

# Introduction to Start-Up Valuation

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## Objective of Presentation

- Jeff Faust qualifications
- Overview of Valuations
- Valuation approaches (traditional vs start-ups)
- Allocation Methods
- Discount rates
- Projecting future income
- Preparing for investors
- What industries are hot right now?
- Berger Lewis' valuation process

## Jeff Faust Background

- Over 20 years in finance, serial entrepreneur.
- Over 15 years in Business Valuations.
- Over 65 different industries.
- All sizes and stages of development.
- Employee Stock Ownership Plans (ESOPs), Stock Options (409A), Family Limited Partnerships (FLPs), Buy-Sell Agreements, Estate/Gift Taxes, Mergers/Acquisitions and Transactions, Litigation Support.
- Testified in front of the Department of Labor and in several Superior Courts in the Bay Area.
- Accredited Valuation Analyst (AVA) with the National Association of Certified Valuation Analysts (NACVA).

## Introduction - Terminology

- Appraisal vs. Valuation
- Price vs. Value
- Art vs. Science

## Overview – Revenue Ruling 59-60

- Single most important piece of valuation literature
- Defined Fair Market Value (FMV):

“...the price at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts.”
- Outlined the methods and factors used in the valuing closely held businesses
  - Comparable Method
  - Asset Method
  - Income Method
  - Combined Method
- Blind use of averages are not appropriate

## Standards of Value

- Fair Market Value (FMV)
- Fair Value (FV)
- Investment Value
- (Intrinsic Value)
- (Synergistic Value)

## Standards of Value – FMV vs. FV

- Fair Market Value (FMV)

“The price at which property would change hands between a hypothetical willing and able buyer and a hypothetical willing and able seller, acting at arms length in an open and unrestricted market, when neither is under compulsion to buy or sell and when both have reasonable knowledge of the relevant facts. “

- International Glossary of Business Valuation Terms

- Fair Value (FV)

“The price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date.”

- ASC 820 (f.k.a. FAS 157)

## Standards of Value – FMV vs. FV

### Fair Market Value

- Willing Buyer
- Willing Seller
- No Compulsion
- Assumes Hypothetical Buyer/Seller
- Approximates a price equitable to both parties
- Assumes reasonable knowledge by both parties
- Applies to All Federal Tax Valuations
- 409A

vs.

### Fair Value

- Willing Buyer, restricted to actual market
- Seller not necessarily willing
- No Compulsion
- Specific “Seller” (current owner) and buyers as defined by marketplace
- Approximates actual possible transactions
- Assumes reasonable knowledge by both parties
- Applies to Financial Reporting Purposes
- ASC718(123R)



## Valuation Methods

- Is there one formula for valuation?

$$\frac{\text{Income}^*}{\text{Risk}} = \text{Value}$$

\* Could be historical or projected but in all cases it is “normalized”

## Valuation Methods

Most common

- Income Approaches (*see samples herein*)
- Market Approaches (*see samples herein*)
- Asset Approaches (Book Value, Restated Net Worth)

Others used

- Cost (Replacement)
- Asset and Income Approaches (Excess Earnings)
- Other / Start-Up Approaches (VC Method, Exit Multiples, Preferred Rounds – *see samples herein*)

## Valuation Methods – Income Approaches

- Discounted Future Earnings (DFE)
- Capitalized Earnings
- (Discounted Cash Flow to Equity (DCF))
- (Capitalized Cash Flow to Equity)
- (Discounted Cash Flow to Invested Capital)
- (Capitalized Cash Flow to Invested Capital)

# Valuation Methods – Income Approaches

- Discounted Future Earnings (DFE)

Projected Financials					Terminal Year
FYE 12/31/12	FYE 12/31/13	FYE 12/31/14	FYE 12/31/15	FYE 12/31/16	

**Projected Earnings**

\$ 1,454,100 \$ 1,537,125 \$ 1,703,328 \$ 1,885,410 \$ 2,181,030

**Terminal Value Calculation**

Gordon Growth Method 23.0% risk rate, 3.0% growth rate

**Terminal Value**

\$ 11,232,307

Present Value Period  
Present Value Factor 23.0% Discount Rate

1.00 2.00 3.00 4.00 5.00  
0.813 0.661 0.537 0.437 0.355 0.355

**Present Value of Net Income**

\$ 1,181,525 \$ 1,015,436 \$ 914,822 \$ 823,264 \$ 774,265 \$ 3,987,467

Sum of Present Value of Net Income in Projection Period \$ 4,709,312  
Plus: Present Value of Terminal Value 3,987,467

**Indicated Equity Value** \$ 8,696,779

Less: Discount for Lack of Control 0.0% -

**Total Equity Value (Non-Controlling, Marketable)** \$ 8,696,779

Less: Discount for Lack of Marketability 35.0% 3,043,872

**Total Equity Value (Non-Controlling, Non-marketable)** \$ 5,652,906

# Valuation Methods – Income Approaches

- Capitalized Earnings

<b>Discount Rate</b>		<b>23.0%</b>
Long-Term Sustainable Growth Rate		-3.0%
<b>Capitalization Rate</b>		<b>20.0%</b>
<b>Projected Earnings</b>		<b>\$ 1,454,100</b>
Divided by Capitalization Rate		20.0%
<b>Indicated Value of Equity</b>		<b>\$ 7,270,499</b>
Less: Discount for Lack of Control	0.0%	-
<b>Total Equity Value (Non-Controlling, Marketable)</b>		<b>\$ 7,270,499</b>
Less: Discount for Lack of Marketability	35.0%	2,544,675
<b>Total Equity Value (Non-Controlling, Non-marketable)</b>		<b>\$ 4,725,824</b>

