Financing Basics
Valuation and Capitalization:
It's Not Fake News

CMU SWARTZ CENTER FOR ENTREPRENEURSHIP

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Matt Kirmayer

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Overview

- Goals:
    - To understand the basic math for determining ownership and financing of a company
        - At formation and among the founding team
        - How valuation caps and discounts affect the number of shares into which SAFEs (and convertible notes) convert in an equity financing
        - How the valuation in an equity financing affects the number of shares investors purchase
    - To identify and recognize the many misconceptions about what the numbers really mean

Basics of Capitalization - Fundamentals

- What are authorized shares?
  - We create the shares a company will issue:
    - By stating a fixed number of shares in the certificate of incorporation (e.g., 10,000,000 shares)
    - The number only serves as a stop sign – it imposes a process on issuing shares
      - The COI can always be amended to increase the number of authorized shares
    - The authorized number of shares is never used for any calculations
  - This number is increased at several stages in the company's life – for example to create the shares issued to investors in equity financings
- What does it mean to own shares?
  - Share ownership is a numerical count used to determine proportional ownership among the owners (shareholders) of a company
  - Absent debt or preferred stock, this % determines how the pie is divided in the end

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Basics of Capitalization (cont'd)

- Examples:
  - One person owning 1 share, or 100, or 3,432,876 (with 10M authorized)
    - In each case, the one stockholder owns 100%
  - The absolute number is irrelevant
    - If you are the only shareholder, it does not matter how many shares you own—you own the entirety of the company: 1/1, or 3,432,876/3,432,876 = 100%
  - 2 people, each owning 1 share, or 100, or 3,432,876.
    - What is their ownership?
    - ½, or 3,432,876/6,865,752 = 50%
  - It is the proportional ownership between or among shareholders that matters
  - And this proportional ownership (mostly—we won't discuss liquidation preferences today) determines how the pie is divided when the company is acquired

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Basics of Capitalization (cont'd)

- The formula for determining percentage ownership:
  - The denominator is the total number of shares "issued and outstanding," and the numerator is, for any given shareholder, the number of shares that shareholder owns
- Absolute share numbers are a matter of resolution:
  - If you have 9 shares outstanding…
    - The lowest number of shares you can issue is 1, and
      - In this case 1/10 = 10% - That's why we use higher share numbers
  - Relative, not absolute ownership, is what matters
- What does proportional ownership mean?
  - At liquidation, the available assets (net of debt and liquidation preferences of venture capital) are distributed to the shareholders based on their proportional ownership
  - The actual number of shares an individual or entity owns in comparison to the whole is the means used to determine that proportional ownership

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A Word on Options and Option Plans

- Two founders often will describe their ownership as 40% / 40%, with 20% reserved for future investors or employees through an option plan (4M, 4M and 2M in an option plan)
  - This is incorrect: Actual current ownership always equals 100%
  - If this company were acquired tomorrow, the 2 founders would share 50%/50%
  - Shares issued in the future are dilutive
  - If the 20% option pool were used, it then would be 40%/40%/20%
- If the company is acquired and the plan shares have not been issued, no one owns those shares, and issued and outstanding shares (4M and 4M - 50% / 50%) share in the proceeds
- The term "fully diluted" ownership means we calculate percentages as if all the shares in the option plan have been issued (added to the denominator)
- Founders retain their actual shares, and future shares issued (from the authorized) increase the denominator and thus decrease their percentage ownership
  - 40/80 = 50%, but 40/100 = 40%. The trend should be obvious

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Let the Financings Begin

- We start with a group of founders owning easy-to-understand relative percentages of the company…
- And then we raise funds
- What is the impact?

