A Case Study of Angel Investment Dilution

ZippyCare

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Jack Scanlon's car was a mess.

Jack was the Regional Sales Manager for a middle market uniform rental company headquartered in Culpeper, VA. He was always in his car and could not imagine being without it for even a few hours for basic maintenance or cleaning. The only time Jack's car was not on the move was when it was parked in the Dulles International Airport long-term parking lot.

And that gave Jack an idea. ZippyCare.

Whenever a business traveler had to leave his car for a day or more at Dulles Airport, the traveler could arrange with ZippyCare to have the oil changed and the car detailed while he was gone. Jack convinced his wife that he should quit his secure job in Culpeper to enter the exciting and risky world of an entrepreneur.

Jack's idea quickly took off. With money from his father and his father's friends, Jack had soon expanded ZippyCare to Reagan National Airport and Baltimore-Washington Airport, with dreams of expanding nationwide.

But Jack needed more capital, ZippyCare wasn't yet big enough to generate interest from professional venture capitalists who told him he would need to have something like $100,000 per month in Monthly Recurring Revenue (MRR) before they would look at his company.

That's when he decided to approach a group of Angel investors in Northern Virginia called the New Dominion Angels (NDA). One member of the New Dominion Angels was Jim Koehr, a friend of Jack's father from college. Jim took a liking to Jack, and quickly saw the potential in Jack's idea. The revenue traction he'd gotten was undeniable, and Jim loved using the service himself.

Jim was the Managing General Partner at Sorin Capital Funds, an aggregation of capital from other Angel investors who wanted access to the Angel investment asset class without having to spend all of the time required to do it well. Jim was an active member of two big Angel Investments groups, through which Sorin Capital Funds invested almost exclusively, the New Dominion Angels and the IrishAngels in Chicago. Jim knew that Angel investing is team sport and that he could dramatically increase his probability of success by teaming up with other experienced Angel investors from Virginia and the University of Notre Dame.

In March 2014, Sorin Angel Capital Fund XXII invested $25,000 in ZippyCare through the New Dominion Angels. Rather than sell equity shares in ZippyCare, Jack sold the New Dominion Angels a Convertible Note with 8% annual interest, a 20% discount and a valuation cap of $2.5 million. Jack's Convertible Note was basically a loan from the New Dominion Angels that accrued interest (i.e. didn't actually pay it) and would convert to equity at a company valuation of $2.5 million after a fixed period of time or whenever Jack sold at least $250,000 in equity to anyone else.

In July 2017, ZippyCare finally had their first priced equity round, and that triggered the conversion of the NDA Convertible Note into equity in ZippyCare. The lead investor for the round was a boutique Venture Capital firm out of Charlottesville, VA called Darden & Harris.

Darden & Harris was led by a veteran investor and former Dean of the Darden Graduate School of Business at UVa who had offered a term sheet that gave Jack's company a pre-money valuation of $16 million. In other words, the value of a new share would be calculated as $16 million divided by the current number of shares – before any new money was invested.

Jim Koehr and his friends at the New Dominion Angels could not have been more excited. Their convertible note had a valuation cap of only $2.5 million! The $16 million valuation offered by Darden and Harris was 6.4 times that amount! Did that mean that the value of Sorin's investment just went up 6.4X?

To answer that question, Jim grabbed a Samuel Adams Boston Lager one afternoon and sat down in his office with the Capitalization Table to do some math. The Capitalization Table (or "Cap Table") is a detailed description of who owns how many shares in a company. As Jim quickly discovered, the underlying calculations can get rather complicated, particularly with the conversion of multiple Convertible Notes with different valuation caps.

What Jim discovered after another Boston Lager and several hours of work was that Sorin's investment had taken an impressive jump, on paper at least, but that the increase was not the 6.4X he had expected– it was 3.8X.

Even more surprising was what Jim discovered about a subsequent investment by the New Dominion Angels in which Sorin Capital Funds did not participate. His NDA friends made a follow-on investment in a later convertible note with a $7.5 million valuation cap, and the unrealized gain on that investment after the equity round was only 1.1X.

"Even with a $16 million pre-money valuation, those NDA investors had only basically broken even!", Jim thought. "And the price per share they paid on their note conversion was actually higher than the price paid by Darden & Harris."

"How could that be?" Jim asked.

- "Did Darden & Harris, who came in after Sorin Angel Capital and the New Dominion Angels, 'cram' them down with unbalanced terms?" Jim suspected not.
- "Did Jack Scanlon do something unethical or even intentionally not in the best interest of the NDA or Sorin?" Jim knew that Jack would never do that.
- "Was Jack benefitting as compared to his early investors?" Jim had no idea, but curious minds need to know.

To explain the deals terms and the math that led to such counterintuitive outcomes, Jim decided he had no choice but to completely redo Jack's Capitalization Table calculations. There had to be a mistake somewhere.

In March 2014, when ZippyCare was ready to raise their first funding from outside of their friends and family, their Capitalization Table had the following shareholders. That initial capitalization including about $478,000 from friends and family at $0.25/share plus a whole lot of "sweat equity" from Jack and his Co-Founders:

Shareholder	Common Shares	% Ownership (Fully Diluted)
Jack Scanlon, Founder	2,650,000	34.8%
Co-Founders	2,650,000	34.8%
Early Investors ("Friends and Family")	1,914,986	25.2%
Options Granted	150,000	2.0%
Options Issuable, Not Granted	241,335	3.2%
Total:	**7,606,321**	

Question 1: There were several things that Jim noted to himself about this Cap Table, which was after the so-called "Founders Round". What are some things of interest about this Cap Table for you?

Answer 1:

- *The Founders each own about 35% of the company*
- *All of the shares are "Common" shares, meaning they have no particular "preferences" like the Preferred Shares that Angel investors like Sorin Capital Funds and New Dominion Angels generally buy almost exclusively.*
    - *The most common preference is called a "liquidation preference" where, upon some liquidity event such as the sale of the company, the Preferred shareholders get all of their capital back before the Common shareholders get anything at all.*
    - *The implication of those preferences could be huge on a Common shareholder like Jack. In the event his company was sold for less than the amount of capital invested by the Preferred shareholders, then there would be no money left to pay the Common shareholders. Jack, his co-Founders, and his Family and Friends would be holding shares that would be worthless.*
- *There was an "Option Pool" of approximately 5% so that Incentive Stock Options (ISOs) could be given to attract talent to the company.*
    - *Early-stage companies must often pay below-market wages and forgo employee benefits to preserve cash, so ISOs are a vital part of a CEO's toolbox for retaining top talent.*
    - *When Jim included the portion of the Option Pool that had not yet been given to anyone in his calculations, those ownership percentages are referred to as "Fully Diluted".*
    - *Jim found it interesting that, after almost three (3) years, the Option Pool was so small and so much of it was unused.*
        - *It made Jim wonder if the company Board of Directors at ZippyCare was actively engaged to take care of their CEO and the key members of his team.*
        - *It also confirmed to Jim that Jack wasn't trying to cheat anyone at all because, in a sense, Jack seemed to be short-changing himself and his team by not taking advantage of the justifiable incentives.*

This was a very unusual investment for Sorin Capital Funds for several reasons. Jim usually focused on Software as a Service (SaaS) business because they could scale so quickly, had a very low cost of goods, and required very little capital. None of these were a feature of ZippyCare.

