VALUATION OF EARLY STAGE COMPANIES

by: Michael R. Hanrahan CPA, CVA, MCBA

I. Valuation Basics – "Regardless of the purpose of the valuation or the stage of development of the subject company, there are still only three valuation approaches to consider – income, market and cost" (Neal Beaton in Valuing Early Stage and Venture-Backed Companies, page 35).

A. What is value?

	1. To whom
	2. For what purpose
	3. Perspective on size vs. stage
B. Gu	iding economic principles
	1. Substitution
	2. Alternatives
	3. Future benefits
C. Pre	emise of value
	1. Liquidation (forced or orderly)
	2. Assemblage of assets
	3. Going concern
D. Sta	andard of value
	1. Fair market value
	2. Fair value
	3. Investment value
	4. Intrinsic value
E. Pu	rpose of valuation

F. Date of valuation

G. What is being valued?

- 1. Stock generally less value than assets owned
- 2. Assets
- 3. Control versus minority position

H. Factors to consider

- 1. Nature and history of the business
- 2. Economic & industry outlook
- 3. Financial condition
- 4. Earnings capacity
- 5. Intangible assets Exhibit A
- 6. Dividend paying capacity
- 7. Historical sales of the stock
- 8. Market price of comparable companies

I. Analysis and adjustments to data

- 1. Company strengths and weaknesses (SWOT analysis)
- 2. Competitive situation (Porter's 5 Forces of Competition)
- 3. Economic and industry conditions
- 4. Financial statement adjustments
 - a. Accounting
 - b. Normalizing
 - c. Economic

- J. Valuation approaches and methods
 - 1. Asset approach include intangibles
 - 2. Market approach private company transaction data (Exhibits B, C & D)
 - 3. Income approach factor methods and present value discounting
- K. Discounts and premiums in a nut shell depends on valuation method and data
- II. Differences Between Established Business (large and small) and Start-up Valuations
 - A. Lack of company and management history
 - B. Lack of financial metrics
 - C. Increased risk & uncertainty
 - D. Limitation of valuation methods
 - E. Greater focus on the qualitative aspects of the company, its management team and market prospects
 - F. Early stage limits valuation methods (Exhibits E & F)
- III. Discounting Cash Flows
 - A. Present value concepts
 - B. Effect of risk on rates
 - C. Range of rates (Exhibits G, H & I)

SELECTED REFERENCES

- "From Concept to Wall Street", Oren Fuerst & Uri Geiger, ISBN #0130348031
- "Term Sheets & Valuations", Alex Wilmerding, ISBN 1587620685
- "Investment Valuation Tools and Techniques for Determining the Value of Any Asset", 2nd edition, Aswath Damodaran, ISBN 0471414883
- "New Venture Creation Entrepreneurship for the 21st Century", 5th Edition, Alex Timmons, ISBN 0256197563
- "The Entrepreneurial Venture", 2nd Edition, William A. Shalman, et. al., ISBN 0875848923
- "Venture Capital Valuations: Top Venture Capitalists on Step-by-Step Strategies and Methodologies for Valuing Companies at All Stages", ISBN 1596220031
- "Early-Stage Technologies: Valuation and Pricing", Richard Razgaitis, ISBN 0471328561
- "Private Capital Markets", Robert Slee, ISBN 0471656224
- "Valuing Early Stage and Venture-Backed Companies", Neil Beaton, ISBN 9780470436295

ILLUSTRATIVE LISTING OF 129 INTANGIBLE ASSETS

Advertising campaigns and programs

Agreements

Airport gates and slots Appraisal plants Awards and judgments Bank customers-deposit, loan, trust, and credit card Blueprints and drawings

Book and other publication libraries

Brand names Broadcast licenses Business licenses/rights Buy-sell agreements Certificates of need Chemical formulations

Claims against others

Client files

Computer software Computer systems Computerized databases

Contacts

Cooperative agreements

Copyrights

Credit information files Customer contracts

Customer/client/patient lists

Customer relationships Designs, patterns, technical drawings

Developmental rights Distribution networks Distribution rights **Drilling rights** Easements