## Valuation Methods – Income Approaches

- Capitalized Earnings [P/E Equivalent]

$$\frac{1}{20\%} = 5.0 \text{ Price to Earnings}$$

# Valuation Methods – Income Approaches

- Capitalized Earnings [P/E Equivalent]

<b>Discount Rate</b>		<b>23.0%</b>
Long-Term Sustainable Growth Rate		-3.0%
<b>Capitalization Rate</b>		<b>20.0%</b>
<b>Projected Earnings</b>		<b>\$ 1,454,100</b>
Times P/E Multiple		x 5
<b>Indicated Value of Equity</b>		<b>\$ 7,270,499</b>
Less: Discount for Lack of Control	0.0%	-
<b>Total Equity Value (Non-Controlling, Marketable)</b>		<b>\$ 7,270,499</b>
Less: Discount for Lack of Marketability	35.0%	2,544,675
<b>Total Equity Value (Non-Controlling, Non-marketable)</b>		<b>\$ 4,725,824</b>

## Valuation Methods – Income Approaches

- Capitalized Earnings vs. Discounted Future Earnings (DFE)
  - Which one is better?
  - When is one used over the other?



## Valuation Methods – Market Approaches

- Guideline Public Company Method
- Comparative Transaction Method

# Valuation Methods – Market Approaches

- Comparative Transaction Method

Pratt's Stats ID#	Sale Date	Business Description	Company Name	Equity/Sales	Equity/Earnings
18202	12/1/2011	HVAC Contractor	Not provided	0.31	
18201	10/31/2011	HVAC Contractor	Not provided	0.39	
18100	5/13/2011	Low-Voltage Building Control Systems (Primarily Mechanical HVAC Control Systems)	Not provided	0.24	4.14
17951	4/30/2011	HVAC	Not provided	0.18	
17818	2/18/2011	Residential and Commercial HVAC Company	Not provided	0.24	4.46
15476	4/29/2010	Air Conditioning and Heating Contractor	Not provided	0.34	4.13
17122	4/29/2010	Heating, Ventilation, and Air	Fonte HVAC, Inc.	0.51	
15475	1/15/2010	Air Conditioning and Heating Contractor	Not provided	0.29	1.94
<b>Maximum</b>				0.51	4.46
<b>Third Quartile</b>				0.38	4.30
<b>Mean</b>				0.35	3.51
<b>Median</b>				0.32	4.13
<b>First Quartile</b>				0.28	3.04
<b>Minimum</b>				0.18	1.94
<b>Coefficient of Variance</b>				34%	39%

Selected Multiple <sup>(3)</sup>	0.38	4.30
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Subject Company's Financial Data	\$	18,585,858	\$	1,454,100
<b>Implied Equity Value Range</b>	<b>\$</b>	<b>7,109,091</b>	<b>\$</b>	<b>6,245,359</b>
Weighting		50%		50%
<b>Indicated Equity Value (Controlling, Non-marketable)</b>	<b>\$</b>	<b>6,677,225</b>		
Less: Discount for Lack of Control	20.0%	\$	1,335,445	
<b>Total Equity Value (Non-Controlling, Non-marketable)</b>	<b>\$</b>	<b>5,341,780</b>		

## Valuation Methods – Market Approaches

- Comparative Transaction Method
  - Where do multiples come from?
    - Pratt Stats
    - Biz Comps
    - Done Deals
    - Capital IQ

# Start-Up Methods

- Stage of Development

- |   |                    |  |   |                           |   |
|---|--------------------|--|---|---------------------------|---|
| 1 | <b>Start-up</b>    | Enterprise has no product revenue and limited expense history. Typically an incomplete management team has an idea, plan, and possibly some initial product development. Seed capital or first-round financing is usually provided by friends and family, angels, or venture capital firms focusing on early-stage enterprises. The securities issued to those investors are occasionally in the form of common stock but are more commonly in the form of preferred stock.  | 4 | <b>Early Revenue</b>      | Enterprise has met additional key development milestones (e.g. growing customer orders and revenue shipments). It has a sufficient customer base to support ongoing operations, but is still operating at a loss. A manufacturing and distribution plan is being implemented. Typically, mezzanine rounds of financing occur during this stage. Discussions frequently start with potential acquirers or investment banks for an initial public offering (IPO). |
| 2 | <b>Development</b> | Enterprise has no product revenue but substantive expense history. Product development is underway and business challenges are thought to be understood. Typically, a second or third round of financing occurs during this stage. Investors are usually venture capital firms which may provide additional management or board of directors' expertise. Securities issued are typically in the form of preferred stock.   | 5 | <b>Positive Cash Flow</b> | Enterprise has a history of product revenues, and has recently achieved breakthrough measures of financial success, such as operating profitability or positive cash flows. Regulatory approvals (e.g. Food and Drug Administration) have been obtained. A liquidity event, such as an IPO or a sale of the enterprise, could occur late this stage.  |
| 3 | <b>Alpha/Beta</b>  | Enterprise has made significant progress in product development; key development milestones have been met (e.g. hiring of the core management team); and product development is near completion (e.g. alpha and beta testing of the product, service, web site). Third party revenue is beginning, although there may have been progress/milestone payments from strategic business partners. Later rounds of financing occur during this stage. Typical investors are venture capital firms and strategic business partners. The typical securities issued to those investors are in the form of preferred stock. | 6 | <b>IPO</b>                | Enterprise has an established financial history of profitable operations and generation of positive cash flows. It is a mature candidate for acquisition or an IPO. The form of securities issued is typically all common stock, with any outstanding preferred converting to common upon an IPO (and perhaps also upon other liquidity events).  |

## Start-Up Methods

- How do they differ from the traditional methods?
  - Income approaches use “exit multiples” and high discount rates
  - Market approaches use public “peer group”
  - Complex capital structures require allocation methods

# Start-Up Methods – Income Approaches

- Discounted Future Earnings (DFE) – [exit multiples]