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Convertible Note

- Convertible note is a loan (debt)
  - The instrument is called a "Convertible Promissory Note"
    - "Principal amount" = the amount of the loan
    - Interest rate, expressed as a percentage, accrues periodically
    - Maturity Date – The date that the convertible note (loan) is supposed to be repaid
    - Principal and accrued interest are due at "maturity"
    - BUT, the expectation is that the loan will NOT be repaid, and instead will be converted into equity at a future financing when the company sells shares to VC investors
    - Convertible notes have discounts and/or valuation caps
      - They allow the note investor to get shares at a lower price than a future VC investor pays
  - The convertible note investor essentially pays for shares today and receives them in the future when an institutional investor sets the valuation and terms
- Why do we use convertible notes and SAFEs?
  - Simple Agreement for Future Equity

SAFE

- Simple Agreement for Future Equity
  - A SAFE is very similar to a Convertible Note except:
    - Not debt (there is no maturity date and no obligation to repay the money)
    - No interest accrues
  - When the company does a future equity financing round, the amount of the SAFE is applied to the purchase of shares
    - Similar discount and/or valuation cap
    - Same net effect as a convertible note
      - a SAFE investor gives the company money now, but gets shares later when a future equity investor invests

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SAFE/Convertible Note (cont'd)

- Selling equity (shares) requires you to set a valuation (or imputes a valuation)
  - Why is this so?
  - How else would you know how much stock to issue to the investor?
    - If I invest $1M, now, how many shares would you issue to me? More in few slides
  - Companies try to avoid having early investors—friends, family, and less sophisticated investors—set the valuation of the company
  - Setting a valuation at this stage is wildly imprecise
  - Convertible note rounds are often for lower amounts of money—$100k to $1M (sometimes higher)—than you would raise from an experienced VC
  - Selling SAFES or notes is faster and far less expensive (legal fees) than selling shares of preferred stock
- Using a SAFE or note delays some tricky considerations and still gives the early investor a comparatively better deal

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Pre-Money v. Post-Money SAFEs

- Pre-Money SAFEs
  - $1M on a $10M valuation cap
  - The $10M valuation cap is stated ”pre” the money from the SAFE investment
    - Results in 9.1% ownership at the moment of issuance (1/11)
    - Then, the SAFE holder is subject to dilution from future issuances
    - The company capitalization (the denominator – remember it’s importance in share price) is calculated EXCLUDING convertible instruments.
      - Future convertible instruments do not increase the denominator and therefore do not reduce the share price
    - So, relative to future investors, whose share price will be based on a larger capitalization (denominator)
      - Pre-money SAFE holders do not get their share price reduced
        - Meaning they do NOT buy additional shares as a result of a lower share price
        - Meaning they absorb some of the dilution

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Pre-Money v. Post-Money SAFEs (cont'd)

- Post-Money SAFEs
  - $1M on a $10M post-money valuation
  - The $10M valuation cap is stated "post" the money from the SAFE investment
  - Results in 10% ownership at the time of issuance (1/10)
  - Then, the post-money SAFE investor maintains that ownership % right up until the moment of an equity financing
  - The company capitalization (the denominator) INCLUDES future convertible instruments
    - Future instruments increase the denominator
      - Which reduces the share price
        - Meaning they DO buy more shares so as to maintain their percentage interest
    - They are not diluted by future SAFEs and convertible notes
      - A sweet deal for investors and a tough deal for founders

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Preferred Stock Financings

- **Equity investors buy preferred stock, but what is preferred stock?**
- Financial elements include:
  - Liquidation preference (this is the big feature that distinguishes this class of stock)
  - Dividends
  - Anti-dilution protection
- Contractual elements include:
  - Board representation
  - Protective provisions
  - Representations and warranties
  - Information rights
  - Preemptive rights
  - Right of first refusal/co-sale rights
  - Other control provisions

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Preferred Stock Documentation

- Here’s what to expect in terms of documentation:
  - Certificate of Incorporation
  - Stock Purchase Agreement
  - Voting Agreement
  - Investors’ Rights Agreement
  - Right of First Refusal and Co-Sale Agreement
- Would you give someone millions and not have all kinds of rights and controls on the company?

