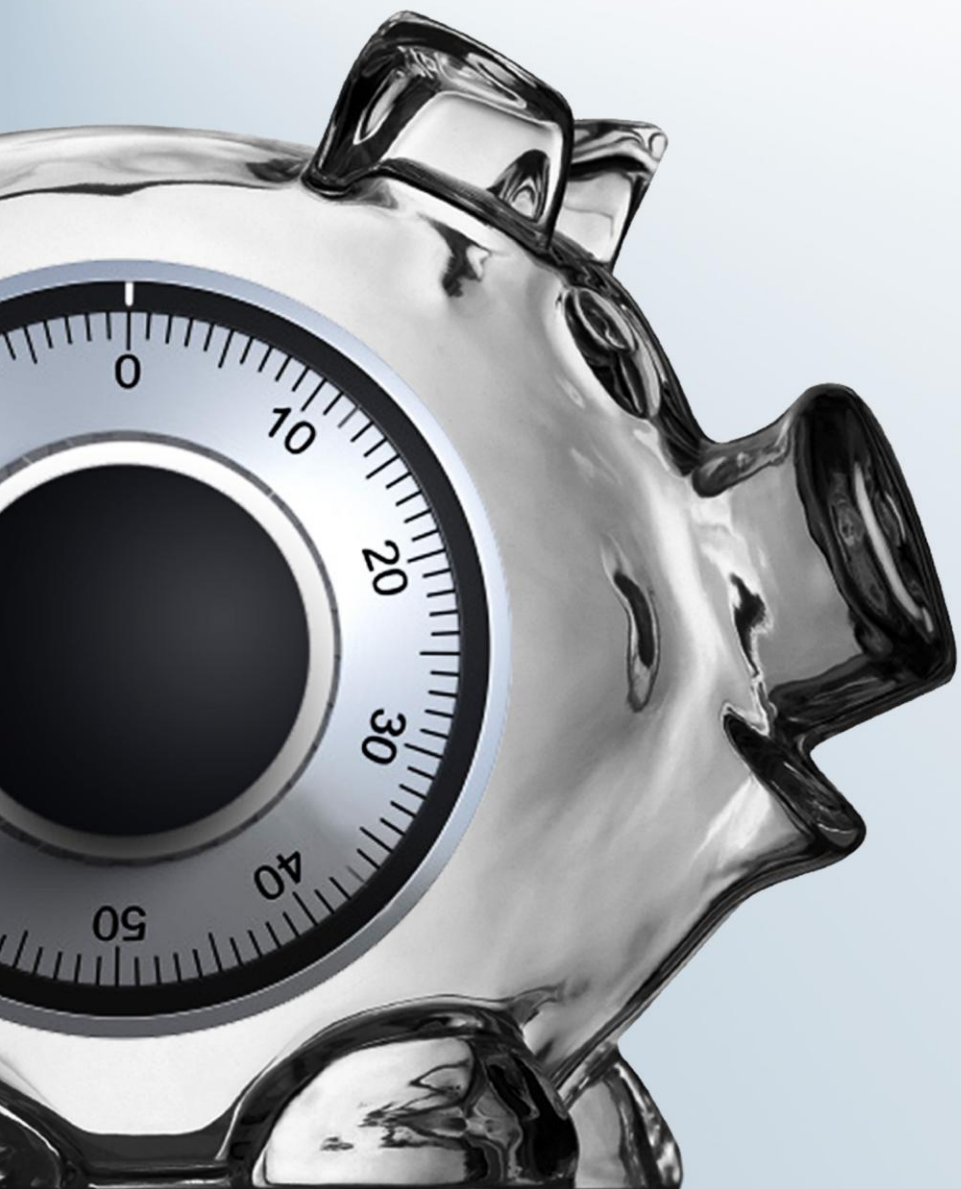
Liquid Scenarios®



Venture Valuation Primer

Using Payout Diagrams
(Waterfall Analysis)
To Value Preferred Stock,
Common Stock,
Options And Warrants

Using Liquid Scenarios
Option Pricing Allocation
Applied To Popular Twitter
Enterprise Value Estimates

Why Every Type (Class) Of Stock Is Not Created Equal

Different Classes Of Stock In The Same Company Have Different Cash Flow Potential