		Projected Financials					Terminal
		FYE	FYE	FYE	FYE	FYE	Year
		12/31/12	12/31/13	12/31/14	12/31/15	12/31/16	
<b>Projected Earnings</b>		\$ (9.238)	\$ (5.235)	\$ 1.528	\$ 6.859	\$ 10.537	
<b>Terminal Value Calculation</b>							
Revenue Multiple	12/31/16	\$ 165.526		2.7			
<b>Terminal Value</b>							\$ 430.37
Present Value Period			1.00	2.00	3.00	4.00	5.00
Present Value Factor <sup>(3)</sup>	60.0% Discount Rate		0.624	0.390	0.244	0.152	0.095
<b>Present Value of Debt-free Cash Flow</b>			\$ (5.782)	\$ (2.042)	\$ 0.373	\$ 1.045	\$ 1.004
Sum of Present Value of Debt-free Cash Flow in Projection Period			\$ (5.403)				
Plus: Present Value of Terminal Value							32.406
<b>Total Equity Value (Controlling, Marketable)</b>			\$ 27.003				
Less: Discount for Lack of Control	0.0%						-
<b>Total Equity Value (Non-controlling, Marketable)</b>			\$ 27.003				
Less: Discount for Lack of Marketability	35.0%						9.451
<b>Total Equity Value (Non-controlling, Non-marketable)</b>			\$ 17.552				

# Start-Up Methods – Market Approaches

- Guideline Public Company Method – [Peer Group & FSA]

(\$US in millions)

Target Company Name	Percent Sought	Closing Date	Total Gross Transaction Value <sup>(1)</sup>	Total Net Transaction Value <sup>(2)</sup>	Target Cash and Short-term Investments	Target Total Debt	Implied Equity <sup>(3)</sup>	Total Invested Capital (1)
Martek Biosciences	100%	2/25/11	\$ 1,087.854	\$ 1,024.108	\$ 63.746	\$ 7.073	\$ 1,080.781	\$ 1,087.854
Penwest Pharmaceuticals Co.	100%	11/4/10	\$ 169.737	\$ 155.330	\$ 14.407	\$ 1.371	\$ 159.834	\$ 169.737
BioSphere Medical, Inc.	100%	9/10/10	\$ 82.070	\$ 65.510	\$ 16.560	\$ 0.005	\$ 82.065	\$ 82.070
PBMNutritionals, Inc. and	100%	4/30/10	\$ 808.000	\$ 808.000	\$ -	\$ -	\$ 721.200	\$ 808.000
Cornerstone Therapeutics Inc.	55%	7/28/09	\$ 74.321	\$ 63.585	\$ 10.736	\$ 0.056	\$ 134.222	\$ 74.321
Vital Signs, Inc.	100%	10/30/08	\$ 1,014.973	\$ 882.893	\$ 132.080	\$ 0.101	\$ 990.604	\$ 1,014.973
Barrier Therapeutics, Inc.	100%	8/4/08	\$ 156.106	\$ 118.795	\$ 37.311	\$ 8.946	\$ 145.928	\$ 156.106
Del Pharmaceuticals, Inc.	100%	7/7/08	\$ 380.000	\$ 380.000	\$ -	\$ -	\$ 380.000	\$ 380.000
SourceCF, Inc.	100%	11/30/07	\$ 9.600	\$ 9.600	\$ -	\$ -	\$ 6.600	\$ 9.600

<b>Maximum</b>	\$ 1,087.900	\$ 1,024.100	\$ 132.100	\$ 8.900	\$ 1,080.800	\$ 1,087.900
<b>Third Quartile</b>	\$ 808.000	\$ 808.000	\$ 37.300	\$ 1.400	\$ 721.200	\$ 808.000
<b>Average</b>	\$ 420.300	\$ 389.800	\$ 30.500	\$ 2.000	\$ 411.200	\$ 420.300
<b>Median</b>	\$ 169.700	\$ 155.300	\$ 14.400	\$ 0.100	\$ 159.800	\$ 169.700
<b>First Quartile</b>	\$ 82.100	\$ 65.500	\$ -	\$ -	\$ 134.200	\$ 82.100
<b>Minimum</b>	\$ 9.600	\$ 9.600	\$ -	\$ -	\$ 6.600	\$ 9.600
<b>Harmonic Mean <sup>(4)</sup></b>	\$ 60.900	\$ 57.700		NM	\$ 47.300	\$ 60.900
<b>Coefficient of Variance</b>	103%	104%	175%		103%	

Target Company Name	Trailing Twelve Month				Trailing Twelve Month Margins		
	Revenue	EBITDA	EBIT	Net Income	EBITDA	EBIT	Net Income
Martek Biosciences	\$ 450.023	\$ 123.241	\$ 87.677	\$ 27.900	27.4%	19.5%	6.2%
Penwest Pharmaceuticals Co.	\$ 35.680	\$ 15.376	\$ 14.486	\$ 13.839	43.1%	40.6%	38.8%
BioSphere Medical, Inc.	\$ 31.281	\$ (2.427)	\$ (2.863)	\$ (2.698)	(7.8%)	(9.2%)	(8.6%)
PBMNutritionals, Inc. and	\$ 266.400	\$ -	\$ 57.530	\$ 44.590	0.0%	21.6%	16.7%
Cornerstone Therapeutics Inc.	\$ 86.127	\$ 24.233	\$ 23.002	\$ 14.639	28.1%	26.7%	17.0%
Vital Signs, Inc.	\$ 223.541	\$ 50.296	\$ 44.626	\$ 22.199	22.5%	20.0%	9.9%
Barrier Therapeutics, Inc.	\$ 29.710	\$ (51.565)	\$ (52.353)	\$ (52.283)	(173.6%)	(176.2%)	(176.0%)
Del Pharmaceuticals, Inc.	\$ 100.000	\$ 28.000	\$ -	\$ -	28.0%	0.0%	0.0%
SourceCF, Inc.	\$ 4.000	\$ -	\$ -	\$ -	0.0%	0.0%	0.0%