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The Details…

- Let's get to the nuts and bolts
  - Institutional investors want to own a piece of the company
    - WHY?
    - It is NOT to earn 4% on a convertible note
    - Owning x% of a company that gets acquired for $1B is a great thing
  - How do we go about deciding how much stock/what percentage they get?
- We raise money using SAFEs and convertible notes first so we do not have to decide on the company valuation
  - Here's why that matters

Preferred Stock Valuation / Contrast with SAFEs and Notes

- **How do you know how many shares an investor gets for its $ investment?**
- You must determine the price per share
    - I like cookies and I have a dollar in my pocket…
    - The price per share is determined by dividing the company's (pre-money) valuation by the company's capitalization
        - Here are some easy examples:
            - The company is worth $1 and a single founder owns 1 share
            - 100% ownership
            - Her share is worth $1 – what else could it be worth?
            - Same, but the company is worth $1M—her share is worth $1M
            - The price per share means spreading the company value among the existing shares
    - Setting a valuation is the necessary first step to determining the price per share
    - Everything derives from the valuation and the capitalization
    - Company valuation of $10M and there are 10M shares outstanding?
        - What is the price per share?

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Preferred Stock Valuation / Contrast with SAFEs and Notes (cont'd)

- **Company A sold its stock for $1/share and company B for $2/share.**
- Who did better?

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Preferred Stock Valuation / Contrast with SAFEs and Notes (cont'd)

- It is IMPOSSIBLE to tell without knowing the valuation and capitalization of both companies

Preferred Stock Valuation / Contrast with SAFEs and Notes (cont'd)

- For a fixed valuation, share price varies as capitalization varies:
- A and B both have $10M valuations and an investor is investing $1M
  - Company A has 10M shares outstanding, so its price per share is $1
    - $1M investment equals 1M shares: 1,000,000/11,000,000 = 9.1%
  - Company B has 5M shares, so its price per share is $2
    - $1M investment equals 500,000 shares: 500,000/5,500,000 = 9.1%
- But both companies are worth $10M, so they are the same
  - The only variable is the number of shares that exist
  - And the absolute number of shares the investor buys changes, BUT
  - The percentage ownership stays the same

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Preferred Stock Valuation / Contrast with SAFEs and Notes (cont'd)

- Given a fixed capitalization, varying the valuation changes the share price
- Now imagine that a company has 10M shares outstanding and an investor invests $1M
  - If the valuation is $10M, then the price is $1/share
    - $10M/10M shares = $1/share
    - And the investor buys 1M shares at $1/share
    - 1,000,000/11,000,000 = 9.1%
  - If the valuation is $5M, then the price per share is $0.50/share
  - $5M/10M shares = $.50/share
    - And the investor buys 2M shares for a $1M investment
    - 2,000,000/12,000,000 = 16.7%
  - Companies negotiate for higher valuations because it raises the share price
    - And this means they sell fewer shares per dollar

Contrast to SAFEs – Valuation Cap

- The price per share determines how many shares an investor gets for its investment, and that allows us to calculate its percentage ownership
- SAFE holders buy their shares at the lower of:
  - The price per share determined by substituting their valuation cap as the numerator
    - Or a discount to the price investors pay (20% typically)
  - Let's see that work in company A: **Valuation Cap**
  - VC pays $1/share based on $10M (valuation)/10M (shares outstanding)
    - This investor buys 1M shares for its $1M investment
  - Noteholders pay $.50/share based on $5M (valuation cap)/10M (shares)
    - This investor buys 2M shares for its $1M investment
  - The lower share price yields them more shares for their dollar
    - In this example:
    - Halving the valuation results in twice the number of shares

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Contrast to SAFEs: Discount

- Let's see that work in company B: **20% Discount**
  - VC pays $1/share based on $10M (valuation)/10M (shares outstanding)
    - This investor buys 1M shares for its $1M investment
  - Convertible note holder buys shares at a 20% discount
    - This investor buys 1.25M shares for its $1M investment
      - $1 x .8 = $.80/share (this is the 20% discount in action)
      - $1,000,000/$.80 = 1,250,000 shares
    - Using a discount means that for every share a VC investor gets per dollar, the convertible note holder gets (1 divided by the discount rate) more per dollar:
      - 1/.8 = 1.25