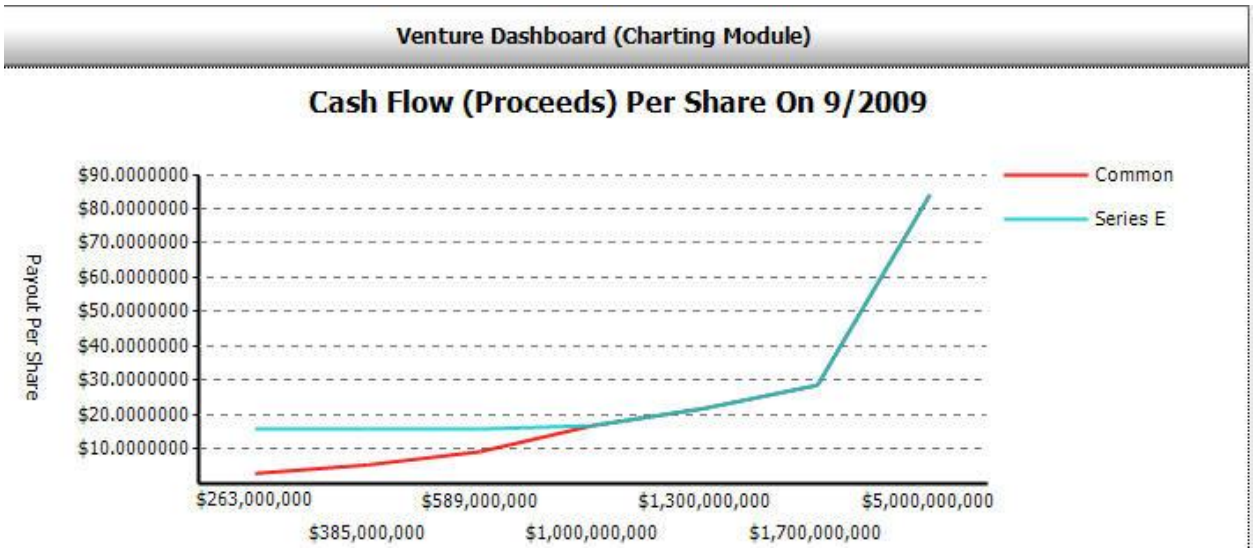
A Penthouse Apartment at 15 Central Park sold for $7,800 per square foot, an $80 million sale. If you own a 600 square foot basement unit in that same building, does that mean your unit is worth $4.68 million (600 X $7,800)? Most people would correctly say "probably not."

This is why simply taking the same price per share paid in the most recent round of venture financing and multiplying by the common stock held by a founder or the total number of shares outstanding rarely represents the "value" of the company. Each class of stock has different terms, rights and privileges and therefore different investment cash flow potential. A breakpoint chart (aka a payout diagram or waterfall analysis) is a graphic illustration of those cash flows at key values where the proportion of payouts to a class changes. We can quickly use these charts to estimate the value of each class of stock.

The table below illustrates how the value per share of the common stock is different than the value of the Series E at almost every estimated company value listed until the estimated value of the company is 20 times greater than the amounts raised.

Sample Twitter Enterprise Values Estimates From Kim-Mai Cutler's 09/18/09 VentureBeat Post*

	Sharespost Low Bid	*Sharespost High Bid*	*NexUp Bull*	*Insight*	*WSJ*	*TechCrunch*	*R. Scobble*
In Millions *	**$ 263**	**$ 385**	**$ 589**	**$ 1,000**	**$ 1,300**	**$ 1,700**	**$ 5,000**
÷ By Est. Shares =	$ 3.89	$ 5.69	$ 8.70	$ 14.78	$ 19.21	$ 25.12	$ 73.88
Versus Value Per Share Based On Cash Flows To Each Type (Class) Of Stock Using The Option Pricing Method							
Common	$ 2.96	$ 5.10	$ 8.65	$ 15.55	$ 20.44	$ 26.89	$ 78.34
Series E	$ 14.48	$ 15.35	$ 16.64	**$ 20.31**	$ 23.76	$ 28.97	$ 78.99
As The Enterprise Value Get Higher (From Left To Right) The Difference In Value Between Common And E Gets Smaller							
Difference	389%	201%	92%	31%	16%	8%	1%



Option Pricing Method (OPM) Valuation Versus Current Method Valuation

Brief Overview Of Allocation Methods

The most capable parties for valuing a venture funded company are the venture capitalists, entrepreneurs, angels and management teams participating (bargaining) in each round of financing leading up to a liquidity event.

