Sector and Market Analysis

Interview preparation summary · VC track

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INT.VS.1.a · Software and AI, and fintech

Judge whether a software company is venture-scale from its growth, retention, gross margin and sales efficiency, and say how much capital it will need.

A software company is venture-scale when it can plausibly reach a very large revenue base because each customer is cheap to serve, stays, and spends more over time. Start with annual recurring revenue (ARR) and build it as a bridge: opening ARR plus new logos plus expansion less churn. From the bridge take net revenue retention (NRR), which includes expansion, and gross revenue retention (GRR), which does not. NRR above 100% means the base grows without new sales. Then test efficiency. Gross margin shows whether the product is software or services in disguise. CAC payback, which is sales and marketing spend divided by new ARR times gross margin, shows how long a customer takes to repay its cost. The burn multiple, net burn divided by net new ARR, shows how much cash each pound of growth consumes. Capital need follows from these: a company with long payback and weak retention must keep raising to stand still. The usual mistake is to admire growth alone, or to quote NRR from a few large accounts. Ask which cohort, which segment, and whether growth survives when the founder stops selling personally.

WORKED EXAMPLE: READING A SOFTWARE BRIDGE: LARCH LEDGER

Larch Ledger sells accounts-payable software to mid-size firms. Opening ARR is 6.0m. During the year it added 1.8m of new-logo ARR and 0.9m of expansion, and lost 0.6m to churn. Sales and marketing spend was 2.4m, gross margin is 75% and net burn was 3.15m. Is it venture-scale, and what would you ask next? Convention: annual figures, ignore discounting, CAC payback measured on new-logo ARR.

Answer: Larch is a decent software business but not yet clearly venture-scale: 35% growth, 105% NRR, 90% GRR, 21-month payback and a 1.5x burn multiple.

> **Interview tip:** Say it in this order: the bridge, the two retention numbers, the efficiency numbers, then your view on scale and the cohort questions you would ask.

INT.VS.1.b · Software and AI, and fintech

Assess an AI company's gross margin, cost of inference, defensibility and dependence on model providers, and explain how they change what a venture investor should pay.

AI companies look like software on the revenue line but can look like services on the cost line. Each use of the product may call a model, and that inference cost, plus hosting and any human review, sits in cost of goods. So the first test is gross margin, built per customer: price, less inference, less review and support. The second test is the direction of unit cost against usage. If usage per customer grows faster than the price per call falls, margin shrinks as the product succeeds. The third test is pricing: seat prices detach revenue from cost, while usage or outcome pricing tracks it. Defensibility is the fourth: proprietary data, workflow depth, integration into systems of record and distribution survive a better base model; a thin layer on a public model does not. Also check dependence on one provider, since price changes or a rival launch can erase the product overnight. Typically investors accept lower gross margin early if it is rising and if cost per task is falling. The usual mistake is to value AI revenue at software multiples without checking what each dollar costs to deliver.

WORKED EXAMPLE: MARGIN UNDER GROWING USAGE: QUILL ASSIST

Quill Assist sells an AI support agent. Each customer pays 120k a year. Inference and hosting cost 54k per customer and other delivery cost (review and support) is 6k. Customers are expected to use 40% more tasks next year at the same price. Separately, the cost per task from the model provider may fall by 30%. What happens to gross margin? Convention: annual figures per customer, other delivery cost unchanged.

Answer: Margin is 50% today, 32% if usage rises 40% at a flat price, and about 51% if unit cost also falls 30%. The company needs pricing or efficiency levers to reach 70%.

> **Interview tip:** Say: gross margin is price less cost per task times tasks. Show how usage and unit cost pull in opposite directions, then name the lever that fixes the gap.

INT.VS.1.c · Software and AI, and fintech

Distinguish payments, lending, infrastructure and insurance fintech models, and explain how take rate, loss rate, funding and regulation decide capital need and venture-scale.

Fintech is several businesses. A payments company earns a small take rate on volume after the card scheme and bank costs, so revenue scales with volume and needs little balance-sheet capital, but margins are thin and fraud, chargebacks and merchant churn matter. A lender earns a yield on loans less credit losses and funding cost, so growth needs capital: each new loan must be funded by debt facilities and equity, and a few points of extra loss can remove most of the profit. Infrastructure and software for banks sells subscriptions to regulated customers, with long sales cycles but high retention. Insurance technology depends on loss ratios and who carries the risk. The venture questions are: who holds the credit or fraud risk, how much regulatory permission is needed (a licence or a sponsor bank), how concentrated are the funding sources, and does the product lower cost for the customer or just subsidise growth. Test loss rates by vintage, not for the whole book. The usual mistake is to count loan originations as revenue and ignore that growth consumes capital that venture equity must supply.

WORKED EXAMPLE: LENDER SENSITIVITY: MARROW CREDIT

Marrow Credit lends to small traders. Its book is 20m of loans earning a 24% yield. Credit losses are 9% of loans. It funds 15m of the book with a debt facility costing 9% and 5m with equity. Operating costs are 1.0m. What is its profit and return on equity, and what happens if losses rise to 12%? What would doubling the book require? Convention: annual figures on a static book, ignore tax.

Answer: Marrow earns 0.65m (13% return on equity) but 12% losses cut that to 0.05m, and doubling the book needs about 5m more equity plus 15m more debt.

> **Interview tip:** Say: whoever holds the credit risk and funds the book decides the capital need. Give the loss sensitivity as a share of profit, then contrast with a capital-light model.

