CHAPTER 1

Using Facebook, Twitter, and LinkedIn to Explain VC Valuation Gains and Losses

How VCs, Angels, Founders, and Employees Give Up Investment Cash Flow Every Day

"They engaged in discovery, which gave them access to a good deal of information about their opponents. They brought half-a-dozen lawyers to the mediation. Howard Winklevoss—father of Cameron and Tyler, former accounting professor at Wharton School of Business and **an expert in valuation**—*also participated."*
—Excerpt United States Court of Appeals for the Ninth Circuit Opinion, *Facebook v. ConnectU*

How can someone realistically use the words "losses" in the same sentence as the names of three of the most successful venture-backed companies in recent history? Indeed, these three companies, along with three or four others, will likely account for 80% of IRRs reported by all U.S. venture-capital funds started after 9/11. So how could anyone lose on one of these transactions? The obvious answer would be the parties referenced in the quote preceding this chapter, the Plaintiffs in the Facebook ConnectU case. To put a face, or set of faces, with the parties, the ConnectU side includes the twin brothers portrayed in the movie *The Social Network*.

DID VALUATION IGNORANCE COST CONNECTU (AND THE WINKLEVOSSES) $50MM?

With half a dozen lawyers, and a father who was an "expert in valuation," how did the ConnectU team miss the obvious fact that it was receiving common shares that are, of course, worth less than preferred shares? To appreciate the answer, here's a brief summary of the lawsuits involved and what 409A is, for those not familiar.

The Facebook, ConnectU Related Lawsuits Timeline

- September 2004: Started with Facebook being sued for, basically, taking the "idea" away from ConnectU (Tyler and Cameron Winklevoss and Divya Narendra)
  - This happened about four months after Peter Thiel (founder of PayPal) invested $500,000 for around "10% of the company [Facebook]"
- April 2007: IRS issues final regulations for Section 409A, which among other things, effectively require venture-funded companies to have third-party appraisals done in order to get a safe harbor from potential penalties associated with mispriced options
- October 2007: Microsoft Invests $240 million in Facebook for 1.6% $240MM ÷ 1.6% = a $15 billion "valuation," according to press reports
- November 2007: Hong Kong billionaire Li Ka-shing invests $60 million in Facebook, apparently for the same Series D shares Microsoft received
- January 2008: 409A regulations become "effective"
- June 2008: Facebook settles with ConnectU founders for "$65 million" calculated (approximately) as follows—$20 million in Cash +$45 million in common stock = approximately $65 million
- August 2008: Press reports Facebook plans to allow employees to sell some of their shares at "internal" (409A) valuation of around $4 billion
- May 2009: DST invests $200MM in Facebook at a reported "valuation" of $10 billion
- July 2009: Michael Arrington reports that DST will offer employees $14.77 per share for their common stock, and they have 20 days to accept the offer
- July 2009: Sharespost "opens for business," with the sale of Tesla shares on a secondary market for private company shares, according to the *New York Times*
- December 2009: Zynga rumored (by Eric Eldon of Inside Social Games) to be offering exits to employees funded by DST at "$19 per share"

- February 2010: Facebook investor Li Ka-shing Foundation invests in leading secondary market for Facebook shares, "secondmarket" at a reported $150 million valuation
- January 2011: DST and Goldman invest in Facebook at a $50 billion "valuation"

As stated in the ConnectU Appeal Brief, "...it was a matter of simple math to conclude that each share of Facebook in February 2008 was worth approximately $35.90...." After negotiating a settlement with Facebook whereby ConnectU would essentially be acquired by Facebook in exchange for $20 million in cash and $45 million in common stock, the ConnectU plaintiffs discovered the existence of a 409A valuation report issued by Houlihan and Loukie that "valued" Facebook common stock at fair market value. Apparently, the ConnectU team believed their common stock was equal in value to the value of the preferred stock purchased by Microsoft months earlier. Considering the fact that nearly all 409A valuations undervalue the company and simultaneously overvalue the common stock, this mistake is not that uncommon. Millions of employees, tens of thousands of angels, thousands of founders, and even a few hundred VCs make the same mistake every year. However, few if any of those parties seek to rectify their mistakes through litigation, despite having substantially less access to information and fewer resources than the Winklevosses had according to court documents.

AN EXPERT DOESN'T NEED A 409A VALUATION WHEN HE OR SHE HAS A CERTIFICATE AND BASIC MATH

Despite the shortcomings of 409A valuations practices, today it takes only 3 to 15 minutes for a valuation expert familiar with venture-funded companies to give an approximate (rough) estimate of the value of common stock compared to the value of the last round of preferred financing. Even if the 409A valuation expert's conclusions are widely off the mark, the expert will still conclude that if Microsoft paid $35.90 per share for its preferred stock, and someone received common stock a few months later, that common stock is probably not worth more than 50% of what Microsoft paid for its preferred stock, unless an IPO is imminent.

This may sound like a simple rule, but there's real science behind it, and much of that science was initiated by the IRS in response to the economic devastation realized by those in the liquor business as a result of prohibition. Ironically, following the ConnectU settlement, many of the factors that

would have caused a 409A valuator to arrive at a lower value for the common stock received by the ConnectU plaintiffs were superseded by a force that impacted each of the companies we mention here as well as the three other companies responsible for "80% of venture fund IRRs" produced by funds started after 9/11.

That superseding force essentially became the market maker in the world of social media investments and their name was DST, or Digital Sky Technologies. Without the bets they placed on Facebook, Zynga, and Groupon, it's unlikely that LinkedIn's IPO would ever spawn a $9 billion market cap so quickly or that Twitter would command a $10 billion "valuation." In fact, it's conceivable that without DST's primary and secondary investments in Facebook, venture capital, social media, and possibly a key part of the U.S. economy might look very different today.

VALUING FACEBOOK'S COMMON STOCK COMPARED TO PREFERRED STOCK IN MINUTES

The "trick" we are about to show applies to 90% or more of venture-funded companies in existence in the United States and around the globe as of the writing of this book. However, it no longer applies to Facebook, for reasons we will touch upon briefly later in the chapter. But in late 2007 and early 2008, when the ConnectU and Facebook dispute was about to reach a settlement, it was still applicable to Facebook's common stock. The Winklevosses could have determined that the "simple math" they were using to value the common stock based on the estimated Series D price paid by Microsoft was simply wrong.

Different Standards of "Value"

The first point concerning differences between the price Microsoft paid for preferred stock and the "value" of Facebook's common stock on the same date was evident to members of the press, which noted that the transaction was "strategic" in nature. However, what exactly does that mean from a valuation standpoint?

If you've ever read a valuation report, one of the first things you will see in the report is the "Standard of Value" being used to arrive at a conclusion. In the case of a 409A valuation, that standard is "Fair Market Value" as defined by the IRS, which is very different than the price a strategic investor or even an investing partner at a VC fund would be willing to pay.

Different Type of Ownership Interest Being Valued

A minority, or non-controlling, interest in a privately held company is generally worth less than a controlling interest. There have been lots of studies conducted to quantify the difference in value, but even if we were to conservatively say that the difference is 5% or 10% across the board, we would expect to get a lower value for a partial interest in common stock, versus an interest that gave us control of a class of preferred. Again, we will get into those details a little more in a moment, but for now, we have two widely accepted differences between the value of the Series D shares Microsoft purchased and the common shares that ConnectU was to have accepted in lieu of $45 million in cash.

Marketability, Liquidity, and Volatility

Perhaps the biggest difference between the price per share Microsoft paid for its preferred stock versus the fair market value of the shares of common stock ConnectU was negotiating is the applicable discount for lack of marketability, or DLOM. This area requires a somewhat more involved discussion, and also relates to the value of control. But as with the discount for lack of control we mentioned, an estimate of 40% to 45% is generally easy to support, assuming Facebook is not expected to go public or be acquired in the next three years or so. We can even quantify the 40% to 45% discount using a protective put, which we will discuss later, along with prevailing inputs for volatility. Although I don't agree with the prevailing volatility inputs for venture-funded company valuations, which routinely overvalue common stock and undervalue the total equity value of the company, the point here is that even if market volatilities for publicly traded "peers" were used, ConnectU would have ended up with a value per share for its common stock in Facebook that was 40% less than what Microsoft paid. Moreover, it wouldn't have had to do the calculation, because the studies supporting these discounts, which we will cover briefly, are well known. So, without any fancy math, applying basic valuation principals could have saved ConnectU, and their counsel, $45 million dollars and months of litigation as follows:

Price ConnectU believed Microsoft paid per share: $35.90
Back of napkin discount for lack of control: 10%
Adjusted price reflecting lack of control: $32.31
Back-of-napkin discount for lack of marketability: 40%

Adjusted price reflecting lack of marketability control: $19.39
Damages parties agreed would settle in stock: $45,000,000
Implied minimum shares of common issuable: 2,321,263 shares

Note that the discounts for lack of marketability and lack of control are applied in stages, as opposed to being simply added together. If we simply took a 40% discount for lack of marketability (DLOM), added that to a 10% discount for lack of control (DLOC), and multiplied $35.90 by 50%, we would have gotten a different (incorrect) answer of $17.95 per share. In this example we could still get an answer, but if instead the DLOM was 55% and the DLOC was 60%, you can see how it wouldn't work mathematically, which is an easy way to remember not to add the DLOM to the DLOC to get the total discount.

The valuation approach used by ConnectU, deliberately or by accident, is a "market approach." It's the most popular approach to valuing anything. We just demonstrated an application of the same approach, the market approach, using the same variables ConnectU used and got a fair market value indication that was 50% less than what it got. Facebook went on to become worth four times as much as the value "implied" by the Microsoft investment around the time of ConnectU's settlement negotiations, suggesting that the impact of basic math and basic valuation on the parties could grow to over half a billion someday very soon.

Granted, the reported "internal" 409A valuation for Facebook common stock at the time was 50% less than the estimate we just generated. But that official 409A estimate took a lot longer than two minutes to arrive at and involved multiple indications of value, a waterfall, allocations of calls on Facebook's total equity value and 50 to 100 hours of other work we can't fit into a single page, as we did with our estimate. However, a deeper understanding of how we can comfortably make an assertion that ConnectU's team could have come to a similar conclusion without the actual 409A report should be beneficial to anyone with an interest in valuing venture-capital-backed companies. Also, our value for common stock is more proportional to the firm we described as the "social media market maker," DST. DST apparently valued the common stock at around "$14.77" according to the Michael Arrington/Techcrunch reference cited earlier. That's still well within the range of our back-of-the-napkin discount math.

