



**SORIN CAPITAL  
FUNDS**

# **A Case Study of Angel Investment Dilution**

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## **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 automatically 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 beer and a couple of 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:

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

There were several things that Jim noted to himself about this Cap Table, which was after the so-called “Founders Round”:

- 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 if the 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.

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, say \$1,000,000, and use that valuation to establish the share price. In this example, 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 7,610,350 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. Jack did not leave his secure job in Culpeper, VA to give his company away to a group of Angel Investors, so he needed a better plan.

As is common for entrepreneurs with Jack's dilemma, he decided to raise a "Convertible Note". 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 four (4) more times with 32 separate investments through the end of 2016 until the value of the convertible notes on his balance sheet looked like this at the time of his first priced round in July 2017:

Date	Note Value	Accrued Interest	Valuation Cap
<b>March 2014</b>	\$862,852	\$234,708	\$2.5 million
<b>June 2015</b>	\$1,005,000	\$170,401	\$4.5 million
<b>March 2016</b>	\$100,000	\$10,346	\$4.5 million
<b>September 2016</b>	\$365,000	\$24,364	\$7.5 million
<b>October 2016</b>	\$690,000	\$41,037	\$7.5 million
<b>Totals:</b>	<b>\$3,022,852</b>	<b>\$480,856</b>	

As Jim compiled this information in his spreadsheet, he noticed a few striking things about Jack's accumulation of debt:

- 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, wants to see.
- 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.

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.

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 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 money.

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 \$7.6 million 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.

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 2014 to the conversion in July 2017 added another \$234,708 in accrued interest for a total of \$1,097,560. At \$0.3287 per share, that bought the NDA **3,339,357 shares** in ZippyCare. For the first time in more than three (3) years, the New Dominion Angels owned a piece of 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 **6,648,911 new shares converted from Notes:**

Date	Note Value	Accrued Interest	Valuation Cap	Shares
<b>March 2014</b>	\$862,852	\$234,708	\$2,500,000	3,339,357
<b>June 2015</b>	\$1,005,000	\$170,401	\$4,500,000	1,986,773
<b>March 2016</b>	\$100,000	\$10,346	\$4,500,000	186,517
<b>September 2016</b>	\$365,000	\$24,364	\$7,500,000	394,884
<b>October 2016</b>	\$690,000	\$41,037	\$7,500,000	741,400
<b>Totals:</b>	<b>\$3,022,852</b>	<b>\$480,856</b>		<b>6,648,931</b>

Cracking open another Boston Lager, Jim thought to himself, "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 6,648,931 newly created shares from the Notes that converted get added to the 7,606,321 existing shares (a new total of 14,255,243 share) for purposes of the calculation or not? In other words, do the shares convert **before** or **after** the price for the new money is calculated?

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 used 14,255,243 shares, the Series A price would be almost half that at \$1.1224.

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

“Which of the two possible prices that end of being used in the calculations also 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!”

Then Jim discovered a further complication. Darden & Harris was insisting that the Option Pool be “topped off”. 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.

“I going to need another beer for this”, thought Jim. “I wonder how Jack determined the fairest way to do the calculation?”

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

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.”

Abandoning his spreadsheet briefly for the trusty old TI-83 Plus calculator in his briefcase, Jim quickly recreated the way that Darden & Harris determined 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
<b>Common Stock, including existing option pool</b>	7,606,324
<b>Converted Notes, \$2.5 million cap</b>	3,339,357
<b>Converted Notes, \$4.5 million cap</b>	2,173,290
<b>Converted Notes, \$7.5 million cap</b>	1,136,284
<b>Option Pool, new</b>	1,991,470
<b>Total:</b>	<b>16,246,470</b>

So the price of the round was calculated as \$16,000,000 divided by 16,246,470 shares = **\$0.9848/share**.

All of the investors in the March 2014 Convertible Note put in a total of \$862,852. That converted amount, plus the \$234,708 in accrued interest converted into 3,339,357 shares at \$0.3287/share.



Jim punched furiously on his old calculator:

$$3,339,357 \text{ shares times } \$0.9848 \text{ per share} = \$3,299,599$$

$$\$3,299,599 \text{ divided by } \$862,852 = 3.8X$$

“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.