Employment contracts Engineering drawings Environmental rights

FCC licenses Favorable financing

Favorable leases Film libraries

Food flavorings and recipes Franchise agreements Franchise ordinances

Going concern (turnkey operation)

value

Goodwill – institutional

Goodwill – personal Goodwill - professional Government contracts Government programs Governmental registrations Historical documents **HMO** enrollment lists

Immediate use value Insurance expirations Insurance in force Joint ventures

Know-how and related procedural

documentation Laboratory notebooks Landing rights Leasehold estates

Leasehold interests and options Libraries – professional, medical,

technical Licenses Literary works

Litigation awards and damages

Loan portfolios Location value

Logos

Managed care contracts/enrollments

Management contracts Manual databases Manuscripts

Marketing and promotional materials Masks and masters (integrated circuits)

Medical billing system Medical charts and records

Mineral rights

Musical compositions Natural resources Newspaper morgue files Non-compete covenants Non-diversion agreements

Open orders

Options, warrants, grants, rights

Ore deposits Patent applications

Patents-both product and process

Patient files and charts

Permits

Personality contracts Possessory interest Prescription drug files Prizes and awards Procedural manuals and

documentation Production backlogs Product designs Professional licenses Property use rights Proposals outstanding

Proprietary computer software

Proprietary processes Proprietary products Proprietary technology

Publications Purchase orders Referral network Regulatory approvals

Reputation

Retail shelf space Royalty agreements Schematics and diagrams Securities portfolios Security interests Shareholder agreements Solicitation rights

Stock and bond instruments

Subscription lists Supplier contracts

Technical and specialty libraries Technical documentation

Technology

Technology sharing agreements

Title plants Trade secrets

Trained and assembled workforce Trademarks and trade names Training manuals and related

materials

Unpatented technology Use rights - air, water, land

Work in process

Compiled From: "Valuation of a Medical Practice"; "Valuing Small Businesses and Professional Practices", 4th ed.; "Valuing Intangible Assets"; "Medical Practice Valuation Guidebook", 2nd ed.; and "PPC's Guide to Business Valuations" 2/06 ed.

