

# The Ultimate Cohort Analysis Cheat Sheet

This cheat sheet is designed as a more in-depth followup to The Ultimate SaaS Metrics Cheat Sheet, so we recommend reading that first.

## What is a cohort analysis?

“A cohort is simply a fancy name for a group” - *David Skok (@BostonVC)*

In SaaS, we use cohort analysis to observe what happens to a group of customers that join in a particular time period. So we have a January 2015 cohort, a February 2015 cohort, etc. We then visualise how our various cohorts behave over time.

## How to read a cohort analysis

Below is the most common cohort visualisation you'll come across in SaaS. It can be quite confusing the first time you see this diagram (time is going in two directions, half the cells are empty, etc). Like everything, it's simple once you understand it. Below are some pointers on how to read this diagram and why it looks the way it does.

Column 0 shows changes (if any) that happen in the same month the customer signs up.

Each row contains one group (cohort) of customers who started paying in a particular month. We follow the lifespan of each cohort (from left to right), starting in the month they converted. The columns (1, 2, 3, etc) represent the number months since they joined.

Customer churn cohort (% of customers churned relative to previous month)

	Cohort value	0	1	2	3	4	5	6	7	8	9	10	11
Feb 2014	\$999	2.50%	0.80%	5.93%	2.12%	1.35%	0.40%	1.04%	0.90%	0.90%	0.90%	0.90%	0.90%
Mar 2014	\$293	0.00%	1.50%	4.09%	3.65%	1.04%	1.43%	1.04%	1.04%	1.04%	1.04%	1.04%	
Apr 2014	\$89	1.22%	4.69%	5.80%	4.23%	2.15%	2.46%	2.46%	1.18%	1.18%	1.18%		
May 2014	\$999	2.40%	5.66%	5.82%	3.54%	1.35%	3.49%	1.04%	1.32%	1.32%			
Jun 2014	\$293	3.50%	2.67%	7.23%	2.12%	1.04%	4.52%	0.90%	1.46%				
Jul 2014	\$89	1.55%	2.56%	5.00%	3.65%	2.15%	5.55%	1.04%					
Aug 2014	\$999	1.34%	0.80%	4.09%	4.23%	1.35%	6.58%						
Sep 2014	\$293	2.50%	1.50%	4.12%	3.54%	1.04%							
Oct 2014	\$89	0.00%	4.69%	3.80%	2.12%								
Nov 2014	\$999	1.22%	5.66%	3.93%									
Dec 2014	\$293	2.40%	2.67%										
Jan 2015	\$89	3.50%											
Average	\$89	1.80%	2.98%	5.04%	3.39%	1.51%	3.49%	1.04%	1.18%	1.11%	1.04%	0.97%	0.90%

The first two columns show the month and the value of the cohort for that month; the total MRR (or customer count) of customers who converted in that month.

The reason these cells are empty is because this is the future, it hasn't yet been 6 months since November 2014 for example.

You could look at a cohort for just a single month, in which case there would be one row. The primary reason for stacking multiple rows like this is so you can see patterns evolving over time by scanning columns from top to bottom. In the above diagram we see the high churn rates observed in month two improving in August 2014, and then holding at those lower rates.

🗨 Grammar tip: An analysis (singular), many analyses (plural).

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## Why are cohorts so useful?

A cohort analysis lets you see a more complete picture of how your subscriptions evolve over their lifetime.

Instead of looking at aggregate numbers like churn rate, a cohort analysis visualises the way your churn rate evolves over the lifetime of a group (cohort) of customers who converted in the same time period (usually a specific month).

This allows you to find answers to questions like:

- At which point in the lifespan of a subscription is churn at it's highest?
- Does churn stabilise after some period of time?

You can then use this information to take appropriate action by focussing customer success efforts where churn is highest (e.g. in months one and two if we're seeing high churn in month two like on page one).

Then we can see if we had an impact and reduced the area of high churn based on later cohorts.

## Common uses in SaaS

The most common metrics used in SaaS cohort analyses are churn rate and retention rate (either customer or MRR).

The metric in each cell is usually relative to the previous column's cell, but you can also compare against the original cohort value to get a different perspective.

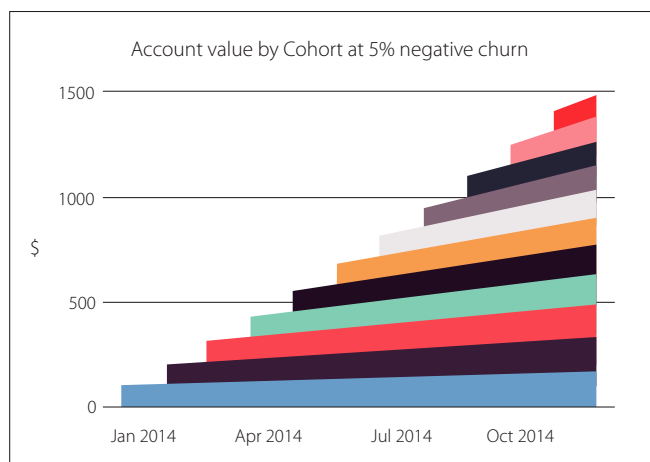
## Segmentation, segmentation, segmentation

The key to creating meaningful cohort analyses is segmenting your customers. Cohorts only really work well with monthly subscriptions (or shorter time intervals) and it's very important not to mix annual subscriptions into your monthly cohorts.

If you have enough data to play with it's also useful to segment (filter) your cohorts by plan and geographical region to get a really granular look at how your subscriptions evolve.

## Other ways to visualise a cohort analysis

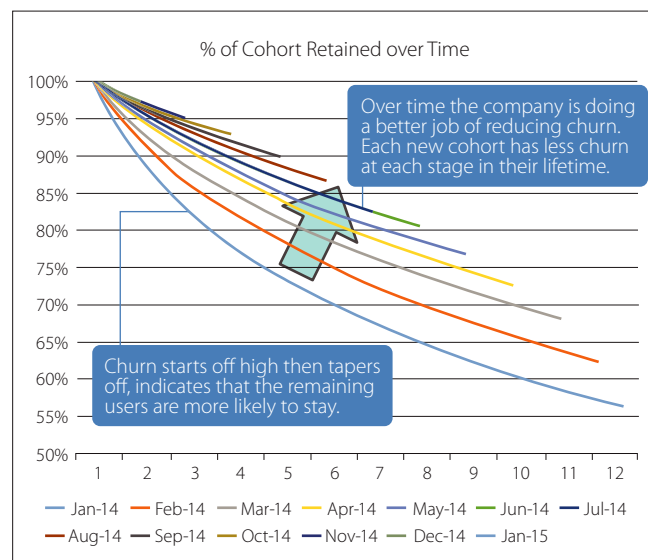
### Layer cake



Credit to Tomasz Tunguz ([tomtunguz.com](http://tomtunguz.com))

Here each bar shows the MRR growth from customers added in each month of 2014. This cohort visualisation shows the power of having 'negative churn' (aka SaaS nirvana).

### Hanging ribbons



Credit to David Skok ([www.forentrepreneurs.com](http://www.forentrepreneurs.com))