<b>Maximum</b>	\$ 450.000	\$ 123.200	\$ 87.700	\$ 44.600	43%	41%	39%
<b>Third Quartile</b>	\$ 223.500	\$ 28.000	\$ 44.600	\$ 22.200	28%	22%	17%
<b>Average</b>	\$ 136.300	\$ 20.800	\$ 19.100	\$ 7.600	-4%	-6%	-11%
<b>Median</b>	\$ 86.100	\$ 15.400	\$ 14.500	\$ 13.800	22%	19%	6%
<b>First Quartile</b>	\$ 31.300	\$ -	\$ -	\$ -	0%	0%	0%
<b>Minimum</b>	\$ 4.000	\$ (51.600)	\$ (52.400)	\$ (52.300)	-174%	-176%	-176%
<b>Harmonic Mean <sup>(1)</sup></b>	\$ 24.000	\$ 29.400	\$ 0.200	\$ 0.100	29%	24%	12%
<b>Coefficient of Variance</b>	109%	229%	213%	357%	-1648%	-1093%	-577%

# Start-Up Methods – Market Approaches

- Guideline Public Company Method

(\$US in millions)

Company Name	Market Value of Invested Capital (MVIC) as a Multiple of:			
	TTM Revenue	TTM EBITDA	TTM EBIT	NFY Revenue
Abbott Laboratories	2.7 x	9.2 x	12.7 x	2.5 x
Baxter International Inc.	2.4 x	8.6 x	10.4 x	2.3 x
Mead Johnson Nutrition Company	4.2 x	16.5 x	17.9 x	3.8 x
Amicus Therapeutics, Inc.	5.6 x	NM	NM	3.0 x
Zalicus Inc.	16.9 x	NM	NM	10.6 x
Perrigo Co.	3.6 x	16.1 x	19.7 x	3.3 x
<b>Maximum</b>	16.9 x	16.5 x	19.7 x	10.6 x
<b>Third Quartile</b>	5.3 x	16.2 x	18.3 x	3.7 x
<b>Average</b>	5.9 x	12.6 x	15.2 x	4.3 x
<b>Median</b>	3.9 x	12.7 x	15.3 x	3.2 x
<b>First Quartile</b>	2.9 x	9.1 x	12.1 x	2.7 x
<b>Minimum</b>	2.4 x	8.6 x	10.4 x	2.3 x
<b>Harmonic Mean</b>	3.9 x	11.5 x	14.2 x	3.3 x
<b>Coefficient of Variance</b>	94%	34%	29%	74%
<b>Selected Multiples</b>	2.9 x	9.1 x	12.1 x	2.7 x
Sample Company's Financials	\$ 5,200	\$ (9,562)	\$ (10,562)	\$ 15,265
<b>Indicated MVIC Value Range</b>	<b>15,080</b>	<b>(87,014)</b>	<b>(127,800)</b>	<b>41,216</b>
Weighting	0%	0%	0%	100%
<b>Implied Market Value of Invested Capital</b>	<b>\$ 41,200</b>			
Less: Debt	10,500			
<b>Total Equity Value (Non-controlling, Marketable)</b>	<b>\$ 30,700</b>			
Less: Discount for Lack of Marketability 35.0%	10,745			
<b>Total Equity Value (Non-controlling, Non-marketable)</b>	<b>\$ 19,955</b>			



## Allocation Methods

- Current Value Method (CVM)
- Option Pricing Method (OPM)
- Probability-Weighted Expected Return Method (PWERM)

## Allocation Methods

- Current Value Method (CVM)
  - The equity value is reduced by the senior claims of preferred shares with the remaining balance allocated to common shares.
  - Like the old “waterfall” analysis.

# Allocation Methods

- Current Value Method (CVM)

Weighted Average of Selected Methods	\$25,049,115
plus: Cash received from exercise of options and warrants	\$40,000
less: Liquidation Preference of Preferred Stock	<u>\$20,761,983</u>
	\$4,327,132
Divided By:	
Shares attributable to remaining allocation	36,060,000
Equals:	
Unrounded Price Per Share	\$0.1199981
Rounded Price Per Share	<span style="border: 1px solid black; padding: 2px;">\$0.12</span>

# Allocation Methods

- CVM – The Effect of Different Capital Structures

	Company 1 <u>(No Preferred)</u>	Company 2 <u>(Non-Participating)</u>	Company 3 <u>(Full participation)</u>
Fair Market Value	\$5,000,000	\$5,000,000	\$5,000,000
Common Stock	2,000,000	2,000,000	2,000,000
Preferred Stock	0	3,000,000	3,000,000
<i>(Assume Liquidation preferend is \$1/sh)</i>			
Common Stock Price	\$2.50	\$1.00	\$0.40