However, when a liquidity event occurs, be it a merger, acquisition or IPO, the bargaining power generally shifts to another market of buyers. **It is absolutely impossible to forecast with any certainty exactly how** those buyers will respond to the purchase opportunity, what market conditions will exist at the time of a purchase opportunity and what competitive condition the company will be in compared to other acquisition or IPO candidates.

What can be modeled with 100% certainty is how legal agreements governing the rights of securities, holders, employees, founders and management impact investment cash flows across a range of potential exit scenarios.

If an assumed, or estimated, business enterprise value is plugged into an accurate model of payouts by security or holders, allocation of value becomes rather simple. This method of allocating enterprise value to different classes of securities is referred to by the AICPA Private Company Valuation Practice Guide as "the Current Method."

In reality, any valuation of a venture funded company with more than one round of financing is only as good as the payout model and breakpoint (or waterfall) analysis.

Why The Option Pricing Method

If a company is worth $1 Billion, but common stock is not entitled to any proceeds below $1.5 billion, is the common stock therefore worth $0? Is it worth something less than $0? Without an objective and forward looking means of allocating the $1 Billion in value to different classes of stock, getting a meaningful answer to this question can be difficult and unreliable.

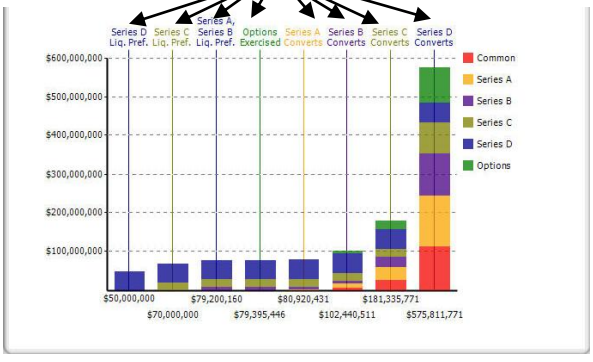
The SEC, FASB, AICPA, NACVA and many other organizations that have studied the matter believe that the Options Pricing Method helps to solve this problem of allocating value where rights to proceeds vary by class of security. However, the AICPA also believes weaknesses of the Options Pricing Method include the sensitivity to the volatility input used and the complexity involved. There's little that can be done with respect to the sensitivity to volatility assumptions. However, with technology the issue of complexity can be eliminated, as is the case with the automated models herein.

The Black-Scholes formula, below, is automatically applied to each of the breakpoints generated to allocate an associated "option value" to each preferred stock, common and employee options.

$$SN(d_1) - Ke^{-rt}N(d_2)$$

For Liquid Scenarios purposes: *S* = Enterprise (Company) Value Estimate, K = Strike price (which is the breakpoint), t = expected time horizon for an exit (sale of the company) to occur, r=risk free rate (generally the rate of a US Treasury security)