Also, like all Angel investors, Jim strongly preferred subscription revenue where the customer paid on a recurring basis – not the revenue model that ZippyCare was currently using. Jack knew that he had to find a way to make more of his revenue recur through some sort of subscription contract model, but he had just not cracked that nut yet.

However, Jim really liked the fact that Jack was getting enough traction to expand to another airport, and Jim really liked Jack personally – so he decided to take a flyer.

Question 2: In March 2014 when Jack first needed to raise outside money, why do you think he chose to take the money in the form of a convertible note rather than priced equity? What do you think the valuation of the company might have been in March 2014?

Answer 2:

In raising money, Founder Jack Scanlon was faced with a difficult choice for any early-stage company. He could raise a "priced round" where he would establish a "pre-money" valuation for his company, and based the price of the new shares on that.

"Ah, I see what Jack's problem was at the time." thought Jim. "With so little revenue, how was Jack going to get an investor to pay a valuation that didn't require him to give away a huge share of his company?"

Early-stage companies are often valued as a multiple of revenue. A rule of thumb is that a company with 100% growth and 90% account retention might be worth 8X to 10X of their recurring revenue. But Jack's revenue was very low – and most of it wasn't recurring.

Jim pulled out his trusty TI-83 calculator and started punching in some numbers. "Let's say Jack could get a valuation of $1,000,000, and he used that valuation to establish the share price. The share price would have been $1,000,000 divided by the 7,606,321 existing shares or $.1314/share."

"At that price, $1,000,000 would buy another 7,606,321 shares which would double the number of shares in the company. That would mean that Jack would be diluted to half his ownership stake (about 17.5%) with potentially several more rounds of fundraising ahead of him!"

Jim knew that Jack did not leave his secure job in Culpeper, VA to give his company away to a group of Angel Investors, so that was why Jack needed a better plan.

As is common for entrepreneurs with Jack's dilemma, he decided to raise a "Convertible Note" with a higher valuation cap than he could offer for equity. A Convertible Note is debt on ZippyCare's balance sheet with the feature that, upon some "qualified event", it can be converted to equity under certain circumstances and terms. The most common circumstance that triggers a conversion is a future "Priced Round" that results in a minimum amount of investment. This is what Jack chose to do.

The March 2014 Convertible Note that Jack took from the New Dominion Angels, and several others, paid 8.0% interest per year, had 20% discount upon conversion, and a $2.5 million valuation cap. That meant that, until the note converted into equity in ZippyCare, it accrued interest (i.e. not paid in cash) of 8% annually on the amount of Note. At the time of conversion to equity, the price of a share would be calculated as 20% off the pre-money valuation of the round or $2.5 million, whichever was less. The

interest that had accrued would automatically be used to buy additional shares at the same price. If the note never converted, it would be treated the same as any other unsecured debt.

By the spring of 2015, ZippyCare was doing very well - as Angel investors like to say, the deal was becoming "de-risked". Jack's team had grown to 15 people, he had a rapidly growing base of recurring customers, and he even got his first corporate contracts for the executive company cars at two large employers in Virginia, Verizon and Sodexo.

Like many rapidly growing early-stage companies though, ZippyCare again needed money. Rather than raise a priced round, typically called a "Series Seed" at this point since ZippyCare still a "seed-stage" company, Jack chose to raise another convertible note, this time with a $4.5 million cap. He implemented this fundraising approach three (3) more times with 32 separate investments.

One of the October 2016 investments was $500,000 from a strategic investor, Carlin Car Care (CCC), a national franchisor of drive through oil change shops. A "strategic investor" is Angel investor code for a possible acquirer – a situation that all early investors, like Jim and the New Dominion Angels, want to see.

By the end of 2016, the principal value of the convertible notes on his balance sheet looked like this:

Date	Note Value	Valuation Cap
March 1, 2014	$862,852	$2.5 million
June 1, 2015	$1,005,000	$4.5 million
March 1, 2016	$100,000	$4.5 million
September 1, 2016	$365,000	$7.5 million
October 1, 2016	$690,000	$7.5 million
Totals:	**$3,022,852**	

Question 3: Using the table below, calculate how much simple interest had accrued on each of the Convertible Note rounds as of July 1, 2017?

Conversion Date:	1-Jul-17
Interest Rate:	8.0%
Pre-Money Shares:	7,606,321

Date	Note Value	Accrued Interest	Valuation Cap
1-Mar-14	$862,852		$ 2,500,000
1-Jun-15	$1,005,000		$ 4,500,000
1-Mar-16	$100,000		$ 4,500,000
1-Sep-16	$365,000		$ 7,500,000
1-Oct-16	$690,000		$ 7,500,000
Totals:	**$3,022,852**		

Answer 3:

Conversion Date:	1-Jul-17
Interest Rate:	8.0%
Pre-Money Shares:	7,606,321

Date	Note Value	Accrued Interest	Valuation Cap
1-Mar-14	$862,852	$230,346	$ 2,500,000
1-Jun-15	$1,005,000	$167,628	$ 4,500,000
1-Mar-16	$100,000	$10,674	$ 4,500,000
1-Sep-16	$365,000	$24,240	$ 7,500,000
1-Oct-16	$690,000	$41,287	$ 7,500,000
Totals:	**$3,022,852**	**$474,175**	

Question 4: As Jim compiled this information in his spreadsheet, he noticed a few striking things about Jack's accumulation of debt. What stands out to you?

Answer 4:

- *The accrued interest was almost $500,000, all of which was eventually convertible to equity*
  - *This is because the notes were open far past their expiration and the investors voted to extend them. The first New Dominion Angels Note was open for more than three (3) years.*
  - *For the March 2014 note (the one in which Sorin Angel Capital invested), there's an extra 27% worth of value to convert.*
- *These notes were accumulated in five (5) separate raises, three of which occurred in 2016. Looking at the timeframes, Jack basically spent all of 2016 raising money.*
  - *When Jack was raising money, he was not working on his company – a situation that no early investor, like Jim, wanted to see.*

After raising more than $3 million over three (3) years, ZippyCare was doing quite nicely – but by the Spring of 2017, they needed money again. Jack finally decided it was time for a priced round so he could make ZippyCare really big. Jack called this round his "Series A" and went after $6 million of new investment.

Question 5: What do you think about Jack's fundraising approach so far and his plans for a $6 million "Series A"?

Answer 5:

As Jim sipped on his Boston Lager, he noted to himself how unusual it was for a company to raise five (5) convertible notes over three (3) years. He also noted how unusual it was for a company to raise $6 million on their first priced round. A raise that large is usually part of a Series B or Series C with more sophisticated investors or with a Venture Capital firm, but because there are no rules for naming your rounds, Jack called his a "Series A" because it was his first outside equity.

To raise that much money and not dilute himself and the other Common shareholders, Jack had to first find a "lead investor" willing to step up to a very high valuation. A "lead investor" is usually a very wealthy individual, an Angel group, or a Venture Capital firm who puts in the first significant money for a fundraising "round" and sets the terms. Those terms almost always include a set of preferences on Preferred stock.

In this case, Jack found a small venture capital firm, Darden & Harris in Charlottesville, VA, who was willing to invest **$2.5 million on a $16 million pre-money valuation** for ZippyCare. That led to other significant investors who ultimately added a **total of $7,639,359 in new capital** to ZippyCare.

"Oversubscribed" is the term used to describe a round that raises more than intended. In spite of the additional dilution this implies, for an Angel investor like Jim, this is generally a good thing because it means that other people like the investment as much as Jim does and that Jim's portfolio company is less likely to run out of money if it hits a bump down the road.