## Allocation Methods

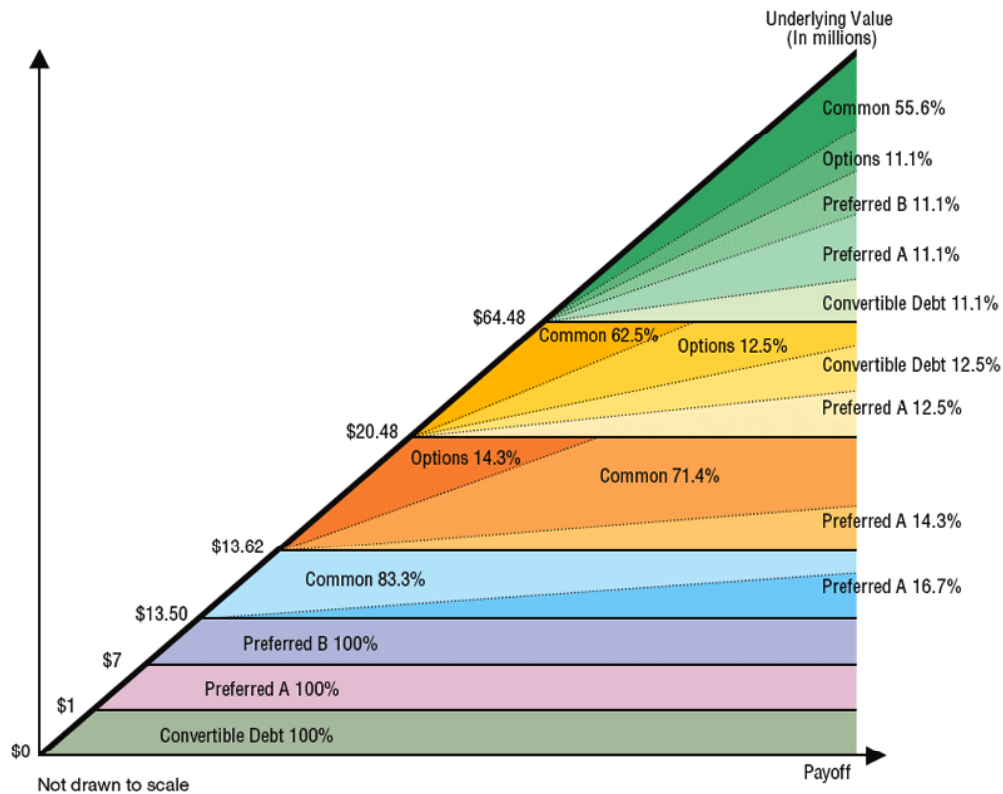
- Option Pricing Method (OPM)
  - Each class of stock is modeled as a call option with a distinct claim on the enterprise value of the company. [Black-Scholes]
  - Exercise prices are based on the liquidation preferences and conversion value of the securities.

## Allocation Methods

- Option Pricing Method (OPM)
  - Five Step Process
    1. Analysis of Capitalization Table
    2. OPM Assumptions (Black-Scholes Assumptions)
      - Volatility (Peer Group)
      - Risk Free Rate
      - Term/Expected Life (Exit / Funding?)
    3. Calculation of Breakpoints
    4. Black-Scholes Calculation of Tranche Values
    5. Allocating Tranche Values

# Allocation Methods

- Option Pricing Method (OPM)



## Allocation Methods

- Probability-Weighted Expected Return Method (PWERM)
  - Estimates values for several likely liquidity scenarios (or lack thereof):
    - IPO
    - Acquisition
    - Dissolution
    - Private (no exit)
  - The value of the common stock is determined for each scenario at the time of each future liquidity event and discounted back to the present using a risk-adjusted discount rate



## Allocation Methods

- What is a “back-solve” method?
  - OPM run backwards using a what-if analysis (goal seek)
    - ❖ Preferred price becomes the anchor
    - ❖ Estimates the implied value needed to get the preferred price of the specific round
    - ❖ Subsequent prices of the other securities, including common stock, are determined
  
- Is it valuation or allocation?

## Discounts and Discount Rates

- What are they and when are they used?
- Risk Discounts vs. Ownership Discounts

## Discount Rates

- Risk Discounts
  - Ibbotson's Build-Up Methods
  - Capital Assets Pricing Model (CAPM)
  - Schilt's Discount Table
  - Duff & Phelps
  - Weighted Average Cost of Capital (WACC)
  - Capitalization Rate (Discount Rate – Long Term Growth Rate)

## Discount Rates

- Risk Discounts – an Example
  - Ibbotson's Build-Up Methods
    - = Risk Free Rate <sup>1</sup>
    - + Equity Risk Premium <sup>2</sup>
    - + Size Premium <sup>2</sup>
    - + Industry Premium <sup>2</sup>
    - + Company Specific (FOLEIM) <sup>3</sup>

1 = 20-Year Treasury Rate

2 = Published by Ibbotson (Morning Star)

3 = Determined by Valuation Analyst

# Discount Rates

- Risk Discounts – Ranges for Start-Ups

Stage of Development	Characteristics	Frei & Leleux Life Sciences Study <sup>(1)</sup>	Seiffer Software Study <sup>(2)</sup>	Plummer Study <sup>(3)</sup>	Scherlis and Sahlman Study <sup>(4)</sup>	Sahlman, Stevenson and Bhide Study <sup>(5)</sup>
Start-up	Pre-prototype	70% - 100%	60% - 80%	50% - 70%	50% - 70%	50% - 100%
Early development	Pre-commercialization	50% - 70%	50% - 60%	40% - 60%	40% - 60%	40%-60%
First Stage	Commercialization	40% - 60%	40% - 50%	NA	NA	NA
Expansion	Shipping Product	35% - 50%	30% - 40%	35% - 50%	30% - 50%	30%-40%
Mezzanine/ IPO	Profitable	25% - 40%	25% - 30%	25% - 35%	20% - 35%	20%-30%

<sup>(1)</sup> Frei, P. & Leleux, B. Valuating the Company. *Starting a Business in the Life Sciences- from Idea to Market*. (Luessen, H. (ed.)) 42-55 (Edition Cantor Verlag, Aulendorf, Germany, 2003).