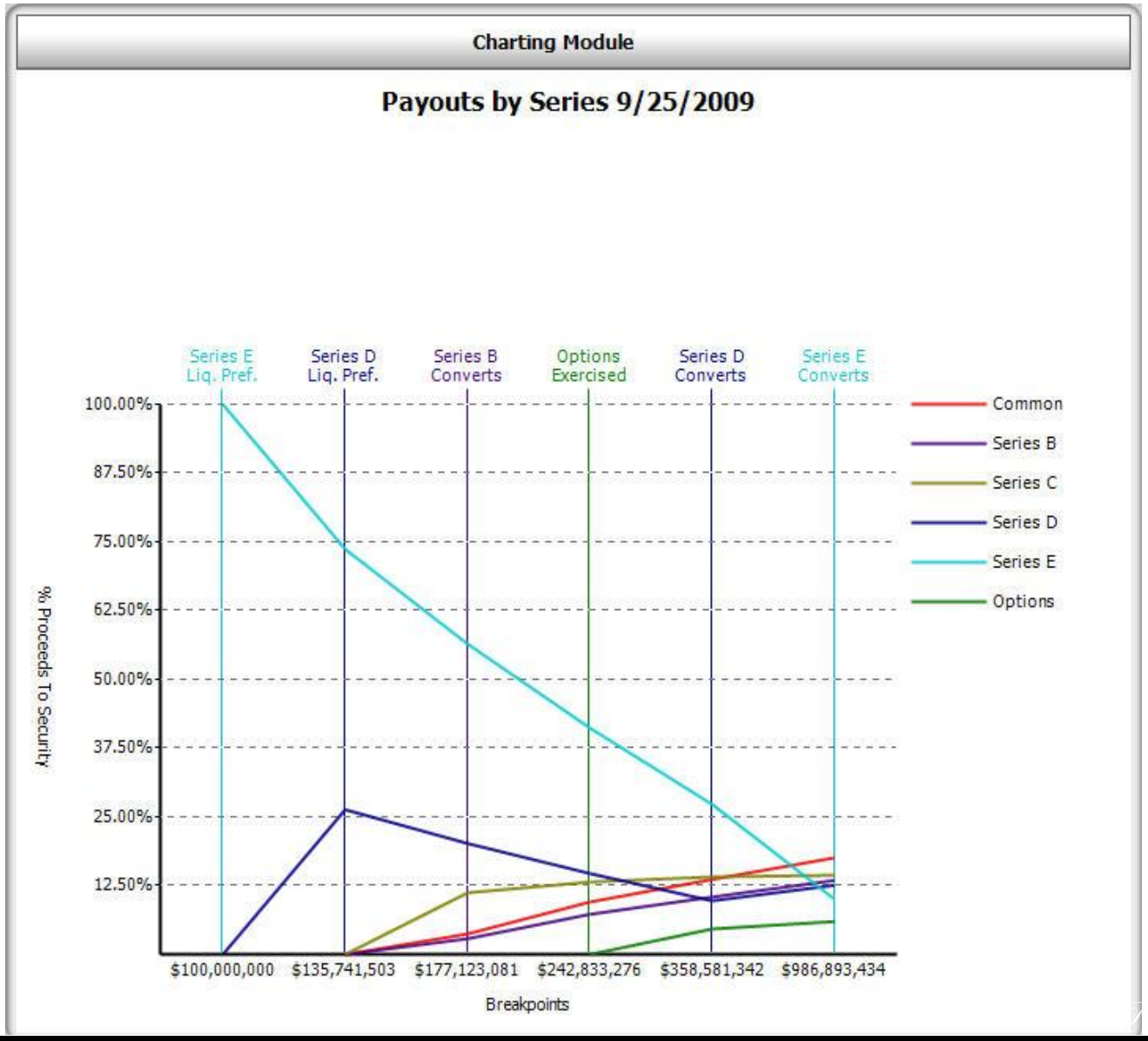
$$d_1 = (\ln(\frac{S}{K}) + (r + \sigma^2/2)t) / \sigma\sqrt{t}, d_2 = d_1 - \sigma\sqrt{t}$$



Payout Diagram Tutorial – Twitter Sample

In most cases, the stated of ownership percentage for a class is different than the percent proceeds that class would get if the company was sold. For instance, Liquid Scenarios estimates that common stockholders owning 14.69% of Twitter's "fully diluted shares" on 9/09 would be get $0, 0%, if the company was sold for less than $172 million, $5.5 million, 3.2%, if the company sells for $172 million, 8.9% at a $216 million sale price, 9.7% at a $227 million and 13.6% at $357 million (each payout less than 14.69% of proceeds).

But at an acquisition price of $1 billion on 9/25/2009, based on the Liquid Scenarios generated estimates, common stockholders owning 14.69% of Twitter's fully diluted shares could be entitled to up to 16.74% of proceeds, or nearly 14% more than their fully diluted ownership percentage would imply. The payoff diagram below illustrates these relationships at a given date. If we push the date forward, the payoffs (or payouts) will change.