	Number of Shares	Value at \$0.9848/share	Amount Invested	Unrealized Gain
<b>Common Stock, including existing option pool</b>	7,606,324			
<b>Converted Notes, \$2.5 mm cap</b>	3,339,357	\$3,288,599	\$862,852	3.8X
<b>Converted Notes, \$4.5 mm cap</b>	2,173,290	\$2,140,256	\$1,105,000	1.9X
<b>Converted Notes, \$7.5 mm cap</b>	1,136,284	\$1,119,012	\$1,055,000	1.1X
<b>Option Pool, new</b>	1,991,470			
<b>Total:</b>	<b>16,246,470</b>			

“The value of Sorin Angel Capital’s shares with the New Dominion Angels is now worth 3.8 times what I paid for them. Not 6.4X, but still very cool”.

Another way that Jim looked at it was that the current share price of \$0.9848 was 3.0X the Note conversion price of \$.3287. “And with all of the interest we accrued to purchase even more shares, it brings our unrealized gain to 3.8X,” Jim thought. “Now it makes sense.”

Jim reflected on what he had just learned so far:

- 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.
- 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 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 after the investment.
    - In this case, the option pool was topped off **before** the investment, further adding to the number of shares in the divisor and further lowering the share price.
- The lower the resulting share price, the lower the unrealized gain for existing investors.

Jim also looked back at his calculation of the share price for the October 2016 Convertible Note purchased by the New Dominion Angels. “I sure am glad that I didn’t do that one” Jim thought. It was completely counterintuitive, but the share price of \$0.9848 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 their October 2016 Note accrued through July 2017 bought enough extra shares to give them a small 1.1X unrealized gain.

“I wouldn’t have believed it,” Jim thought, “But Jack’s math had been correct all along.”

It was getting late, but Jim’s curiosity was still getting the better of him. He still had more questions.

What would it have looked like if the notes were converted **after** the investment and the option pool was topped off **after** the investment?

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

As he had calculated previously, in this case, 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.

Even in this case though, Jim realized that it would be hard to say that he would have actually earned a 6.4X unrealized gain because Jack would have had to add 1,991,470 shares to the option pool at \$2.1035 per share to top it off. That would have increased the post-money valuation by 1,991,470 times \$2.1035/share = \$4,189,057.

“Did the topping off an option pool increase the value of a company by \$4 million?”, Jim wondered.

“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, if the 6,648,911 shares were converted from Notes **after** the investment and were valued at \$2.1035/share, they would be worth \$13,962,713. “Wouldn’t it be great if that were true!”, Jim thought.

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.

Jim calculated the two possibilities:

Note Conversion and Option Pool top-off **before** the investment at \$0.9848/share:

	Number of Shares	Post-Money Value	% Ownership (Fully Diluted)
<b>Jack Scanlon, Founder</b>	2,650,000	\$2,609,720	<b>11.0%</b>
<b>Co-Founders</b>	2,650,000	\$2,609,720	11.0%
<b>Friends and Family</b>	1,914,986	\$1,885,878	8.0%
<b>Converted Notes</b>	6,648,931	\$6,547,868	<b>27.7%</b>
<b>Option Pool, existing</b>	391,335	\$385,387	1.6%
<b>Option Pool, new</b>	1,991,470	\$1,961,200	8.3%
<b>New Money</b>	7,757,269	\$7,639,359	<b>32.3%</b>
<b>Post-Money Totals:</b>	<b>24,003,992</b>	<b>\$23,639,131</b>	

Note Conversion and Option Pool top-off **after** the investment at \$2.1035/share:

	Number of Shares	Post-Money Value	% Ownership (Fully Diluted)
<b>Jack Scanlon, Founder</b>	2,650,000	\$5,574,275	<b>13.3%</b>
<b>Co-Founders</b>	2,650,000	\$5,574,275	13.3%
<b>Friends and Family</b>	1,914,986	\$4,028,173	9.6%
<b>Converted Notes</b>	6,648,931	\$13,986,027	<b>33.4%</b>
<b>Option Pool, existing</b>	391,335	\$823,173	2.0%
<b>Option Pool, new</b>	1,991,470	\$4,189,057	10.0%
<b>New Money</b>	3,631,737	\$7,639,359	<b>18.3%</b>
<b>Post-Money Totals:</b>	<b>19,878,459</b>	<b>\$41,814,339</b>	

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.