<sup>(2)</sup> John Seiffer, "The Business of Software: The Venture Capital Rate of Return". < <http://discuss.joelonsoftware.com/default.asp?biz.5.254929.9>> (21 November 2005)

<sup>(3)</sup> Plummer, James L., *QED Report on Venture Capital Financial Analysis*, Palo Alto: QED Research, Inc., 1987

<sup>(4)</sup> Scherlis, Daniel R. and Sahlman, William A., "A Method for Valuing High-Risk, Long Term, Investments: The Venture Capital Method," Harvard Business School Teaching Note 9-288-006, Boston: Harvard Business School Publishing, 1989

<sup>(5)</sup> Sahlman, William A. and Howard H. Stevenson, Amar V. Bhide, "Financing Entrepreneurial Ventures", Business Fundamental Series, Boston: Harvard Business School publishing, 1998.

## Discount Rates (Premiums)

- Ownership Discounts
  - Discount for Lack of Marketability (DLOM)
  - Discount for Lack of Control (DLOC)
  - Minority Interest Discount (MID)
  - (Control Premium)

## Discount Rates – DLOC vs. MID

- Discount for Lack of Control vs. Minority Interest Discount

<b>CONTROLLING INTEREST</b>
100% Equity Ownership Position Control Interest with Liquidating Control 51% Operating Control Two equity holders, each with 50% interest Minority with largest block of equity interest Minority with “swing vote” attributes Minority with “cumulative voting” rights Pure minority interest – no control features
<b>MINORITY INTEREST</b>

## Projecting Income

- All valuation are forward looking (Future Benefits)
- Historical vs. Projected
- Single Period (Linear) vs. Multi Period (Non-Linear)

Tax Related (Gift/Estate)

Litigation (Divorce)

Erratic Earnings

Steady Earnings

Transaction

Rapid Growth

**Hockey Stick**

**Start-Ups**



## Projecting Income

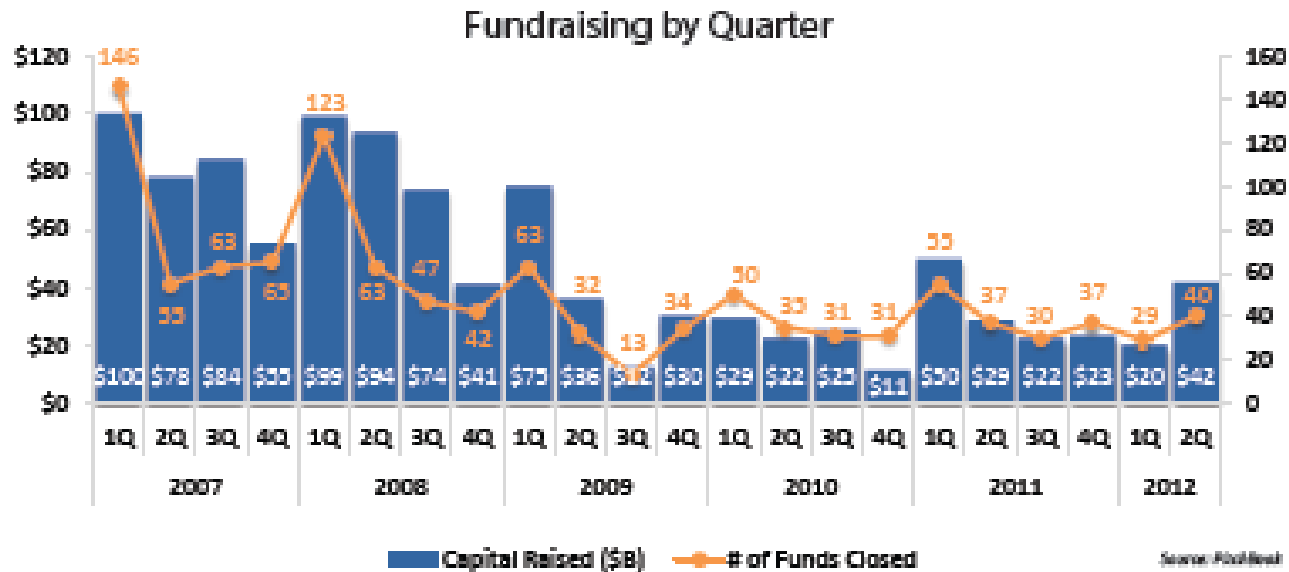
- The impact of hockey stick projections?
  - Heavily Discounted

## Preparing for investors

- Don't be unreasonable with the valuation (Shark Tank)
- Ask for the right amount
  - Use of funds
  - Time and Realistic Milestones
  - Potential or Progress?
- Get the financial house in order
  - Clean financials, no strange accounts
  - Clean Cap Table

