9-813-017
REV: SEPTEMBER 23, 2016

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Convertible Notes in Seed Financings

Unpriced securities, such as Convertible Notes and Y-Combinator's simple agreement for future equity ("SAFE") have taken on growing importance as a funding structure for early startups, particularly among angel investors making seed round investments. In some industry segments such as internet and digital media, over 50% of Seed rounds are raised using unpriced securities.

This note provides an overview of financing using unpriced securities. It begins by outlining the differences between a priced and non-priced round. It then discussed the main differences between two of the most common unpriced securities – Convertible Notes and SAFEs. Finally, the note goes through a specific example of a convertible note, with attention paid to technical details regarding how discounts and valuation caps impact the ownership of all parties involved in the transaction. It closes with some more general observations and references. This note does not discuss the relative benefits of fundraising using unpriced securities compared to the more traditional priced rounds. These issues are discussed in "PunchTab, Inc." (HBS Case No. 812-172), where the founders are evaluating a convertible note financing deal versus a traditional venture capital contract. A broader overview of entrepreneurial finance is provided by "Financing New Ventures" (HBS Note No. 811-093).

Unpriced vs. Priced Rounds

The fundamental difference between an unpriced security such as convertible notes and a priced round is that there is no valuation assigned to the startup in the former case, while the latter structure assigns a specific valuation. That is, in a typical venture capital financing round, $X will buy Y% of the startup, implying that the startup's post-money valuation is $X/Y%. On the other hand, a convertible note provides the startup with $X immediately *without* buying a specific fraction of the startup, instead delaying valuation and pricing until the next round of financing. In this sense, the convertible note is not strictly "priced," since it gives money to the startup without establishing an exact valuation at the time the money is invested. In return for not pricing the round, however, the $X invested usually converts into equity at a discount to the next round's price (a typical discount is 20%—see the statistic on median discounts on convertible notes in **Exhibit 1**).

For investors, the rationale behind a convertible note stems from two factors. First, the cost of starting firms has fallen substantially over the last decade, particularly in some industry segments, leading the size of Seed rounds to fall considerably as well. Nevertheless, startups at the seed stage still face great uncertainty about the ultimate outcome. The investor has some idea about the capabilities of the founders, but performing due diligence on the market, the opportunity, or the issues

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related to successful execution can be time-consuming and potentially costly, making it uneconomical to do so for the small sum of money invested in seed rounds. Second, the extremely high failure rates of early-stage startups mean that there is a significant chance the firm will not reach a Series A financing (or that if it does, the investor may choose not to follow on), leading any diligence to be worthwhile only a small percentage of the time.

The convertible note allows investors to make an investment now, while deferring the more complex issues around the pricing and terms till a later date. Relatedly, angel investors who are not as sophisticated can defer the pricing decision till a professional investor such as a VC comes in, and benchmark their valuation to the price taken by the VC by simply contracting on a fixed discount to the next round's price. Unpriced securities can therefore be an attractive investment vehicle for investors making small investments in early-stage startups.

Convertible notes also carry advantages for entrepreneurs. First, they allow an entrepreneur to raise money faster and at a lower price than traditional financing. A convertible note can cost as little as a few thousand dollars in legal fees and the financing can close in a matter of days, compared to the tens of thousands of dollars in legal fees and many weeks necessary to undertake the diligence and documentation associated with priced rounds. Second, by delaying the pricing, the entrepreneur has the ability to increase valuation relative to a priced round. If the venture makes substantial progress between the seed round and the next financing, the entrepreneur can retain a greater ownership share of the venture. Third, the duration of the convertible note, use of discounts and caps allows the entrepreneur to partially tailor the subsequent pricing of the round to the investor in question. For example, a value-added investor can be given a greater discount than friends or family.

While both parties may find convertible notes attractive, one of the issues with a standard convertible note is that the entrepreneur and seed round investor have divergent interests in the period prior to the Series A investment. Since a seed investor with a convertible note will get a discount on the next round's price, the entrepreneur has an incentive to use the money from the seed round to raise the startup's valuation to more than compensate for this difference. Any increase in value greater than 25% (in the case that the discount is 20%) leads directly to lower dilution for the entrepreneur, at the expense of the investor. Ironically, this also means that any advice or help the seed investor provides to the startup can in fact hurt the investor by diluting them more if the advice leads to a higher valuation.

The presence of this conflict of interest, particularly in the context of frothy, entrepreneur-friendly markets, creates a problem for seed investors: if the Series A round of financing gets a very high valuation, the 20% discount they get from the convertible note does not adequately compensate them for the risk they took in the seed round—they are essentially taking downside risk (that the firm fails without a Series A investment), but not being adequately compensated if the firm does well.

Seed investors have therefore begun to use convertible notes with caps. That is, their $X converts at the lower of (1) a discount to the next round's valuation or (2) a valuation cap. The cap therefore works to set a lower bound in terms of the seed investor's ownership upon conversion of the note, and, as we will highlight in the next section, aligns the interests of the seed investor and the entrepreneur to increase firm valuation beyond the point of the cap's binding.

It is worth noting that in general the entrepreneur would like the cap to be as high as possible, while investors would like it to be low; however, there are also arguments to be made for the entrepreneur to incentivize investors by setting the cap low—since the investors then have aligned incentives to grow the value of the company as much as possible before the next round of financing. Angel investors, who typically invest only in early stages of a firm and hence get more and more diluted across future rounds, are the most sensitive to the cap. On the other hand, VC investors with several hundred million dollars under management care much less about the cap at the seed round, as the seed investment is tiny compared to the rest of the investments they are likely to make in the firm.