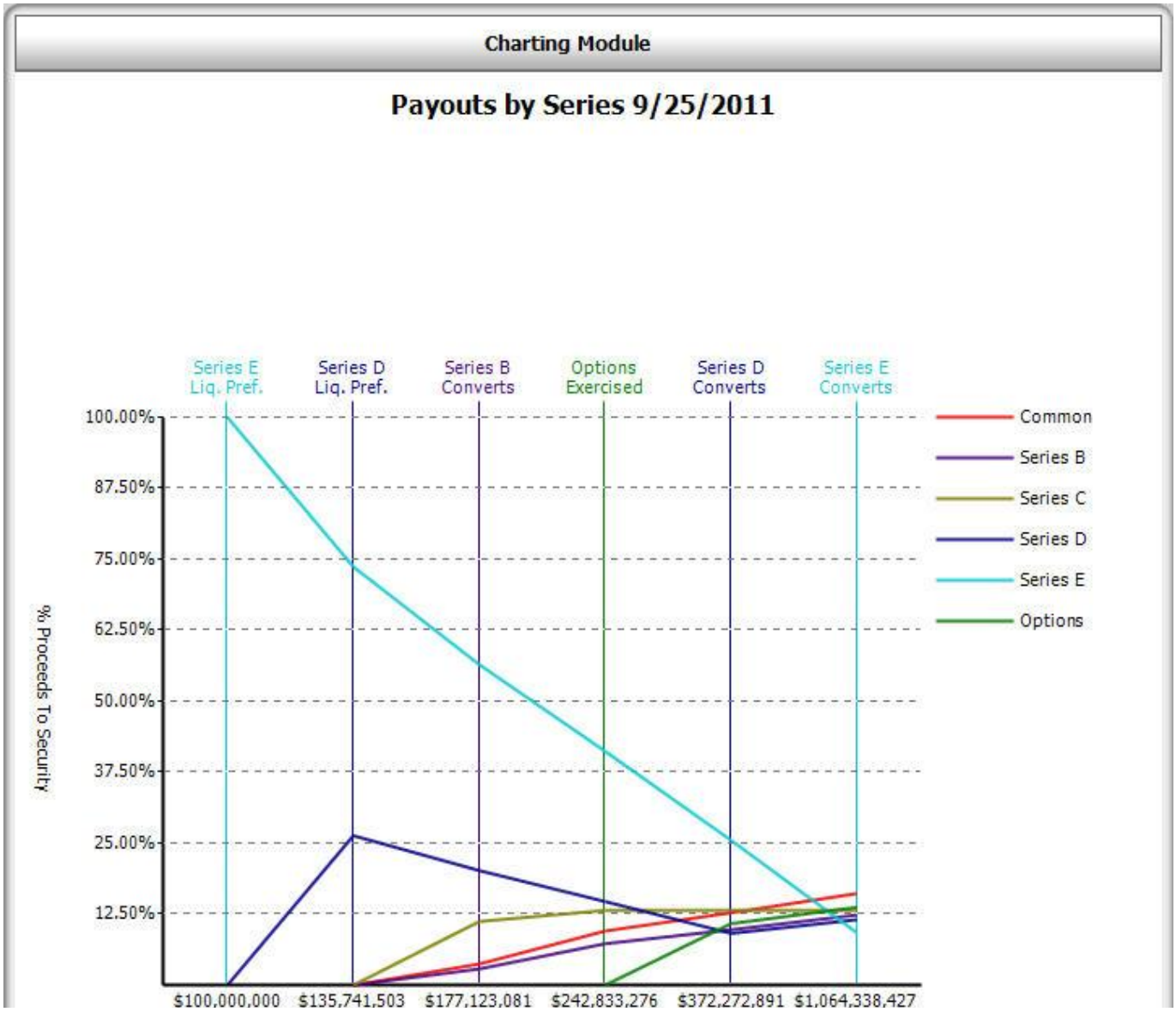


Payouts Change With Time, Largely Due To Options Being Granted

The Impact Of Time On Payout Diagrams

Pushing the hypothetical acquisition date out by two years decreases payouts to common stock at every point where a preferred series converts to common stock. These points, where slopes of any given payout line change, are sometimes referred to as "breakpoints." In certain companies breakpoints change over time because of cumulative dividends, expirations of warrants or expirations of uncapped participating preferred provisions. However, in this model, as in almost every other, the biggest impact on the change in payouts over time is the granting and vesting of options.