# Fundraising in general

## Private Equity Fundraising Activity



# What industries are hot?

## Amount Invested

Industry	2000	2008	2011	2012			
	2000 Total	2008 Totals	2011 Total	Qtr 1	Qtr 2	Qtr 3	2012 Total
Software	\$25,101,788,400	\$6,025,290,500	\$7,319,551,500	\$1,686,812,500	\$2,367,990,900	\$2,078,646,800	\$6,133,450,200
Biotechnology	\$4,325,886,900	\$4,962,793,200	\$4,909,007,900	\$883,080,900	\$754,727,600	\$1,239,889,000	\$2,877,697,500
Industrial/Energy	\$2,626,652,100	\$4,705,895,200	\$3,544,267,100	\$805,868,600	\$932,301,000	\$475,591,500	\$2,213,761,100
Medical Devices and Equipment	\$2,382,210,400	\$3,621,746,800	\$2,814,920,700	\$705,756,800	\$687,025,500	\$434,347,100	\$1,827,129,400
IT Services	\$8,925,218,100	\$2,106,164,900	\$2,338,907,700	\$501,929,600	\$604,551,700	\$524,271,100	\$1,630,752,400
Media and Entertainment	\$10,648,716,100	\$1,793,857,000	\$2,262,885,900	\$419,485,200	\$715,885,800	\$454,471,700	\$1,589,842,700
Consumer Products and Services	\$3,198,114,600	\$418,131,700	\$1,314,656,800	\$432,113,900	\$161,707,000	\$149,431,600	\$743,252,500
Semiconductors	\$3,797,149,200	\$1,654,493,700	\$1,301,815,100	\$220,783,100	\$337,776,900	\$154,716,400	\$713,276,400
Telecommunications	\$16,507,716,400	\$1,520,563,700	\$659,120,400	\$187,192,500	\$249,297,400	\$89,080,200	\$525,570,100
Retailing/Distribution	\$3,207,387,700	\$222,352,600	\$438,308,400	\$47,588,100	\$150,552,300	\$242,111,400	\$440,251,800
Computers and Peripherals	\$1,674,167,100	\$475,418,000	\$475,461,500	\$66,712,300	\$80,649,000	\$230,774,900	\$378,136,200
Networking and Equipment	\$11,737,251,500	\$701,985,900	\$340,578,400	\$66,327,400	\$94,349,700	\$93,067,000	\$253,744,100
Financial Services	\$4,145,889,200	\$454,010,700	\$394,099,700	\$55,341,000	\$51,476,800	\$143,860,100	\$250,677,900
Electronics/Instrumentation	\$800,015,700	\$757,169,700	\$674,044,400	\$42,958,000	\$56,743,700	\$71,074,400	\$170,776,100
Healthcare Services	\$1,391,815,300	\$157,421,200	\$392,459,800	\$20,913,900	\$53,689,000	\$83,260,200	\$157,863,100
Business Products and Services	\$4,696,533,600	\$483,100,600	\$227,189,200	\$32,991,200	\$5,205,400	\$20,021,900	\$58,218,500
Other	\$59,734,900	\$30,000,000	\$36,708,100	\$10,750,000	\$7,200,000	\$3,662,000	\$21,612,000
<b>Grand Total</b>	<b>\$105,226,247,200</b>	<b>\$30,090,395,400</b>	<b>\$29,443,982,600</b>	<b>\$6,186,605,000</b>	<b>\$7,311,129,700</b>	<b>\$6,488,277,300</b>	<b>\$19,986,012,000</b>



# Where are VC's putting their money?

## Amount Invested

Region	2000	2011	2012			2012 Total	
	2000 Total	2011 Total	Qtr 1	Qtr 2	Qtr 3		
AK/HI/PR	248,615,000	600,000	645,000	-	-	645,000	0.00%
Colorado	4,103,857,400	610,626,300	125,885,100	164,312,800	180,826,600	471,024,500	2.36%
DC/Metroplex	5,790,648,800	979,250,200	211,743,600	202,723,400	215,659,100	630,126,100	3.15%
LA/Orange County	6,802,512,300	2,080,911,700	571,957,700	541,130,200	452,958,100	1,566,046,000	7.84%
Midwest	5,781,208,700	1,508,007,200	315,838,900	320,715,300	446,318,900	1,082,873,100	5.42%
New England	11,962,570,500	3,256,836,200	762,480,700	847,913,500	826,104,200	2,436,498,400	12.19%
North Central	1,426,669,600	383,064,100	91,398,900	80,183,300	99,770,000	271,352,200	1.36%
Northwest	3,627,802,200	796,086,000	316,529,400	242,570,100	194,704,300	753,803,800	3.77%
NY Metro	10,295,726,700	2,771,351,300	391,468,300	632,620,400	512,829,500	1,536,918,200	7.69%
Philadelphia Metro	2,591,465,600	456,905,400	135,685,000	57,461,100	170,388,100	363,534,200	1.82%
Sacramento/N.Cal	375,278,500	87,830,900	8,009,100	11,000,000	-	19,009,100	0.10%
San Diego	2,270,771,900	926,645,700	395,565,200	320,636,000	241,507,000	957,708,200	4.79%
Silicon Valley	33,519,568,100	12,032,104,300	2,205,828,800	3,362,186,400	2,619,428,100	8,187,443,300	40.97%
South Central	446,940,800	105,605,900	18,126,000	5,309,900	57,198,400	80,634,300	0.40%
Southeast	7,995,282,900	1,197,975,200	129,230,000	228,397,800	241,734,500	599,362,300	3.00%
SouthWest	1,380,012,500	548,015,700	83,239,100	112,222,900	81,183,200	276,645,200	1.38%
Texas	6,262,948,200	1,595,451,700	409,629,200	179,496,600	127,715,200	716,841,000	3.59%
Unknown	50,423,000	-	-	-	-	-	0.00%
Upstate NY	293,944,500	106,714,800	13,345,000	2,250,000	19,952,100	35,547,100	0.18%
<b>Grand Total</b>	<b>105,226,247,200</b>	<b>29,443,982,600</b>	<b>6,186,605,000</b>	<b>7,311,129,700</b>	<b>6,488,277,300</b>	<b>19,986,012,000</b>	

# Where are VC's putting their money?

## Amount Invested

Stage of Development	2000	2008	2011	2012			
	2000 Total	2008 Total	2011 Total	Qtr 1	Qtr 2	Qtr 3	2012 Total
Seed	\$3,156,137,600	\$1,924,319,300	\$1,056,234,800	\$153,583,400	\$229,286,700	\$178,116,300	\$560,986,400
Early Stage	\$25,354,579,000	\$5,701,061,900	\$8,632,435,900	\$1,897,568,900	\$2,197,189,500	\$1,728,080,200	\$5,822,838,600
Expansion	\$59,117,420,800	\$10,869,829,600	\$9,772,225,700	\$1,781,876,600	\$2,700,649,000	\$2,613,655,300	\$7,096,180,900
Later Stage	\$17,598,109,800	\$11,595,184,600	\$9,983,086,200	\$2,353,576,100	\$2,184,004,500	\$1,968,425,500	\$6,506,006,100
Grand Total	\$105,226,247,200	\$30,090,395,400	\$29,443,982,600	\$6,186,605,000	\$7,311,129,700	\$6,488,277,300	\$19,986,012,000