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.

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

"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.

But Jim still wondered, "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 on a roll and dying to know more, so he grabbed one last icy cold Samuel Adams and decided to do a “Thought Experiment”. What would have happened if Jack had completed all of his fundraising in priced equity rounds rather than Convertible Note rounds? So Jim settled in for one final round of calculations, this time assuming that all of the money that came in was invested in separate rounds with a 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 round taking in the exact same amount of money as the corresponding Convertible Note(s):

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

Here are what Jim’s theoretical capitalization tables looked like after each of these theoretical rounds, starting with the “Founder’s Round”, which was the Cap Table before any Jack took any outside fundraising:

### **Founders Round**

Shareholder	Shares	% Ownership (Fully Diluted)
<b>Jack Scanlon, Founder</b>	2,650,000	34.84%
<b>Co-Founders</b>	2,650,000	34.84%
<b>Early Investors (“Friends and Family”)</b>	1,914,986	25.18%
<b>Options Pool</b>	391,335	5.1%
<b>Total:</b>	<b>7,606,321</b>	

Besides his own interest, Jim was curious to see what have happened to Jack’s share of the company had he chosen to raise equity from the beginning rather than just Convertible Notes. Jim wanted to know if Jack had somehow benefited unfairly. So, Jim noted that Jack started with 35% of his company.

## Series Seed-1, March 2014

**Pre-Money Valuation:** \$2,500,000  
**Share Price:** \$0.3287 (\$2.5 million/7,606,321 shares)  
**Investment:** \$862,852  
**Post-Money Valuation:** \$3,362,852

Shareholder	Pre-Money Shares	Post-Money Shares	% Ownership (Fully Diluted)
Jack Scanlon	2,650,000	2,650,000	25.9%
Co-Founders	2,650,000	2,650,000	25.9%
Friends and Family	1,914,986	1,914,986	18.7%
Series Seed-1		<b>2,625,252</b>	25.7%
Options Pool	391,335	391,335	3.8%
<b>Total:</b>	<b>7,606,321</b>	<b>10,231,573</b>	

Jim noticed that the share price for this hypothetical first round was the same as the price at which the New Dominion Angels note actually converted in July 2017.

“For the first note, the share price is exactly the same as the equity price would have been”, realized Jim.

“But hold on here. In March 2014, there was no way ZippyCare was worth \$2.5 million! They were only **projecting** to do \$215,000 in revenue for all of 2014!”

“I guess Jack Scanlon was smarter than I thought”, concluded Jim. “He got us to ultimately pay a very high price for his shares, and all he gave in return was 8% interest on our very high-risk loan to him. Now that was a brilliant move!”

## Series Seed-2, June 2015

**Pre-Money Valuation:** \$4,500,000  
**Share Price:** \$0.4398 (\$4.5 million/10,231,573 shares)  
**Investment:** \$1,105,000  
**Post-Money Valuation:** \$5,605,000

Shareholder	Pre-Money Shares	Post-Money Shares	% Ownership (Fully Diluted)
Jack Scanlon	2,650,000	2,650,000	20.8%
Co-Founders	2,650,000	2,650,000	20.8%
Friends and Family	1,914,986	1,914,986	15.0%
Series Seed-1	2,625,252	2,625,252	20.6%
Series Seed-2		<b>2,512,420</b>	19.7%
Options Pool	391,335	391,335	3.1%
<b>Total:</b>	<b>10,231,573</b>	<b>12,743,992</b>	

Neither Sorin Capital Funds nor the New Dominion Angels participated in this round, but Jim noted that the new share price was 33.8% higher which would have been a nice unrealized gain in the first year.

Jim also noted however that the pre-money valuation jumped 80% from \$2.5 million to \$4.5 million. So why didn't the value of the investment by the New Dominion Angels jump 80%?