Now that Jim had figured out this background, he could now return to the question at hand: Why was his unrealized gain 3.8X rather than 6.4X? Could the huge value of those Convertible Notes have anything to with it? Or was there something in the fine print from Darden & Harris?

Jim took another sip of his Boston Lager and dove back into his spreadsheet.

Question 6: Assuming a conversion date of July 1, 2017, an annual simple interest rate of 8.0%, and a pre-money share total of 7,606,321, use the table below to calculate the conversion price for each round and the number of new shares that converted.

Conversion Date:	1-Jul-17
Interest Rate:	8.0%
Pre-Money Shares:	7,606,321

Date	Note Value	Accrued Interest	Valuation Cap	Conversion Price	Converted Shares	Cash at Each Price	Shares at Each Price
1-Mar-14	$862,852	$230,346	$ 2,500,000			$ 1,093,198	-
1-Jun-15	$1,005,000	$167,628	$ 4,500,000				
1-Mar-16	$100,000	$10,674	$ 4,500,000			$ 1,283,302	-
1-Sep-16	$365,000	$24,240	$ 7,500,000				
1-Oct-16	$690,000	$41,287	$ 7,500,000			$ 1,120,527	-
Totals:	$3,022,852	$474,175			-	$ 3,497,027	-

Answer 6:

The price per share for a note conversion depends on two things: 1) the valuation and 2) the number of shares before the conversion. With the round priced at a $16 million valuation for the 7,606,321 shares before the investment (i.e. the "pre-money valuation"), the $2.5 million valuation cap on the New Dominion Angel's Note certainly applied. Using that cap as the pre-money valuation for the conversion of the NDA's first Note, Jim confirmed that the calculation of the price per share for the conversion was $2.5 million divided by 7,606,321 or ***$0.3287/share****.*

ZippyCare's first March 2014 Note with the New Dominion Angels, and several others, was for a total $862,852. Jim's investment on behalf of Sorin Angel Capital was in this Note. The 8% coupon that applied from March 1, 2014, to the conversion on July 1, 2017, added another $230,346 in accrued interest for a total of $1,093,198. At $0.3287 per share, that bought the NDA ***3,326,086 shares*** *in ZippyCare.*

The New Dominion Angels also purchased another note in October 2016 for $75,000 with the same terms except a $7.5 million cap. Jim would eventually be thankful that Sorin Angel Capital was not part of that investment. That note ultimately converted for $7.5 million divided by 7,606,321 or ***$0.9860/share****. Jim hadn't figured it out yet, but that price was going to prove to be very high.*

Jim used the same methodology with all the notes at their various valuation caps to confirm Jack's calculation of a of ***6,631,655 new shares converted from Notes****:*

Conversion Date:	1-Jul-17
Interest Rate:	8.0%
Pre-Money Shares:	7,606,321

Date	Note Value	Accrued Interest	Valuation Cap	Conversion Price	Converted Shares	Cash at Each Price	Shares at Each Price
1-Mar-14	$862,852	$230,346	$ 2,500,000	$ 0.3287	3,326,086	$ 1,093,198	3,326,086
1-Jun-15	$1,005,000	$167,628	$ 4,500,000	$ 0.5916	1,982,086		
1-Mar-16	$100,000	$10,674	$ 4,500,000	$ 0.5916	187,072	$ 1,283,302	2,169,158
1-Sep-16	$365,000	$24,240	$ 7,500,000	$ 0.9860	394,758		
1-Oct-16	$690,000	$41,287	$ 7,500,000	$ 0.9860	741,653	$ 1,120,527	1,136,411
Totals:	**$3,022,852**	**$474,175**			**6,631,655**	**$ 3,497,027**	**6,631,655**

For the first time in more than three (3) years, the New Dominion Angels owned a piece of ZippyCare.

But then Jim had a sudden realization, "Wow, Jack just doubled the number of shares in company, and I haven't even calculated how many Darden & Harris will get for their investment, yet."

To make the calculation of the share price for Darden & Harris' investment, Jim used a simple formula, or at least he thought it would be simple:

$$\frac{\text{Pre-Money Valuation}}{\text{Total Number of Shares}}$$

The Pre-Money Valuation was easy, $16,000,000, but what is the Total Number of Shares?

Pondering the possible ways to calculate the number of shares, Jim took another sip from his Samuel Adams and recalled the line from Shakespeare's Hamlet, "*ay, there's the rub!*"

Do those 6,631,655 newly created shares from the Notes that converted get added to the 7,606,321 existing shares (a new total of 14,237,976 share) for purposes of the Share Price calculation or not? In other words, do the shares convert **before** or **at the same time as** the new money is calculated?

Then Jim discovered a further complication. Darden & Harris insisted that the Option Pool be "topped off" with another 2,000,000 Incentive Stock Option (ISO) shares. This made perfect sense to Jim, and he had seen it many times before. Darden & Harris was investing $2.5 million and wanted to make sure that Jack and his team were properly incented to work hard, even if the going got tough. The addition of those shares into the "Options Pool" would make the determination of how to calculate the Series A share price even more important.

One important thing that Jim recalled about an "Option Pool" is that it was really just a set of shares that were set aside to be awarded to key employees and advisors at some future date, generally at the discretion of the CEO (with Board approval, of course). Shares that are in the Option Pool but have not been awarded are said to be "unallocated". Typically, ISO shares were designed to incentivize the key people to both stay around for the hard work ahead and to do it for a below market paycheck.

To accomplish those two (2) goals, Jim had almost always seen a "vesting schedule" applied to ISO shares. A "vesting schedule" is a set of timeframes when a recipient earns ownership of all or a portion of their awarded shares. A typical vesting schedule might be over four (4) years where the recipient

earns the permanent right to one-quarter of their ISO shares at the end of each year after their award. That would mean that, if a recipient left before the end of the first year, they would own none of the shares and those shares would be returned to the pool for use to incentivize others.

Because the shares are formally reserved though, they are most often used in the calculation of each shareholders' ownership percentage. When the unallocated shares of the Option Pool are used in an ownership share calculation, that calculation is said to be "fully diluted".

Question 7: Use the following Capitalization Table templates to calculate the Price/Share and the Total Number of Shares Purchased with the new Series A investment if the Note Conversion and Option Pool top-off was done:

a. **Before the investment**
b. **At the same time as the investment**

Note Conversion and Option Pool top-off **before** the investment:

Pre-Money Valuation: $ 16,000,000
Share Price:

	Founder Common Shares	Notes & Options Shares	Series A, July 2017 Preference	Series A, July 2017 Shares	Series A, July 2017 % of Series A	Fully Diluted Capitalization Table Shares	Fully Diluted Capitalization Table Post-Money	Fully Diluted Capitalization Table Fully Diluted %
Founders	2,650,000			-		2,650,000		34.8%
Co-Founders	2,650,000			-		2,650,000		34.8%
Friends and Family	1,914,986			-		1,914,986		25.2%
Initial Option Pool	391,335			-		391,335		5.1%
ISO Top-off, Common						-	-	0.0%
Note, $2.5 Million Cap				-		-	-	0.0%
Note, $4.5 Million Cap				-		-	-	0.0%
Note, $7.5 Million Cap				-		-	-	0.0%
Series A New Money			$ 7,639,359			-	-	0.0%
Totals:	**7,606,321**	**-**	**$ 7,639,359**	**-**	**0.0%**	**7,606,321**	**-**	**100.0%**
Cummulative Totals:		**7,606,321**						