As of the writing of this book, ConnectU was never granted access to the 409A valuation of Facebook, and neither were we. However, any 409A valuation should have language and references similar to what we are about to present surrounding the standard of value, fair market value in accordance with revenue ruling 59-60, the interest being valued

(a minority, non-marketable interest), and the process of applying appropriate discounts.

WHAT THE WINKLEVOSSES WOULD HAVE SEEN IN ANY 409A VALUATION REPORT

It's not an exaggeration to say that if I were to simply copy and paste comments from successful early-stage investors, founders, and CEOs I personally know concerning their dissatisfaction with 409A and the related valuation reports, it would easily exceed the 250 or so pages of this book. One of the complaints is that it appears that a lot of the information is "simply copied from one report to another." From the perspective of highly creative and unique founders and investors, I can see how this would be perceived as a bad thing. But I'm guessing that those parties would be scared if they found out that their tax attorney or CPA was completing their tax returns using a "unique" form he or she had created. I use the analogy because 409A is a tax regulation and, like more than 50% of all valuation work in the United States, these valuations would not exist without the IRS. So the redundancies can be beneficial, especially in the context of the details ConnectU's former shareholders felt they were missing in the absence of Facebook's 409A valuation. The typical 409A report elements that are of particular interest with respect to our back-of-the-napkin calculation are:

1. Standard of Value (Fair Market Value)
2. Non-Marketable, Minority Interest Being Valued
3. Revenue Ruling 59-60
4. Discount for Lack of Control Selected
5. Discount for Lack of Marketability Selected

Standard of Value

As we noted at the beginning of this book, the word "value" is used a lot of times without a context or specific definition as to what it is referring to. I like the example of the value of a massive penthouse apartment in New York City with multiple breathtaking views that you are approached by a buyer to offer versus the value for the same apartment the day after you are served divorce papers. While the buyer that approached may have offered you something "above" fair market value, you may need to accept something below fair market value in order to divide the proceeds for an estate or dissolution of marriage. Each of these can be, depending on the circumstances, separate standards of value. For a 409A valuation, the purpose of the valuation firms

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report would be to present an opinion of the fair market value of Facebook common stock.

The term "fair market value" is defined in Revenue Ruling 59-60 as follows:

> *. . . price at which the property (business) would change hands between a willing buyer and a willing seller when the former is not under any compulsion to buy and the latter is not under any compulsion to sell, both parties having reasonable knowledge of relevant facts. Court decisions frequently state in addition that the hypothetical buyer and seller are assumed to be able, as well as willing, to trade and to be well informed about the property and concerning the market for such property.*

A key factor that can be confusing as you read a 409A valuation report, such as the one for Facebook, where the standard of value is fair market value, as defined in Revenue Ruling 59-60, is the definition of a "hypothetical buyer and seller."

In general, you might think of a hypothetical buyer as a party that has the willingness and ability to purchase a business or interest in a business on a given date (the valuation date) solely because of its ability to generate future cash flows as of a given date (the valuation date) without further material adjustments to the company (as is). Such a party is sometimes referred to as a "financial buyer" as opposed to a "strategic buyer." A strategic buyer, sometimes referred to as a "synergistic buyer," sees ways of enhancing the cash flows or advancing a strategy by purchasing a company and is often willing to pay far more than the current cash flow potential of a business. A strategic buyer of a fractional interest could acquire it to effectively block the acquisition of a firm by a competitor, gain access to an exclusive distribution channel, or otherwise make partnerships with competitors of the purchaser less attractive or commercially awkward. Each of these elements could have been additional motivations for Microsoft's Series D investment in Facebook, suggesting that Microsoft was not the hypothetical, financial buyer described in Revenue Ruling 59-60.

A hypothetical seller is similarly motivated by realizing the future cash flows of his or her business as of a given date (the valuation date), but as a single value due as of that date, solely because he or she receives a price that may produce better returns than his or her current business does. This theoretical party is not forced or otherwise unduly pressured into selling, as Revenue Ruling 59-60 indicates in the excerpt above, knows the market and his or her business, and is expected to act rationally based on these

facts. This requirement also makes the Microsoft transaction problematic as a direct example of a fair market transaction. Clearly, the fair market value standard, in this context, is not similar to what VCs and "strategics" offer venture-backed issuers of preferred stock, as opposed to the motivations of a secondary seller and secondary purchaser of common stock already outstanding.

Non-Marketable, Minority Interest Being Valued

As discussed, the ConnectU founders contemplated receiving something far less than 1% of Facebook's fully diluted shares, and far less than 1% of Facebook's outstanding shares. Similarly, any employees of Facebook, with the exception of the founders, receiving options would potentially own non-controlling, or minority, interests in the company. Prior to the emergence of venues such as SecondMarket and Sharespost, employees desiring to convert their ownership interests in a venture-funded company into cash by selling the shares to a third-party purchaser was expensive. Even in the late 1990s when established investment banks were open to non-recourse restricted stock loans, there was a meaningful discount and some level of due diligence involved. This additional transaction time and cost still exists compared to a liquid public company and equals uncertainty. This uncertainty as to how long it will take to liquidate an ownership interest in the company has to be taken into consideration to properly reflect the fair market value of the interest being valued. Valuation professionals will often apply a discount to the interest being valued to reflect the cost, in time and money, of not being able to readily liquidate a position.

Along these same lines, an owner of less than 1%, which would include the ConnectU founders as well as most Facebook optionees, would not have the ability to direct a number of management actions that a VC, strategic investor, or controlling shareholder would have. This lack of control also has to be taken into consideration to properly reflect the fair market value of the interest being valued in a 409A valuation report. As with the discount for a lack of marketability, valuation professionals will often apply a discount to reflect the lack of control. By contrast, if a controlling interest were being valued, a valuation professional might apply a premium to reflect the increased economic benefits of having the option to direct management and other key decisions regarding the company being valued.

These relationships, between non-marketable, minority, and controlling interests, are sometimes referred to as levels of value. Exhibit 1.1 illustrates how the 409A valuation report for Facebook might have presented these

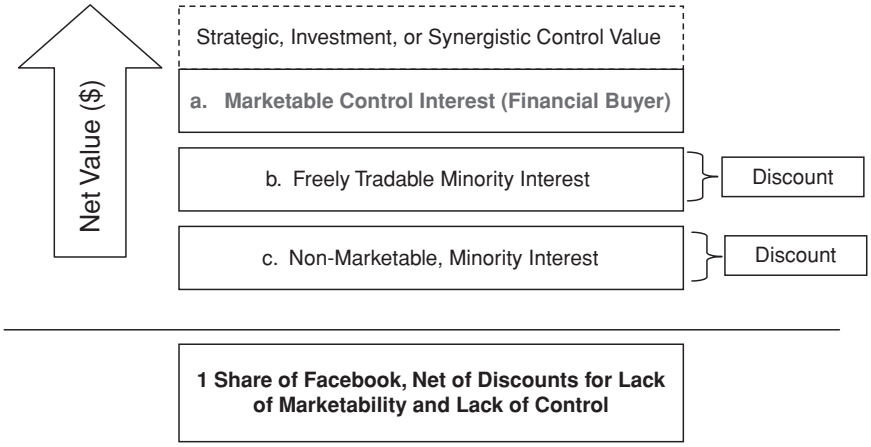

EXHIBIT 1.1 Levels of Value, Control, and Marketability
Source: Liquid Scenarios, Inc.

concepts to highlight where its valuation of common stock of Facebook falls on these three levels:

a. *Controlling interest value:* The equity value of the enterprise as a whole, when combined with debt, and net of cash; this is the "takeover" value of the company.
b. *Freely tradable minority interest value:* The value of a factional, minority interest that does not have control but does have the ability to quickly convert their interest into cash with the degree of certainty provided by market liquidity.
c. *Non-marketable, minority interest value:* The estimated value of a minority interest, net of a discount to reflect the lack of control and net an appropriate discount to reflect the lack of speed and uncertainty of costs with which the interest can be converted into cash at a fair market value (marketability).

Different valuation professionals address issues related to capturing discounts for lack of control based on their professional opinions as to the best approach in a given situation. Similarly, some valuation professionals differentiate discounts for lack of marketability from discounts from lack of liquidity. We will cover some of the differences later, but for now it's fair to assume that we view liquidity as a component of marketability and do not view "marketability" as a legal right to sell something, but rather as the

commercial feasibility to sell something in a reasonable period of time for the item being sold.

Revenue Ruling 59-60

Exhibit 1.2 shows two columns, one column with the specific Revenue Ruling 59-60 valuation factor required to be at least considered for purposes of a 409A valuation and a second column where I note how that factor might have impacted Facebook's actual 409A valuation.

Discounts for Lack of Control and Discounts for Lack of Marketability

Discounts for lack of marketability (DLOM) and discounts for lack of control (DLOC), together, often have the largest single impact on many valuations of minority interests in private or closely held companies, as we illustrated at the beginning of this section of the chapter by cutting ConnectU's napkin math in half with a simple DLOM and DLOC. Unfortunately, as quickly as parties are to jump to a conclusion of value on a valuation report, they are not as quick to fully understand how the discounts were arrived at. This makes sense, in part, since you can easily assume that the discount was simply some kind of a "fudge" factor that allows a valuation analyst to arrive at a safe figure he or she believes. Indeed, this is often suspected with selected required rates of return, or "discount rates," where selecting a higher discount rate will reduce the value indication.

In reality, valuation professionals carefully consider the inputs to determine the appropriate discounts, the rationale behind sources of data, and the reasonableness of applying such discounts in each engagement. As a user of a valuation report, it's critical that you appreciate the relationship between these discounts and value conclusions reached.