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Preferred Stock – Financial Terms - OPTIONAL

- Liquidation Preference:
  - A stated dollar amount (essentially the purchase price per share)
  - When the company is liquidated or sold, this is the amount of money the investor receives before any money is returned to the common stockholders
  - Non-participating preferred stock:
    - Investors receive the stated $ amount or, if their percentage ownership is worth more, they forgo their liquidation preference, convert to common stock, and share proportionally with the other common stockholders.
    - $1M investment for 10% of the company – the inflection point is a $10M exit
      - Below $10M, the liquidation preference is worth more than 10% of the exit value
      - Above $10M, the percentage ownership is worth more than the liquidation preference
    - There are multiples to liquidation preference: 1x, 2x, …
  - Participating Preferred:
    - The investor receives back its original investment amount and ALSO shares in the remaining assets of the company, based on its percentage ownership
    - Participating preferred can be uncapped, or capped at a specific multiple

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Preferred Stock – Financial Terms (cont'd)

- Dividends
  - A fixed percentage of the purchase price per share
  - Dividends are not actually paid during the life of the company
  - Accruing dividends (atypical) add up over the life of the investment and are added to the liquidation preference of an investor, payable on a sale or liquidation

- Anti-Dilution Protection
  - Comes in various forms: Weighted Average and Ratchet
    - Provides that a share of preferred stock converts into common stock at a greater than 1:1 basis if the company issues shares to investors in the future at a lower price
    - The issuance of more shares of common than preferred results in larger proportional ownership. The number of shares varies based on the extent of the lower price and the number of such shares sold at the lower price

Preferred Stock – Contractual Terms

- Board Representation
  - It is customary for investors to get a seat on the board of directors.
    - The size and composition of the board varies over time as the company progresses.
  - The Voting Agreement hard wires the shareholders to agree to the size of the board and to obligate all parties to vote for specific designees.
  - Best example is obligating all preferred shareholders to vote in favor of a designee of the lead venture capital investor.

Preferred Stock – Contractual Terms

- Protective Provisions
  - Bifurcates the vote between the two classes of stock. Even if the preferred stock collectively owns <50% of the company, their class vote is required before certain acts can be taken.
    - Required vote can be majority, or greater
    - A means of providing the preferred stock with controls on company actions/behavior
      - Can't issue senior securities
      - Can't change the board of directors
      - Can't sell the company
    - Contained within the Certificate of Incorporation

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Preferred Stock – Contractual Terms (cont'd)

- Representations and Warranties (contained within the Stock Purchase Agreement)
  - Would you invest millions without having the company tell you important things about itself?
    - Statements about the occurrence or non-occurrence of events
      - Capitalization
      - No litigation
      - Ownership of intellectual property
      - Taxes
      - Employee/employment matters
    - Used as a means of casting a wide net to discover issues
      - Worded as statements, such as "There is no litigation…," "the Company owns or licenses the intellectual property it needs to conduct its business," "the Company has timely paid all its taxes," and the company has the obligation to specifically identify and list all exceptions.

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CLE Code Word

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Preferred Stock – Contractual Terms (cont'd)

- Information Rights (contained in the Investors' Rights Agreement)
  - Investors (of a certain investment threshold) have the right to receive periodic financial and other information about the company.
  - Would you invest in a company and then never hear any news about its progress?
- Preemptive Rights
  - The right to continue to buy shares of the company in future financings so as to maintain your percentage ownership.

Preferred Stock – Contractual Terms (cont'd)

- Right of First Refusal and Co-Sale Right
  - Contained in the ROFR and Co-Sale Agreement
    - Imposes an obligation on certain key holders to offer shares back to the company, and to the investors if the company does not buy back shares, before the founder/key holder can sell those shares to a third party.
    - Allows investors to participate in the sale of shares by founders to third parties on some proportional level.