



## Cap Tables Explained

### Introduction

Capitalization tables (“cap tables”) are used to record and track ownership in a company. If you are a sole proprietor, then it is not necessary to use a cap table – you own 100% of the company. But, if you will raise money from investors and thus share ownership in the company, cap tables are not only helpful, but necessary as you begin discussions with possible investors and, hopefully, pay out dividends from profitable operations and/or divvy up the windfall after you sell the company. If you do take the company public, you also need to be able to show who owns how many shares...so they can sell them on the open exchange (NASDAQ or the NYSE).

Cap tables look very complex and involve numerous calculations and references to other numbers. There also are countless formats and layouts, which can add to the confusion. To understand how to create and read a cap table it helps to know that the two most important elements are the value of the investment and the percent of the company owned by each person or group. These are both measured in the number of shares. Value also is based on price per share. Simply, number of shares x price per share = value of investment.

As exciting as it may be, the initial number of shares granted to founder(s) is really arbitrary and not important. You are granting them to yourself. Pick a nice number as a starting point. Use a relatively big number (perhaps one million) because it allows for easier addition of future investors later (balancing math and common expectations). Also, despite your great ambitions, the initial value of founders’ stock is, well, essentially zero, so price per share is not calculated until first investor comes in.

You also should set aside a pool of stock or options for future employees if you think that will help entice people to work for you or motivate employees. This is especially important if you will need employees before you have the cash to pay them salaries. This pool of stock may also be used to reward (i.e. pay) a board of directors for their time and contributions. Usually about 10%-20% is a good percentage to allocate. You’ll want to be near the high end if you think you’ll need to recruit a high-powered CEO to replace you as the company grows or other executives to help lead your growing enterprise. For simplicity, this pool will not be discussed during the rest of this discussion, but can be assumed to be included in the founders’ or existing shareholders’ stakes. In reality, it is separate from founders’ stock, is a different line item on the cap table (i.e. a row in an Excel spreadsheet) and does need to be called out separately.

Founders should expect their percent owned to decrease over time, but the number of shares will not change, and the value of these shares (measured in price per share) should increase as the company increases in value. Remember, “worth” equals number of shares multiplied by price per share. But, for each new round of investors, founders should expect their equity stake to decrease in proportion to the percent of the company new investors are buying. This is dilution. If a new investor buys 25% of the company, previous owners should naturally expect to see their ownership



in the company decrease by 25%. Total ownership always has to equal 100%.

Note on dilution: Suppose after the first investment round, the founders own 80% and the angels own 20%. Further supposed that the next round of investors will come in and own 30%. It's a minor point, and probably obvious, but worth commenting on. Founders' shares do not decrease by a straight 30%. That would be  $80\% - 30\% = 50\%$ . Instead, they decrease as a percentage of current ownership. That is,  $80\% * (1 - .30\%) = 56\%$ . Likewise, the original angels' share decreases to  $20\% * (1 - 30\%) = 14\%$ . You can check the math by adding all the ownership shares:  $56\% + 14\% + 30\% = 100\%$

Second note on dilution: The term "dilution" often has negative connotations. There is natural dilution as described here, which is a sign of growth and a "cost" associated with raising money. Then there is excessive dilution caused by "cram downs" or "down rounds". If the company suffers a set back and needs to raise money at a lower valuation or share price than set during a previous investment round, existing share holders will sacrifice greater than expected dilution. Since the stock has gone down, existing shareholders lose value and new investors can buy more at this low price.

### Cap Table Calculations

There are some basic formulas you should know (see Excel sheet). Sometimes, certain figures are only derived by working backwards from a calculation.

A: Pre-money valuation + investment = post-money valuation

B: Investment / share price = number of shares to investor(s)

C: Share price = pre-money valuation / number of existing shares

Note: Share price is also known as price per share

How do you determine how many shares a new investor gets? The simplest way, assuming calculations have already been made, is to divide their investment (say \$100,000) by the established price per share (say \$.50), which equates to 200,000 shares. However, for the first investor, the calculations are not already made. You need to step away from the cap table for a moment to get the required information.

1. You should determine your company's pre-money valuation independent of the cap table. For simplicity, let's say you determine (probably with the "assistance" of a new investor) it is \$1M.
2. You should determine how much money you need to raise to reach a significant milestone. Let's say you need to raise \$500,000.
3. Your "post-money" value will be  $\$1M + \$500K = \$1.5M$ , meaning the investor will receive one-third ( $\$500K/\$1.5M$ ) for the investment. Any fractional investment will receive a pro rata share of the company. For example, if someone invests \$50K out of the \$500K, they receive  $\$50K/\$1.5M = 3.3\%$  of the company. Alternatively, you could calculate this as 1/10 the total investment round (of \$500K), which also equates to 1/10 of the new ownership stake (f 33%); resulting in the same 3.3%.



