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Calculating Investor Share Ownership

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Founders of startups often have difficulty understanding how to calculate the number of shares to be issued to new investors based on an agreed-upon valuation. The outline below provides a simple explanation of how to make this calculation, while helping founders understand the difference between pre-money and post-money valuations.

1. Assume that the founders and the new investors have agreed that the company is currently worth $18M and the new investors will be investing $5M.
2. If 100% of the company is worth $18M, then if the existing shareholders (the "founders") were to sell a 1% interest to an outside investors (with the money going into the hands of the founders selling their shares rather than to the company), that 1% would be worth $180,000 and following the sale of this 1% interest, the company would *still* be worth $18M (since only ownership of the company has changed hands (to some degree) and the company *itself* has not been affected by the transaction).
3. If, however, as it is typically the case with early stage companies, the money ($5M) ends up in the company, then although the "pre-money" value (i.e., *before* the $5M ended up in the company) is $18M, *after* the $5M investment *in* the company, the company is now worth $18M *plus* $5M, or $23M. That means each 1% interest in the company is – "post-money" – now worth $230,000.
4. The question to be answered is what percentage of this now $23M company will be owned by new investors and what percentage will be owned by the founders. Another way to put

this question is: how many % points of this $23M company does a $5M investment purchase where the investment funds end up in the company itself?

5. Since each % point is worth $230,000, the formula is as follows:

    $230,000 multiplied by X = $5M

    (where X = the number of % points to be acquired by the new investors for $5M)

6. This equation yields a result of $5M divided by $230,000, or 21.739%.

7. Thus, at the end of the day (i.e., after the investment and the issuance of the new shares to the new investors), the new investors would end up with 21.739% of the total outstanding shares.

8. Assuming there are 12M shares outstanding, the new investors will receive such number of newly issued shares which, when added to the 12M shares already outstanding, constitutes 21.739% of the total.

9. Algebraically, the formula would be

    X = 21.739% (12,000,000 + X)

    (where X = the number of new shares to be issued to the new investors

    (and also equals the increase in the number of shares that will be outstanding as a result of the issuance of these new shares to the new investors))

10. The only effect options and other convertible securities has on this discussion, is to increase the base number of shares in our calculation. Thus, assuming the company has 50,000 unexercised stock options and promissory notes that are convertible into 100,000 shares, on a “fully-diluted and as-converted” basis, the company would have 12,150,000 shares outstanding and the formula would be changed to:

X = 21.739% (12,150,000 + X) or 3,374,974.13 shares

11. Thus, as a result of the $5M investment by the new investors in the company, the company would now have 15,524,974.13 shares outstanding (on a fully-diluted and as-converted basis), of which 3,374,974.13 shares (or 21.739% of the total) shares would be owned by the new investors.