This is important to bear in mind as the entrepreneur approaches different investors to finance their venture. An example that nicely illustrates this is the case of PunchTab, where founder Ranjith Kumaran reflected on the use of convertible notes for his seed round financing: "I want to use a convertible note because it is faster, costs less and angels are comfortable with them… VCs don't really care about the cap, but some of the angels wonder how they will make money with such a high cap and think it is too rich for an early stage company."

Convertible Notes vs. SAFE

Exhibit 2 provides an example of a convertible note and **Exhibit 3** provides an example of a SAFE. One primary difference between convertible notes and a SAFE is that the former is debt instrument while the latter is equity. This has several practical implications: First, convertible notes have a maturity date – the point at which the loan comes due. This causes a particular problem if the loan comes due before a qualified round of financing has occurred, by creating the potential for insolvency if the founders cannot repay the loan. In addition it often requires potential extensions to the loan, which can lead to time consuming and costly negotiations between the entrepreneur and Seed investors. Second, debt instruments typically have an interest component to them, which the SAFE does not.

A second major difference lies in the way liquidation preference is calculated when the unpriced security converts into preferred stock in the next round of financing. In the case of convertible notes, the convention is to issue the same security to the Seed investors as that received by the Series A. This has the unintended consequence that of the liquidation preference equaling the value of the investment at the time of the Series A rather than the face value of the investment. That is, since the holders of the convertible note convert at a discount to the Series A investor's price or a capped price, they hold a "stepped up" value of their investment. This leads Seed investors to receive a liquidation preference that is more than 1X (e.g. in the case of a 20% discount, the step-up and hence the liquidation preference is 1.25X; with a cap the step-ups can be much higher). The SAFE accounts for this by creating a new security at the time of Series A financing with all other rights of the Series A, but where the liquidation preference is equal to the face value of the investment as opposed to the stepped-up value. While the difference is insignificant for small investments, it can get more meaningful for larger investments where there cap binds well below the price of the Series A financing.

Implications of Valuation Caps and Discounts on Ownership Shares

We now use the example in **Exhibit 2** to highlight how the mechanics of a discount and a cap work in the context of a Series A financing. The mechanics of this calculation are identical for the SAFE, although the nomenclature used is slightly different.

It can be seen from **Exhibit 2** that the seed investors are considering a $750,000 investment in the form of a convertible note, which will convert at the lower of (1) 80% of the price per share in the next equity financing or (2) a pre-money valuation of $5 million. The next equity financing is defined as a round of financing where at least $2 million is raised, including the conversion of the $750,000 convertible note. We now look at two situations, one where the Series A investor takes 40% for a $4 million investment (a $10 million post money valuation) and the second where the Series A investor takes 20% for a $4 million investment (a $20 million post money valuation). In the calculations below, we assume there are 900,000 founder shares and a 10% issued and unallocated option pool of 100,000 shares. Collectively we will refer to these as 1 million shares for founders and management.

Scenario 1: Series A investor takes 40% for $4 million investment

Note first that the cap has been set at a $5 million pre-money valuation. As is often the case with convertible notes, there is some ambiguity about whether the $5 million pre-money refers to the Series A round of investment or the Seed round of investment. The convention is usually to treat a pre-money cap as being prior to the Seed investment, thereby including the founder and management shares and any shares allocated to the option pool. In our example, we have assumed founder and management to have 1,000,000 shares, so following the convention we have that the $5 million pre-money cap implies a price-per-share cap of $5 million /1,000,000 million shares = $5/share.[1] Hence the cap implies that the maximum price the Seed investors will need to pay (i.e. the cap) is $5/share.

Since the Seed investor has the option to convert their $ 750,000 at the lower of the capped price per share, or 80% of the price per share implied by the Series A financing, our task is to figure out the whether 80% of the price per share implied by the $10 million post money valuation (40% for a $4 million investment) is more or less than the $5 cap.

To do this, note, however, that since the Seed investors buy in at a 20% discount to the Series A price, they get more shares than they would have gotten if they simply bought in at the Series A price per share. These extra shares will dilute the ownership of the Series A investors, who will now get less than their 40% ownership if they stick to the original price per share. Since the Series A investors will not be willing to settle for less than their required ownership stake, they will need to be compensated with more shares, implying a slightly lower Series A share price. Now, however, the Seed investors' 20% discount needs to be applied to this lower price, further diluting Series A investors and requiring them to take an even lower price. This circularity resolves itself at a fixed point that can most easily be calculated using the following logic (but note that a more detailed step-by-step guide is included in **Exhibit 4**):

- Suppose the Series A price is $X. The Seed investors' share price will then be $0.8*X.
- The Series A investors put in $4,000,000, so they are allocated $4,000,000/$X shares
- The Seed investors put in $750,000, so they are allocated $750,000/$0.8X shares
- The total number of shares are equal to the post money valuation divided by the share price, implying that the total number of shares are $10,000,000/$X

Since founders and management have 1 million shares, this allows us to set up the following simple equation: 1 million (F&M shares) + $750,000/$0.8X (Seed investor shares) + $4,000,000/$X (Series A investor shares) = $10,000,000/$X (total shares).

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[1] If the pre-money cap referred to the pre-money valuation of the Series A instead, then this would mean that the *post money* valuation of the Seed Round was no greater than $5 million. This would mean that sum of founder & management shares AND the Seed investor shares would be worth $5 million. The $750,000 invested by the Seed investor would thus own 750,000/5,000,000= 15%. Given that 1 million founder and management shares are now equal to 100%-15%=85%, the Seed investors under this interpretation would get 15%/85%*1,000,000 shares= 176,471 shares, implying a share price of $750,000/176,471=$4.25. Note therefore that the convention of using the pre-money valuation of the Seed round is always more entrepreneur friendly since it implies a higher price-per-share cap. This logic (and convention) also applies to valuation caps for SAFEs, which explicitly note that the cap is on the pre-money of the Seed Round.