So, let's assume you have one investor who puts in the whole \$500K for 33.3% of the company. That leaves the existing, or previous, shareholders with 66.7% of the company (which is 100% minus the new investor's negotiated stake of 33.3%). Sum up the number of existing shareholders' shares. Let's say they have a total of 2 million shares. Remember, this number was arbitrary to begin with but becomes important very soon. Also remember this number does not change as new investors come in. With these two numbers (2 million shares = 66.7% of the stock), there are two common calculations to determine how many shares new investors will receive.

First, we now know those 2 million shares are worth \$1 million (from the pre-money). This means each share is worth \$.50 (price per share = value/number of shares = \$1M/2M). The new investor coming in with \$500K will thus buy 1 million shares (\$500K/\$.50 price per share). Quick check:

	<b>Value and/or Investment</b>	<b>Price Per Share</b>	<b>Shares</b>	<b>% of shares (% ownership)</b>
Founders	\$1,000,000	\$.50	2,000,000	66.7%
Investor	\$500,000	\$.50	1,000,000	33.3%
<b>Total</b>	<b>\$1,500,000</b>		<b>3,000,000</b>	<b>100%</b>

Another common way to calculate these numbers is to take the number of total existing shares (2 million) divided by the founders' updated ownership share of the company (66.7%), which equals total shares after investment (3 million). The founders keep the same number of shares (2 million), which means the balance of 1 million goes to the new investor. This investor paid \$500,000 for the 1 million shares, meaning the price per share is \$.50. These are the same value as the first method above. Good.

With multiple rounds, investors can continue to invest at the then current price per share to accumulate more and more shares. Imagine an investor who invests \$100,000 in each round. As described above, if the initial round "is going at 50 cents a share", this buys 200,000 shares. If, as one would expect, the price per share increases over time to each round as the company becomes more valuable, perhaps their investments and holdings would look like this:

<b>Round</b>	<b>Investment</b>	<b>PPS</b>	<b>New Shares</b>	<b>Total Shares</b>
A	\$100,000	\$0.50	200,000	<b>200,000</b>
B	\$100,000	\$0.75	133,333	<b>333,333</b>
C	\$100,000	\$1.00	100,000	<b>433,333</b>
D	\$100,000	\$2.00	50,000	<b>483,333</b>
E	\$100,000	\$10.00	10,000	<b>493,333</b>
<b>Total</b>	<b>\$500,000</b>		<b>493,333</b>	



It's important to keep in mind that, when the company is sold, a share is a share, regardless when or at what price someone received it (not accounting for other terms, such as liquidation preference, or options). For the company, the price per share simply helps determine how many shares an investor buys for a given dollar investment. For an investor, it also helps them determine their investment gain and ROI.

So, in this example, if the company is sold for, say, \$117 million, and there are a total of about 5.8 million shares outstanding, the calculated price per share is about \$20 per share. This investor, with 493,333 shares, would receive \$9,866,667. The investor would make nearly \$10M, not including taxes. Since they invested \$500,000, that's not a bad return. As a whole, this investment returned about "20x" (which comes from  $20 \times \$500,000 = \$10,000,000$ ), but most investors would also look at each \$100,000 investment independently as well, and consider the time horizon for each to really judge the return.

### **Creating Your Cap Table**

There are a number of templates you could use to build your cap table. A useful cap table should allow for easy identification of each individual shareholder's number of stock held at each step, their percentage owned at each step, the share price for each round, and the pre- and post-money valuations at each round. The common practice is to list shareholders down the left column and describe each investment round across the top of the page. Please see Excel file entitled "Cap Tables Explained.xls."

Founders are usually listed first, then any executives who have been given an equity stake, and the employee/director option pool. Investors from the first round are then listed next; individually, but clearly grouped together (put an extra blank row or border above the first name and below the subtotal below the last name). Repeat this for each subsequent round and always put subtotals below each group to track their shares and ownership stakes.

It is also good practice to separate common shareholders from preferred shareholders. There are a number of differences between the two classes and reasons to delineate between the two on a cap table. In most cases, founders and employees own shares or options for common stock, and angel and VC investors own preferred stock. This also makes it easy to track on the cap table since the founders and employees are listed separately already.

Going across the page left to right, first include the number of shares and percent owned for each founder and the employees. Remember, there is no relevant share price or value. Share price and dollars invested will be included for investors. It also is useful to mark the date of each investment. A common order is date issued, dollars invested, shares issued, and percent ownership. Carry the calculations for each shareholder through for each round, not just the new investors.

Typically, each new round will bring in new investors who will receive new stock at new values. The calculations described above will apply for each round, but will get a little more complex as more shareholders are involved. Again, remember existing shareholders keep the same number of



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shares (unless they invest more). The steps are (and usually in this order):  
Independent of the cap table, determine how much money you need to raise to fund your business. Then:

1. • Sum up the existing shares  
As best you can, calculate a pre-money valuation for your company. This will set a share price that you can take to potential investors. You may need to be flexible on these values as you negotiate with investors.
2. • Record the new dollars invested by each new investor.  
You will be able to calculate the shares each investor will receive and the total shares issued at the conclusion of the funding round
3. • Calculate the ownership percentage for the new investor(s). You'll also be able to (and want to) calculate the new ownership stakes for existing shareholders).