Because of changes in option pool activity, the Series E converts at $1.06 billion instead of $0.987 billion. This means Twitter has to sell for around $70 million more two years later for common holders to get payouts comparable to 2009.

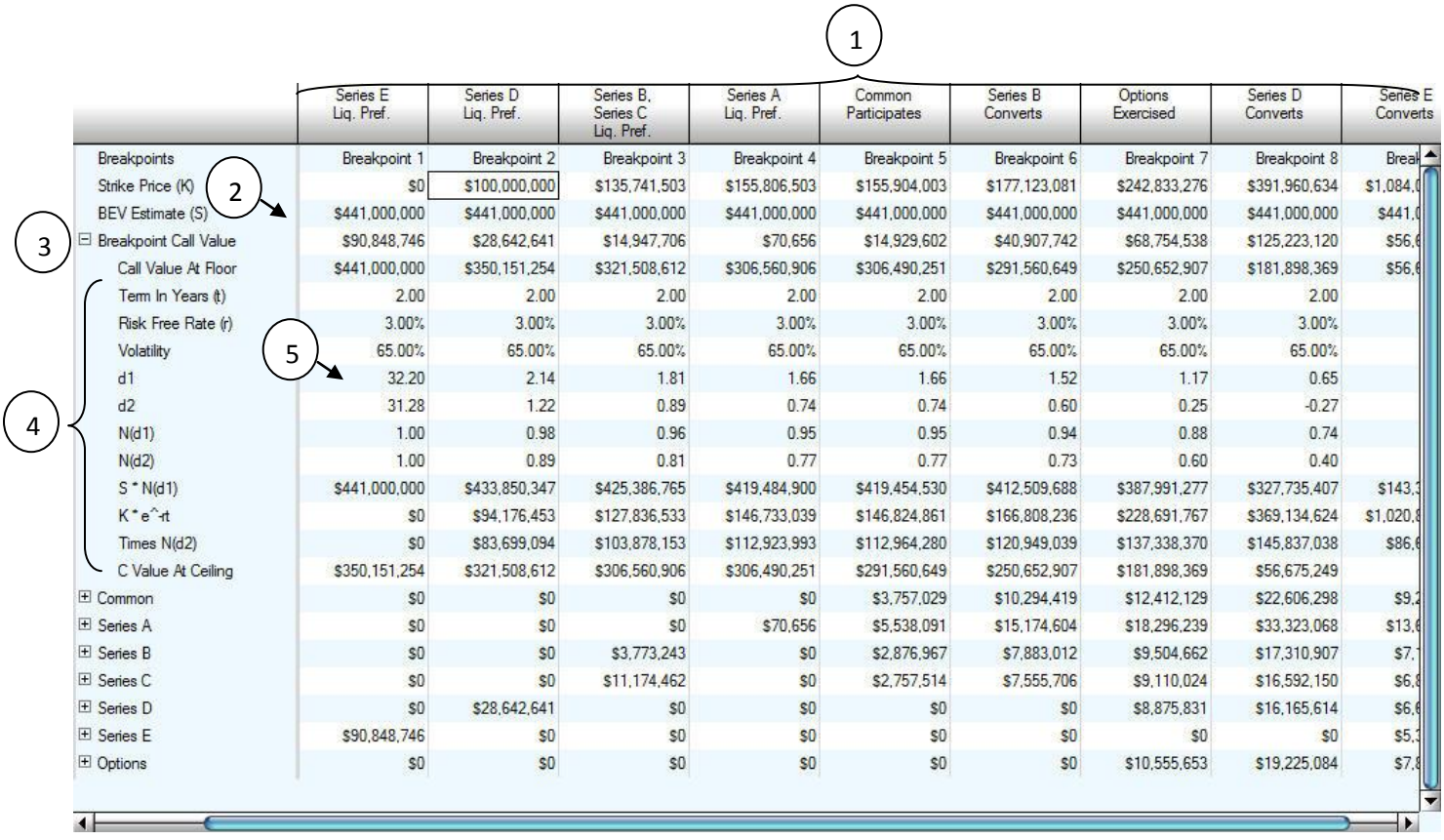


Enterprise Value Estimates Used To Convert Breakpoints Into Call Options

Assumed Enterprise Values

Based on press reports and filings, Twitter's pre-money/post money valuations increased from approximately $130K near its Series A round to around $80 million in 2008, a 615X step-up in value. And most recently to a $1 billion valuation, a 7,692X step up in value from the Series A. To utilize that pre-money valuation of $1 billion as an enterprise value, it could be rationalized that it includes a discount for lack of marketability (or DLOM), since the purchasers in that round knew that their shares would be subject to transfer restrictions (not free trading shares, without a registration statement).

Other possible enterprise values include the bull ($589 million) and bear ($441 million) valuation scenarios estimated by Michael Moe in his 7/17/09 Nextup Twitter report on Sharespost. The screen capture below from the Liquid Scenarios OPM module shows some of the variables that would be used to convert breakpoints into call option strike prices (X), apply the business enterprise value (Michael Moe's bull case in this example) as the current stock price (S), and other Black-Scholes variables to allocate the call values at each breakpoint to common stock, Series A, Series B, Series C, Series D, Series E and employee stock options.



	Series E Liq. Pref.	Series D Liq. Pref.	Series B, Series C Liq. Pref.	Series A Liq. Pref.	Common Participates	Series B Converts	Options Exercised	Series D Converts	Series E Converts