Discounts for Lack of Marketability (Liquidity)

For purposes of this analogy in which we are valuing a minority interest for purposes of 409A FMV, the terms "marketability discount" and "liquidity discount" are used interchangeably. It is worth noting that different varying definitions exist and that an increasing number of business valuation professionals differentiate the terms. We've chosen not to do so here for several reasons, one of which is the inconsistencies in how parties choose to differentiate marketability from liquidity. Some parties regard marketability as the legal right to sale; others use marketability only when addressing the speed with which an entire firm can be sold and use liquidity when referring to the

EXHIBIT 1.2 Applicability of Revenue Ruling 59-60 to Venture-Backed Companies

Revenue Ruling 59-60 Factor	How It Applies to Facebook and VC Companies
(1) The nature of the business and the history of the enterprise from its inception.	For venture-backed companies, the history of the company is often better documented than it is for traditional private companies. However, the period of time covered is almost always shorter, since these companies are invested in by outside parties under the premise of high velocity and high trajectory growth.
(2) The economic outlook in general and the condition and outlook of the specific industry in particular.	The economy impacts everyone—as even Facebook and LinkedIn investors realized in Q4 of 2008. In a direct way these changes impact risk-free rates, return premiums for all equity securities, and volatility for peers.
(3) The book value of the stock and the financial condition of the business.	Book value is especially important for certain types of businesses, such as banks or oil companies, where the market value of their net assets is often closely reflected by what's on their balance sheets. Most of the value for venture backed companies is "intangible," largely because of how ongoing engineering and customer acquisition costs are accounted for. In light of the Enron analogy we spoke of earlier, most parties currently believe this practice is generally good for accounting, but it makes the balance sheet less relevant for valuation purposes.
(4) The earning capacity of the company.	This is the trillion-dollar question. What's the earnings capacity of a venture-funded company? You don't really know until it starts generating sustainable earnings, and that doesn't generally happen until long after the company has gone public. A more meaningful metric is what's the capacity to penetrate a market faster and more efficiently than rivals? Using common valuation techniques. this can be extended to represent a proxy for "earnings" capacity.
(5) The dividend-paying capacity.	The dividend-paying capacity is essentially an extension of earnings capacity, and therefore, in the context of a venture-funded company, the question is what's the ability to generate capital appreciation in the form of a liquidating dividend (M&A) or publicly traded security (IPO), as a multiple of invested equity capital?

EXHIBIT 1.2 (*Continued*)

Revenue Ruling 59-60 Factor	How It Applies to Facebook and VC Companies
(6) Whether the enterprise has goodwill or other intangible value.	Even the worst venture-funded company's value, and even the best venture-funded company's value, is composed of "intangibles," which for our purposes means something the creator or builder has successfully invested resources in but is unable to reflect at market value on the balance sheet due to accounting rules.
(7) Sales of the stock and the size of the block of stock to be valued.	Although the company's stock is not registered with the SEC for public trading, sales of preferred stock also have to be considered, since they are convertible into common, so there is no clear indicator of value. Second Market and Sharespost weren't venues for Facebook at this time. The size of the block of stock being valued is officially a minority interest in common shares.
(8) The market price of stocks of corporations engaged in the same or a similar line of business having their stocks actively traded in a free and open market, either on an exchange or over-the-counter.	When most people think of valuation, this is what they think of—comps, or market multiples. This would include other market inputs such as revenue multiples, price earnings ratios or price per user, page view, or other parameter. The missing element, or variable, that's hard to fit in most cases is growth prospects. Public company comps rarely reflect the comparable growth.

speed with which a minority interest in a firm can be sold. All of these efforts to refine the definitions are helpful in advancing this complex area of business valuation. However, these efforts also may make it difficult for outside parties to appreciate the various elements that support the use of DLOMs.

To simplify the explanation, we offer an analogy and some easily accessible, broadly used definitions of marketability. An analogy most people can relate to is the time it takes to sell one's home. Coincidentally, the acronym is similar, DOM, or days on market.

In a hot real estate market, such as the one experienced around the time of Facebook's Series C round, a high-end home would often sell within 30 days of being listed for sale. However, in a buyer's market, such as the one experienced during Facebook's Series E financing, that same home was taking four months to sell on average, or four times as long. The speed with which you can convert your home into cash, using an actual buyer, has an

impact on the value of your home. This can be proven pretty easily, because if you decide that you simply don't want to wait four months to sell your home, what will you do to decrease the time required to find a buyer? In most cases, the obvious answer is to discount the price.

Although this is not a perfect analogy of each and every variable, it is an easily understood example of the concept of marketability and its effect on value as of a given date. Real estate is a hard asset, of course, whereas securities are not. But if you look at the popular definitions for "marketable securities" you can appreciate that the essence of marketability is very similar. Investopedia defines marketable securities as "very liquid securities that can be converted into cash quickly at a reasonable price." And the AICPA FAS 115 definition of marketable securities is

> *the fair value of an equity security is readily determinable if sales prices or bid-and-asked quotations are currently available on a securities exchange registered with the Securities and Exchange Commission (SEC) or in the over-the-counter market, provided that those prices or quotations for the over-the-counter market are publicly reported by the National Association of Securities Dealers Automated Quotations systems or by the National Quotation Bureau. Restricted stock does not meet that definition.*

Many publicly traded companies have sufficient volume to enable a minority shareholder to place an order with his or her broker at the most recently quoted market price and get a confirmation within a matter of minutes that the order has been filled at a price very close to the quote. Three days later, the proceeds from that sale will be in the seller's brokerage account, net of commissions, or selling costs. However, in thinly traded stocks, or bonds, of a company there's often a spread between the bid price and ask price for a security, making it more risky to simply place a market order, because if you do, the price you hope to get will likely be much lower than the price your order gets filled at. As a result, the time required to get the price you want may be longer than with a more "liquid" or actively traded security. As the time between when you decide you want to sell the stock and the time when the market can absorb your order at the price you want grows, uncertainty as to world events, economic events, news releases, company performance, political unrest, and myriad other potential factors can impact the price you are able to sell your security at. That uncertainty, as to when you will receive a fair market value, or when you will find a willing financial buyer based on the company's earnings, dividends, and potential for capital appreciation, must be reflected in the value of your security, compared to a similar security that is unencumbered by this uncertainty.

DERIVING A DISCOUNT FOR LACK OF MARKETABILITY FOR VALUATIONS

While there is virtually no debate about the reality that a discount for lack of marketability is applicable for private company shares where no secondary market, or known vehicle for liquidating on demand, exists, there's a fair amount of debate regarding how to measure the appropriate magnitude of such a discount. Valuation professionals generally cite five popular reference points they use in deriving a discount for lack of marketability for their valuations.

Restricted Stock Studies

Restricted stock studies, considered "empirical studies," refer to prices realized by sellers of shares that are not "free trading" stock, but are instead subject to regulatory restrictions by SEC regulations. When a company files a registration statement with the SEC, only the shares registered for sale can be freely traded, and even some of those shares can subsequently become subject to restrictions depending on who purchases them. These restrictions have changed over time, with respect to the holding period required prior to the ability to sell the shares and also with respect to other provisions. For instance, in 1997 Rule 144 shortened the holding period, and in 2008 it was shortened again.

Shares that are subject to these regulatory restrictions on resale typical have a notice, or "legend" on their back, similar to the following:

> *THE SECURITIES REPRESENTED BY THIS CERTIFICATE HAVE BEEN ACQUIRED FOR INVESTMENT AND HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY STATE SECURITIES LAW. THESE SECURITIES MAY NOT BE SOLD OR TRANSFERRED IN THE ABSENCE OF SUCH REGISTRATION OR ANY EXEMPTION THEREFROM UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR ANY APPLICABLE STATE SECURITIES LAW.*

Stock with this type of legend is sometimes referred to as "letter" stock, because in the absence of a letter from a securities attorney to the transfer agent, generally approved by the issuer's counsel, the legend will remain and the shares can't be offered for sale to the general public. This, of course, does not mean that the shares can't be sold, just that a holder can't deposit

those shares in his oher brokerage account as free trading, place a sell order for those shares on the open market, and have the transaction settle (without violating securities laws). This limitation decreases the value to a purchaser. By observing the pricing behavior of those purchaces, insights into the appropriate discount rate for regulatory time restrictions enable an implied marketability discount to be estimated. The use of "marketability" by some valuation professionals to refer only to the "legal right" to market an interest is, in my view, at odds with this reality. However, there are also reasonable arguments for its use by other parties.

In addition to regulatory restrictions, private sales of securities, either in a private or publicly traded company, can be subject to additional restrictions, such as lockup agreements or restricted stock purchase agreement. An example of a legend related to such restrictions is as follows:

> *THE TRANSFER OF THESE SECURITIES IS SUBJECT TO THE TERMS AND CONDITIONS OF A RESTRICTED STOCK PURCHASE AGREEMENT EFFECTIVE AS OF (SOME DATE) BETWEEN THE COMPANY, INC. AND THE HOLDER OF RECORD OF THIS CERTIFICATE AND NO SALE, ASSIGNMENT, TRANSFER, PLEDGE, HYPOTHECATION OR OTHER DISPOSITION OF SUCH SECURITIES SHALL BE VALID OR EFFECTIVE EXCEPT IN ACCORDANCE WITH SUCH AGREEMENT AND UNTIL SUCH TERMS AND CONDITIONS HAVE BEEN FULFILLED. COPIES OF SUCH AGREEMENT MAY BE OBTAINED AT NO COST BY WRITTEN REQUEST MADE BY THE HOLDER OF RECORD OF THIS CERTIFICATE TO THE SECRETARY OF THE COMPANY, INC.*

Fortunately, there are a wide variety of restricted stock studies available to choose from. Unfortunately, the vast majority of these studies were conducted years or even decades ago. Also, after filtering out transactions, some of the more robust studies ended up with rather small samples. This is especially problematic when attempting to draw a direct conclusion about a unique, privately held company's appropriate DLOM from a small range of publicly held securities in a variety of industries, across a range of sizes and sampled as of a particular point in a given market cycle. Notwithstanding those limitations, these studies provide guideposts for comparisons, in general, to the lower range of reasonable discounts to apply. Exhibit 1.3 shows a summary of some of the studies that may have been reviewed and considered, as benchmarks or guideposts, in developing a DLOM for Facebook.

EXHIBIT 1.3 Sample of Mean DLOMs from Select Empirical Studies

Author/Publisher/Title	Mean Discount	Observations	Year Published
SEC Institutional Investors	26%	398	1971
Gelman	33%	89	1972
Moroney	35%	146	1976
Trout	35%	60	1977
Silber	34%	69	1991

Source: Adapted from NACVA.

The Silber study, conducted in 1991 on restricted stock sales to institutional investors by publicly traded firms, like many of the others listed, found a correlation between the size of the company, with respect to market capitalization (equity), revenue and earnings, and the applicable discount. However, this study also looked closely at the volume of the issuers' shares. As suggested earlier, liquidity is indeed a function of volume, so that one publicly traded company may have a less-developed market for its shares than another publicly traded company. This study, which applied a least-squares method to the data, found a median discount of 35% and a mean discount of 34%. This suggests that a minority interest in a private, untraded, unregistered company such as Facebook would command a discount of at least, likely greater than, 34%.