In the sample cap table, you can see there really are only two variables you need to establish and enter manually (cells are highlighted in green), along with individual investments. The rest of the figures are automatically calculated (cells are highlighted in yellow). As you read the following descriptions of this example, you'll notice the **green** highlights that correspond with the numbers in the cap table.

I added a simple calculation highlighted in gray to track the value of existing shareholders with each round. Assuming an "up-round" each time (i.e. the share price increases with each new investment round), existing stocks will increase in value regardless of the percentage anyone owns of the company. The quickest calculation to see how much money you make each round is to calculate the change in stock price and multiply that by your number of shares. If they stock price increases from \$1 per share to \$2 per share, you just doubled your money...on paper!! Don't forget, you don't realize your gains (i.e. make money) until you sell your stock.

## Founding

Company is formed on New Years Day 2003 by two founders who agree to share company equally. Still reveling from their celebration last night, they allocate 10 million shares for each of them. Two months later, they bring on a Sr. VP and offer her 5 percent of the company. They realize giving her over a million shares sound like a lot, so they change their initial shares to **800,000** each and give her **100,000** shares. They also set aside another 15%, or **300,000** shares for future employees and directors. Total common shares are thus 2 million.

## A Round

Eight months later, they start to raise money to help the company grow. They determine they need **\$500,000** for about one year's cash needs and estimate their company is worth **\$1 million** dollars. They accept the fact that they will thus give up one-third of their company and issue one million shares. These then produce a share price of \$.50.



They talk to a number of possible investors and finally find a very wealthy and well-respected businessman to invest \$200,000 in the company. He agrees to the terms and thus buys 400,000 shares. After this lead investor, four other investors follow under the same terms. The round is complete. The founders still control over 50% of the company and the biggest investor controls about an eighth.

## B Round

The founders and investors determine another **million dollars** is needed to expand into a new market and are willing to sell between 20% and 40% of the company. After extensive negotiations, a group of six investors agree the company's pre-money value is **\$2.25M**, setting the share price at \$.75. The group collectively agrees to invest \$800,000 for about 25% of the company. This is within the company's range, so everyone's happy. Two of the original investors (call them Pat and Chris) agree to complete the round with \$100,000 each. The new investment receives a total of about 31% of the company.

Note: You could opt to add Pat's and Chris' across their row and just track their total shares, but there may be different terms associated with each round (other than just dollars). So, it's likely more clear to include Pat and Chris with the B Round investors. When Pat and Chris sell their shares, you should account for all their shares.

## C Round

The Board determines the company needs to raise **\$1M** and settles on the price of **\$1** per share, non-negotiable. This gives existing shareholders a nice 33% increase in value. With 4,333,333 shares already issued, the pre-money valuation at \$1 per share is \$4,333,333. The new \$1M will receive about 19% of the company.

Note: This scenario is not that uncommon, although success at inflexible fundraising may be a question. But, it shows how the calculations can flow in multiple directions because all these figures are tied together in set formulas.

The CEO presents to a local angel group that decides to form an LLC to invest \$500,000 as a single shareholder. (The angels own shares of this LLC, but from the company's perspective, the LLC is the shareholder of record.) True believer Pat put in another \$100,000 and eight others put in various amounts.

## Venture Round:

Riding on a track record of success, the company decides to fund even more rapid expansion by raising **\$5M** from VCs. Pat, the faithful investor, introduces the CEO to two venture capitalists Pat is close to and both invest. The VCs negotiate the pre-money value to be **\$10.75M**, which means they will own just under a third of the company. Further, everyone agrees to let Pat invest yet another \$100,000 into the company under the same terms as the VCs.



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Note: Compare Pat's investments with the example I used above of an investor that invested \$100,000 in multiple rounds. You can see how Pat accumulated 493,333 shares and stands to gain a lot from a sale of the company or IPO.

### **Summary:**

This cap table shows a company that has experienced steady growth and successfully raised multiple rounds of investments from about 20 different investors. While each founder started off with a little less than half of the company, they ended up owning only 10 percent of the company. Is this bad? At last valuation, that small piece was worth over \$1.5M. And, if the example of investor Pat is played out and the company is sold at \$20 per share, each founder will earn \$16M. Compare that to Pat's \$10M.

This simplified cap table does not include options or warrants, bonuses, vesting schedules, or conversions. These obviously add to the complexity of the cap table and should be discussed with your accountant and/or investors. Because these terms were not included, calculations for "fully diluted" percentage also were not included, but, as the name implies calculates a shareholder's percent ownership after all possible shares have been issued.

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