It is now trivial to solve for X, leading to a Series A price per share of $ 5.0625. The Seed investors get to buy in at 0.8* $ 5.0625 = $4.05.

Since the Seed investors can choose the lower of the valuation cap ($5/share) or 80% of the implied price per share in the Series A financing ($4.05), it is easy to see they will choose to convert using the discount rather than the cap. They will therefore receive $750,000/$4.05 shares = 185,185 shares which imply an ownership of 9.4% of the fully diluted shares following the Series A round of funding. The Series A investors will receive $4,000,000/$5.0625 = 790,123 shares, implying the full 40% ownership they needed, and founders and management's 1,000,000 shares now account for 50.6%.

Scenario 2: Series A investor takes 20% for $4 million investment

We can follow the same logic as above in Scenario 2. The valuation cap remains at $5/share. Our task is therefore to determine whether 80% of the price-per-share implied by the $20 million post money valuation ($4 million for 20%) is higher or lower than the cap. We do so following the same steps as above:

- Let the Series A price again be $X. The Seed investors' share price will then be $0.8*X.
- The Series A investors put in $4,000,000, so they are allocated $4,000,000/$X shares
- The Seed investors put in $750,000, so they are allocated $750,000/$0.8X shares
- The total number of shares are equal to the post money valuation divided by the share price, implying that the total number of shares are $20,000,000/$X

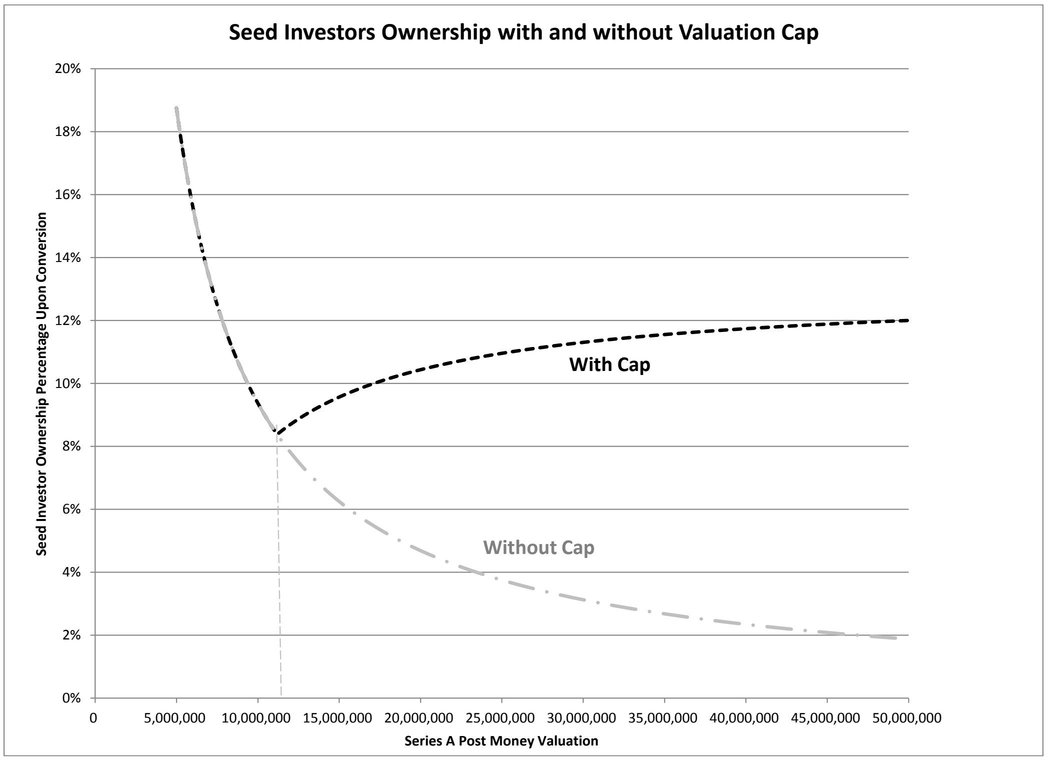
Since founders and management have 1 million shares, we get that: 1 million (F&M shares) + $750,000/$0.8X (Seed investor shares) + $4,000,000/$X (Series A investor shares) = $20,000,000/$X (total shares). Solving for $X leads to a Series A price per share of $ 15.0625. The Seed investors get to buy in at 0.8* $ 15.0625 = $12.05.

Since the Seed investors can choose the lower of the valuation cap ($5/share) or 80% of the implied price per share in the Series A financing ($12.05), it is easy to see they will choose to convert using the cap rather than the discount. They will therefore receive $750,000/$5 shares = 150,000 shares. Note now that since the Seed investors bought in at a much lower price per share ($5 vs. $12.05), the Series A investors need to also get a somewhat lower share price to compensate them for this extra dilution. To calculate the Series A investors' ownership, note that since they need 20% of the fully diluted shares for their $4 million investment, F&M and the Seed Investors will account for the balance 80% of the ownership. Since F&M have 1,000,000 shares and Seed investors have 150,000 shares, we know that 1,150,000 shares account for 80% of the capitalization and hence the balance 20% must be 287,500 shares. The Series A investors therefore needed to buy in at $4,000,000/287,500= $13.913 as opposed to the original $ 15.0625 because the Seed investors converted at the cap. Note that since the Series A investors are protected from dilution, the full extent of dilution due to the discount / cap is borne by the founders and management.