Breakpoints	Breakpoint 1	Breakpoint 2	Breakpoint 3	Breakpoint 4	Breakpoint 5	Breakpoint 6	Breakpoint 7	Breakpoint 8	Breal
Strike Price (K)	$0	$100,000,000	$135,741,503	$155,806,503	$155,904,003	$177,123,081	$242,833,276	$391,960,634	$1,084,0
BEV Estimate (S)	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,0
⊟ Breakpoint Call Value	$90,848,746	$28,642,641	$14,947,706	$70,656	$14,929,602	$40,907,742	$68,754,538	$125,223,120	$56,6
Call Value At Floor	$441,000,000	$350,151,254	$321,508,612	$306,560,906	$306,490,251	$291,560,649	$250,652,907	$181,898,369	$56,6
Term In Years (t)	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	
Risk Free Rate (r)	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	
Volatility	65.00%	65.00%	65.00%	65.00%	65.00%	65.00%	65.00%	65.00%	
d1	32.20	2.14	1.81	1.66	1.66	1.52	1.17	0.65	
d2	31.28	1.22	0.89	0.74	0.74	0.60	0.25	-0.27	
N(d1)	1.00	0.98	0.96	0.95	0.95	0.94	0.88	0.74	
N(d2)	1.00	0.89	0.81	0.77	0.77	0.73	0.60	0.40	
S * N(d1)	$441,000,000	$433,850,347	$425,386,765	$419,484,900	$419,454,530	$412,509,688	$387,991,277	$327,735,407	$143,1
K * e^-rt	$0	$94,176,453	$127,836,533	$146,733,039	$146,824,861	$166,808,236	$228,691,767	$369,134,624	$1,020,8
Times N(d2)	$0	$83,699,094	$103,878,153	$112,923,993	$112,964,280	$120,949,039	$137,338,370	$145,837,038	$86,6
C Value At Ceiling	$350,151,254	$321,508,612	$306,560,906	$306,490,251	$291,560,649	$250,652,907	$181,898,369	$56,675,249	
⊞ Common	$0	$0	$0	$0	$3,757,029	$10,294,419	$12,412,129	$22,606,298	$9,2
⊞ Series A	$0	$0	$0	$70,656	$5,538,091	$15,174,604	$18,296,239	$33,323,068	$13,6
⊞ Series B	$0	$0	$3,773,243	$0	$2,876,967	$7,883,012	$9,504,662	$17,310,907	$7,1
⊞ Series C	$0	$0	$11,174,462	$0	$2,757,514	$7,555,706	$9,110,024	$16,592,150	$6,8
⊞ Series D	$0	$28,642,641	$0	$0	$0	$0	$8,875,831	$16,165,614	$6,6
⊞ Series E	$90,848,746	$0	$0	$0	$0	$0	$0	$0	$5,1
⊞ Options	$0	$0	$0	$0	$0	$0	$10,555,653	$19,225,084	$7,8