IBA DATA

				mary				
SIC	Business Description	Sales	DE	Price	Price / Sales	Drice / DE	State	Sale Date
	Arch. & engrg. svcs.	15	DL	6	0.40	FIICE / DL	State	08/01/84
	Engrg., arch., other svcs	16	-1	8	0.50			03/01/84
	Engineering consits	29	- 1	8	0.38		WI	03/01/93
	Design services	31	1	8	0.26	8.00	VVI	03/01/83
	Engineering svcs	54		32	0.59	0.00	TX	06/01/93
	Technical support svcs.	79	8	105	1.33	13.13	17/	07/01/84
	Petroleum ind'y services	117	4	176	1.50	44.00		02/01/84
	Construction Site Preparation	133	69	100	0.75	1.45	FL	08/27/04
	Construction Site Preparation	136	84	135	0.99	1.61	FL	07/06/04
	Construction Site Preparation	204	103	152	0.75	1.48	FL	04/11/05
	Construction Site Preparation	216	88	170	0.79	1.93	FL	01/04/06
	Engineer	250	50	100	0.40	2.00	FL	12/01/89
	Drafting & blue pnts	285	151	119	0.42	0.79	FL	11/01/95
	Architectural & Engineering	371	261	133	0.36	0.51	WI	10/01/98
	Construction Site Preparation	372	71	150	0.40	2.11	FL	04/30/03
	Engineering	378	77	150	0.40	1.95	FL	01/01/93
	Engineering Contractors	404	79	125	0.31	1.58	FL	07/01/03
	Construction Site Preparation	425	138	300	0.71	2.17	FL	11/17/03
	Engineering	500	200	375	0.75	1.88	TX	01/01/91
	Engineering, geographical	501	90	255	0.51	2.83	TX	01/01/91
	Engrg. & const. services	620	26	210	0.34	8.08	.,,	05/01/82
	Civil Engineering	677	74	212	0.31	2.86	ID	07/01/95
	Engineering Engineering Civil	843	434	825	0.98	1.90	FL	01/06/05
	Enviromental Engineering	876	265	525	0.60	1.98	FL	12/13/01
	Engineering Engineering Electric	880	284	660	0.75	2.32	FL	07/28/08
	Damage reconst	977	150	450	0.46	3.00	AZ	01/01/01
	Engineering Engineering Construction		102	2,105	2.01	20.64	CO	01/23/06
	Engineering Service	1,170	218	105	0.09	0.48	TX	05/01/95
	Engineering Service Engineering Engineering Electric	1,520	779	800	0.53	1.03	FL	06/02/04
	Engineering Conult. Svcs	1,779	115	500	0.28	4.35	WI	02/01/00
	Construction	1,900	330	300	0.16	0.91	FL	12/01/04
	Eng Services Catholic Protection	1,923	372	1,155	0.60	3.10	OK	09/01/06
	Construction Site Preparation	1,940	562	1,000	0.52	1.78	FL	02/28/05
	Engineering service	2,000	002	1,900	0.95	1.70	LA	01/01/94
	Construction Site Preparation	2,669	110	1,350	0.51	12.27	OK	01/19/07
	Civil engineering	2,700		800	0.30	12.27	TX	06/01/91
	Geotechnical engineerin	3,500		2,000	0.57		CA	05/01/89
	Design, eval. & test. svc	5,000		3,800	0.76		0/1	04/01/83
	Engineering	5,000	500	8,700	1.74	17.40		01/01/72
	Engineering & archit'ural	6,300	-223	8,900	1.41	17.10		11/01/83
	Environmental Engineering	6,331	9,952	3,500	0.55	0.35	FL	02/04/08
	Engineering ser	8,000	7,752	3,400	0.43	0.55	CA	06/01/91
	Construction Site Preparation	8,500	0	4,800	0.56		CO	07/02/07
	Research & development	9,000	J	9,700	1.08			01/01/75
	Engrg. & arch. plan svc.	9,100	984	10,000	1.10	10.16		01/01/69
	Engineering svcs	17,000	-2,700	3,000	0.18	10.10	CA	01/01/94
	Water resources mgmt	17,000	1,000	6,000	0.15	6.00	CO	01/01/94
	Environ engineering	17,000	1,000	7,700	0.44	7.70	CA	05/01/93
	Engineering consits	29,000	1,400	8,000	0.44	5.71	WI	03/01/93
	Engineering consits Engineering svcs	54,000	8,000	32,000	0.59	4.00	TX	06/01/93
	Engineering svcs Engineering	34,000	5,000	2,500	0.39	4.00	١٨	00/01/93
	Engineering			1,200				
				1.200				•

48.271

3.285

5.296

Pratt's Stats® Advanced Search Results Prepared: 11/2/2010 8:18:15 PM(PST)

Search Criteria

Total transactions found meeting criteria: 55 Your search results are based upon this criteria:

1. SIC (8711)

Transaction Summary					
<u>Statistic</u>	<u>Count</u>	Range	<u>Mean</u>	<u>Median</u>	Coefficient of Variation
Sale Date	55	5/31/1996 - 7/1/2010	N/A	N/A	N/A
Net Sales	55	\$288,895 - \$875,080,000	\$75,735,812	\$8,100,000	N/A
Market Value of Invested Capital (MVIC)	55	\$125,000 - \$418,000,000	\$39,226,921	\$4,975,000	N/A
EBITDA	43	(\$12,120,000) - \$72,739,000	\$3,381,409	\$508,676	N/A
EBIT	55	(\$22,680,000) - \$54,228,000	\$2,884,265	\$469,641	N/A
Net Income	55	(\$30,585,000) - \$54,228,000	\$2,074,386	\$315,000	N/A
Gross Profit Margin	54	-0.167 - 1.000	0.428	0.358	N/A
Operating Profit Margin	55	-0.901 - 0.366	0.057	0.056	N/A
Net Profit Margin	55	-0.906 - 0.318	0.042	0.046	N/A
MVIC/Net Sales	55	0.087 - 3.190	0.763	0.620	0.814
MVIC/Gross Profit	53	0.338 - 19.509	2.588	1.748	1.171
MVIC/EBIT	46	1.695 - 280.657	20.797	7.938	2.100
MVIC/EBITDA	39	1.668 - 311.721	24.711	6.348	2.325
MVIC/DiscEarnings	20	1.781 - 10.466	3.689	2.946	0.562