Although there are more recent studies available, most of the recently published studies either have (a) few observations or (b) reflect substantially shorter holding periods, due to the changes in Rule 144 noted previously. It's important to keep in mind that in most of these cases the implied DLOM exists where (a) all costs of going public have already been incurred by the issuer, other than ongoing costs, and (b) the ability to sell within a defined time period, albeit at an indefinite price, is known. Since a hypothetical buyer, and hypothetical seller, of Facebook minority would not have the advantage of either of these on the date in question, you might be able to argue that the relative size of Facebook's discount should be higher than those implied by these studies, all things being equal. On the other hand, venture-backed companies are generally operated and managed with an idea to one day going public if the IPO window is open and the company's traction can attract retail investors. This effectively suggests that the costs of going public for a later-stage venture-backed company are potentially comparable to the cost of being acquired, since the only remaining variables are additional legal, with fees/commissions and audit expense likely being comparable leading up to the exit.

Pre-IPO Studies

Pre-IPO studies, sometimes referred to simply as "IPO studies," are also considered "empirical studies" by the valuation profession. Whereas the restricted stock studies mentioned previously look at discounts implied by sales of restricted shares of publicly traded companies, the IPO studies look at private transactions in a company's shares prior to the company's registration statement becoming effective. In theory, these studies may reflect more of the uncertainty embedded in a private company's shares, since not every company that files a registration statement actually ends up trading, and the range of potential offering pricing is highly speculative prior to a new issue be priced for offering to the public. However, these studies also suffer from the bias of that speculation, as opposed to simply measuring the difference between being able to sell shares, with some certainty in the future.

In most of the studies I've looked at, base prices used for comparison are the private transaction purchase price and the initial offering price. It's worth noting that the closing first-day trading price can effectively be higher or lower than the IPO price, which would of course imply yet another data point to be considered. Still, it's most likely that including this data would suggest an even higher discount for venture-backed companies.

John Emory Studies at Robert W. Baird & Co. Over 2200 transactions were examined as part of these studies for periods from 1980 to 1997. One key feature is the cutoff period of five months prior to the IPO. Out of that pool, only 310 transactions made it through the filtering process, which left 67 sales transactions and 239 option transactions. The median discount was 43% and the mean was 44%.

Other Emory Studies John Emory conducted numerous other studies that are often references in valuation reports and, sometimes, in court cases. One of the broader studies covered a period from 1997 to 2000, with 1847 offering documents/registration statements. Based on various filtering criteria, the study concluded medians and means ranging from 44% and 48%, respectively, to 59% and 54%, respectively.

Quantitative Methods

There are a number of quantitative methods; one of these includes the QMDM, or Quantitative Marketability Discount Model, which looks at dividends, growth, an assumed holding period, earnings, and other factors

in a manner similar to the discounted cash flow approach discussed later in Chapters 3 and 5. Unfortunately, this approach was challenged again by the courts about a year before Microsoft's financing of Facebook. Interestingly enough, the most popular method for valuing venture-backed company discounts, based on my observations, is the option-pricing methodology.

The option-pricing methodology, often in the form of a protective put, also require inputs with respect to holding periods and, as such, is ideally suited for venture-funded companies since it is the expectation of a liquidity event within a time horizon that's the foundation for an investment thesis in these companies. The key input, however, is volatility, and that, as we've touched upon, is routinely underestimated; thus, so is the resulting marketability discount estimate as a result.

Court Rulings

Given the use of a 409A valuation for tax purposes, the valuation analyst would have paid special attention to guidelines established in rulings by the tax courts with respect to applying discounts for lack of marketability. The most cited case in this area of valuation is perhaps Mandelbaum. In this case the court lists specific factors that valuation professionals should consider in determining a DLOM. They are the following:

1. Private versus public sales of the stock
2. An analysis of the financial statements of the company
3. The company's dividend policy (and capacity)
4. The nature of the company, its history, its position in the industry, and its economic outlook
5. The company's management
6. The amount of control in transferred shares
7. Restrictions on transferability of stock
8. Holding period for stock
9. The company's redemption policy
10. Costs associated with making a public offering

Starting from the bottom of the list up, we've discussed how, at the later stages of a venture-funded company, the costs of going public are already being reflected as a G&A (General and Administrative expenses) in the form of increased accounting and legal compliance expenses. Not all of these costs are specifically identifiable as being related to going public, but those that are will be disclosed in a registration statement and, in certain cases, accounted for differently.

This is different than the case for typical private companies, or for smaller venture-funded companies, or those at the earlier stages, for that matter. The direct costs of taking a small company public, as a percentage of proceeds, is higher than direct costs of taking a large company public. As noted, the pattern recognized in the most cited case illustrates a portion of the chasm between the two. However, what is not fully reflected in the numbers is the continuing lack of liquidity due to lower dollar volume, typically, for smaller capitalized companies, which tend to be thinly traded. A company like Facebook, which has tens of millions more "friends" than many Fortune 1000 companies, would not likely suffer from this weakness. As a result, the costs associated with taking Facebook public would probably not be considered a factor justifying an increased discount for lack of marketability by most valuation analysts.

Venture-funded companies do have formal redemption policies, but they do not function the same way as typical redemption policies at non-venture-backed privately held companies. The redemption policies with respect to common shares are often expressed as ROFRs (or rights of first refusal) and repurchase agreements. In both cases, these tend to support the appropriateness of a higher DLOM, whereas pure redemption policies in a privately held company's ESOP for instance would tend to do the opposite.

With respect to the holding period for the stock, this is an issue the courts have struggled with, as noted previously, concerning Quantitative Discounts for Lack of Marketabity (QDLM) methods. However, prior to the emergence of DST-type deals and secondary venues like Sharespost and SecondMarket, which weren't that active at the time of the ConnectU settlement, the holding period for common stocks was generally subject to the control of preferred stockholders. While these realities don't explicitly preclude a minority sale, they have historically reduced the likely pool of buyers for such an interest, implying that a higher discount would be applicable.

As noted, restrictions on transferability include some that relate to agreements employees execute, others that relate to shareholder agreements and/or the company's charter, and others that relate to federal and state securities regulations. As we noted early, there's typically a right of first refusal in place. I am of the opinion that these must always be examined and considered, especially if there's a specific price or pricing formula included in the ROFR, which is not uncommon in venture-funded deals. Federal securities laws, as noted, place restrictions on the sales of private company securities, as do state laws. The applicable exemptions to these regulations, while available to minority holders, still require legends on the stock, minimum holding periods, and additional limitations on shares acquired from

"affiliates" and "control" persons. This also suggests a minimum holding period, which is of course directly related to nearly every study and quantitatively based approach to calculating marketability discounts for restricted shares in both private and public companies.

The amount of control in the transferred shares is another consideration. Most common stockholders, optionees, hold what are clearly a minority interests. When considering a company's management in the context of a DLOM, issues of both functional competence and ethics come in to play. Most venture-backed companies have stellar management teams, with strong cultures of fairness, which would be beneficial to a hypothetical buyer of a minority interest. However, at various times in history the perspective of controlling shareholders (VCs) has been primarily unfavorable to selling employees, which of course could offset this benefit.

IPO Offering-Cost Studies

IPO offering-cost studies, most often referred to as "Flotation Cost Studies," use the cost of taking a company public as an indication of the costs to achieve liquidity and, therefore, as the indication of a data point for a DLOM. Although the most cited study covering IPO costs was completed for the SEC in 1974, over three decades ago, the data is still very insightful and has use beyond simply extrapolating an appropriate DLOM rate or floor. Specifically, it confirms that the costs for smaller firms to achieve liquidity is substantially higher than for larger firms, as illustrated by a range of commissions or underwriting fees that, when combined with other costs, can exceed 25% for small issuers.

Discount for Lack of Control As mentioned, minority shareholders can do few things in response to the actions of majority holders that they do not agree with. This, and a host of other factors, has long supported the notion that a minority interest in a private company is worth less than its proportionate share of a company's total equity, all things being equal. Some of the specific things a minority holder, acting alone, can't do, as opposed to a control interest holder, include the following:

- Change the capital structure of the company
- Declare dividends
- Appoint board members
- Sell the business
- Acquire another business (subsidiary)
- Direct management to consider or select a specific vendor

- Direct management to consider or select a specific employee or manager
- Repurchase shares through the company (treasury stock purchases)
- Change the company's bylaws, or articles, through the board of directors

This is not an exhaustive list, but it illustrates the vast difference in available options. The issue is, however, not if minority holders of securities have fewer effective rights than majority holders, but how and when do those differences in effective rights translate into quantifiable differences (discounts) in security values. The answer depends, in part, on what data is used to arrive at our primary indications of value used in our final conclusions.

Certain schools of thought concerning control discounts suggest that the interest rate used in the buildup process, in the case of the income approach, is generally a minority interest rate, since it's been obtained from an analysis of publicly traded equity returns. Similarly, others believe that if no control adjustments have been made to the benefit stream, then no control discount is warranted. I tend to be of the school of thought that says every situation and every company is unique, and all circumstances should be examined in light of the facts to determine if a control discount is appropriate.

One of the resources you will often see cited in a valuation report is the Mergerstat control premium data. In the case of traditional private companies, valuation professionals would look at discretionary earnings, which include things such as owner's compensation. But unlike most other early-stage privately held companies, venture capital–backed companies always have a formal, professional board of directors that's actively involved in approving management compensation plans. This means that founders and other owner/management compensation for Facebook would most likely already be at or around the industry averages for most periods, suggesting no control adjustment was warranted.

For traditional industries, Mergerstat can be a helpful input, listing the number of transactions in a given industry for a given year, along with an acquisition price "premium." The formula to translate a control premium into a minority discount is as follows:

$$\text{Minority Discount} = 1 - [1/(1 + \text{Mean Premium Paid})]$$

As you can see from the formula, the single input is in fact an estimated "Mean Premium Paid" or control premium. In the case of Mergerstat, this premium is calculated by determining a price that was not impacted by the acquisition offer versus the price after knowledge of the offer hits the market. The difference is a premium, and the formula simply converts that

premium into an implied discount for lack of control. It's important to keep in mind that not 100% of the premium would be a function of "control" in the context of a fair market value standard. In fact, it's likely in many cases that the premium would also reflect the strategic value of the acquisition, depending on the circumstances.