In this example, F&M end up with 69.6% and Seed investors with 10.4%, but if there was no valuation cap and the Seed investors had converted at the $12.05 share price, F&M would have ended up with 75.3% and Seed investors with only 4.7%.

The chart below highlights the distinction between what a seed investor obtains with and without the $5 million pre-money valuation cap, depending on the Series A post money valuation. As can be seen from the chart, this difference (and hence the value of the cap) increases with the post-money valuation of the Series A investment. Note also that the seed investor's ownership percentage actually goes up once the cap binds. The reason for this is that once the cap binds, the seed investor is much like an "insider" and hence shares in the benefits of increased valuation. That is, once the cap binds, the seed round is in effect "priced" at a value that is less than the next round of funding. Any increase in valuation beyond that point is shared between the founder and the seed investor (at the expense of the Series A investor)—even though the number of shares the seed investor gets is the same, the Series A investor gets fewer shares and hence the seed investor gets a larger share.

Figure 1 Seed Investor's Ownership Percentage with and without Valuation Cap



Source: Casewriters.

Additional Terms for Convertible Notes

We now highlight some of the main terms that are associated with a convertible note. Our focus in this note is mostly about the mechanics of a convertible note's discounts and valuation caps, as this is where confusion is greatest, but the broader landscape is also important as negotiations regarding discounts and valuation caps are undertaken alongside these other features. Not all these terms are included in term sheets, but it is important for the entrepreneur to remember that several of the contingencies outlined below do take place, and it is helpful to have a clear understanding of what will happen to the seed investor's shares in the event of these contingencies. Also note that the SAFE is a standardized document so does not vary as much as a convertible note. Due to the fact that the SAFE is an equity investment, it does not have a duration, an interest rate and does not require a stipulation of what happens when no financing event takes place within the duration of the note.

Figure 2 Typical Seed Investment Terms for Negotiation

	Conventional	**Entrepreneur-Friendly**	**Investor-Friendly**
Duration of the note	18 months	24-36 months	12-18 months
Interest rate paid on the note	6-8%	As low as 0.5%; simple interest	As much as 14%; compounded interest
Discount when converting?	Yes, 20%	No (or low discount)	Yes, up to 50% discount
Valuation cap?	Yes	No	Yes, capped at low valuation
Board seats?	No	No	Yes
What happens in the event of an acquisition?	Return investment plus 2X premium	Return principal plus interest; no (or low) premium	2-4X premium over and above principal or conversion right
What happens in the event that no financing takes place in the stipulated duration of the note?	Loan extension	Automatic conversion	Right to redeem or force company into bankruptcy

Source: Compiled from Fenwick & West 2011 Seed Financing Survey,[1] Scott Walker's posts on TechCrunch[2,3,4] and WilmerHale's 2016 Venture Capital Report.[5]

Additional Resources and Statistics

- Three-part series in TechCrunch on convertible note financings by Scott Walker, which includes a discussion of securities law and accredited investor status:
    - http://techcrunch.com/2012/04/07/convertible-note-seed-financings/
    - http://techcrunch.com/2012/04/21/convertible-note-seed-financings-econ-101/
    - http://techcrunch.com/2012/05/13/convertible-note-seed-financings-part-3/.

- Another convertible note example: http://www.scribd.com/doc/51681290/Convertible-Note-Financing-Term-Sheet.

- https://www.ycombinator.com/documents/.

- Fenwick and West's 2011 Seed Financing Survey of Internet/Digital Media and Software Industries: http://www.fenwick.com/FenwickDocuments/2011_Seed_Survey _Report.pdf.

- WilmerHale 2016 Venture Capital Report: Available for download at https://www.wilmerhale.com/uploadedFiles/Shared_Content/Editorial/Publications/Documents/2016-WilmerHale-VC-Report.pdf.

- Silicon Legal Seed Financing Report: http://www.siliconlegal.com/reports/seed-financing-report-2015.

Exhibit 1 Trends in Convertible Note Financing

Convertible Note Seed Financings	**2011**	**2015**
Median amount raised	$1,000,000	$1,000,000
Median interest rate	5.5%	5%
Median term	18 months	18 months
Percentage of deals in which valuation on conversion is capped	82%	55%
Median valuation cap	$7.5 million	$7.5 million
Percentage of deals that convert at a discount to the next equity round valuation	83%	89%
Median initial discount	20%	20%
Treatment of note if company is acquired prior to an equity financing:		
Receive return of investment plus a premium	61%	53%
Median premium	1.0x	2.0x
Percentage in which investors receive a board seat	4%	6%

Source: Compiled from Fenwick & West 2011 Seed Financing Survey,[1] WilmerHale's 2016 Venture Capital Report and Silicon Legal 2015 Seed Financing Report.

Exhibit 2 Convertible note example

MEMORANDUM OF TERMS FOR THE PRIVATE PLACEMENT OF SECURITIES OF ________________________

THIS TERM SHEET SUMMARIZES THE PRINCIPAL TERMS OF THE PROPOSED FINANCING OF ___________ (THE "COMPANY"). THIS TERM SHEET IS FOR DISCUSSION PURPOSES ONLY; THERE IS NO OBLIGATION ON THE PART OF ANY NEGOTIATING PARTY UNTIL A DEFINITIVE NOTE PURCHASE AGREEMENT IS SIGNED BY ALL PARTIES. THIS TERM SHEET IS SUBJECT TO THE SATISFACTORY COMPLETION OF DUE DILIGENCE. THIS TERM SHEET DOES NOT CONSTITUTE EITHER AN OFFER TO SELL OR AN OFFER TO PURCHASE SECURITIES.