(2) Each of the column labels indicate what security behavior corresponds with a change in the slope of the payout line (2) Each breakpoint becomes a call value floor, or minimum strike price k, (3) The business enterprise value (BEV) is the current stock price (S) (4) Black-Sholes d1, d2, N(d1), N(d2) and so forth are calculated automatically (5) the Volatility assumption, 65% in this case, could have alternatively been solved for iteratively, using the BEV and a given series price.

Better Option Grant Details Would Result In More Breakpoints

Individual Grants Prices Versus Averages

In the previous example we applied a single average grant price to employee stock options. Using the same business enterprise example as in that example, Michael Moe's $441 million bear case scenario from 7/17/09, but with more detailed option prices used, you can see how breakpoints change and therefore values for each call on Twitter equity change accordingly. As a result, the value of common stock, Series A, Series B, Series C, Series D, Series E and employee stock options also changes.

1

	Options at $0.3500000/Sh. Exercised	Options at $1.0000000/Sh. Exercised	Series B Converts	Options at $3.0000000/Sh. Exercised	Options at $4.0000000/Sh. Exercised	Series C Converts	S C
2 Breakpoints	Breakpoint 8	Breakpoint 9	Breakpoint 10	Breakpoint 11	Breakpoint 12	Breakpoint 13	
Strike Price (K)	$158,830,875	$164,289,495	$172,794,986	$183,772,978	$194,770,969	$218,776,584	
3 BEV Estimate (S)	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000	
⊞ Breakpoint Call Value	$3,893,743	$5,950,084	$7,472,007	$7,255,632	$15,065,287	$61,500,200	
⊞ Common	$1,535,670	$2,330,007	$2,250,989	$2,184,810	$4,531,953	$12,884,231	
⊞ Series A	$2,263,671	$3,434,573	$3,318,096	$3,220,544	$6,680,376	$18,992,146	
⊞ Series B	$0	$0	$1,723,709	$1,673,031	$3,470,370	$9,866,176	
⊞ Series C	$0	$0	$0	$0	$0	$9,456,528	
⊞ Series D	$0	$0	$0	$0	$0	$9,213,428	
⊞ Series E	$0	$0	$0	$0	$0	$0	
4 ⊞ Options at $0.1000000/Sh.	$46,434	$70,453	$68,064	$66,062	$137,033	$389,582	
⊞ Options at $0.3500000/Sh.	$10,680	$16,204	$15,655	$15,194	$31,518	$89,604	
⊞ Options at $0.2000000/Sh.	$37,288	$56,575	$54,656	$53,049	$110,041	$312,843	
⊞ Options at $1.0000000/Sh.	$0	$42,272	$40,838	$39,637	$82,220	$233,749	
⊞ Options at $3.0000000/Sh.	$0	$0	$0	$3,303	$6,852	$19,479	
⊞ Options at $4.0000000/Sh.	$0	$0	$0	$0	$14,925	$42,432	

(2) Each of the column labels indicate what security behavior corresponds with a change in the slope of the payout line (2) Each breakpoint becomes a call value floor, or minimum strike price k, (3) The business enterprise value (BEV) is the current stock price (S) (4) based on whether or not a given group of options are in the money will determine whether preferred shares, such as the Series B and Series C in the above Liquid Scenarios OPM capture, will convert to common stock.

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Lorenzo Carver, MS, MBA, CPA, is the inventor of bpCentral's Carver Import Algorithm, which enables importing financial reports and data in seconds, without data tagging or manual data entry. He has developed of over 200 strategic plans for information technology and life sciences companies and participated in over $1 billion in financing rounds as an advisor and planner. Noted as one of the Top 100 Free Sites by PC Magazine, Mr. Carver authored and produced an online sample business plan used by well over 2,000,000 students, teachers and entrepreneurs. He conceived, designed, developed and coded an award winning small business valuation program used by thousands of entrepreneurs and advisors worldwide.