Jim realized that this was just a simpler version of the question that started him on this journey in the first place. When viewed in this simplified form, the answer became more obvious. It's because the increase cannot be measured between the two pre-money valuations. That doesn't account for the dilution resulting from the \$862,852 that came in after Jack's company was valued at \$2.5 million.

The value of ZippyCare **after** the March 2014 investment round rose to  $\$2,500,000 + \$862,852 = \$3,362,852$ . Another name for the valuation after a round is called the "post-money valuation".

Interestingly enough, when Jim pulled out his old TI-83 Plus calculator, he quickly calculated that the new \$4.5 million pre-money valuation was 33.8% higher than the previous **post-money** valuation of \$3,362,852 – the same as the increase in the share price.

So the increase in the value of this theoretical New Dominion Angels investment was diluted by the new money coming in. Rather than the investment value increasing by 80%, it was increased by 33.8%.

"I'll be asking a few more questions about how much money has come into the deal after the last pre-money valuation before I get excited again about a high pre-money valuation. It's the post-money valuation that really matters.", Jim concluded.

"Oh, I digress", Jim thought. "I need to get back on track with my theoretical fundraising rounds now."

### **Series Seed-3, June 2016**

**Pre-Money Valuation:** \$7,500,000  
**Share Price:** \$0.5992 (\$7.5 million/12,516,624 shares)  
**Investment:** \$1,055,000  
**Post-Money Valuation:** \$8,555,000

Shareholder	Pre-Money Shares	Post-Money Shares	% Ownership (Fully Diluted)
Jack Scanlon	2,650,000	2,650,000	18.2%
Co-Founders	2,650,000	2,650,000	18.2%
Friends and Family	1,914,986	1,914,986	13.2%
Series Seed-1	2,625,252	2,625,252	18.1%
Series Seed-2	2,512,420	2,512,420	17.3%
Series Seed-3		<b>1,792,655</b>	12.3%
Options Pool	391,335	391,335	2.7%
<b>Total:</b>	<b>12,743,992</b>	<b>14,536,647</b>	

"Whoa!" thought Jim. "Look at that share price! It's only \$0.5992!"

This was the round in which Jim's friends at the New Dominion Angels invested in Jack's extension of the Convertible Note with a valuation cap of \$7,500,000. When their note converted, it converted at \$0.9860/share. In other words, Jim's friends who invested in the third extension of Jack's Convertible



Note actually paid a share price that was 65% higher than the price they would have paid had all the prior rounds purchased shares in ZippyCare rather than just Notes.

Why? Because when the share price was calculated at their Note conversion, it was done by taking the \$7.5 million cap and dividing by the existing number of shares, which was only 7,606,321. In Jim's theoretical simulation where the prior rounds were all equity rounds, the \$7.5 million valuation was divided by the much larger 12,516,624 in total shares which resulted in a much lower share price.

“Note to self: Never invest in an extension of a Convertible Note!”, Jim noted to himself.

### Series A, July 2017

**Pre-Money Valuation:** \$16,000,000  
**Share Price:** \$0.9680 (\$16 million / (14,536,647 shares + 1,991,470 Option top-off))  
**Investment:** \$7,639,359  
**Post-Money Valuation:** \$23,639,359

Shareholder	Pre-Money Shares	Post-Money Shares	% Ownership (Fully Diluted)
Jack Scanlon	2,650,000	2,650,000	10.9%
Co-Founders	2,650,000	2,650,000	10.9%
Friends and Family	1,914,986	1,914,986	7.8%
Series Seed-1	2,625,252	2,625,252	10.8%
Series Seed-2	2,512,420	2,512,420	10.3%
Series Seed-3	1,792,655	1,792,655	7.3%
Series A		<b>7,891,514</b>	32.3%
Options Pool	391,335	391,335	1.6%
Option Pool Top-off		<b>1,991,470</b>	8.2%
<b>Total:</b>	<b>14,536,647</b>	<b>24,419,631</b>	

“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:

Shareholder	Actual w/Notes		Theoretical w/out Notes	
	Shares	% Ownership	Shares	% Ownership
Jack Scanlon	2,650,000	11.0%	2,650,000	10.9%
Co-Founders	2,650,000	11.0%	2,650,000	10.9%
Friends and Family	1,914,986	8.0%	1,914,986	7.8%
Notes, \$2.5 mm cap	<b>3,339,357</b>	<b>13.9%</b>	<b>2,625,252</b>	<b>10.8%</b>
Notes, \$4.5 mm cap	<b>2,173,290</b>	<b>9.1%</b>	<b>2,512,420</b>	<b>10.3%</b>
Notes, \$7.5 mm cap	<b>1,136,284</b>	<b>4.7%</b>	<b>1,792,655</b>	<b>7.3%</b>
Series A	7,757,732	32.3%	7,891,514	32.3%
Options Pool	391,335	1.6%	391,335	1.6%
Option Pool Top-off	1,991,470	8.3%	1,991,470	8.2%
<b>Total:</b>	<b>24,003,992</b>		<b>24,419,631</b>	

“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 theoretical 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 Theoretical outcome for his New Dominion Angel friends who bought into the 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. “What are the comparable returns from my thought experiment”, thought Jim about his thoughts.

	Theoretical Number of Shares	Theoretical Value at \$0.9735/share	Amount Invested	Unrealized Gain, Theoretical	Unrealized Gain, Actual
<b>Common Stock, including existing option pool</b>	7,606,324				
<b>Series Seed-1</b>	2,652,252	\$2,555,683	\$862,852	<b>3.0X</b>	<b>3.8X</b>
<b>Series Seed-2</b>	2,512,420	\$2,445,840	\$1,105,000	2.2X	1.9X
<b>Series Seed-3</b>	1,792,655	\$1,745,150	\$1,055,000	<b>1.7X</b>	<b>1.1X</b>
<b>Series A</b>	7,891,514				
<b>Option Pool, new</b>	1,991,470				
<b>Total:</b>	<b>24,419,631</b>				

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!”

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 nearly doubled the number of shares. Dividing a fixed \$16 million pre-money valuation by almost twice as many shares cut the price per share nearly in half thereby cutting Sorin’s investment through the NDA into ZippyCare by nearly half.

The only way for ZippyCare, valued at \$2.5 million, to have given the first New Dominion Angel investors a 6.4X unrealized gain is 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.

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Jim woke up the early the next morning after a fitful night’s sleep. He could not stop thinking about Jack, and 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 get one (1) times their actual invested capital 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 he understands in advance what he has to do with ZippyCare to achieve his dream of a big exit for himself”, determined Jim.

Jim started by adding up the capital that invested in Preferred Shares. That included the investments in Convertible Notes, all of 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	
<b>Convertible Notes</b>	\$3,022,852
<b>Accrued Note Interest</b>	\$480,856
<b>Series A</b>	\$7,639,359
<b>Totals:</b>	<b>\$11,143,067</b>

“Wow!” thought Jim. “Jack is going to have to return \$11 million to his investors before he gets a dime.”

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

	Number of Shares	Post-Money Value	% Ownership (Fully Diluted)
<b>Jack Scanlon, Founder</b>	2,650,000	\$2,609,720	<b>11.0%</b>
<b>Co-Founders</b>	2,650,000	\$2,609,720	11.0%
<b>Friends and Family</b>	1,914,986	\$1,885,878	8.0%
<b>Converted Notes</b>	6,648,931	\$6,547,868	<b>27.7%</b>
<b>Option Pool, existing</b>	391,335	\$385,387	1.6%
<b>Option Pool, new</b>	1,991,470	\$1,961,200	8.3%
<b>Series A</b>	7,757,269	\$7,639,359	<b>32.3%</b>
<b>Post-Money Totals:</b>	<b>24,003,992</b>	<b>\$23,639,131</b>	

“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 almost 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 \$11,143,067 divided by 60% or \$18,571,778.

“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 \$19,000,000 for him to cover all of the transaction costs and liquidation preferences and still leave him with his full share of the gain.”

Jim also reminded himself that the post money valuation for ZippyCare was now a hefty \$23,639,131 so 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 some real value for us to be able to ever realize this big unrealized gain”, Jim thought.

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.