Type of Security:	Convertible promissory notes (the "Notes").
Amount to be Raised:	$750,000.
Investors:	Investor 1: $475,000. Other Investors: $275,000, subject to the mutual agreement of the Company and Investor 1.
Interest Rate:	6% per annum.
Maturity Date:	Twelve months from the date of issuance.
Prepayment:	The Notes may not be prepaid.
Conversion:	Principal and accrued and unpaid interest shall be automatically converted into Series A Preferred Stock on the closing of the Company's next equity financing in an aggregate amount of at least $2,000,000 (including conversion of the Notes) (the "Next Equity Financing"). The principal and accrued and unpaid interest shall convert at the lesser of (i) 80% of the price per share in the Next Equity Financing and (ii) the price per share at which the Company's shares would be valued at a pre-money, fully diluted valuation of $5,000,000 (assuming an authorized, unissued option pool of 10 % of the Company's equity). Investor 1 shall have the right to purchase in the Next Equity Financing 40% of the securities issued in such Next Equity Financing.
Next Equity Financing:	The Next Equity Financing shall be in the aggregate amount of at least $2,000,000 (including conversion of the Notes).
Acquisition:	If the Company is acquired prior to the conversion as provided above, Investor 1 shall be entitled to receive 150% of the

outstanding principal of the Note as of the closing of the acquisition.

Board of Directors: Until the Next Equity Financing, the Board of Directors shall consist of two members. The two members shall be _______ and _______.

Exclusivity: From the signing date hereof until the earlier of i) 5:00 pm Pacific Time on January 31, 2011, (ii) the Closing, or (iii) written notification by Investor 1 that it does not intend to proceed with the financing of Company. Company agrees that it shall not solicit, encourage others to solicit, encourage or accept any offers with respect to the acquisition or financing of the Company, and it shall not negotiate with or enter into any agreement or understanding with any other person with respect to any such transaction.

No Obligation: This memorandum of terms represents the basis upon which the parties intend to negotiate toward a definitive agreement. This memorandum shall not, however, be binding on any party, nor shall any party be obligated to consummate a transaction on the terms proposed herein or otherwise (and no obligation on the part of either party shall arise by virtue of such things as parol evidence, extended negotiations, "handshakes," oral understandings or course of conduct) until such time as a definitive agreement shall have been negotiated, prepared and executed by the parties.

If you are in agreement with the terms and conditions set forth above and desire to proceed on that basis, please sign this letter in the space provided below and return an executed copy to the undersigned.

ACKNOWLEDGED AND AGREED:

By ____________________________ By ____________________________

Date __________________________ Date __________________________

Source: Casewriters.

Exhibit 3 Sample of a SAFE

THIS INSTRUMENT AND ANY SECURITIES ISSUABLE PURSUANT HERETO HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED (THE "**SECURITIES ACT**"), OR UNDER THE SECURITIES LAWS OF CERTAIN STATES. THESE SECURITIES MAY NOT BE OFFERED, SOLD OR OTHERWISE TRANSFERRED, PLEDGED OR HYPOTHECATED EXCEPT AS PERMITTED UNDER THE ACT AND APPLICABLE STATE SECURITIES LAWS PURSUANT TO AN EFFECTIVE REGISTRATION STATEMENT OR AN EXEMPTION THEREFROM.

[**COMPANY NAME**]

SAFE

(Simple Agreement for Future Equity)

THIS CERTIFIES THAT in exchange for the payment by [Investor Name] (the "**Investor**") of $[________] (the "**Purchase Amount**") on or about [Date of Safe], [Company Name], a [State of Incorporation] corporation (the "**Company**"), hereby issues to the Investor the right to certain shares of the Company's capital stock, subject to the terms set forth below.

The "**Valuation Cap**" is $[___________].

The "**Discount Rate**" is [ ]%.

See **Section 2** for certain additional defined terms.

1. *Events*

(a) **Equity Financing**. If there is an Equity Financing before the expiration or termination of this instrument, the Company will automatically issue to the Investor a number of shares of Safe Preferred Stock equal to the Purchase Amount divided by the Conversion Price.

In connection with the issuance of Safe Preferred Stock by the Company to the Investor pursuant to this Section 1(a):

(i) The Investor will execute and deliver to the Company all transaction documents related to the Equity Financing; *provided,* that such documents are the same documents to be entered into with the purchasers of Standard Preferred Stock, with appropriate variations for the Safe Preferred Stock if applicable, and *provided further,* that such documents have customary exceptions to any drag-along applicable to the Investor, including, without limitation, limited representations and warranties and limited liability and indemnification obligations on the part of the Investor; and

(ii) The Investor and the Company will execute a Pro Rata Rights Agreement, unless the Investor is already included in such rights in the transaction documents related to the Equity Financing.

(b) **Liquidity Event**. If there is a Liquidity Event before the expiration or termination of this instrument, the Investor will, at its option, either (i) receive a cash payment equal to the Purchase Amount (subject to the following paragraph) or (ii) automatically receive from the Company a number of shares of Common Stock equal to the Purchase Amount divided by the Liquidity Price, if the Investor fails to select the cash option.

In connection with Section (b)(i), the Purchase Amount will be due and payable by the Company to the Investor immediately prior to, or concurrent with, the consummation of the Liquidity Event. If there are not enough funds to pay the Investor and holders of other Safes (collectively, the "**Cash-Out Investors**") in full, then all of the Company's available funds will be distributed with equal priority and *pro rata* among the Cash-Out Investors in proportion to their Purchase Amounts, and the Cash-Out Investors will automatically receive the number of shares of Common Stock equal to the remaining unpaid Purchase Amount divided by the Liquidity Price. In connection with a Change of Control intended to qualify as a tax-free reorganization, the Company may reduce, *pro rata*, the Purchase Amounts payable to the Cash-Out Investors by the amount determined by its board of directors in good faith to be advisable for such Change of Control to qualify as a tax-free reorganization for U.S. federal income tax purposes, and in such case, the Cash-Out Investors will automatically receive the number of shares of Common Stock equal to the remaining unpaid Purchase Amount divided by the Liquidity Price.

