Blossom Capital

FIELD GUIDE TO

Net Revenue Retention

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Blossom Capital

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Early stage capital, long term strategy.

What is Net Revenue Retention?

- NRR gives us a measure of how much expansion revenue will be generated from existing customers
- Also known as Net Dollar Retention when tracking revenue in USD
- Not a GAAP metric, so frequently calculated in “favourable” ways by public SaaS companies[1]. But important to focus on accuracy when using for modelling.

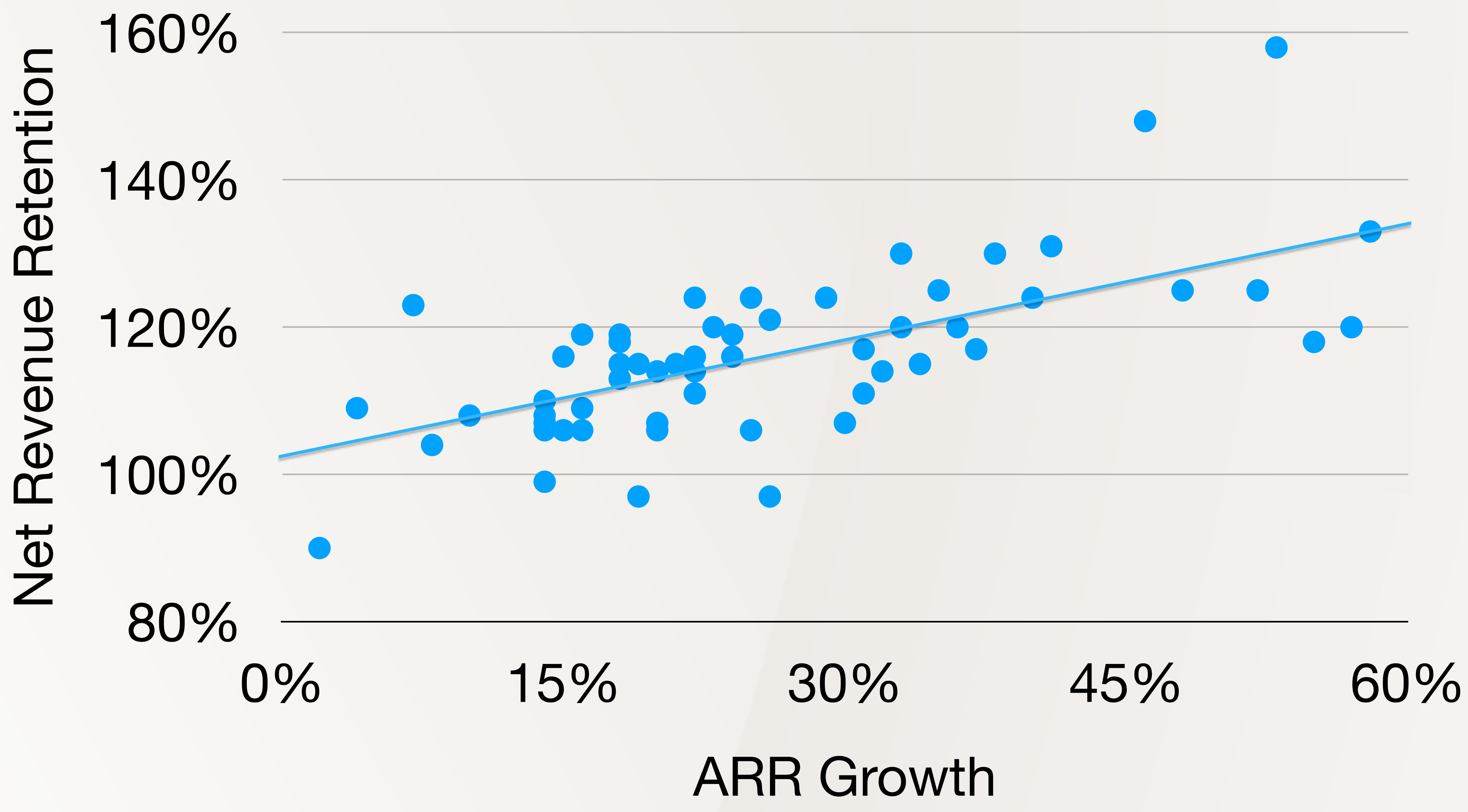
120% NRR =

On average a customer on 10k at the start of the year will end the year spending 12k

1. ALEX CLAYTON, HIGH-GROWTH SAAS NET DOLLAR RETENTION DEFINITIONSO HTTPS://DOCS.GOOGLE.COM/SPREADSHEETS/D/1OGELPTCT2S6JJ9WRBPOGQGUE5K4CO73XXCVQMEZE89M/EDIT#GID=0

Why is Net Revenue Retention (NRR) important?