0.853 - 1,599.920

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Transactions

MVIC/Book Value of Invested Capital

<u>No</u>	SIC Code	Business Description	Market Value of Invested Capital	Sale Date	<u>Net Sales</u>	MVIC / Sales	MVIC / Disc Earnings	MVIC / EBITDA
1	8711	Provides Consulting and Engineering Services	\$350,000	6/10/2002	\$288,895	1.212	N/A	8.961
2	8711	Engineering Contractor	\$125,000	7/1/2003	\$404,000	0.309	1.781	311.721
3	8711	Provides Specialty Engineering Services to Semiconductor Companies	\$1,255,395	10/4/2005	\$472,000	2.660	N/A	8.314
4	8711	Engineering Supplies and Blueprint Company	\$425,000	8/1/2000	\$499,516	0.851	N/A	5.910
5	8711	Engineering Services	\$600,000	7/31/2004	\$577,696	1.039	3.661	8.119
6	8711	Environmental Engineering and Testing	\$545,000	12/13/2001	\$875,536	0.622	4.112	4.776
7	8711	Electrical Engineering	\$660,000	7/28/2008	\$880,125	0.750	3.000	3.000
8	8711	Civil Engineering Firm	\$300,000	9/25/2009	\$887,000	0.338	2.419	4.688
9	8711	Geotechnical Engineering and Drilling	\$732,500	3/1/2001	\$1,267,400	0.578	N/A	N/A
10	8711	Geotechnical Engineering Company	\$725,000	6/30/2009	\$1,632,000	0.444	2.746	4.191
11	8711	Engineering Consulting Services	\$500,000	12/14/2000	\$1,779,286	0.281	4.273	71.174
12	8711	Engineering Services	\$1,155,260	9/28/2006	\$1,923,000	0.601	5.394	22.756
13	8711	Engineering Contractor	\$6,500,000	8/25/2006	\$2,037,768	3.190	N/A	N/A
14	8711	Fire Detection System Distributor and Engineers	\$2,085,000	9/17/1999	\$2,169,965	0.961	2.757	188.585
15	8711	Precision Engineering Products	\$2,230,000	10/31/2005	\$2,250,000	0.991	2.473	3.112
16	8711	Civil Engineering Firm	\$2,273,000	2/1/2005	\$2,550,000	0.891	2.892	4.186
17	8711	Engineering	\$1,100,000	6/29/2005	\$2,577,782	0.427	1.880	10.407
18	8711	Material Testing and Inspection of Construction	\$1,536,000	1/3/2000	\$2,630,000	0.584	2.136	2.653
19	8711	Engineering Services	\$1,098,960	1/20/2009	\$2,693,000	0.408	10.466	N/A
20	8711	Engineering Consultants	\$2,300,000	4/26/2010	\$3,707,000	0.620	N/A	5.637