(c) **Dissolution Event**. If there is a Dissolution Event before this instrument expires or terminates, the Company will pay an amount equal to the Purchase Amount, due and payable to the Investor immediately prior to, or concurrent with, the consummation of the Dissolution Event. The Purchase Amount will be paid prior and in preference to any Distribution of any of the assets of the Company to holders of outstanding Capital Stock by reason of their ownership thereof. If immediately prior to the consummation of the Dissolution Event, the assets of the Company legally available for distribution to the Investor and all holders of all other Safes (the "**Dissolving Investors**"), as determined in good faith by the Company's board of directors, are insufficient to permit the payment to the Dissolving Investors of their respective Purchase Amounts, then the entire assets of the Company legally available for distribution will be distributed with equal priority and *pro rata* among the Dissolving Investors in proportion to the Purchase Amounts they would otherwise be entitled to receive pursuant to this Section 1(c).

(d) **Termination**. This instrument will expire and terminate (without relieving the Company of any obligations arising from a prior breach of or non-compliance with this instrument) upon either (i) the issuance of stock to the Investor pursuant to Section 1(a) or Section 1(b)(ii); or (ii) the payment, or setting aside for payment, of amounts due the Investor pursuant to Section 1(b)(i) or Section 1(c).

2. *Definitions*

"**Capital Stock**" means the capital stock of the Company, including, without limitation, the "**Common Stock**" and the "**Preferred Stock**."

"**Change of Control**" means (i) a transaction or series of related transactions in which any "person" or "group" (within the meaning of Section 13(d) and 14(d) of the Securities Exchange Act of 1934, as amended), becomes the "beneficial owner" (as defined in Rule 13d-3 under the Securities Exchange Act of 1934, as amended), directly or indirectly, of more than 50% of the outstanding voting securities of the Company having the right to vote for the election of members of the Company's board of directors, (ii) any reorganization, merger or consolidation of the Company, other than a transaction or series of related transactions in which the holders of the voting securities of the Company outstanding immediately prior to such transaction or series of related transactions retain, immediately after such transaction or series of related transactions, at least a majority of the total voting power represented by the outstanding voting securities of the Company or such other surviving or resulting entity or (iii) a sale, lease or other disposition of all or substantially all of the assets of the Company.

"**Company Capitalization**" means the **sum**, as of immediately prior to the Equity Financing, of: (**1**) all shares of Capital Stock (on an as-converted basis) issued and outstanding, assuming exercise or conversion of all outstanding vested and unvested options, warrants and other convertible securities, but excluding (A) this instrument, (B) all other Safes, and (C) convertible promissory notes; **and** (**2**) all shares of Common Stock reserved and available for future grant under any equity incentive or similar plan of the Company, and/or any equity incentive or similar plan to be created or increased in connection with the Equity Financing.

"**Conversion Price**" means the either: (1) the Safe Price or (2) the Discount Price, whichever calculation results in a greater number of shares of Safe Preferred Stock.

"**Discount Price**" means the price per share of the Standard Preferred Stock sold in the Equity Financing multiplied by the Discount Rate.

"**Distribution**" means the transfer to holders of Capital Stock by reason of their ownership thereof of cash or other property without consideration whether by way of dividend or otherwise, other than dividends on Common Stock payable in Common Stock, or the purchase or redemption of Capital Stock by the Company or its subsidiaries for cash or property other than: (i) repurchases of Common Stock held by employees, officers, directors or consultants of the Company or its subsidiaries pursuant to an agreement providing, as applicable, a right of first refusal or a right to repurchase shares upon termination of such service provider's employment or services; or (ii) repurchases of Capital Stock in connection with the settlement of disputes with any stockholder.

"**Dissolution Event**" means (i) a voluntary termination of operations, (ii) a general assignment for the benefit of the Company's creditors or (iii) any other liquidation, dissolution or winding up of the Company (**excluding** a Liquidity Event), whether voluntary or involuntary.

"**Equity Financing**" means a bona fide transaction or series of transactions with the principal purpose of raising capital, pursuant to which the Company issues and sells Preferred Stock at a fixed pre-money valuation.

"**Initial Public Offering**" means the closing of the Company's first firm commitment underwritten initial public offering of Common Stock pursuant to a registration statement filed under the Securities Act.

"**Liquidity Capitalization**" means the number, as of immediately prior to the Liquidity Event, of shares of Capital Stock (on an as-converted basis) outstanding, assuming exercise or conversion of all outstanding vested and unvested options, warrants and other convertible securities, but **excluding**: (i) shares of Common Stock reserved and available for future grant under any equity incentive or similar plan; (ii) this instrument; (iii) other Safes; and (iv) convertible promissory notes.

"**Liquidity Event**" means a Change of Control or an Initial Public Offering.

"**Liquidity Price**" means the price per share equal to the Valuation Cap divided by the Liquidity Capitalization.

"**Pro Rata Rights Agreement**" means a written agreement between the Company and the Investor (and holders of other Safes, as appropriate) giving the Investor a right to purchase its *pro rata* share of private placements of securities by the Company **occurring after the Equity Financing**, subject to customary exceptions. *Pro rata* for purposes of the Pro Rata Rights Agreement will be calculated based on the ratio of (1) the number of shares of Capital Stock owned by the Investor immediately prior to the issuance of the securities to (2) the total number of shares of outstanding Capital Stock on a fully diluted basis, calculated as of immediately prior to the issuance of the securities.