## Number of Deals

Stage of Development	2000	2008	2011	2012			
	2000 Total	2008 Total	2011 Total	Qtr 1	Qtr 2	Qtr 3	2012 Total
Seed	701	538	438	57	72	67	196
Early Stage	2,857	1,130	1,538	335	424	395	1,154
Expansion	3,705	1,244	1,012	219	244	241	704
Later Stage	779	1,256	918	225	195	187	607
Grand Total	8,042	4,168	3,906	836	935	890	2,661



# Exit Trends

Quarter/Year	Total M&A Deals	M&A Deals with Disclosed Values	*Total Disclosed M&A Value (\$M)	*Average M&A Deal Size (\$M)	**Number of IPO's	Total Offer Amount (\$M)	Average IPO Offer Amount (\$M)
2007	510	208	34,133.7	164.1	93	12,163.4	130.8
2008-1	132	45	5,528.6	122.9	7	625.0	89.3
2008-2	104	28	3,145.2	112.3	0	0.0	0.0
2008-3	116	44	5,434.2	123.5	2	195.9	98.0
2008-4	82	26	2,677.2	103.0	0	0.0	0.0
2008	434	143	16,785.2	117.4	9	820.9	91.2
2009-1	82	21	986.0	47.0	0	0.0	0.0
2009-2	77	14	1,902.4	141.6	0	1,070.4	133.0
2009-3	101	34	2,827.2	83.2	2	522.5	261.3
2009-4	103	47	8,444.7	179.7	5	504.7	100.9
2009	363	116	14,240.3	122.8	15	2,097.6	139.8
2010-1	150	38	5,015.0	132.0	10	1,146.7	114.7
2010-2	110	31	2,715.9	87.6	20	1,663.1	83.2
2010-3	140	42	9,434.3	224.6	17	1,996.0	117.4
2010-4	139	48	6,061.3	126.3	30	3,591.5	119.7
2010	539	159	23,226.5	146.1	77	8,397.3	109.1
2011-1	143	56	6,805.1	121.5	14	1,526.9	109.1
2011-2	94	39	6,432.3	164.9	22	6,059.0	275.4
2011-3	145	45	7,147.7	158.8	5	475.9	95.2
2011-4	124	37	4,799.6	129.7	11	2,803.2	254.8
2011	506	177	25,184.8	142.3	52	10,865.0	208.9
2012-1	110	29	3,678.5	126.8	19	1,682.8	88.6
2012-2	116	29	5,841.2	201.4	11	17,147.1	1558.8
2012-3	96	30	7,599.2	253.3	10	1,088.1	108.8
2012	322	88	17,118.9	194.5	40	19,918.1	497.9

Source: Thomson Reuters & National Venture Capital Association

\*Only accounts for deals with disclosed values

\*\*Includes all companies with at least one U.S. VC investor that trade on U.S. exchanges, regardless of domicile.

## Exit Trends

		Q3 2012	
Industry		*Number of Venture-Backed IPO's in the U.S.	Total Venture- Backed Offering Size (\$M)
Information Technology	Computer Software and Services	3	421.6
	Internet Specific	3	327.8
		6	749.4
Life Sciences	Medical/Health	2	172.5
	Biotechnology	1	77.6
		3	250.1
Other	Industrial/Energy	1	88.6
TOTAL		10	1,088.0

Source: Thomson Reuters & National Venture Capital Association

\*Includes all companies with at least one U.S. VC investor that trade on U.S. exchanges, regardless of domicile



## Exit Trends

		Q3 2012		
		Number of Venture-Backed M&A deals	Number of Venture-Backed M&A deals with a disclosed value	Total Disclosed Venture-Backed Deal Value (\$M)
Industry				
Information Technology	Computer Software and Services	29	7	3,161.6
	Internet Specific	29	7	2,361.4
	Communications and Media	3	0	0.0
	Computer Hardware	5	2	85.9
	Semiconductors/Other Elect.	4	2	16.4
		<b>70</b>	<b>18</b>	<b>5,625.2</b>
Life Sciences	Medical/Health	8	4	51.4
	Biotechnology	8	5	892.6
		<b>16</b>	<b>9</b>	<b>943.9</b>
Non-High Technology	Other Products	7	2	445.0
	Consumer Related	1	1	585.0
	Industrial/Energy	4	0	0.0
		<b>12</b>	<b>3</b>	<b>1,030.0</b>
<b>TOTAL</b>		<b>96</b>	<b>30</b>	<b>7,599.2</b>

Source: Thomson Reuters & National Venture Capital Association

# Exit Trends

## Analysis of Transaction Values versus Amount Invested

Relationship between transaction value and investment	Q1 12 M&A **	Q2 12 M&A**	Q3 12 M&A**
Deals where transaction value is less than total venture investment	8	3	6
Deals where transaction value is 1-4x total venture investment	7	11	7
Deals where transaction value is 4x-10x total venture investment	11	5	7
Deals where transaction value is greater than 10x venture investment	3	10	7
<b>Total Disclosed Deals</b>	<b>29</b>	<b>29</b>	<b>27</b>

Source: Thomson Reuters & National Venture Capital Association

\*\* Disclosed deals that do not have a disclosed total investment amount are not included

## Our Valuation Process

- Define the project / generate engagement letter
- Send info request list / gather data
- Review / analyze data
- Perform research (economy / industry)
- Fact-finding interview
- Adjust financial statements (normalize)
- Determine appropriate discounts (FOLEIM)
- Determine appropriate methods
- Perform valuation analysis
- Provide discussion draft on valuation
- Perform feasibility study based on valuation results and goals of owner
- Finalize and prepare deliverables

## Q & A

- Any questions?

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