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21	8711	Design, Integration, and Fielding of Mobile, Modular, and Fixed-Site Communication Electronic Systems	\$1,915,000	9/28/2007	\$3,738,135	0.512	N/A	N/A
22	8711	Engaged in Engineering, Construction, and Consulting for the Telecommunications Industry	\$3,995,000	7/1/2002	\$3,750,279	1.065	N/A	82.917
23	8711	Civil Engineering Firm	\$3,400,000	1/7/2000	\$4,722,295	0.720	N/A	2.448
24	8711	Engineering Services	\$2,240,000	4/29/2000	\$5,243,018	0.427	N/A	N/A
25	8711	An Engineering Consulting Firm	\$8,800,000	12/1/2000	\$6,250,000	1.408	N/A	N/A
26	8711	Antenna Engineering	\$2,960,000	8/1/2003	\$6,639,997	0.446	6.994	10.834
27	8711	Mechanical, Electrical, HVAC, and Plumbing Maintenance and Repair for Prisons and Other Public Buildings	\$5,000,000	6/16/2008	\$7,840,483	0.638	N/A	N/A
28	8711	Environmental Engineering	\$3,200,000	2/6/2008	\$8,100,000	0.395	2.228	6.324
29	8711	Group Environmental engineering firm	\$1,675,000	8/31/2009	\$8,359,827	0.200	2.082	2.082
/	0711	Telecommunications	\$1,075,000	0/31/2007	ψ0,337,027	0.200	2.002	2.002
30	8711	Engineering, Right of Way Acquisition and Field Services	\$4,975,000	11/8/1996	\$9,850,454	0.505	N/A	9.780
31	8711	Utility Engineering Firm Focusing on Design, Construction Management, Financial Planning, Rate Setting, Infrastructure Planning, and Infrastructure Management	\$3,302,000	9/30/2004	\$10,400,000	0.318	4.339	5.275
32	8711	Engineering, Mechanical Contracting and Steel Fabrication	\$6,768,202	2/1/2005	\$11,071,860	0.611	N/A	N/A
33	8711	Civil Engineering Firm Concentrating in the Areas of Land Development, Land Surveying, Planning, Municipal Engineering, Environmental Services, and Landscape Architecture	\$17,500,000	10/31/2004	\$12,044,000	1.453	4.647	32.710
34	8711	Engineering, Mechanical and Technical Services Related to Ship Building	\$5,900,000	7/29/1996	\$13,294,585	0.444	N/A	6.348
35	8711	Provides Software and Hardware Solutions to Healthcare Organizations	\$43,850,265	8/27/1997	\$14,979,761	2.927	N/A	7.167
36	8711	Full-Service Environmental, Engineering, and Consulting Firm	\$10,850,000	5/23/2001	\$17,005,778	0.638	3.500	3.946
37	8711	Engineering Service Provider Principally to the United States Government	\$20,772,085	11/2/2001	\$31,302,012	0.664	N/A	17.579
38	8711	Services in Highway Design, Bridge Inspections, Geotechnical Engineering, and Construction Testing	\$21,500,000	10/15/2001	\$32,110,758	0.670	N/A	4.536
39	8711	Full-Service Engineering Service Company	\$14,390,000	5/2/2008	\$33,372,449	0.431	N/A	N/A
40	8711	Naval Architectural and Marine Engineering Services	\$16,500,000	5/31/1996	\$35,543,255	0.464	N/A	N/A
41	8711	Designs, Engineers and Constructs Projects that Improve Energy Efficiency and Reduce Water Consumption	\$10,500,000	6/11/2008	\$40,899,866	0.257	N/A	N/A
42	8711	Engineering Firm focused on the Design of Industrial Controls and Industrial Power Distribution	\$36,500,000	6/6/2007	\$42,367,750	0.862	N/A	23.764
43	8711	Performs Engineering, Consulting, and Research for the United States Government	\$9,000,000	4/2/2001	\$46,371,485	0.194	N/A	2.413