PUBLIC COMPANY NET REVENUE RETENTION VS ARR GROWTH



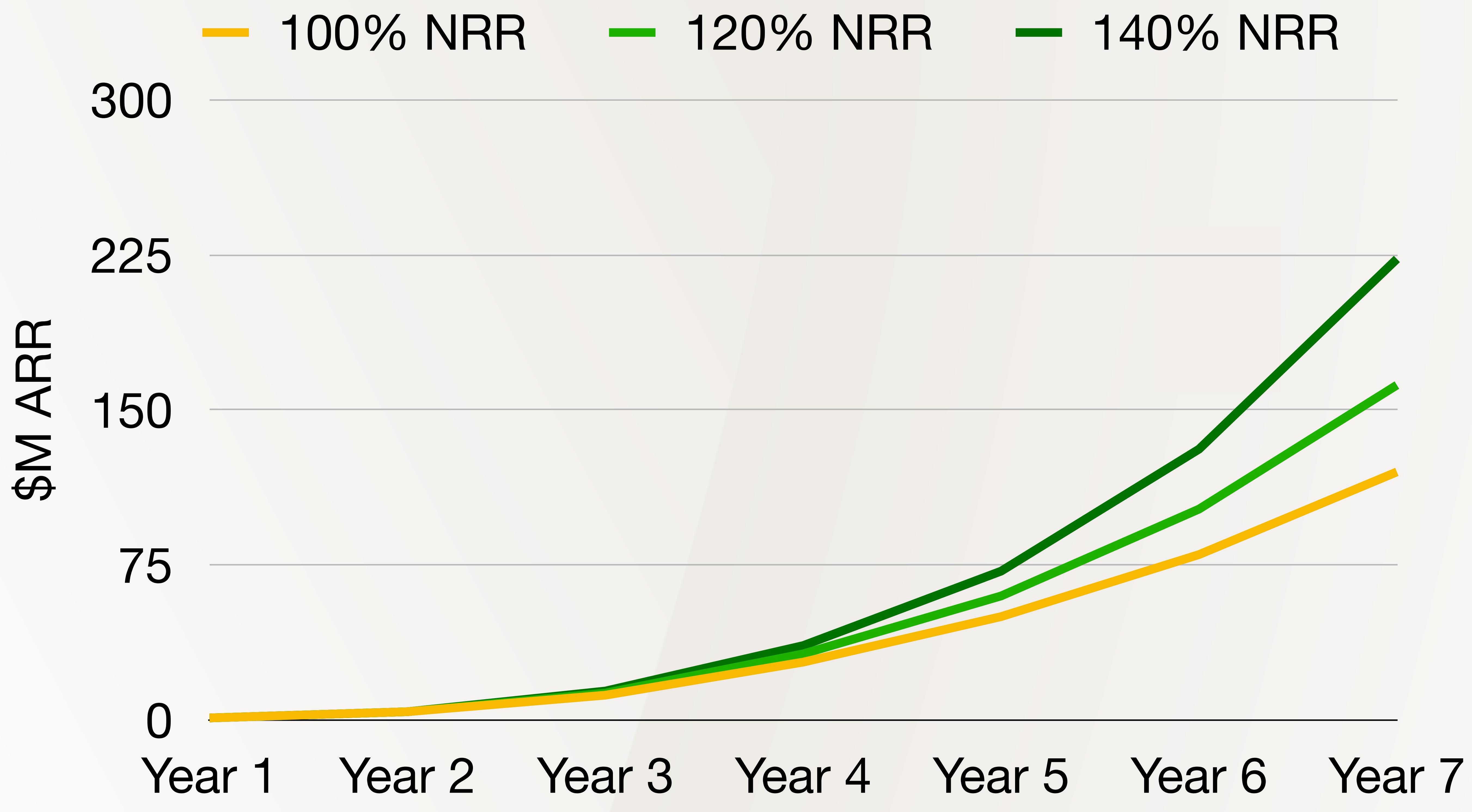
NOTES

- Post-IPO top-line revenue growth becomes very correlated with NRR
- The median public SaaS company generates 60% of their growth from NRR.
- In the long term NRR will become the primary driver of growth for your business.