Note Conversion and Option Pool top-off **at the same time as** the investment:

Pre-Money Valuation: $ 16,000,000
Share Price:

	Founder Common Shares	New Options Shares	Series A, July 2017 Preference	Series A, July 2017 Shares	Series A, July 2017 % of Series A	Fully Diluted Capitalization Table Shares	Fully Diluted Capitalization Table Post-Money	Fully Diluted Capitalization Table Fully Diluted %
Founders	2,650,000					2,650,000	-	34.8%
Co-Founders	2,650,000					2,650,000	-	34.8%
Friends and Family	1,914,986					1,914,986	-	25.2%
Initial Option Pool	391,335					391,335	-	5.1%
ISO Top-off, Common						-	-	0.0%
Note, $2.5 Million Cap						-	-	0.0%
Note, $4.5 Million Cap						-	-	0.0%
Note, $7.5 Million Cap						-	-	0.0%
Series A New Money			$7,639,359	-		-	-	0.0%
Totals:	**7,606,321**	**-**	**$7,639,359**	**-**	**0.0%**	**7,606,321**	**-**	**100.0%**

Answer 7:

Note Conversion and Option Pool top-off **before** the investment:

Pre-Money Valuation: $ 16,000,000

Share Price: $ 0.9853

	Founder Common Shares	Notes & Options Shares	Series A, July 2017 Preference	Series A, July 2017 Shares	Series A, July 2017 % of Series A	Fully Diluted Capitalization Table Shares	Fully Diluted Capitalization Table Post-Money	Fully Diluted Capitalization Table Fully Diluted %
Founders	2,650,000			-		2,650,000	2,611,163	11.0%
Co-Founders	2,650,000			-		2,650,000	2,611,163	11.0%
Friends and Family	1,914,986			-		1,914,986	1,886,921	8.0%
Initial Option Pool	391,335			-		391,335	385,600	1.6%
ISO Top-off, Common		2,000,000				2,000,000	1,970,689	8.3%
Note, $2.5 Million Cap		3,326,086	$ 1,093,198	3,326,086	23.1%	3,326,086	3,277,340	13.9%
Note, $4.5 Million Cap		2,169,158	$ 1,283,302	2,169,158	15.1%	2,169,158	2,137,368	9.0%
Note, $7.5 Million Cap		1,136,411	$ 1,120,527	1,136,411	7.9%	1,136,411	1,119,757	4.7%
Series A New Money			$ 7,639,359	7,752,983	53.9%	7,752,983	7,639,359	32.3%
Totals:	**7,606,321**	**8,631,655**	**$ 11,136,386**	**14,384,638**	**100.0%**	**23,990,959**	**23,639,359**	**100.0%**
Cummulative Totals:		**16,237,976**						

Note Conversion and Option Pool top-off **at the same time as** the investment:

Pre-Money Valuation: $ 16,000,000

Share Price: $ 2.1035

	Founder Common Shares	New Options Shares	Series A, July 2017 Preference	Series A, July 2017 Shares	Series A, July 2017 % of Series A	Fully Diluted Capitalization Table Shares	Fully Diluted Capitalization Table Post-Money	Fully Diluted Capitalization Table Fully Diluted %
Founders	2,650,000					2,650,000	5,574,311	13.3%
Co-Founders	2,650,000					2,650,000	5,574,311	13.3%
Friends and Family	1,914,986					1,914,986	4,028,199	9.6%
Initial Option Pool	391,335					391,335	823,179	2.0%
ISO Top-off, Common		2,000,000				2,000,000	4,207,027	10.1%
Note, $2.5 Million Cap			$1,093,198	3,326,086	32.4%	3,326,086	6,996,467	16.7%
Note, $4.5 Million Cap			$1,283,302	2,169,158	21.1%	2,169,158	4,562,853	10.9%
Note, $7.5 Million Cap			$1,120,527	1,136,411	11.1%	1,136,411	2,390,457	5.7%
Series A New Money			$7,639,359	3,631,714	35.4%	3,631,714	7,639,359	18.3%
Totals:	**7,606,321**	**2,000,000**	**$11,136,386**	**10,263,369**	**100.0%**	**19,869,690**	**41,796,164**	**100.0%**

If Jack had determined the share price for the new Series A investors by dividing $16 million by previous 7,606,321 shares, the price per share would have been $2.1035, but if he included the newly converted shares and new ISO shares for a total of 16,237,976 shares, the Series A price would be less than half that at $0.9853.

Question 8: Which of the two (2) Capitalization Tables that you just created, above, is the "right" way to do it? What would you think if you were one of the following:

a. **A Common Stockholder**
b. **A Convertible Noteholder who just converted**
c. **Darden & Harris**

Answer 8:

What would it have looked like if the notes were converted ***at the same time as*** *the investment and the option pool was topped off* ***at the same time as*** *the investment? That would have meant that the share price calculation would have been done with just the existing Common shares:*

	Number of Shares
Common Stock, no Options	*7,214,986*
Option Pool, existing	*391,335*
Total:	***7,606,321***

*If the Series A share price calculation were done with just this number of Common Shares, the Series A price would be $16,000,000 divided by 7,606,321 shares = **$2.1035/share.** That would have been 6.4X the share price of $.3287, or the amount Jim intuitively expected when he heard that the round was priced at $16 million, and his shares would convert at a valuation cap of $2.5 million.*

"I sure like that $2.1035 price!" Jim thought to himself. "That is 6.4X the price at which I converted!"

Abandoning his spreadsheet briefly for the trusty old TI-83 Plus calculator in his briefcase, Jim quickly recreated the way that Darden & Harris must have used to determine the number of shares that would be divided into the $16,000,000 pre-money valuation to get the share price for the round:

	Number of Shares
Common Stock, including existing option pool	7,606,321
Converted Notes, $2.5 million cap	3,326,086
Converted Notes, $4.5 million cap	2,169,158
Converted Notes, $7.5 million cap	1,136,411
Option Pool, new	2,000,000
Total:	**16,237,976**

*So, the price of the round was calculated as $16,000,000 divided by 16,237,976 shares = **$0.9853/share.***

*"Which of the two possible prices that end up being used in the calculations makes a huge difference for Darden & Harris." Jim realized. "If the calculations are done with the Notes converted **before** the Series A money came in, Darden & Harris would get nearly twice as many shares!"*

"I wonder how Jack determined the fairest way to do the calculation?" thought Jim.

After a few more calculations, and some quality time with the documents that the New Dominion Angels signed for the Series A investment, the answer became clear. Jim didn't like the answer, but at least it made sense.

The "lead investor", Darden & Harris, got to decide.

Yes, it was true that a majority of the Common shareholders and Note holders who were converting, including the New Dominion Angels, had to approve the terms, but in this case, the Common shareholders were dominated by the guys who negotiated the terms with Darden & Harris, and the Notes were heavily concentrated in a few large investors. Add to this the fact that there was not a long line of people willing to put $2.5 million into ZippyCare on more favorable terms, and Jim quickly come to the realization that the New Dominion Angels, and Sorin Capital Funds by extension, had no influence over the decision whatsoever.

Sitting back in his Notre Dame desk chair, Jim finally realized, "Even Jack, who was hurt by this at least at least as much as us, had no choice in the end. Jack made the best deal possible. Those Darden & Harris guys are no dummies."

