0× means losing money on every customer. Above 10.0× may indicate underinvestment in growth.

## Question 8

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- B. Net income divided by number of customers
- C. Gross profit divided by total assets
- D. Total revenue minus total expenses

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Contribution margin is the amount each customer contributes toward covering fixed costs and generating profit, calculated as revenue per user minus variable cost per user.

## Question 9

**A fintech has ARPU of \$6/month and variable cost per user of \$8/month. Each new user added will:**

- A. Generate \$6/month in pure profit
- B. Make losses worse by \$2/month
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With negative contribution margin ( $\$6 - \$8 = -\$2/\text{month}$ ), each additional customer increases losses. The company cannot “grow into profitability” without fixing unit economics first.

### What is embedded finance?

- A. Finance courses embedded in university curricula
- B. Financial services integrated directly into non-financial platforms and applications
- C. Financial services exclusively available through bank branches
- D. Hardware-based security for banking transactions

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Embedded finance means financial services (payments, lending, insurance) are integrated into platforms where the user already is—e.g., checkout financing in e-commerce, insurance at ride booking.

## Question 11

### What is Banking-as-a-Service (BaaS)?

- A. Banks outsourcing all operations to third parties
- B. API-based infrastructure that lets non-banks offer banking products using a licensed bank's capabilities
- C. A government program providing free banking
- D. A marketing term for online banking

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BaaS providers offer banking infrastructure (accounts, payments, lending, compliance) via APIs, enabling any company to embed financial services without obtaining its own banking license.

## Question 12

**In the BaaS stack, which layer does the fintech/brand typically own?**

- A. Core banking system and ledger
- B. Compliance and KYC/AML
- C. Banking license and regulatory capital
- D. Frontend, user experience, and branding

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In the BaaS model, the fintech owns the customer-facing layer (app, branding, UX), while the BaaS provider handles compliance, core banking, and the licensed bank provides the regulatory foundation.

## Question 13

**Why do most fintechs operate at a loss for years?**

- A. They are legally prohibited from charging fees in the first five years
- B. Financial regulators require them to lose money initially
- C. Traditional banks subsidize fintech losses
- D. They invest in network effects, user growth, and infrastructure before monetization

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Fintechs invest heavily in user acquisition (subsidizing free accounts), building technology infrastructure, and achieving the network effects required for long-term viability—all before reaching scale for profitability.

## Question 14

**A marketplace lending platform earns a 3% origination fee and 0.75% annual servicing fee. On a \$10,000 loan with 3-year term, what is the platform's total fee revenue?**

- A. \$300
- B. \$225
- C. \$375
- D. \$525

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Origination:  $\$10,000 \times 3\% = \$300$ . Servicing:  $\$10,000 \times 0.75\% \times 3 = \$225$ . Total:  $\$300 + \$225 = \$525$ . (Simplified: ignoring principal amortization for the servicing fee.)

**What is the “chicken-and-egg” problem in two-sided platforms?**

- A. Neither side will join unless the other side is already present
- B. Whether to launch in domestic or international markets first
- C. Whether to hire engineers or marketers first
- D. Whether to build mobile or web application first

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In two-sided markets (e.g., payment networks), consumers will not join without merchants, and merchants will not join without consumers. Platforms solve this by subsidizing one side initially.

## Question 16

### What is a super-app?

- A. An application with superior download speed
- B. An app exclusively for premium banking customers
- C. A single mobile application serving as a platform for multiple services including payments, shopping, and messaging
- D. An app that works across all operating systems

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A super-app bundles multiple services (payments, e-commerce, messaging, transport, financial services) into one application, becoming the user's primary digital interface.

## Question 17

**Winner-take-most dynamics are weaker in financial services compared to social media because:**

- A. Financial services companies are always non-profit
- B. Banks do not use technology platforms
- C. Financial services have no network effects
- D. Users commonly multi-home (use multiple banks/apps) and regulation prevents monopolies

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Unlike social media (where you want all friends on one platform), consumers routinely hold accounts at multiple banks and use multiple payment apps. Regulators also actively prevent monopolistic concentration in financial services.

## Question 18

**A fintech has 1 million users, 8% premium conversion at \$12/month, and all free users generate \$1.50/month in interchange. What is total monthly revenue?**

- A. \$2,340,000
- B. \$1,500,000
- C. \$960,000
- D. \$2,100,000

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- C. \$960,000
- D. \$2,100,000

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Premium:  $80,000 \times \$12 = \$960,000$ . Free users also generate interchange:  $920,000 \times \$1.50 = \$1,380,000$ . Total:  $\$960,000 + \$1,380,000 = \$2,340,000$ .

## Question 19

**Which path to profitability typically offers the highest margins for a neobank?**

- A. Cross-selling into consumer lending
- B. ATM withdrawal surcharges
- C. Foreign exchange commissions
- D. Interchange fee revenue from card transactions

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Lending generates Net Interest Margins (NIM) of 3–8%, far exceeding interchange (0.2–0.3% in EU-regulated markets) or FX margins. This is why many neobanks pivot to lending as they mature.

## Question 20

**A fintech with CAC of \$40 and monthly contribution margin of \$3 per user. How many months to break even on a single customer?**

- A. 40.0 months
- B. 3.3 months
- C. 13.3 months
- D. 8.0 months

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Breakeven months =  $\text{CAC} \div \text{Monthly Contribution Margin} = \$40 \div \$3 = 13.3$  months. If average customer lifetime is shorter than 13.3 months, the fintech loses money on that customer.