While not impossible, it's hard to retrofit revenue expansion into a business where it doesn't exist organically. So even as early as seed stage it's critical to be embedding expansion and measuring it's performance.

The Compound Impact of NRR

IMPACT OF NDR OVER TIME



NOTES

The chart shows the growth of three identical companies; the only difference is NRR

While the impact of NRR seems small in the short term, it defines the trajectory in the longer term and can make a 2-3x difference in ARR by the time it comes to IPO.

New revenue from NRR also comes at a fraction of the cost of new customer revenue

Benchmarking Net Revenue Retention

WHAT DOES GOOD LOOK LIKE?

	NET REVENUE RETENTION
Best-in-class	>140%
Good	>120%
Danger Zone	<100%

NOTES

- These benchmarks are for typical early-stage (Seed-to-Series B) startups selling into mid to large size enterprises
- For companies selling to SMB or Consumers these numbers will generally be lower
- Where a startup's NRR falls within these benchmarks can significantly impact a company's equity valuation

How do you calculate Net Revenue Retention?

THE BASIC FORMULA

$$\text{NRR} = \frac{\textbf{ARR (today)} \text{ from customers } \textbf{>12 months old}}{\textbf{ARR (12 months ago)} \text{ from customers } \textbf{>12 months old}}$$

NOTES

- By default NRR is assume to be calculated on an annual (or 12 month) basis
- **ARR (12 months ago)** MUST include customers who've churned since then

While this definition works well for public companies, for an early-stage startup this isn't very helpful because it's a 12 month lagging metric and you need a much tighter feedback cycle for how things are going.

Early-Stage Net-Revenue Retention Calculations

MONTHLY NET REVENUE RETENTION

- Calculate NRR on a monthly rather than annual basis
- Can be used to approximate annual NRR
- Often easy to add in existing financial spreadsheets

COHORTED NET REVENUE RETENTION

- Calculate NRR for each cohort of customers vs on a blended basis
- Gives an in-depth view for how NRR is evolving
- Harder to calculate on an on-going basis

Standard practice for early-stage startups is to use both of these approaches, tracking Monthly NRR as part of monthly financials and cohorted NRR as part of annual financial planning or fundraising.

Monthly Net Revenue Retention

	May 2022	Jun 2022	Jul 2022	Aug 2022	Sep 2022	Oct 2022	Nov 2022	Dec 2022	Jan 2023	Feb 2023	Mar 2023	Apr 2023
Starting ARR	$0	$4,883	$8,681	$14,301	$19,530	$25,513	$32,299	$39,668	$45,628	$52,182	$61,121	$70,169
New Customer ARR	$4,900	$3,724	$5,390	$5,145	$5,880	$6,370	$6,860	$5,880	$5,929	$7,840	$7,840	$7,840
Expansion ARR	$0	$110	$247	$90	$157	$465	$575	$93	$667	$1,100	$1,277	$418
Churn & Contraction ARR	-$17	-$36	-$17	-$6	-$53	-$49	-$66	-$13	-$41	-$2	-$69	-$28
Monthly NRR	**100%**	**102%**	**103%**	**101%**	**101%**	**102%**	**102%**	**100%**	**101%**	**102%**	**102%**	**101%**
Annualized (NRR^12)	**100%**	**120%**	**137%**	**107%**	**107%**	**121%**	**121%**	**102%**	**118%**	**128%**	**126%**	**107%**

Monthly NRR =
(Starting Revenue + Expansion Revenue - Churn&Contraction Revenue) / (Starting Revenue)

NOTES

MRR, ARR or actual revenue can be used in this formula as long as it's used consistently

You can't calculate annual NDR by summing the monthly expansion/churn/contraction and dividing by revenue at start of period. As this will incorrectly include expansion of customers who joined after the start of the year.

Annualizing Monthly Net Revenue Retention

TECHNIQUE	NOTES
(Monthly NRR)^12	Assumes every month will have similar expansion to this month. Due to the small sample size at early-stage startups this approach is often volatile and unreliable
Average of (Monthly NRR)^12	Calibrates for the volatility in the above by averaging over a period of time.
Product of (Monthly NRR) for last 12 months	Annualizes by using 12 months data of monthly NRR expansion, capturing any seasonality in the expansion.

