

How valuation and cap tables work

By Rita Khoriaty on March 23, 2016

Have you ever wondered how valuation is calculated and cap tables work? Read on. (Image via Business Collective)

In the context of venture capital transactions, the first point that comes to the attention of the founders in the term sheet is the valuation of the company.

Term sheets usually refer to pre-money valuation and post-money valuation. What is the difference between the two?

Post-money valuation is the valuation of the company after the investment. It is equal to the pre-money valuation plus the amount invested.

For example, if an investor invests \$1 million for 10 percent of your company, what is the implied pre-money valuation? At a first glance, you might think it's \$10 million. Wrong! \$10 million is the post-money valuation and not the pre-money valuation.

To calculate the post-money valuation, you simply divide the amount to be invested by the investor by the contemplated percentage of shares that he will be getting in the company. In the example above: post-money valuation is $\$1\text{M}/10\% = \10M .

Pre-money valuation is calculated by subtracting the amount invested by the investor from the post-money valuation. In the above case, the pre-money would be equal to \$9 million ($\10M minus $\$1\text{M}$).

Once the pre and post-money valuation are determined, you will need to figure out the exact number of shares that the investor will get in the company. Such number is calculated according to the following formula, on a fully-diluted basis, (assuming that all options, warrants, other convertible securities or any other rights to acquire common shares have been exercised or converted in full):

$Y / (X+Y) = Z$ where:

- Y is the total number of shares to be issued to the investor (assuming that the investment is made through a capital increase);
- X is the initial total number of shares meaning the total number of outstanding shares prior to the investment, taking into consideration all options, warrants and convertible securities and assuming that they are exercised or converted in full;
- Z is the contemplated percentage of shares to be owned by the investor.

In order to simplify the simulations, a capitalization table, commonly referred to as a “Cap Table” is used. The Cap Table shows the names of the shareholders along with their respective ownership percentages, quantity and type of shares (common or priority), at each round of investment.

A Cap Table would typically look like that:

		Pre-Investment		Post-Investment	
Type of shares		Nb. of shares	Percentage	Nb. of shares	Percentage
Founder 1	Common	325,000	48.15%	325,000	43.33%
Founder 2	Common	125,000	18.52%	125,000	16.67%
Employees (Employees Stock Options Plan)	Common (Issued)	0	0%	0	0%
	Common (Unissued)	225,000	33.33%	225,000	30%
Investor	Priority	0	0%	75,000	10%
Total		675,000	100%	750,000	100%

To go back to our example, the investor has promised to invest \$1 million against 10 percent of the company’s share capital. In order to calculate the number of shares to be issued to the investor, we will need to apply the above formula:

$$Y / (X+Y) = Z$$

$$Y / (675,000 + Y) = 10 \%$$

Therefore, $Y = 75,000$

It is worth noting that X includes the number of shares allocated to the Employees Stock Options Plan (225,000 shares), although such stock options are not exercised yet and the underlying shares are not thus issued. This is the effect of the fully-diluted capitalization. Had such a number not been taken into consideration, the number of shares to be issued to the investor would have been smaller (50,000 instead of 75,000 shares).

The next step is to figure out the issue price per share. Calculating this is relatively easy. Once you know how many shares the company will be issuing to the investor, you should simply divide the amount of the investment by the number of shares to be issued. In the above example, the issue price per share would be equal to \$13.33 (1M / 75,000).

Founders tend to sign with the investor that offers them the highest pre-money valuation. This is wrong. Do not obsess over pre-money valuation and consider the remaining terms of the term sheet which might also affect the economics of the deal, notably the liquidation preference. Besides, always remember that an investor can add huge value to your company and that “a smaller piece of a huge pie is better than a bigger piece of a little pie,” as business attorney [Scott Edward Walker](#) said.

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