Jim took another cold sip from his Boston Lager and suddenly noticed the two (2) alternative post-money valuations. The "post-money" valuation of a company is the paper valuation of the company

after the investment round is completed. It is equal to the new share price times the new total number of shares. In theory, the post-money valuation should approximate what ZippyCare is actually worth immediately following the Series A.

"Whoa!", he thought to himself. "Is it possible that the methodology insisted upon by Darden & Harris really was the most reasonable way to do it?"

Question 9: Looking at the post-money valuations that result from the two (2) alternative Capitalization Tables, do you think they both make sense? Why or why not?

Answer 9:
Jim reviewed the two possibilities:

Note Conversion and Option Pool top-off ***before*** *the investment at $0.9853/share:*

	Fully Diluted Capitalization Table		
	Shares	Post-Money	Fully Diluted %
Founders	2,650,000	2,611,163	11.0%
Co-Founders	2,650,000	2,611,163	11.0%
Friends and Family	1,914,986	1,886,921	8.0%
Initial Option Pool	391,335	385,600	1.6%
ISO Top-off, Common	2,000,000	1,970,689	8.3%
Note, $2.5 Million Cap	3,326,086	3,277,340	13.9%
Note, $4.5 Million Cap	2,169,158	2,137,368	9.0%
Note, $7.5 Million Cap	1,136,411	1,119,757	4.7%
Series A New Money	7,752,983	7,639,359	32.3%
Totals:	**23,990,959**	**23,639,359**	**100.0%**

Note Conversion and Option Pool top-off ***at the same time as*** *the investment at $2.1035/share:*

	Fully Diluted Capitalization Table		
	Shares	Post-Money	Fully Diluted %
Founders	2,650,000	5,574,311	13.3%
Co-Founders	2,650,000	5,574,311	13.3%
Friends and Family	1,914,986	4,028,199	9.6%
Initial Option Pool	391,335	823,179	2.0%
Note, $2.5 Million Cap	3,326,086	6,996,467	16.7%
Note, $4.5 Million Cap	2,169,158	4,562,853	10.9%
Note, $7.5 Million Cap	1,136,411	2,390,457	5.7%
ISO Top-off, Common	2,000,000	4,207,027	10.1%
Series A New Money	3,631,714	7,639,359	18.3%
Totals:	**19,869,690**	**41,796,164**	**100.0%**

After looking at these two possible outcomes, Jim concluded that Darden & Harris didn't just simply dictate the terms of the calculation because it benefited them. They dictated the only reasonable terms given the circumstances.

The Pre-Money valuation for ZippyCare was $16 million, and the only two (2) things that changed were that they added $7.6 million in cash to their checking account, and they topped off the option pool with an additional 2 million shares. Could that have made the company worth almost $42 million?

"No way!" thought Jim. "When Jack added 2 million ISO shares, is it reasonable to say that added $2.1035 per share to the value of the company? Maybe the improved ability to attract talent added some value or else Darden & Harris would not have insisted on it, but $4.2 million? Definitely not!"

"Certainly Darden & Harris didn't believe that, so it would be easy to understand – and accept – that a Venture Capitalist will insist on topping off the option pool to 10% ***before*** *their investment." Jim concluded.*

Further, when the 6,631,655 shares were converted from Notes ***at the same time as*** *the investment and they got valued at $2.1035/share, they would be worth almost $14 million (on paper at least). "But didn't ZippyCare already spend that money to get the valuation up to $16 million? How can we count it again as new money coming in?", Jim thought.*

After ZippyCare's Series A was completed, which of these two possible post-money valuations is closest to the real value of the company? Jack had found a group of investors who were willing to value his company at $16 million, and he now has $7.6 million in freshly raised funds in the bank.

"$16 million in value plus $7.6 million in cash is $23.6 million. I would say that the post-money valuation of $23.6 million is far more believable than the incredible valuation of $41.8 million.", Jim thought.

Jim sat back in chair after his three (3) hours of forensic work and realized, "That was really interesting. I think I just learned a thing or two about how Cap Table math works. And I also think I finally have enough information to answer the question that started all of this. 'Was my unrealized gain really only 3.8X?' "

Question 10: What is the simple unrealized gain on each of the three (3) tranches of Convertible Notes once they converted to equity? Why is the Share Price multiple less than the Cash-on-Cash multiple? Use the table below to guide your work.

Note Tranche	Cash Invested	Accrued Interest	Conversion Price	Converted Shares	Series A Price	Post-Money Value	Share Price Multiple	Cash-on-Cash Multiple
$2.5 mm Cap	$862,852	$230,346	$ 0.3287					
$4.5 mm Cap	$1,105,000	$178,302	$ 0.5916					
$7.5 mm Cap	$1,055,000	$65,527	$ 0.9860					
Totals:	**$3,022,852**	**$474,175**		-				

Answer 10:

All the investors in the March 2014 Convertible Note put in a total of $862,852. That converted amount, plus the $230,346 in accrued interest converted into 3,326,086 shares at $0.3287/share. After the Series A, those shares are now valued at $0.9853/share

Jim punched furiously on his old calculator. First, Jim looked at the increase in the share price:

Series A price of $0.9853 per share/Conversion price of $0.3287 per share = 3.0X

"That doesn't look right", thought Jim. "Let me look at it from a cash perspective. What is my current post-money valuation divided by how much cash I put in."

3,326,086 shares times $0.9853 per share = $3,277,340

$3,277,340 divided by $862,852 = 3.8X

"Well, which is it – 3.0X or 3.8X", puzzled Jim.

After one more sip on his now slightly warm Samuel Adams, it hit him. "It's the converted interest! My tranche of the Convertible Note also converted $230K interest that purchased extra shares at $0.3287/share and are now worth almost a buck. That's part of my gain too!"

"I'd better put that into a spreadsheet so the youngsters in my 2013 Darden class don't laugh at me again for using a calculator." Jim chuckled to himself as he did it.

Tranche	Cash Invested	Accrued Interest	Conversion Price	Converted Shares	Series A Price	Post-Money Value	Share Price Multiple	Cash-on-Cash Multiple
$2.5 mm Cap	$862,852	$230,346	$ 0.3287	3,326,086	$ 0.9853	3,277,340	3X	3.8X
$4.5 mm Cap	$1,105,000	$178,302	$ 0.5916	2,169,158	$ 0.9853	2,137,368	1.7X	1.9X
$7.5 mm Cap	$1,055,000	$65,527	$ 0.9860	1,136,411	$ 0.9853	1,119,757	1X	1.1X
Totals:	**$3,022,852**	**$474,175**		**6,631,655**		**6,534,465**		**2.2X**

"Now it all makes sense. The value of Sorin Angel Capital's shares with the New Dominion Angels is now 3.8 times the cash I put in - not 6.4X, but still very cool".

Jim reflected on what he had just learned about the timing of Note conversions and new Incentive Stock Options:

- The number of shares from the Notes that converted were included in the calculation – **before** the investment.
  - This is always to the advantage of the new money because it lowers the share price.
  - But it also makes sense because the money from the Convertible Note has already been spent generating the value captured in the Pre-Money valuation.
- It is very common for a Venture Capitalist, or any prudent investor really, to make sure that the entrepreneurs are properly incented with stock options.
  - The amount generally considered acceptable for an Option Pool is around 10% of the total shares.
  - And like the note conversion, it makes a big difference whether that option pool is "topped off" to 10% before or at the same time as the investment.
    - The new money always wants the option pool to be topped off **before** the investment, because it further adds to the number of shares in the divisor which further lowers the share price.
    - Existing investors want the option pool to be created **at the same time as** the new money's shares are being added because then the new investors' shares in the dilution.
- The more shares used in the Share Price calculation, the lower the resulting Share Price. The lower the Share Price, the lower unrealized gain for existing investors and the more existing investors are diluted by the increased number of shares that can be purchased by the incoming round of capital.
  - "I guess that seems obvious enough." thought Jim

Question 11: The third tranche of Convertible Notes had a valuation cap of $7.5 million and converted into the Series A round with a Pre-Money Valuation of $16 million. Do you notice anything unusual about the price at which that tranche of Convertible Notes converted?