Cohorted Net Revenue Retention

Cohorted NDR looks at the revenue that a particular cohort (typically all customers who signed in the same month or quarter) and measuring how expenditure from those customers changes over time.

For every month in that cohort's life you take the revenue generated from those customers and divide it by how much those customers spent in their first month.

	Cohort Month									
Cohort	0	1	2	3	4	5	6	7	8	9
Jul 2022	$4,900	$4,923	$4,976	$4,991	$5,082	$5,100	$5,125	$5,220	$5,314	$5,391
Aug 2022	$3,724	$3,728	$3,738	$3,782	$3,841	$3,909	$3,933	$3,962	$3,968	
Sep 2022	$5,390	$5,486	$5,507	$5,607	$5,700	$5,805	$5,877	$5,903		
Oct 2022	$5,145	$5,228	$5,299	$5,332	$5,334	$5,340	$5,429			
Nov 2022	$5,880	$5,932	$5,961	$6,075	$6,115	$6,126				
Dec 2022	$6,370	$6,410	$6,422	$6,521	$6,608					
Jan 2023	$6,860	$6,870	$6,924	$6,972						
Feb 2023	$5,880	$5,905	$5,927							
Mar 2023	$5,929	$6,045								
Apr 2023	$7,840									

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Jan 2023	100%	100%	101%	102%						
Feb 2023	100%	100%	101%							
Mar 2023	100%	102%								
Apr 2023	100%									

Cohorted Net Revenue Retention

The value in this approach is understanding the nature of the expansion, do customers typically expand heavily in the first few months and then stabilize in spend (e.g. an initial rollout) or is it a continuous expansion as customer continue to expand their usage of the product driving up spend.

It also means we can quickly compare how behaviors are changing over time - ideally newer cohorts should be expanding faster than older cohorts as you increase the value of the product.

Just looking at the monthly NDR might mask over the differences between cohorts, for example top-line NRR might be good, but when you look at the cohorts you might discover the growth is being driven only by the older cohorts and the younger cohorts aren't expanding at the same rate. Which implies in the long term the NRR will drop as your new customers are behaving differently from older customers. Looking at cohorts can give you you an early warning sign that you might need to make changes.

	Cohort Month									
Cohort	0	1	2	3	4	5	6	7	8	9
Jul 2022	$4,900	$4,923	$4,976	$4,991	$5,082	$5,100	$5,125	$5,220	$5,314	$5,391
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Dec 2022	100%	101%	101%	102%	104%					
Jan 2023	100%	100%	101%	102%						
Feb 2023	100%	100%	101%							
Mar 2023	100%	102%								
Apr 2023	100%									

Best Practices: Handling Currency Fluctuations

For companies that invoice customers in multiple currencies they can find that FX volatility can cause NRR to fluctuate in ways that don’t reflect customer expansion or contraction.

This is generally solved by using fixed FX rates for the entire period of the calculation

Gains and losses from currency fluctuation don't compound so for purposes of calculating NRR should be ignored.

Best Practices: Customer Segmentation

When different customer groups behave differently (e.g. self-serve vs enterprise) best practice is to have separate NRR calculations for each segment

Critical to avoid cherry picking customers to include/exclude

Any segmentation should be consistent across financial reporting

Any information used for segmenting customers MUST be based on the start of the period

Common Mistakes: Miscalculating Annual NRR

	FY 2022
Starting ARR	$0.9m
New Customer ARR	$3.5m
Expansion ARR	$1.2m
Churn & Contraction ARR	$0.2m
NRR	211%

Calculating NRR as:

(Starting ARR + Expansion ARR - Churn & Contraction ARR) / (Starting ARR) using annual numbers

This approach includes expansion of customers who weren't customers at the start of the period, so overestimates the NRR.

The Annualizing Monthly Net Revenue Retention slide gives information how to calculate this correctly.

Common Mistakes: Look-forward segmentation

Defining segment as:

Customers who are on >$5k ARR today

This excludes customers who were >$5k a year ago but are <$5k now so hides the contraction & churn in this segment

Definition should be customers who are on >$5k ARR at start of period. Any information used to segment customers should have been available at start of period.

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