"**Safe**" means an instrument containing a future right to shares of Capital Stock, similar in form and content to this instrument, purchased by investors for the purpose of funding the Company's business operations.

"**Safe Preferred Stock**" means the shares of a series of Preferred Stock issued to the Investor in an Equity Financing, having the identical rights, privileges, preferences and restrictions as the shares of Standard Preferred Stock, other than with respect to: (i) the per share liquidation preference and the conversion price for purposes of price-based anti-dilution protection, which will equal the Conversion Price; and (ii) the basis for any dividend rights, which will be based on the Conversion Price.

"**Safe Price**" means the price per share equal to the Valuation Cap divided by the Company Capitalization.

"S**tandard Preferred Stock**" means the shares of a series of Preferred Stock issued to the investors investing new money in the Company in connection with the initial closing of the Equity Financing.

3. *Company Representations*

(a) The Company is a corporation duly organized, validly existing and in good standing under the laws of the state of its incorporation, and has the power and authority to own, lease and operate its properties and carry on its business as now conducted.

(b) The execution, delivery and performance by the Company of this instrument is within the power of the Company and, other than with respect to the actions to be taken when equity is to be issued to the Investor, has been duly authorized by all necessary actions on the part of the Company. This instrument constitutes a legal, valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, except as limited by bankruptcy, insolvency or other laws of general application relating to or affecting the enforcement of creditors' rights generally and general principles of equity. To the knowledge of the Company, it is not in violation of (i) its current certificate of incorporation or bylaws, (ii) any material statute, rule or regulation applicable to the Company or (iii) any material indenture or contract to which the Company is a party or by which it is bound, where, in each case, such violation or default, individually, or together with all such violations or defaults, could reasonably be expected to have a material adverse effect on the Company.

(c) The performance and consummation of the transactions contemplated by this instrument do not and will not: (i) violate any material judgment, statute, rule or regulation applicable to the Company; (ii) result in the acceleration of any material indenture or contract to which the Company is a party or by which it is bound; or (iii) result in the creation or imposition of any lien upon any property, asset or revenue of the Company or the suspension, forfeiture, or nonrenewal of any material permit, license or authorization applicable to the Company, its business or operations.

(d) No consents or approvals are required in connection with the performance of this instrument, other than: (i) the Company's corporate approvals; (ii) any qualifications or filings under applicable securities laws; and (iii) necessary corporate approvals for the authorization of Capital Stock issuable pursuant to Section 1.

(e) To its knowledge, the Company owns or possesses (or can obtain on commercially reasonable terms) sufficient legal rights to all patents, trademarks, service marks, trade names, copyrights, trade secrets, licenses, information, processes and other intellectual property rights necessary for its business as now conducted and as currently proposed to be conducted, without any conflict with, or infringement of the rights of, others.

4. *Investor Representations*

(a) The Investor has full legal capacity, power and authority to execute and deliver this instrument and to perform its obligations hereunder. This instrument constitutes valid and binding obligation of the Investor, enforceable in accordance with its terms, except as limited by bankruptcy, insolvency or other laws of general application relating to or affecting the enforcement of creditors' rights generally and general principles of equity.

(b) The Investor is an accredited investor as such term is defined in Rule 501 of Regulation D under the Securities Act. The Investor has been advised that this instrument and the underlying securities have not been registered under the Securities Act, or any state securities laws and, therefore, cannot be resold unless they are registered under the Securities Act and applicable state securities laws or unless an exemption from such registration requirements is available. The Investor is purchasing this instrument and the securities to be acquired by the Investor hereunder for its own account for investment, not as a nominee or agent, and not with a view to, or for resale in connection with, the distribution thereof, and the Investor has no present intention of selling, granting any participation in, or otherwise distributing the same. The Investor has such knowledge and experience in financial and business matters that the Investor is capable of evaluating the merits and risks of such investment, is able to incur a complete loss of such investment without impairing the Investor's financial condition and is able to bear the economic risk of such investment for an indefinite period of time.

5. ***Miscellaneous***

(a) Any provision of this instrument may be amended, waived or modified only upon the written consent of the Company and the Investor.

(b) Any notice required or permitted by this instrument will be deemed sufficient when delivered personally or by overnight courier or sent by email to the relevant address listed on the signature page, or 48 hours after being deposited in the U.S. mail as certified or registered mail with postage prepaid, addressed to the party to be notified at such party's address listed on the signature page, as subsequently modified by written notice.

(c) The Investor is not entitled, as a holder of this instrument, to vote or receive dividends or be deemed the holder of Capital Stock for any purpose, nor will anything contained herein be construed to confer on the Investor, as such, any of the rights of a stockholder of the Company or any right to vote for the election of directors or upon any matter submitted to stockholders at any meeting thereof, or to give or withhold consent to any corporate action or to receive notice of meetings, or to receive subscription rights or otherwise until shares have been issued upon the terms described herein.

(d) Neither this instrument nor the rights contained herein may be assigned, by operation of law or otherwise, by either party without the prior written consent of the other; *provided, however*, that this instrument and/or the rights contained herein may be assigned without the Company's consent by the Investor to any other entity who directly or indirectly, controls, is controlled by or is under common control with the Investor, including, without limitation, any general partner, managing member, officer or director of the Investor, or any venture capital fund now or hereafter existing which is controlled by one or more general partners or managing members of, or shares the same management company with, the Investor; and *provided, further*, that the Company may assign this instrument in whole, without the consent of the Investor, in connection with a reincorporation to change the Company's domicile.