Answer 11:

Jim looked back at his calculation of the share price for the October 2016 Convertible Note purchased by the New Dominion Angels with a cap of $7.5 million. "I sure am glad that I didn't do that one" Jim thought. It was completely counterintuitive, but the share price of $0.9853 that resulted from the $16 million pre-money valuation was actually less than the share price of $0.9860 at which NDA's second Note converted.

Fortunately for Jim's friends at the New Dominion Angels, the interest on their October 2016 Note accrued through July 2017 bought enough extra shares to give them a small 1.1X unrealized gain.

Jim could only say to himself, "Better lucky than good! I had no idea I was being so smart by not investing in the extension of a Convertible Note, but I sure know that now!"

Question 12: How much of the company did Jack end up selling to the Series A investors? Was that reasonable for an entrepreneur like Jack? Why or why not?

Answer 12:

By dictating that the Notes were converted, and the option pool was topped off ***before*** *their investment, Darden & Harris ultimately ensured that the Series A investors received 32.3% of the company.*

	Fully Diluted Capitalization Table		
	Shares	Post-Money	Fully Diluted %
Founders	2,650,000	2,611,163	11.0%
Co-Founders	2,650,000	2,611,163	11.0%
Friends and Family	1,914,986	1,886,921	8.0%
Initial Option Pool	391,335	385,600	1.6%
ISO Top-off, Common	2,000,000	1,970,689	8.3%
Note, $2.5 Million Cap	3,326,086	3,277,340	13.9%
Note, $4.5 Million Cap	2,169,158	2,137,368	9.0%
Note, $7.5 Million Cap	1,136,411	1,119,757	4.7%
Series A New Money	7,752,983	7,639,359	32.3%
Totals:	**23,990,959**	**23,639,359**	**100.0%**

"That looks familiar", Jim thought. A 30% stake in ZippyCare for a $7.6 million investment lined up quite nicely with what Jim had seen many times before: For a Series A round, entrepreneurs generally give up about 30% of their companies.

Question 13: After the initial Founders Round, Jack and his co-founders owned nearly 70% of the company. Five (5) rounds of Convertible Notes and now his big Series A later, how much of the company do Jack and his partners still own? Should they be happy with that? Why or why not?

Answer 13:

"But what about Jack?" Jim thought. He and his co-founders started off with nearly 70% of the company (34.8% each), and now they have only 22.0% - and Jack is down to only 11%!"

	Founder Common Shares	Notes & Options Shares	Series A, July 2017 Preference	Shares	% of Series A	Fully Diluted Capitalization Table Shares	Post-Money	Fully Diluted %
Founders	2,650,000			-		2,650,000	2,611,163	11.0%
Co-Founders	2,650,000			-		2,650,000	2,611,163	11.0%
Friends and Family	1,914,986			-		1,914,986	1,886,921	8.0%
Initial Option Pool	391,335			-		391,335	385,600	1.6%
ISO Top-off, Common		2,000,000				2,000,000	1,970,689	8.3%
Note, $2.5 Million Cap		3,326,086	$ 1,093,198	3,326,086	23.1%	3,326,086	3,277,340	13.9%
Note, $4.5 Million Cap		2,169,158	$ 1,283,302	2,169,158	15.1%	2,169,158	2,137,368	9.0%
Note, $7.5 Million Cap		1,136,411	$ 1,120,527	1,136,411	7.9%	1,136,411	1,119,757	4.7%
Series A New Money			$ 7,639,359	7,752,983	53.9%	7,752,983	7,639,359	32.3%
Totals:	**7,606,321**	**8,631,655**	**$ 11,136,386**	**14,384,638**	**100.0%**	**23,990,959**	**23,639,359**	**100.0%**
Cummulative Totals:		**16,237,976**						

Jim tried to put himself in Jack's shoes for a moment.

I suppose if I were Jack, I wouldn't like the fact that I only owned 11% of my company, the company that has consumed me for the last four (4) years, but on the other hand, look at the post-money valuation on that 11% - $2.6 million! "I'm a millionaire!"

"Jack needs to ask himself 'Do I want to be rich, or do I want to be king?'" Jim suggested to himself, as if Jack could somehow hear him. "All angel investors know the answer they want to that question, and it does not involve a crown!"

Then Jim put himself back into his own shoes and thought, "That $5.2 million post-money valuation on the shares held by the Founders looks pretty good, but maybe there are a few things that Jack should consider as he evaluates how happy he is about his 11%."

"For one, he's not considering how much value he has generated from the money he raised. Counting his initial friends and family money, he had raised about $3.5 million ($478,000 from Friends and Family and $3.02 million in Convertible Notes), and in four (4) years, he had managed to create a company worth $16 million."

"That's actually pretty darn good", Jim thought as he scrolled through the list of Angel investments in his head that he had made that never made it anywhere near a $16 million valuation. "Most of them!"

"But the other thing that Jack might be forgetting is that his post-money valuation includes the $7.6 million in cash that is just sitting in his checking account. Can he turn that into four (4) or five (5) times the value also? Until he produces some actual value with that cash, his company is really a $16 million valuation company. But 11% of $16 million is still $1.76 million."

"If I were Jack, I wouldn't be particularly happy about owning such a small share of my company, but I'd be feeling great about what I'd accomplished and that $2.6 million post-money valuation for my shares."

"I wouldn't have believed it," Jim thought, "But Jack's math had been correct all along."

Jim swallowed the last warm sip of his Boston Lager and hit the Save button on his spreadsheet. Then he leaned back and pondered the original question that started him on his all-evening quest: Why was the unrealized gain on his Convertible Note with a $2.5 million cap only 3.8X when the new pre-money valuation of $16 million was 6.4 times that amount?

It was because the huge amount of $3,022,852 in Convertible Debt that accumulated prior to the Series A had all converted into shares **before** the share price was calculated for the Series A investors. That debt conversion, combined with the conversion of almost $500,000 in accrued interest and the addition

of 2,000,000 new Incentive Stock Option (ISO) shares, more than doubled the number of shares. Dividing a fixed $16 million pre-money valuation by more than twice as many shares cut the price per share by more than half, thereby cutting Sorin's investment through the NDA into ZippyCare by nearly half.

"It could have been worse though. At least I stopped after the first round of Convertible Notes." Jim said without acknowledging to himself the pure luck involved in that decision.

Then, after more than four (4) hours trying to figure this all out, Jim suddenly thought, "Duh!"

"The only way for ZippyCare to have given the first New Dominion Angel investors a 6.4X unrealized gain was for NDA to have the ZippyCare valued at $2.5 million after an investment in equity and then for Jack Scanlon to have achieved a $16 million pre-money valuation with no additional capital."

"Jack is good, but he's not that good", thought Jim as he turned out his office light and headed up to bed.

Supplemental Questions

Jim woke up early the next morning after a fitful night's sleep. He still had more questions.