INT.VS.2.a · Healthtech and biotech, climate and deep tech, consumer and marketplaces

Explain how value, risk and capital need differ between biotech and digital health, using clinical-stage probabilities, reimbursement and sales-cycle evidence.

Biotech and digital health share the word health but not the risk. A biotech asset moves through trial phases with falling odds: typically well under half of programmes pass phase II, and few pass all the way to approval. Value is created at data readouts, so investors fund to a readout and ask what it would prove, what the next round costs, who would buy the asset and whether the regulator accepts the endpoint. The test is expected value: the probability of reaching each step, the exit value if it works, and your diluted ownership then. Digital health and devices have lower technology risk but a hard route to revenue: someone must pay. Test the payer (insurer, health system or employer), reimbursement codes, the length of the sales cycle, clinical evidence for the buyer, and integration with hospital systems. Pilots that never convert are the typical failure. The usual mistake is to treat a biotech like software, forgetting binary outcomes, or to treat a digital health pilot as revenue when procurement has not signed.

WORKED EXAMPLE: EXPECTED VALUE OF A PHASE II BET: VELLUM BIO

A fund can invest 10m for 25% of Vellum Bio at a post-money value of 40m. Later rounds before the phase II readout will dilute the stake to 15%. Chance of passing phase I is 60% and of then passing phase II is 35%. If phase II is positive, a pharmaceutical buyer would pay 250m. If either fails the stake is worth nothing. Is the price right? Convention: ignore time value and the liquidation preference.

Answer: The expected multiple is 0.79x. The price only works at about 317m exit value, a lower entry price, or better odds of success.

Interview tip: Say: odds times payoff times diluted ownership. State the breakeven exit value, then say which of price, odds or exit you would challenge.

INT.VS.2.b · Healthtech and biotech, climate and deep tech, consumer and marketplaces

Separate technology, market and financing risk in climate and deep tech, and use cost-curve and capital-need arithmetic to decide when venture capital is the right funding.

Climate and deep tech companies carry risks that software does not. Technology risk is whether the science or engineering works at scale. Market risk is whether customers will pay, often against a cheaper fossil incumbent and a policy price that can change. Financing risk is that the first plant or product line costs far more than a typical venture round. The central tool is the cost curve: unit cost usually falls by a fixed share each time cumulative output doubles (the learning rate), so the question is how many doublings are needed to reach the incumbent's price, and what each doubling costs in capex. Venture funds are best at buying down technology risk with pilots and first-of-a-kind demonstrations; later plants are often funded by project finance, strategics, grants and infrastructure funds once the plant is bankable. Test offtake agreements, unit cost at the next scale, customer capex tolerance and policy exposure. The usual mistake is to underwrite a technology that works in a lab without asking who funds the tenth plant, or to assume subsidy will last.

WORKED EXAMPLE: COST CURVE AND CAPITAL: BASALT CEMENT

Basalt Cement makes low-carbon cement. Its first plant has 10 thousand tonnes of annual capacity and a unit cost of 300 per tonne, against a conventional price of 120. Each doubling of cumulative capacity cuts both unit cost and plant cost per tonne by 20%. The first plant cost 45m (4,500 per tonne of capacity). How many doublings are needed to reach 120, and how much capital will they need? Convention: each doubling builds as much new capacity as already exists; ignore inflation and financing costs.

Answer: Parity needs about 4.1 doublings (17x volume), roughly 333m of further plant capital after a 45m first plant. Venture money buys the first plant, other capital must fund the rest.

Interview tip: Say: how many doublings, what each costs, then who funds each stage. Show the sensitivity to the learning rate.

INT.VS.2.c · Healthtech and biotech, climate and deep tech, consumer and marketplaces

Evaluate a consumer or marketplace business using take rate, liquidity, repeat behaviour, contribution margin and disintermediation, and judge whether unit economics support venture scale.

Consumer companies and marketplaces are venture-scale when they build a habit or a network that gets cheaper to grow. A marketplace earns a take rate on gross merchandise value (GMV); the test is liquidity, meaning the share of listings that sell or requests that are matched quickly. Then build contribution margin per order: take-rate revenue less payment costs, refunds, insurance and support. Cohort curves show whether customers return. Customer acquisition cost (CAC) against lifetime contribution shows whether paid growth works. The characteristic failure is disintermediation: once buyer and seller have met, they trade off the platform, especially in high-trust services with repeat need. Defences are payment, insurance, software tools and guarantees. Direct-to-consumer brands add inventory risk, returns and dependence on paid social channels. Typically investors look for a cohort that keeps spending, a falling blended CAC through organic and referral growth, and a repeat share that does not depend on discounts. The usual mistake is to quote GMV growth while ignoring that revenue per customer shrinks as repeat activity leaves the platform.

WORKED EXAMPLE: LEAKAGE IN A SERVICE MARKETPLACE: TILBURY TRADES

Tilbury Trades matches households with tradespeople. A typical job is 300 GMV and the take rate is 12%. Payment costs are 1.5% of GMV and refunds and support cost 3 per job. Half of customers rebook each year. Customer acquisition cost is 30. If 30% of repeat jobs move off the platform, what is lifetime contribution and CAC coverage over three years? What if leakage falls to 10%? Convention: three-year horizon, no discounting.

Answer: Contribution is 28.5 per job, about 42 per customer (1.4x CAC) with 30% leakage and 47 (1.6x) with 10%. The marketplace works only if it can hold repeat jobs.

> **Interview tip:** Say: take rate, contribution per order, repeat on platform, then CAC coverage. Name leakage and the defence against it.

Summary of the Charta interview-preparation topic. Companies and figures in the examples are invented. Draft content, not yet expert reviewed.