

Wall Street Playbook.

FREE FIELDNOTES / GROWTH EQUITY

Growth equity: reconcile the retention story

Fictional software company Northline Cloud reports 25% ARR growth and says its customer base is expanding. Work from the opening customer cohort to determine how much growth came from retention and how much required new business.

THE TASK

Explain how retention, new customer acquisition and cash needs change an investment view.

Investment interview practice | Suggested session: 35 minutes

Updated 2 October 2026. Original exercises with stated assumptions and source notes.

How to use this resource

Work through the prompts before checking the answers. Keep a record of the assumption or step that caused difficulty, then repeat that part without notes. The suggested timing is a study aid, not an employer assessment standard.

The annual cohort bridge

For this exercise, ARR is annualized recurring subscription value. All movements use a consistent currency and definition; there are no acquisitions, foreign-exchange effects, restatements or reactivations. The expansion, contraction and churn figures refer only to the opening customer cohort. New customers are excluded from retention calculations.

ARR movement, \$m	Amount
Opening live ARR	10.0
Expansion from opening customers	+2.0
Contraction from opening customers	-0.5
Churn from opening customers	-1.0
New-customer ARR	+2.0

- Calculate ending ARR and total growth.
- Calculate gross revenue retention (GRR) and net revenue retention (NRR).
- Calculate the opening cohort's ending ARR and its contribution to net growth.
- Explain why NRR above 100% does not mean there was no churn.

Keep the cohort denominator fixed

$GRR = (\text{opening ARR} - \text{contraction} - \text{churn}) / \text{opening ARR}$. $NRR = (\text{opening ARR} + \text{expansion} - \text{contraction} - \text{churn}) / \text{opening ARR}$. The opening denominator stays fixed for both calculations. Do not add new-customer ARR to the retention numerator.

Opening cohort ending ARR / new ARR / total ending ARR

GRR / NRR / total growth

What the metrics show / what they do not show

Worked retention bridge

The existing cohort adds a net \$0.5m while new customers add \$2m, so 80% of the \$2.5m net ARR increase comes from new-customer ARR. NRR above 100% masks \$1.5m of contraction and churn, because expansion from remaining customers is larger.

The metrics do not show the number of customers lost, concentration, discounts, contract duration or gross margin. Two companies with 105% NRR can have very different customer risk and economics.

Calculation	Result
Opening cohort ending ARR: $10 + 2 - 0.5 - 1$	\$10.5m
Total ending ARR: $10.5 + 2$	\$12.5m
Total growth: $12.5 / 10 - 1$	25%
GRR: $(10 - 0.5 - 1) / 10$	85%
NRR: $10.5 / 10$	105%
Opening cohort net growth contribution	\$0.5m
New customer growth contribution	\$2.0m

The cash question

The company began the year with \$8m unrestricted cash and ended with \$5m. There was no financing, acquisition, asset sale or distribution; treat the \$3m cash decline as operating and investing net burn for this exercise. The next-year plan assumes the same net burn. Management uses burn multiple = net cash burn / net new ARR.

- Calculate the year's burn multiple.
- Calculate constant-burn runway from year-end cash.
- Stress expansion down to \$1m and new ARR down to \$1.5m, holding contraction and churn fixed. Recalculate ending ARR, growth, NRR and burn multiple if cash burn remains \$3m.

WORKED ANSWER

Cash and downside answer

Base burn multiple is $\$3\text{m} / \$2.5\text{m} = 1.2\text{x}$. Annual burn of $\$3\text{m}$ equals $\$0.25\text{m}$ monthly, so $\$5\text{m}$ year-end cash provides 20 months at constant burn. This is an illustrative runway, not a monthly cash forecast.

The downside produces opening-cohort ARR of $\$10 + \$1 - \$0.5 - \$1 = \$9.5\text{m}$, so NRR falls to 95%. Adding $\$1.5\text{m}$ new ARR gives $\$11\text{m}$ ending ARR and 10% growth. GRR remains 85%. Net new ARR is $\$1\text{m}$ and burn multiple increases to 3.0x. The same cash burn now buys less reported growth.

The denominator matters: a burn multiple becomes unstable as net new ARR approaches zero and is generally not meaningfully interpreted as a positive efficiency measure when net new ARR is negative.

What to request before paying for growth

Finish by writing one question that would disconfirm your preliminary view. A strong investment discussion explains what evidence could change the conclusion, not just what evidence would support it.

Diligence request	Decision it informs
Customer-level beginning and ending ARR, with movement reasons	Whether the aggregate bridge hides concentration or weak cohorts
Contract pricing and discount schedules	Whether expansion reflects durable usage or temporary commercial terms
Gross profit and customer-support costs	Whether retained revenue produces attractive contribution
Monthly billing, collections and cash forecast	Whether headline runway masks a near-term cash trough
Sales efficiency by cohort and channel	Whether new ARR depends on repeatable acquisition economics

Example preliminary view

Northline's 25% ARR growth is mostly dependent on new customers: the opening cohort contributes only \$0.5m of the \$2.5m increase. NRR of 105% coexists with 85% GRR and \$3m net burn. I would test customer concentration, expansion quality and collections before deciding what growth rate and valuation the evidence supports.

Source notes and next steps

SEC: how to read a 10-K

Background on reviewing disclosures and risk. The ARR definitions, dataset, scenarios and investment questions are original and explicitly stipulated.

<https://www.sec.gov/answers/reada10k.htm>

Continue when you have identified a gap

The full guide extends the analysis to customer data, cash forecasting, entry-price decisions and spreadsheet cases.

Preview the growth equity playbook

Read this resource online and find the current edition