As we've discussed, the inability to decide where to focus a company's efforts, who to hire, what strategy to pursue, and so forth represent a lack of control that, in many circumstances for private companies, can represent a reduction in fair market value. However, if the management team and owners charged with making these decisions have a proven track record of success and results substantially higher than the industry, this is actually accretive to minority holders. In some cases, those benefits exceed the detriments of not having control. In almost every case, the mix of control variables will be reflected, to one degree or another, in the financial results and position of a company as of the valuation date. Those variables will also be reflected, to a certain degree, in the DLOM. As such, care must be taken not to double count or undercount. It's my position that most of the threats of a minority interest in Facebook, beyond what one would find in a comparable public company, are offset by a management team that's delivering results that are hard to find in the marketplace. As a result, any control discount beyond the 10% rule we initially estimated would probably be excessive.

FACEBOOK AT $80 BILLION VALUATION VERSUS ENRON AT $80 BILLION VALUATION

What's the difference between Facebook being valued at $80 billion and Enron being "valued" at $80 billion? Most people would accurately include the fact that Facebook is not relying on off-balance sheet financing, questionable accounting practices, and outright fraud. However, I believe the real difference in value, as if a publicly traded company, is what I refer to as the Peter Lynch factor.

In this case, the Peter Lynch factor is 900 million people who had no idea how Enron worked or what it did for them, compared to over 900 million who know exactly what Facebook does for consumers. If and when Facebook goes public, some percentage of those users will be retail investors, unable to get in on the IPO pricing but knowing, intuitively and personally, the potential "value" to a user of Facebook's service. When they start putting orders in to buy shares of Facebook, any math you can apply to the fundamentals, or financials of the company, will appear conjured,

juvenile, or both. The issue will no longer be demand for "financial returns" in the form of earnings per share or dividends, but instead demand for capital appreciation by those who know, personally, of the power of what the company offers and expect that to translate into growth in the values at which Facebook's shares trade in the public markets. Is that "irrational"? Lots of analysts, economists, and observers would say "yes," but I have to tell you that if there is an irony, that is largely how successful venture capitalists appear to sort through clutter and find the people that have an offering that will attract interest and then, later, find utility and fit in the marketplace. If you believe that ideas and opportunities evolve, that seems perfectly rational.

DEAL TERMS, WATERFALLS, AND THE PRE-MONEY MYTH

Whenever I use the expression "cash flow potential" in the context of a venture-backed company security, especially an early-stage investment, the first reaction I get from people is "there is no cash flow for most of these companies, so how can you value that?" We discuss this in more depth later, but for now I think it's safe to say that the ConnectU team failed to take into account the impact of volatility on investment cash flow potential, in the form of discounts for lack of marketability. They also appear to have not recognized that each security in a venture-backed company generally has a different investment cash flow potential until the value of the company is extraordinarily high, which ultimately was the case with both Facebook and Twitter, or the company goes public, which was the case with LinkedIn.

Cash Flow Potential, Volatility, and Deal Terms Are Driven by Time

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 use these charts to estimate the value of each class of stock.

Exhibit 1.4 illustrates how the implied optionality (OPM) value per share of Twitter's common stock in 2009 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.

The first row in the exhibit shows the total company value, or enterprise value, estimated by each party (the column headings). This is assumed to equal the total equity value, since it's assumed that no substantial debt is outstanding for this company. The next row divides that amount by the estimated shares outstanding to come up with implied value per share. It's important to note that unlike many of the other cases in this book, Twitter is a private company so there's no official record publicly available of exactly how many shares of the company are outstanding. There are, however, official records of how many shares of each class of stock have been authorized. Using certain adjustments, which we illustrate on the pages that follow, we were able to adjust the authorized shares reported to estimate fully diluted shares outstanding. We used that data, along with information regarding the rights and preferences of different classes of securities from the company's restated articles of incorporation, to determine how much each share would be "worth" if we applied the Black-Scholes option-pricing method to the different types of shares versus simply treating all classes as equal.

The most capable parties for valuing a venture-funded company under the investment standard of value 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."

EXHIBIT 1.4 Various Twitter Value Estimates Converted to Option Values per Share

Sample Twitter Enterprise Values Estimates from Kim-Mai Cutler's 09/18/09 VentureBeat Post*							
	Sharespost Low	*Sharespost High*	*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%

Source: Option Values per Liquid Scenarios, Inc.

P1: TIX/b P2: c/d QC: e/f T1: g
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In reality, any fair market 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.

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 following Black-Scholes formula can be automatically applied to each of the breakpoints generated to allocate an associated "option value" to each preferred stock series, common stock, and employee option participating at a given breakpoint.

$$SN(d1) - Ke^{\wedge}(-rt)N(d2)$$

For our analysis purposes here, assuming Twitter has no debt and excluding any cash on the books: S = Enterprise (Company) Value Estimate, K = Strike price (which is each 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),

$$d1 = (\ln(S/K) + (r + \sigma^{\wedge}2/2)t)/\sigma\sqrt{t}$$
$$d2 = d1 - \sigma\sqrt{t}$$

Throughout this book we provide additional representations and explanations of the Black-Scholes formula. Not all elements of Black-Scholes, or option pricing for that matter, are intuitive. However, there are analogies that make it easier to understand how some of the inputs to the model influence conclusions reached by an investor. A basic understanding of these relationships is important when determining whether the Black-Scholes model enhances an indicated value, contradicts a more reliable

measure of value, or is simply not applicable within the context of an option-pricing model.

You can see from the previous formula for d2 that we must first solve for d1. Also in the d1 formula, you will notice that d1 is reduced by the product of sigma (volatility) times the square root of the expected time between the valuation date and a liquidity event (t). Without further analysis, it's fair to deduct that d2 can be sensitive to increases or decreases in volatility (sigma) input and to differences in the time horizon for a liquidity event (t). What's not so obvious without looking at the breakpoints and the formula inputs at the same time is that when d2 is derived from a breakpoint (strike price K) that's higher than the estimated company value (S), increasing volatility or increasing time tends to increase the indicated value for that breakpoint. These out-of-the-money breakpoints, breakpoints where the estimated company value is higher than the exit value being modeled, can play a key role in conclusions reached for venture-backed companies. This is due, in part, to both how d2 is calculated and how it is often interpreted.

Sometimes the standard normal distribution of d2, N(d2) in the preceding formula, is described as giving the probability that the call option will be struck or, put another way, the chances that the exercise price for the call option will be lower than company value by the time the option expires (t) for a given volatility (sigma). This can be a useful way to interpret N(d2) in some instances, but must be done with a couple of key caveats and considerations.

- A "risk-free" rate of return assumes a risk-neutral world
- Each breakpoint is a separate call option
- Higher volatility can hurt in the money breakpoints
- Higher volatility can help out of the money breakpoints
- Longer times to exit, t, help out of the money breakpoints

In the Twitter example in Exhibit 1.4, increasing the volatility input or the estimated time to liquidity would increase (help) the indicated value of common stock under the Sharespost Low case, since the estimated company value (S) was so much lower than the exit values where common stock starts to participate. These out-of-the-money breakpoints, or out-of-the-money options, are worth more if there's either more time for the value of Twitter to increase prior to an exit or if there's a greater dispersion (volatility) of possible values of Twitter between the valuation date and the date Twitter gets purchased or goes public. On the other hand, if the estimated value of Twitter is Robert Scobble's $5 billion shown in Exhibit 1.4, then increasing volatility could potentially decrease the value of common stock, since volatility works in both directions and could result in a lower

future enterprise value between the valuation date and the date of an exit or IPO.

We will continue to introduce additional explanations and relationships between volatility, time, and values indicated by BlackScholes throughout this book.

Estimated Payout Diagrams: The Anchor for Applying Value In most cases, the stated ownership percentage for a class is different than the percent proceeds that class would get if the company was sold. For instance, our analysis 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 $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 our automated analysis 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. Exhibit 1.5 illustrates these relationships at a given date. If we push the date forward, the payoffs (or payouts) will change.

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.

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 within a year of that to a $1 billion valuation, a 7,692X step-up in value from the Series A. Without any knowledge of high school statistics or the stock market, most people would say that the variability in the total equity value of Twitter is greater than 100% based on any one of those price moves. If that's correct, how reasonable is an estimate of 65% volatility as an input for a Black-Scholes option pricing model? What would happen if we simply doubled the volatility input? What would have happened if we "built up" the volatility

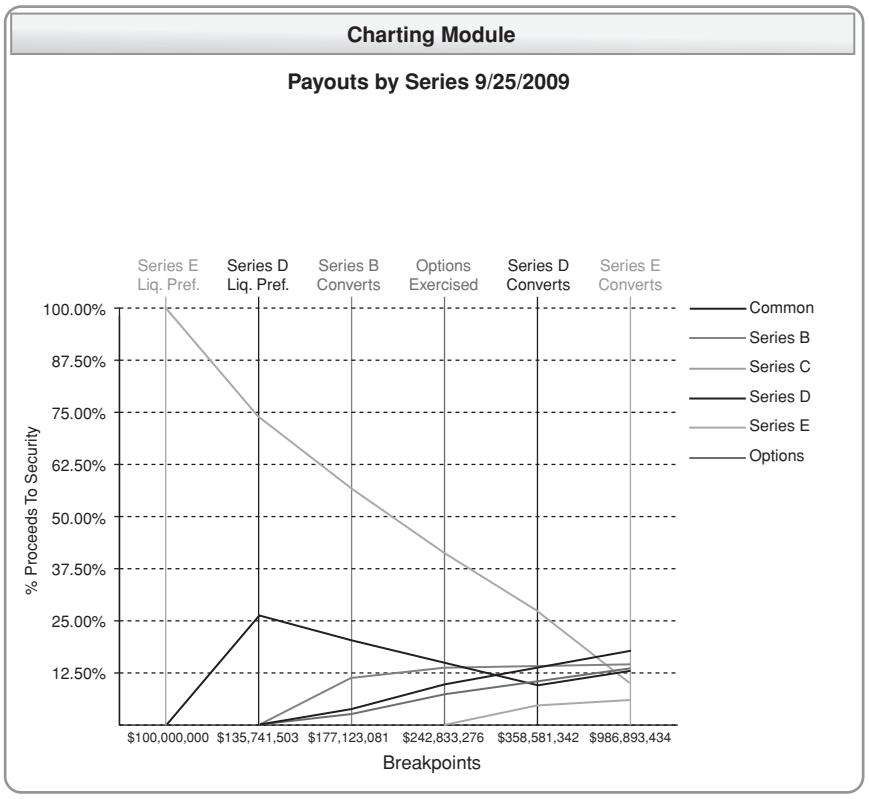

EXHIBIT 1.5 Payouts by Series 9/25/09

estimate similar to the way valuation professionals build up a discount rate or capitalization rate? We will address these critical issues later in the book, but for now you can see that the most substantial market data for the value of Twitter is the round-to-round pricing. However, the key to valuation of an ongoing business is to look at the future benefit stream to owners.