(e) In the event any one or more of the provisions of this instrument is for any reason held to be invalid, illegal or unenforceable, in whole or in part or in any respect, or in the event that any one or more of the provisions of this instrument operate or would prospectively operate to invalidate this instrument, then and in any such event, such provision(s) only will be deemed null and void and will not affect any other provision of this instrument and the remaining provisions of this instrument will remain operative and in full force and effect and will not be affected, prejudiced, or disturbed thereby.

(f) All rights and obligations hereunder will be governed by the laws of the State of [Governing Law Jurisdiction], without regard to the conflicts of law provisions of such jurisdiction.

(*Signature page follows*)

Source: Ycombinator.com (Safe: Cap and Discount).

Exhibit 4 Step-by-Step solution to Example

Scenario 1: Series A investor takes 40% for $4 million investment

- First, we calculate the pre money valuation implied in the Series A investment. Since $4,000,000 buys 40%, the post-money valuation is $10,000,000 ($4,000,000/.4). Thus the pre-money valuation is $6,000,000 (Post valuation of $10,000,000 less Investment of $4,000,000).
- We then calculate the 20% discounted valuation at which the Notes would convert as $4,800,000 ($6,000,000 *0.8). This is the post money valuation of the Seed Investment and therefore the pre-money valuation is $4,050,000 ($4,800,000 - $750,000). Since the pre-money valuation of the Seed Round using the discount is lower than the pre-money valuation cap, Seed investors will use the discounted valuation for their investment and calculate their ownership and conversion price as follows:
    - Ownership attributable to the converted notes is 15.625% ($750,000/$4,800,000).
    - Number shares allocated to the Seed Investors is 185,185 (New Shares = 1/(1 – new ownership) * old shares * new ownership. So (1/(1 – 15.625%) * 1,000,000 * 15.625%).
    - Price per share of $4.05 ($750,000/185,185). Note also that the price per share equals the pre-money valuation ($4,050,000) divided by the pre-money shares (1,000,000)
- We can now calculate the price paid and number of share issued to the Series A investors as follows:
    - Ownership purchased by series A is 40% for $4,000,000.
    - Number shares for the Series A investors is 790,123 (New Shares = 1/(1 – new ownership) * old shares * new ownership. So (1/(1 – 40%) * 1,185,185 * 40%).
    - Price per share is $5.06 ($4,000,000/790,123).
- The total number of shares will be 1,975,699 after the Notes convert and shares are issued to the new Series A investors (1,000,000 Founders + 185,185 Converted Notes + 790,123 Series A Investors) and ownership percentages as follows:
    - The Founder Retains 1,000,000 / 1,975,699 = 50.6%
    - The Converted Note Holders 185,185/1975,699 = 9.4%
    - The Series A Investors 790,514 / 1,975,699 = 40%

Scenario 2: Series A investor takes 20% for $4 million investment

- First, we calculate the pre money valuation implied in the Series A investment. Since $4,000,000 buys 20%, the post-money valuation is $20,000,000 ($4,000,000/.2). Thus the pre-money valuation is $16,000,000 (Post valuation of $20,000,000 less Investment of $4,000,000).
- We then calculate the 20% discounted valuation at which the Notes would convert as $12,800,000 ($16,000,000 * 80%). Since this discounted market valuation is greater than the capped valuation, the price per share and the number of shares for the converted Notes are calculated at the cap valuation of $5,000,000.
    - The implied price per share is $5 since there are 1,000,000 shares outstanding prior to the investment and these are valued at $5,000,000.
    - Number shares = $750,000/$5 = 150,000
- We can now calculate the price paid and number of share issued to the Series A investors as follows:
    - Ownership purchased by series A is 20% for $4,000,000.
    - Number shares for the Series A converted notes as 287,500 (New Shares = 1/(1 – new ownership) * old shares * new ownership. So (1/(1 -20%) * 1,150,000 *20%)).
    - Price per share of $13.91 ($4,000,000 / 287,500).
- The total number of shares will be 1,437,500 after the Notes convert and shares are issued to the new Series A investors (1,000,000 Founders + 150,000 Converted Notes + 287,500 Series A Investors) and ownership percentages as follows:
    - The Founder Retains 1,000,000 / 1,437,500 = 69.6%
    - The Converted Note Holders 150,000 / 1,437,500 = 10.4%
    - The Series A Investors 287,500 / 1,437,500 = 20%

Source: Casewriters.

Endnotes

[1] Kramer, Barry J. and Steven S. Levine, *2011 Seed Financing Survey – Internet/Digital Media and Software Industries*, Fenwick & West LLP, March 21, 2012, http://www.fenwick.com/publications/Pages/Seed-Finance-Survey-2011.aspx.

[2] Walker, Scott E., "Everything You Ever Wanted To Know About Convertible Note Seed Financings (But Were Afraid To Ask)," April 7, 2012, post on blog "TechCrunch," http://techcrunch.com/2012/04/07/ convertible-note-seed-financings/.

[3] Walker, Scott E., "Convertible Note Seed Financings: Econ 101 for Founders," April 21, 2012, post on blog "TechCrunch," http://techcrunch.com/2012/04/21/convertible-note-seed-financings-econ-101/.

[4] Walker, Scott E., "Convertible Note Seed Financings: Founders Beware!," May 13, 2012, post on blog "TechCrunch," http://techcrunch.com/2012/05/13/convertible-note-seed-financings-part-3/.

[5] WilmerHale, "2016 Venture Capital Report" Downloaded September 12, 2016 from: https://www.wilmerhale.com/uploadedFiles/Shared_Content/Editorial/Publications/Documents/2016-WilmerHale-VC-Report.pdf.