One question that kept Jim up much of the night was, "If I can conclude that Darden & Harris dictated reasonable terms given the circumstances, and if I consider that Sorin Angel Capital and the New Dominion Angels now have a very strong unrealized gain of 3.8X on our investment in ZippyCare, why do the results of the Series A seem relatively unsatisfying?"

"Could it have been the three (3) years it took Jack to stop raising money with Convertible Notes?" Jim asked. "Should we have encouraged Jack to do all of his fundraising in discrete, priced rounds?"

Jim was suddenly energized, so he grabbed a hot cup of coffee, "black and bitter" as they called it back in Jim's nuclear submarine days, and he decided to do a "Thought Experiment". What would have happened if Jack had completed all his fundraising in priced equity rounds rather than Convertible Note rounds? Jim knew that part of the reason Jack chose to do Convertible Notes was to get valuation caps higher than any reasonable equity valuations at the time, but that realization was not going to stop Jim's experiment.

So, Jim settled in for one final round of calculations, this time assuming that all the money that came in was invested in separate rounds with pre-money valuations equal to the valuation caps on each of the Convertible Notes.

Simplifying that a bit, Jim laid out four (4) theoretical rounds of financing for ZippyCare with each equity round taking in the exact same amount of money as the corresponding Convertible Note(s):

	Cash Invested	Pre-Money Valuation
Series Seed-1, March 2014	$862,852	$2,500,000
Series Seed-2, June 2015	$1,105,000	$4,500,000
Series Seed-3, June 2016	$1,055,000	$7,500,000
Series A	$7,639,359	$16,000,000
Total Cash Invested:	**$10,662,211**	

It didn't take Jim long at all to knock out what the imaginary Cap Table looked like for his Thought Experiment.

"Man, it is a lot easier to do these calculations with no Note conversions." Jim thought to himself.

Pre-Money Valuation:			$ 2,500,000			$ 4,500,000			$ 7,500,000			$ 16,000,000		
Share Price:			$ 0.3287			$ 0.4398			$ 0.5885			$ 0.9675		*includes new options*
	Founders Round		Series Seed-1, March 2014			Series Seed-2, June 2015			Series Seed-3,June 2016			Series A, July 2017		
	Shares	% Ownership	Invested	Shares	% Ownership	Invested	Shares	% Ownership	Invested	Shares	% Ownership	Invested	Shares	% Ownership
Founders	2,650,000	34.8%		2,650,000	25.9%		2,650,000	20.8%		2,650,000	18.2%		2,650,000	10.8%
Co-Founders	2,650,000	34.8%		2,650,000	25.9%		2,650,000	20.8%		2,650,000	18.2%		2,650,000	10.8%
Friends and Family	1,914,986	25.2%		1,914,986	18.7%		1,914,986	15.0%		1,914,986	13.2%		1,914,986	7.8%
Option Pool	391,335	5.1%		391,335	3.8%		391,335	3.1%		391,335	2.7%		391,335	1.6%
Option Pool Top-off													2,000,000	8.2%
Series Seed-1			$ 862,852	2,625,252	25.7%		2,625,252	20.6%		2,625,252	18.1%		2,625,252	10.7%
Series Seed-2						$1,105,000	2,512,420	19.7%		2,512,420	17.3%		2,512,420	10.3%
Series Seed-3									$1,055,000	1,792,655	12.3%		1,792,655	7.3%
Series A												$7,639,359	7,895,587	32.3%
Total Shares:	**7,606,321**			**10,231,573**			**12,743,992**			**14,536,647**			**24,432,234**	
Post-Money Valuation:				**$3,362,852**			**$5,605,000**			**$8,555,000**			**$23,639,359**	

Question 14: How would the Founders, the Convertible Note holders, and the Series A been impacted had Jack done each Convertible Note round as a priced round using the Note valuation cap as the valuation? Use the templates below to guide your work.

	Actual w/Notes		Thought Experiment w/out Notes	
Shareholder	Shares	% Ownership	Shares	% Ownership
Jack Scanlon	2,650,000	11.0%	2,650,000	10.8%
Co-Founders	2,650,000	11.0%	2,650,000	10.8%
Friends and Family	1,914,986	8.0%	1,914,986	7.8%
Options Pool	391,335	1.6%	391,335	1.6%
Option Pool Top-off	2,000,000	8.3%	2,000,000	8.2%
Converted Notes, $2.5 mm cap	**3,326,086**	**13.9%**	**2,625,252**	**10.7%**
Converted Notes, $4.5 mm cap	**2,169,158**	**9.0%**	**2,512,420**	**10.3%**
Converted Notes, $7.5 mm cap	**1,136,411**	**4.7%**	**1,792,655**	**7.3%**
Series A	7,752,983	32.3%	7,895,587	32.3%
Total:	**23,990,959**		**24,432,234**	

Unrealized Gains from Note Conversions

Series A Price: $ 0.9853

	Number of Shares	Value at $0.9853/share	Amount Invested	Unrealized Gain, Actual
Common Stock, including Option Pool	9,606,321	$ 9,465,535		
Converted Notes, $2.5 million cap	3,326,086	$ 3,277,340	$ 862,852	3.8X
Converted Notes, $4.5 million cap	2,169,158	$ 2,137,368	$ 1,105,000	
Converted Notes, $7.5 million cap	1,136,411	$ 1,119,757	$ 1,055,000	
Series A	7,752,983	$ 7,639,359		
Total:	**23,990,959**	**$ 23,639,359**		

Unrealized Gains from Thought Experiment Equity Rounds

Series A Price: $ 0.9675

	Number of Shares	Value at $0.9675/share	Amount Invested	Unrealized Gain, Experiment
Common Stock, including existing option pool	9,606,321	$ 9,294,577		
Series Seed-1	2,625,252	$ 2,540,057	$ 862,852	2.9X
Series Seed-2			$ 1,105,000	
Series Seed-3			$ 1,055,000	
Series A	7,895,587	$ 7,639,359		
Total:	**20,127,159**	**$ 19,473,993**		

Answer 14:

"Did I do that right?", Jim thought. "This cap table really doesn't look all that much different from the real one."

Jim put the two Cap tables side by side to better see the differences:

	Actual w/Notes		Thought Experiment w/out Notes	
Shareholder	Shares	% Ownership	Shares	% Ownership
Jack Scanlon	2,650,000	11.0%	2,650,000	10.8%
Co-Founders	2,650,000	11.0%	2,650,000	10.8%
Friends and Family	1,914,986	8.0%	1,914,986	7.8%
Options Pool	391,335	1.6%	391,335	1.6%
Option Pool Top-off	2,000,000	8.3%	2,000,000	8.2%
Converted Notes, $2.5 mm cap	**3,326,086**	**13.9%**	**2,625,252**	**10.7%**
Converted Notes, $4.5 mm cap	**2,169,158**	**9.0%**	**2,512,420**	**10.3%**
Converted Notes, $7.5 mm cap	**1,136,411**	**4.7%**	**1,792,655**	**7.3%**
Series A	7,752,983	32.3%	7,895,587	32.3%
Total:	**23,990,959**		**24,432,234**	

"Incredible", Jim thought to himself. "There is hardly any difference at all for anyone except the Convertible Note holders. And I was actually better off for buying into the first Convertible Note."

Jim sat back on pondered how that could be possible. He quickly realized it was because the note had accrued interest for more than three (3) years at 8%. That turned into a lot of accrued interest that also went toward the purchase of additional shares at the conversion price of $0.3287. In the Thought Experiment case, where all fundraising rounds purchased equity, that same three (3) years passed with no accrued interest to buy additional shares.