In the case of a venture-backed company, that future benefit stream is in the form of capital appreciation. Of the various Twitter value estimates arrayed in Exhibit 1.4 from Kim Mai Cutler's articles, Robert Scobble's estimate of $5 billion, which was the highest on the list, turned out to be closest to the next round of financing for the company, which "valued" Twitter at almost $4 billion. So does that $4 billion include discounts for lack of marketability? With thousands of investors willing to purchase junior equity securities of Twitter without access to financial information and at the same price or higher as the preferred investors that have control and

information access, should $4 billion be the "value"? It all depends on the standard of value, as we've discussed previously.

Going back to the 2009 valuation estimates, to utilize that pre-money valuation of $1 billion as an enterprise value, it could be rationalized that the price paid for by VCs 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, and subject to other restrictions as a function of shareholder rights agreements).

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. Exhibit 1.6 from the Liquid Scenarios OPM module shows some of the variables that would be used to convert breakpoints into call option strike prices (K), apply the total equity value based on the pre-money value of $1 billion 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.

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. See Exhibit 1.7.

In Exhibit 1.7, each of the column labels indicates what security behavior corresponds with a change in the slope of the payout line. Each breakpoint becomes a call value floor, or minimum strike price k. The business enterprise value (BEV) is the equivalent of the current stock price (S) variable in the traditional Black-Scholes formula. Each of the breakpoints represents changes in proceeds to certain securities. In cases where those changes increase the total proceeds as compared to a previous breakpoint, a proportional share of that breakpoint's call value (C) will be attributed to that security.

Using just a handful of variables for one case, on several hypothetical valuations, we've proven hundreds of cash flow implications not reflected in the value estimates of any of the experts that follow this one private company. If you can't determine the cash flow implications of an investment, any investment, then you will give that cash flow up daily to others that take the time to understand the terms embodied in the securities they purchased. This reality applies to founders, key employees, angels, and venture capitalists. Although the first example may seem a little complicated for some,

EXHIBIT 1.6 Option Pricing Model Based on 2009 Pre-Money Value of Twitter

	Total	Series E Liq. Pref.	Series D Liq. Pref.	Series B, Series C Liq. Pref.	Series A Liq. Pref.
Breakpoints		Breakpoint 1	Breakpoint 2	Breakpoint 3	Breakpoint 4
Strike Price (K)		$0	$110,000,000	$145,741,503	$165,806,503
BEV Estimate (S)	$1,000,000,000	$1,000,000,000	$1,000,000,000	$1,000,000,000	$1,000,000,000
Breakpoint Call Value	$1,000,000,000	$102,991,710	$32,552,021	$17,917,897	$86,371
Call Value at Floor		$1,000,000,000	$897,008,290	$864,456,268	$846,538,371
Term in Years (t)		2.00	2.00	2.00	2.00
Risk-Free Rate (r)		3.00%	3.00%	3.00%	3.00%
Volatility		65.00%	65.00%	65.00%	65.00%
d1		33.09	2.93	2.62	2.48
d2		32.17	2.01	1.70	1.56
N(d1)		1.00	1.00	1.00	0.99
N(d2)		1.00	0.98	0.96	0.94
S * N(d1)		$1,000,000,000	$998,283,671	$995,603,686	$993,425,288
K * e^-rt		$0	$103,594,099	$137,254,179	$156,150,684
Times N(d2)		$0	$101,275,381	$131,147,418	$146,886,916
C Value at Ceiling		$897,008,290	$864,456,268	$846,538,371	$846,452,000
Common	$161,633,397	$0	$0	$0	$0
Series A	$238,343,900	$0	$0	$0	$86,371
Series B	$128,294,740	$0	$0	$4,523,008	$0
Series C	$123,998,264	$0	$0	$13,394,889	$0
Series D	$118,506,987	$0	$32,552,021	$0	$0
Series E	$162,716,122	$102,991,710	$0	$0	$0
Options	$66,506,591	$0	$0	$0	$0

our introductory premise that cash flow is being sacrificed daily by these parties can be further proven using even more basic techniques. Comparing the way that venture capitalists typically expressed express value, pre-money or post-money value, to basic math reveals opportunities for all parties to improve their results. This can be accomplished by replacing the current definition of pre-money value used by VCs with simple valuation techniques such as waterfalls.

THE PRE-MONEY MYTH

Pre-money value is the most widely misused and misunderstood term quoted when speaking of the value of a venture-backed company. Simply adjusting the most popular definitions and interpretations for pre-money/post-money valuation is an easy, inexpensive way to achieve more transparency and

Common Participates	Options Exercised	Series D Converts	Series C Caps	Series C Converts	Series E Converts
Breakpoint 5	Breakpoint 6	Breakpoint 7	Breakpoint 8	Breakpoint 9	Breakpoint 10
$165,904,003	$258,063,693	$387,972,056	$443,809,171	$533,358,062	$1,017,409,997
$1,000,000,000	$1,000,000,000	$1,000,000,000	$1,000,000,000	$1,000,000,000	$1,000,000,000
$78,236,190	$97,667,798	$37,461,388	$54,829,126	$210,188,186	$368,069,313
$846,452,000	$768,215,811	$670,548,012	$633,086,624	$578,257,499	$368,069,313
2.00	2.00	2.00	2.00	2.00	2.00
3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
65.00%	65.00%	65.00%	65.00%	65.00%	65.00%
2.48	2.00	1.55	1.41	1.21	0.51
1.56	1.08	0.64	0.49	0.29	−0.41
0.99	0.98	0.94	0.92	0.89	0.69
0.94	0.86	0.74	0.69	0.61	0.34
$993,413,488	$977,165,889	$940,014,725	$920,526,559	$886,606,348	$693,611,769
$156,242,506	$243,035,233	$365,378,322	$417,963,737	$502,297,706	$958,160,652
$146,961,487	$208,950,079	$269,466,713	$287,439,934	$308,348,849	$325,542,457
$768,215,811	$670,548,012	$633,086,624	$578,257,499	$368,069,313	$0
$19,652,772	$21,951,055	$7,252,286	$12,392,577	$36,238,438	$64,146,268
$28,969,390	$32,357,200	$10,690,314	$18,267,417	$53,417,678	$94,555,529
$15,049,227	$16,809,151	$5,553,481	$9,489,689	$27,749,799	$49,120,385
$14,564,801	$16,268,075	$5,374,718	$0	$26,856,550	$47,539,230
$0	$0	$5,193,470	$8,874,509	$25,950,886	$45,936,100
$0	$0	$0	$0	$23,000,018	$36,724,393
$0	$10,282,317	$3,397,117	$5,804,933	$16,974,816	$30,047,407

better communication between founders, venture funds, limited partners, angels, employees, journalists, and even potential acquirers.

"The Pre-Money Myth" uses widely disseminated quotes on the "value" of Facebook at different times, along with 2010 VC-backed IPO value disclosures to show how venture-funded company use of the term "pre-money value" is hurting venture-capital funds, founders, limited partners, employees, and innovation. It also provides some simple techniques anyone can use to immediately get a better grasp of the true company value implied by a recent round of preferred equity.

Highlights include:

1. Pre-money value for a VC-backed company is almost never equal to "the value of a company prior to receiving the latest round of financing" as most people believe it is and most definitions explicitly say it is.

EXHIBIT 1.7 Option Pricing Model Based on 2009 NextUp Bear Estimated Value of Twitter

	Total	Series E Liq. Pref.	Series D Liq. Pref.	Series B, Series C Liq. Pref.	Series A Liq. Pref.
Breakpoints		Breakpoint 1	Breakpoint 2	Breakpoint 3	Breakpoint 4
Strike Price (K)		$0	$110,000,000	$145,741,503	$165,806,503
BEV Estimate (S)	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000
Breakpoint Call Value	$441,000,000	$99,120,597	$27,922,038	$14,544,696	$68,721
Call Value at Floor		$441,000,000	$341,879,403	$313,957,365	$299,412,669
Term in Years (t)		2.00	2.00	2.00	2.00
Risk-Free Rate (r)		3.00%	3.00%	3.00%	3.00%
Volatility		65.00%	65.00%	65.00%	65.00%
d1		32.20	2.04	1.73	1.59
d2		31.28	1.12	0.81	0.67
N(d1)		1.00	0.98	0.96	0.94
N(d2)		1.00	0.87	0.79	0.75
S * N(d1)		$441,000,000	$431,781,889	$422,534,980	$416,293,549
K * e^-rt		$0	$103,594,099	$137,254,179	$156,150,684
Times N(d2)		$0	$89,902,486	$108,577,615	$116,880,881
C Value at Ceiling		$341,879,403	$313,957,365	$299,412,669	$299,343,948
Common	$61,108,769	$0	$0	$0	$0
Series A	$90,146,791	$0	$0	$0	$68,721
Series B	$50,465,914	$0	$0	$3,671,512	$0
Series C	$51,819,922	$0	$0	$10,873,184	$0
Series D	$51,938,680	$0	$27,922,038	$0	$0
Series E	$113,616,286	$99,120,597	$0	$0	$0
Options	$21,903,638	$0	$0	$0	$0

2. VC pre-money and post-money values, which are based largely on market capitalization–style calculations used for companies going public, always include substantially more shares in the pre-money and post-money calculations than companies going public include in the same calculation. This means that even on a basic math basis every VC-based "pre-money value" is overstated if you accept the current prevailing definitions and interpretations of the term.
3. For almost every company, the expected value of potential cash-on-cash returns for prior round investors, founders, and employees is lower than the value of potential cash-on-cash returns for investors in the current round (the new money). Stated another way, in almost every case the probability is that the last money in (the newest preferred shares issued)

