

In-Class Activity: Revenue Layer Sort, SOLUTIONS

Digital Finance, BSc Course

Prof. Dr. Joerg Osterrieder

Day 5A companion (Follow the Money) | 15 min | Pairs

Setup. The Day 5A framework sheet defines three revenue layers in digital finance.

Infrastructure (Layer 1): fees paid to run the underlying network. Example: Ethereum validators earn gas + MEV.

Protocol (Layer 2): fees embedded in protocol rules. Example: Uniswap LP fee (0.30% per swap).

Application (Layer 3): fees from the user-facing product. Example: Coinbase trading fees, Coinbase One subscription.

Your task. For each of the 8 real revenue lines below, write the layer letter in the right-hand column: **(I)** Infrastructure, **(P)** Protocol, or **(A)** Application. Then circle the 3 items you found **most ambiguous** and be ready to defend the call.

#	Company	Revenue line (2024)	Layer	Ambig?
1	Coinbase	Retail trading spread (1.49 to 3.99% above mid-market on buys/sells)		<input type="radio"/>
2	Circle	USDC reserve float, T-bill yield (about 5.3%) on circulating USDC supply		<input type="radio"/>
3	Robinhood	Payment for order flow (PFOF): market makers pay for retail order routing		<input type="radio"/>
4	Visa	Network interchange fee on every card swipe (about 0.10 to 0.15%)		<input type="radio"/>
5	Uniswap LPs	0.30% swap fee distributed to liquidity providers on every pool swap		<input type="radio"/>
6	Ethereum validator	Gas fees + MEV + staking yield (about 3 to 5% APY on staked ETH)		<input type="radio"/>
7	Coinbase	USDC float share: Circle remits about 50% of T-bill income to Coinbase		<input type="radio"/>
8	Stripe	2.9% + \$0.30 card-acceptance fee charged to the merchant (online checkout)		<input type="radio"/>

Debrief prompts (2 min each). (a) Which item exposes the firm to interest-rate risk first? (b) Which two items are structurally identical but earned by different firms? (c) Pick any Application-layer item and name the cost line that scales with it.

Reminder: the locked taxonomy comes from `content_day5_framework_sheet.tex`. Many real firms span multiple layers (Coinbase appears twice on purpose).

Answer Key **1. A** Coinbase retail spread: classic Application layer, fee on user-facing product, scales with retail volume. **2. P** Circle USDC float: Protocol revenue baked into the stablecoin issuance rules (zero yield to holders, all yield to issuer). **3. A** Robinhood PFOF: Application monetisation of the user relationship, market makers pay the broker for routing. **4. P** Visa interchange: Protocol toll on every transaction over the card network rules. **5. P** Uniswap LP fee: textbook Protocol revenue, embedded in the swap rule (0.30%). **6. I** Ethereum validator: textbook Infrastructure, earned for running the network regardless of which app is on top. **7. P** Coinbase USDC float share: same Protocol mechanism as Circle's, half delivered to Coinbase via contract. Note Coinbase therefore sits at TWO layers (A on #1, P on #7). **8. A** Stripe checkout: Application-layer SaaS markup on top of the underlying card rails.

Defensible re-classifications. Item 3 (PFOF) some students argue is Protocol because it scales with order count, not user count; counter: the payer is the market maker, the value sold is access to retail flow, that is the user relationship. Item 4 (Visa) some argue is Application because Visa runs consumer-facing rails; counter: the customer is the issuing bank, not the cardholder, the fee is embedded in the network rule. Item 8 (Stripe) some argue is Protocol because the fee is per transaction; counter: Stripe sits above the rails and sells a developer SDK + dashboard, the markup is application-layer convenience.

Debrief answers. (a) Item 2 first: when 3M T-bill yield drops from 5.3% to 2%, Circle revenue collapses (S-1 lists this as Risk #1). Item 7 inherits the same risk via the 50% share. (b) Items 2 and 7 are the identical float mechanism, earned by different firms (Circle issues, Coinbase distributes). (c) For item 1 (Coinbase retail spread), the matching cost line is technology + compliance: about \$1.6B engineering plus regulatory headcount, fixed regardless of volume; this is why a 75% revenue drop in 2022 produced a \$1.1B net loss.