As Jim continued to scan down the table, he also noticed a really big difference between the Actual and Thought Experiment outcome for his New Dominion Angel friends who bought into the last 2016 Convertible Notes.

Jim had calculated that his actual unrealized return was 3.8X and the unrealized gain for his NDA friends in the Convertible Note extension was 1.1X.

	Number of Shares	Value at $0.9853/share	Amount Invested	Unrealized Gain, Actual
Common Stock, including Option Pool	9,606,321	$ 9,465,535		
Converted Notes, $2.5 million cap	3,326,086	$ 3,277,340	$ 862,852	3.8X
Converted Notes, $4.5 million cap	2,169,158	$ 2,137,368	$ 1,105,000	1.9X
Converted Notes, $7.5 million cap	1,136,411	$ 1,119,757	$ 1,055,000	1.1X
Series A	7,752,983	$ 7,639,359		
Total:	**23,990,959**	**$ 23,639,359**		

"I wonder what the comparable returns from my Thought Experiment are?", thought Jim about his thought.

	Number of Shares	Value at $0.9675/share	Amount Invested	Unrealized Gain, Experiment
Common Stock, including existing option pool	9,606,321	$ 9,294,577		
Series Seed-1	2,625,252	$ 2,540,057	$ 862,852	2.9X
Series Seed-2	2,512,420	$ 2,430,887	$ 1,105,000	2.2X
Series Seed-3	1,792,655	$ 1,734,480	$ 1,055,000	1.6X
Series A	7,895,587	$ 7,639,359		
Total:	**24,432,234**	**$ 23,639,359**		

Jim could only say to himself, "Better lucky than good! All that interest I accrued on the first Convertible Note made a huge difference, and I had no idea I was being so smart by not investing in the extension of a Convertible Note. I sure know that now!"

The other thing that was keeping Jim awake was that he could not stop thinking about Jack and the situation he had put himself in with such a large Series A raise.

"$7.6 million is a lot of money to take from other people", thought Jim. "I hope he knows what he is doing, because if he doesn't use all of that money well, he could have just made his company worthless for himself, his key people, and his Family and Friends."

What got Jim thinking about all of this was the difference between the huge number of Preferred Shares Jack had just added to ZippyCare's Cap table versus the Common shares that were owned in the Founders Round and in the Option Pool.

The shares Jack just added to the ZippyCare Cap Table were all "Preferred Shares", and the preference that had Jim worried for Jack was called a "Liquidation Preference". In this case, Jack had offered a "1X Liquidation Preference" which meant, upon a liquidation event (e.g. a sale of the company) all holders of Preferred Shares would have the choice of taking their share of the available sale proceeds or one (1) times their actual invested capital, whichever is more. In other words, the Preferred Shareholders were guaranteed that their capital would be returned to them before the Common Shareholders got anything.

Jim had seen cases before where this "fine print" had made the Common Shares worthless. In those cases, not only did the Founders get nothing for their years of hard work and risk, but the great young talent those Founders enticed to their companies with the lure of rich stock options also ended up spending some good years working for nothing more than below market wages.

"I should try to quantify this for Jack so that he at least understands in advance what he has to do with ZippyCare to achieve his dream of a big exit for himself", determined Jim.

Question 15: Assuming Jack raises no additional money, below what net sale price will the Common Shares be worthless? For how much will Jack have to sell ZippyCare in order for the Common Shareholders to receive their full pro-rata share of the sale proceeds? For how much will Jack have to net on the sale of the company for him to get the full $2.6 million post-money valuation of his shares?

Answer 15:

Jim started by adding up the capital that had been invested in Preferred Shares. That included the investments in Convertible Notes, all the interest accrued on those Notes, and the capital recently invested in the Series A that was led by Darden & Harris:

	Capital Invested with a 1X Liquidation Preference
Convertible Notes	*$3,022,852*
Accrued Note Interest	*$474,175*
Series A	*$7,639,359*
Totals:	***$11,136,386***

"Wow!" thought Jim. "Jack is going to have to return $11 million to his investors before he can even get a dime."

Jim recalled what the final ZippyCare Cap Table looked like after the Series A:

	Fully Diluted Capitalization Table		
	Shares	Post-Money	Fully Diluted %
Founders	2,650,000	2,611,163	11.0%
Co-Founders	2,650,000	2,611,163	11.0%
Friends and Family	1,914,986	1,886,921	8.0%
Initial Option Pool	391,335	385,600	1.6%
ISO Top-off, Common	2,000,000	1,970,689	8.3%
Note, $2.5 Million Cap	3,326,086	3,277,340	13.9%
Note, $4.5 Million Cap	2,169,158	2,137,368	9.0%
Note, $7.5 Million Cap	1,136,411	1,119,757	4.7%
Series A New Money	7,752,983	7,639,359	32.3%
Totals:	**23,990,959**	**23,639,359**	**100.0%**

"I'll bet Jack is looking at that Cap Table thinking he has $2.6 million in the bank already. I wonder what a buyer would have to pay for ZippyCare for that to actually become true?", Jim asked himself.

To figure that out, Jim started with the fact that the Preferred Shareholders owned exactly 60% of ZippyCare now (27.7% from the Converted Notes and 32.3% from the Series A). If ZippyCare had to be worth enough for that 60% to be repaid without the requirement to apply the liquidation preference, the company would have to worth $11,136,386 divided by 60% or $18,560,643.

"I don't know what it costs for attorneys, investment bankers, and everyone else involved in the sale of a company, but I know it is not cheap" pondered Jim. "I'll bet though, that this means Jack needs to build this company up and sell it for something like $19 million for him to cover all of the transaction costs and liquidation preferences and still leave himself with his full 11.0% share of the gain."

"I'm guessing that is not what Jack is going for though", realized Jim. "11% of $18,560,643 is about $2.04 million. If Jack wants to see the $2.6 million show on the Cap Table by his name, he is going to have to net the entire $23.6 million post-money value for the company."

Question 16: The most current Pre-Money Valuation for ZippyCare was $16 million. If Jack raised a future round of investment with the Pre-Money Valuation of $20 million, what would the result be for the Series A investors?

Answer 16:

As Jim continued to think about the challenge Jack created for himself by raising such a large Series A, Jim was reminded that the post money valuation for ZippyCare was now a hefty $23,639,131. That meant that any additional gains would have to be measured from that starting point, not the $16 million pre-money valuation that began the Series A.

"Jack is going to have to take the $7.6 million he just raised and turn it into $7.6 million in real value for us to be able to ever realize this big unrealized gain", Jim thought. "And if the next round did not have a Pre-Money Valuation of at least $23.6 million, the Series A investors would actually have an unrealized loss!"

Jim recalled a very painful experience in the past with a so-called "down-round". He was quite sure that Darden & Harris had negotiated anti-dilution protection to help mitigate a potential loss from a down-round, but that mitigation would be at the expense of the Common Shareholders who would be diluted disproportionately.

"I'll think about the potential complications of the various kinds of anti-dilution protection that could possibly be in the Operating Agreement another day," Jim resolved to himself. "The pain of that last experience is not one I ever want to relive."

Jim resolved to get on the phone and make sure that Jack thoroughly understood the implications of so many Note conversions, such a large Series A, and the relatively large number of Preferred Shares he just sold. Jim's morning calculations did not make him feel any better for Jack.

"Jack is good, and now he's going to have to be", concluded Jim.