Common Participates	Options Exercised	Series D Converts	Series C Caps	Series C Converts	Series E Converts
Breakpoint 5	Breakpoint 6	Breakpoint 7	Breakpoint 8	Breakpoint 9	Breakpoint 10
$165,904,003	$258,063,693	$387,972,056	$443,809,171	$533,358,062	$1,017,409,997
$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000	$441,000,000
$57,118,727	$58,834,775	$19,504,086	$25,917,728	$75,622,628	$62,346,004
$299,343,948	$242,225,221	$183,390,445	$163,886,359	$137,968,631	$62,346,004
2.00	2.00	2.00	2.00	2.00	2.00
3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
65.00%	65.00%	65.00%	65.00%	65.00%	65.00%
1.59	1.11	0.66	0.52	0.32	−0.38
0.67	0.19	−0.25	−0.40	−0.60	−1.30
0.94	0.87	0.75	0.70	0.62	0.35
0.75	0.57	0.40	0.34	0.27	0.10
$416,261,700	$381,917,993	$329,311,198	$307,714,363	$275,524,220	$154,479,929
$156,242,506	$243,035,233	$365,378,322	$417,963,737	$502,297,706	$958,160,652
$116,917,752	$139,692,772	$145,920,752	$143,828,004	$137,555,589	$92,133,925
$242,225,221	$183,390,445	$163,886,359	$137,968,631	$62,346,004	$0
$14,348,108	$13,223,247	$3,775,867	$5,857,971	$13,038,059	$10,865,517
$21,149,991	$19,491,876	$5,565,859	$8,635,008	$19,218,897	$16,016,438
$10,987,149	$10,125,780	$2,891,393	$4,485,776	$9,983,971	$8,320,334
$10,633,479	$9,799,837	$2,798,320	$0	$9,662,593	$8,052,508
$0	$0	$2,703,955	$4,194,981	$9,336,748	$7,780,959
$0	$0	$0	$0	$8,275,069	$6,220,620
$0	$6,194,036	$1,768,692	$2,743,992	$6,107,290	$5,089,628

has a higher present value and option value, on a per share basis than previously issued preferred shares. In the case of common stock, every class of preferred generally has a greater expected value.

What's the Cost of a Flawed Definition of Pre-Money/Post-Money Valuation?

Just a few of the implications of the widely held misunderstanding that pre-money value equals "the value of a company prior to receiving the latest round of financing" are as follows:

1. It suggests that venture capitalists routinely pay too much for (overvalue) the securities they purchase. If this were true, the assets class would not

outperform most conventional equity investments, as it has done for much of the past several decades.

2. It suggests that founders, employees, and management in a company hold stakes that are worth significantly more than what they actually own.
   a. This leads to unrealistic expectations for investor behavior, which can create a lack of trust between investors, founders, management, and employees.
   b. It also makes it more difficult for management to fairly view the options being used to recruit and retain employees and key management.
   c. This also has the potential to turn an otherwise virtuous source of liquidity, such as secondary markets and secondary sales, into a viscous disincentive
3. It makes limited partners, investment managers, funds, and other parties that rely on financial statement disclosures of venture-capital investment values skeptical of the amounts reported. If not corrected, this could have a huge impact on future investments into venture capital and therefore a negative impact on innovation and competitiveness in countries that continue to use that definition.

Why Is the Current Definition of Pre-Money Value "Wrong"?

When people refer to the "value" of a venture-backed company, they are usually referring to either pre-money value or a post-money value. This is one of the biggest misunderstandings in all venture-capital valuation terminology and it's a very easy problem to fix. See Exhibit 1.8.

Reason 1 Why Pre-Money Value Is Almost Never Company Value: Shares Purchased in the Latest Round Are Rarely the Same as Shares Purchased in Previous Rounds Let's do some basic math. The biggest problem with the pre-money/post-money definition and its variations is the assumption that the securities being purchased in B are the same as the securities outstanding in A. In the case of a venture-backed company that is not registered to go public, the securities in B and A are almost never the same. In fact, in most cases, "company value," as defined in A, includes securities that have never been issued or even granted. So based simply on basic math, "company value" before money comes in according to this definition is overstated 100% of the time. See Exhibit 1.9.

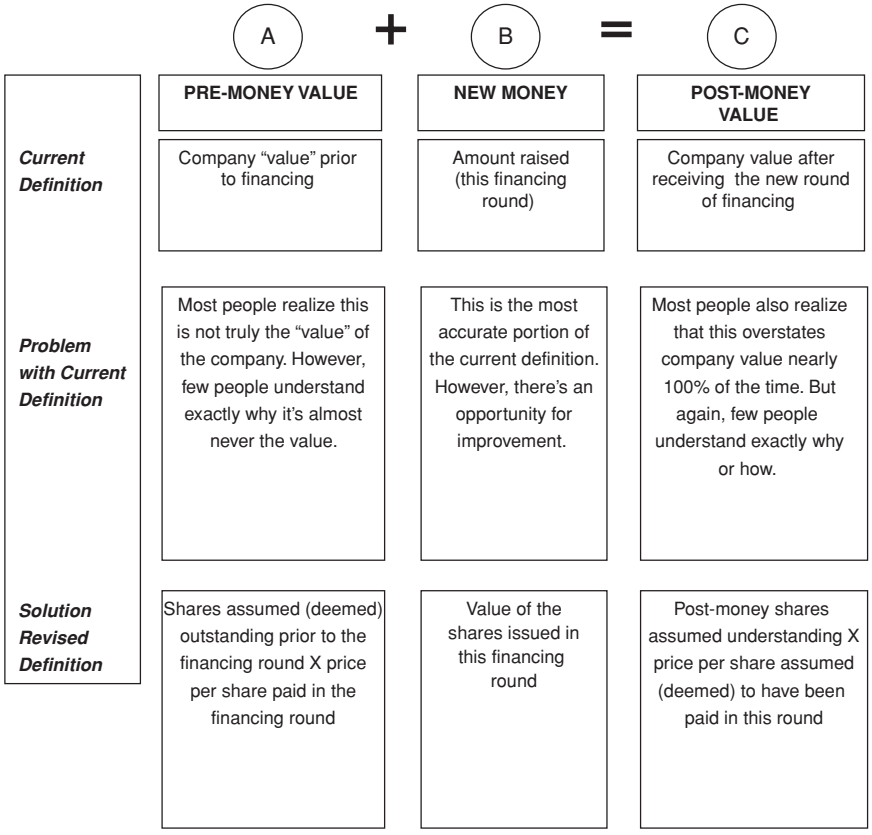

EXHIBIT 1.8 How Current Definitions of Pre-Money "Value" Are Misleading

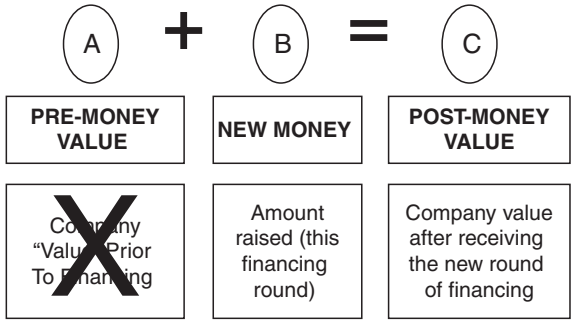

EXHIBIT 1.9 Company Value

EXHIBIT 1.10 2010 IPO Pre-Money Values Using VC Method versus Using Underwriter Method

Q1 2010 IPO Company	Pre-Money IPO Method "Value"	Pre-Money VC Method "Value"	Pre-Money Difference	Post-Money Difference
Meru Networks, Inc. (MERU)	$169,847,775	$312,946,950	**84%**	**39%**
MaxLinear, Inc. (MXL)	$353,682,882	$565,435,304	**60%**	**33%**
Calix, Inc. (CALX)	$417,701,258	$570,507,756	**37%**	**24%**
Financial Engines, Inc. (FNGN)	$346,866,924	$510,732,204	**47%**	**26%**

Proof 1—Q1 2010 IPOs To illustrate this, Exhibit 1.10 has four venture-funded companies that went public in Q1 of 2010. The first column shows the pre-money as calculated using market "capitalization" disclosures in the companies' SEC filings. The second column shows how that same company's pre-money value would be interpreted and cited by a VC-funded company using the current definition. The final two columns show the resulting overstatement of company "value" as a result of substantially higher capitalization share counting conventions for private companies versus those used for public companies.

Reason 2 Why Pre-Money Value Is Almost Never Company Value: Last Money in Has Generally Purchased a Class of Security That Has Higher Value Than Prior Rounds Let's take a look at the basic cash flow. Beyond the issue of basic math, overcounting shares that don't exist as well as rights that haven't been granted, there's an issue of investment cash flow potential differences based on when a given class of stock was issued. This is a more difficult problem to explain simply, so we'll use examples from Facebook's valuation-related litigation disclosures as reported by journalists along with disclosures from certain 2010 venture IPO companies disclosed in their SEC filings.

In a very general sense, timing is critical for every investment decision, but perhaps even more so in the case of illiquid assets such as venture capital. This is one of the reasons that so many contractual provisions exist to protect the last party to the table. Also, the last party to the table should, in theory,

have a shorter distance between its cash return (cash in) and its investment (cash out). Finally, the price per share paid by those last-round investors is the most objective measurement of the "value" of that specific class of security on that specific day to a buyer similar to the purchasers that bought that same class of preferred stock. The standard for that value, however, is probably not Fair Market Value as defined for 409A.

The Facebook and IPO examples we presented should allow you to get a better feel for this piece of the equation. We will take another look at the Facebook waterfalls as of the Series D, the approximate per share value that was used by ConnectU as a basis for its original settlement negotiations with Facebook.

Proof 2a—Facebook Series D "Value" Versus Litigation "Value" In each of these examples, as well as in cases of all venture-backed companies, understanding rights to investment cash flows is needed to understand the value of every security other than the most recently purchased round of financing. One way to do this is to put yourself in the shoes of each type of investor holding the same exact number of shares but in different types of stock issued by the company. The output in Exhibit 1.11 shows how cash flow to one angel and two VCs that invested in 100,000 shares of Facebook Series A, 100,000 Series B, and 100,000 Series C respectively all get lower investment cash flows than the last money in, the Series D, if the company is sold for anything under $3 billion.

If you could purchase 100,000 shares of **any** of the securities outstanding at that time for $1.00 per share, the Series A, Series B, Series C, Series D, or common stock, which would you purchase for your $100,000? Here's a reminder hint, the 100,000 series D shares give you 6,016 times more cash (that's 601,660% more cash) back than the common stock at even the worse of scenarios. See Exhibit 1.12.

Also, if you buy 100,000 shares of series D with your $100,000, if the company sells for three times as much as the value of the largest venture-backed IPO of 2010, you will still get 505% more cash return to you than if you invested your $100,000 into 100,000 shares of any of the other Facebook securities you could have chosen at $1.00 per share.

So which one would do you chose? You buy the one with the greatest potential.

Since at the same price you are more willing to buy the Series D than the Series A, Series B, Series C, and Common Stock, then we don't really have to go much further in the analysis to prove that the Series D is more valuable than the other classes of stock issued by the company as of that

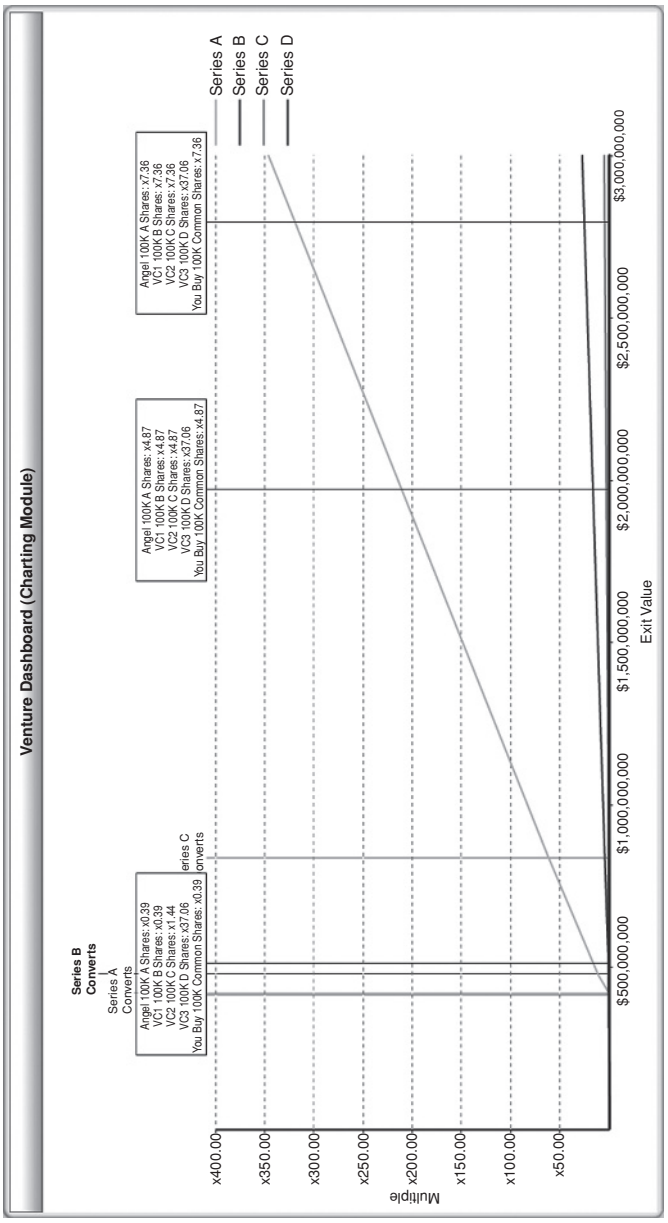

EXHIBIT 1.11 Facebook Series D Waterfall
Source: Liquid Scenarios, Inc.

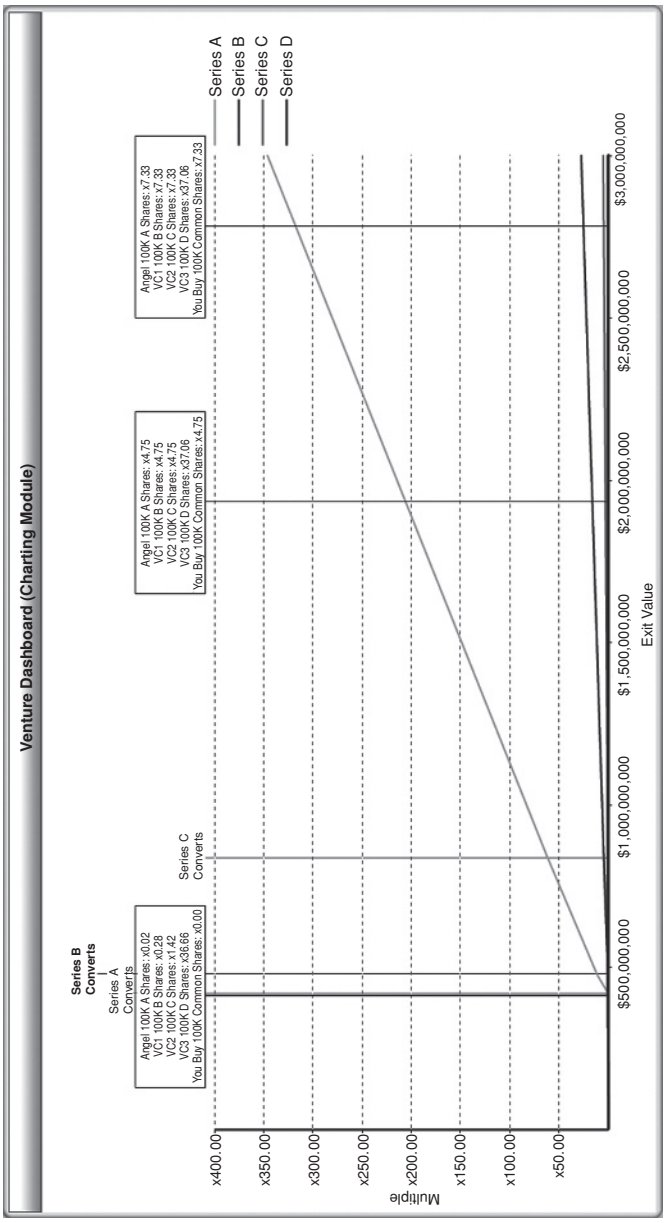

EXHIBIT 1.12 Facebook Series D Waterfall with Carver Deal Term Test
Source: Liquid Scenarios, Inc.

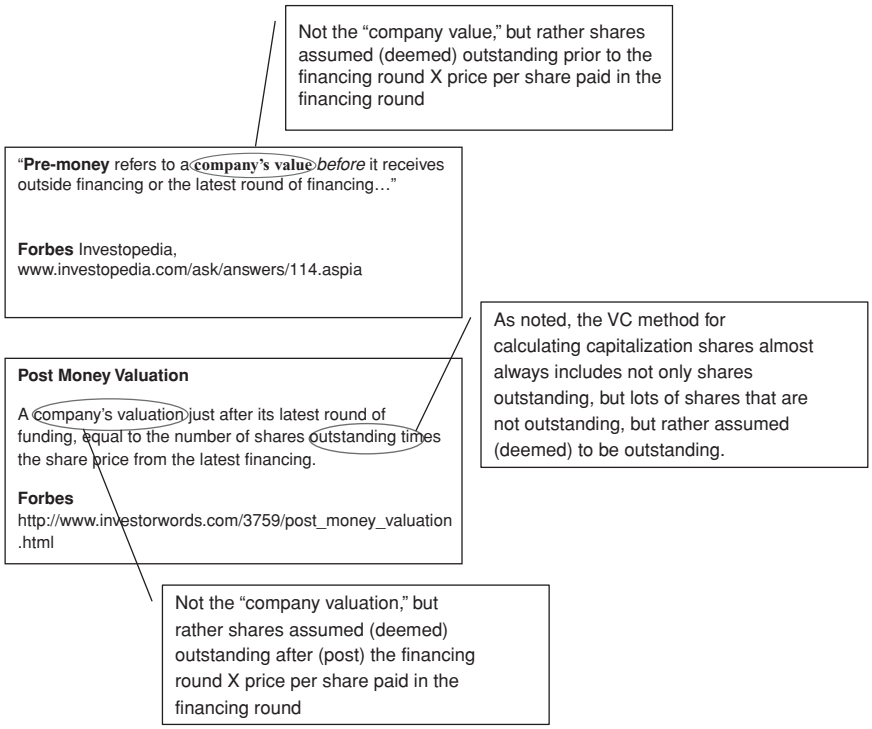

EXHIBIT 1.13 Pre-Money Value Definitions versus "Value of Company" before Financing

date. If that's true, and the Series D shareholders all paid $37.06 per share for the Series D, for instance, then any of the other securities are worth less than $37.06 per share. So multiplying that share price, $37.06 per share, by the shares assumed to be outstanding would overstate the value of the company even if we used the more conservative IPO method of calculating market capitalization. Using the VC method, we would overstate the value even further. See Exhibit 1.13.

Every party involved with the valuation of venture-funded companies is currently applying basic math in a slightly different way (illustrated in Exhibit 1.14). Those differences have profound impacts on the conclusions of value reached. The significance of those differences depends on the stage of a company, its industry, and the objectives of the party seeking to determine value.

EXHIBIT 1.14 VC Valuation Indications and Conclusions Arrived at by Various Parties

Source of "Value" Quote	Typically Refers to	Relative to Company Value
Investing partner at VC fund, company founder, management, and press relying on quotes	Pre- or post-money value, not company fair market value	Overstates company fair market value (FMV) by 50% to 200% Closer to enterprise value later in a company's life The larger (dollar amount) the preferred financing round is, the closer to FMV a VC's pre/post money value will be.
Limited partner financial statements	Carrying value of an LP interest in a VC fund	Overstates or understates FMV by ± 25% to 33%, depending on the auditors, partners finance teams, and liquidity environment
Company 409A (tax) valuation specialist/expert reports	Technically the best assessment of fair market value of common prior to an IPO	Common stock fair market value is typically overstated by 15% to 35% but indicated enterprise values are routinely understated by as much as 100%
Ad hoc enterprise value estimates (times users, revenue, visits, length of stay, clinical trial phase, etc.)	Enterprise value without considering risk, lack of marketability, or uncertainty	All over the map, but still an important exercise to discovering different indications of value
Secondary market transactions (primarily common stock) extrapolated to indicate company value	Price bid (or paid) for common shares times estimated number of fully diluted shares deemed outstanding	Overstates fair market value as a private company by 50% to 200%, but properly values the common shares sold in a given transaction most of the time. The fact that liquidity comes to an asset that was otherwise assumed to be illiquid automatically increases the value of the asset

SUMMARY

The case approach used in this book attempts to allow all parties to quickly find techniques, guides, and samples of how to apply the proper collection of techniques to their real-world situation at the right time to make a better decision. With a relevant case, you should be able to put the facts unique to your situation into a context that will stop you from giving up rights to cash flow or giving advice that will result in your clients giving up those rights unwittingly.