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44	8711	Provides Engineering, Logistics, and Information Technology Services	\$66,500,000	6/27/2007	\$50,863,874	1.307	N/A	N/A
45	8711	Design and Engineering Services Firm	\$65,000,000	7/31/2007	\$63,981,438	1.016	N/A	N/A
46	8711	Provides Engineering Services and Engineered Systems	\$21,700,000	12/21/2001	\$68,343,696	0.318	N/A	6.324
47	8711	Engineering, Architectural and Planning Firm Specializing in the Construction of Airports, Highways, Bridges and other Transportation Infrastructure	\$60,492,000	5/3/2010	\$91,867,134	0.658	N/A	11.551
48	8711	Provides Mission Systems Engineering and Command, Control, Communications, Computers, Intelligence, Surveillance and Reconnaissance (C4ISR) Services and Solutions	\$242,000,000	1/15/2010	\$181,033,373	1.337	N/A	23.111
49	8711	General Construction Contracting	\$16,000,000	12/31/2008	\$184,317,732	0.087	N/A	1.668
50	8711	Program Management and Engineering Services	\$221,400,000	6/30/2006	\$215,068,000	1.029	N/A	N/A
51	8711	Engaged in the Business of Planning, Design, Engineering and Construction of Healthcare Facilities	\$247,000,000	3/10/2008	\$324,038,967	0.762	N/A	9.813
52	8711	Provides Environmental Engineering and Construction Services	\$80,000,000	3/7/2003	\$335,271,000	0.239	N/A	N/A
53	8711	Provides Design, Construction, Maintenance, Engineering and other Infrastructure Services to the Utility Industry	\$418,000,000	7/1/2010	\$598,776,000	0.698	N/A	N/A
54	8711	Provides Consulting, Design and Construction Services to a Variety of Process, Manufacturing, Power and Institutional Entities in the United States & Other International Locations	\$95,000,000	12/12/2003	\$739,468,420	0.128	N/A	20.245
55	8711	Engineering, Construction, and Maintenance	\$342,400,000	9/7/2007	\$875,080,000	0.391	N/A	4.707

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Pratt's Stats® Transaction Report Prepared: 11/2/2010 8:59:56 PM (PST)

Seller Details

Target Name:

Business Description: Civil Engineering Firm 8711 Engineering Services SIC: NAICS: 541330 Engineering Services

United States Sale Location:

Years in Business: Number Employees: 15 **Source Data**

Broker Name: Schumann, Lawrence Broker Firm Name: Corporate Investment

Income Data		Asset Data		Transaction Data	
Data is "Latest Full Year" Reported	Yes	Data is Latest Reported	Yes	Date Sale Initiated:	12/30/2004
Data is Restated (see Notes for any explanation)	No	Data is "Purchase Price Allocation agreed upon by Buyer and Seller"	No	Date of Sale:	2/1/2005
Income Statement Date	12/31/2003	Balance Sheet Date	12/31/2004	Days to Sell:	33
Net Sales	\$2,550,000	Cash Equivalents	\$53,000	Asking Price:	\$2,500,000
cogs	\$540,000	Trade Receivables	\$454,000	Market Value of Invested Capital*:	\$2,273,000
Gross Profit	\$2,010,000	Inventory	\$0	Debt Assumed:	\$173,000
	\$109,000	1	**	Employment Agreement Value:	N/A
Yearly Rent		Other Current Assets	\$50,000	Noncompete Value:	N/A
Owner's Compensation	\$243,000	Total Current Assets	\$557,000	Amount of Down Payment:	\$1,050,000
Other Operating Expenses	\$1,115,000	Fixed Assets	\$328,000	Stock or Asset Sale:	Stock
Noncash Charges	\$51,000	Real Estate	\$0	Company Type:	S Corporation
Total Operating Expenses	\$1,518,000	Intangibles	\$0	l ' * *'	3 Corporation
Operating Profit	\$492,000	Other Noncurrent Assets	<u>\$0</u>	Was there an Employment/Consulting Agreement?	No
Interest Expenses	<u>\$0</u>	Total Assets	\$885,000	Was there an Assumed Lease in the	Yes
EBT	\$492,000	Long-term Liabilities	\$3,000	sale?	162
Taxes	<u>\$0</u>	Total Liabilities	\$173,000	Was there a Renewal Option with the Lease?	No
Net Income	\$492,000	Stockholder's Equity	\$712,000	*Includes noncompete value and interest excludes real estate, employment/consul- values, and all contingent payments.	

Additional Transaction Information

Was there a Note in the consideration paid? No

Terms of Lease: unknown

Assumed Lease (Months): N/A

Noncompete Length (Months): 36

Employment/Consulting Agreement Description:

Additional Notes:

Was there a personal guarantee on the Note? Yes

Noncompete Description: 100 mile radius

Valuation Multiples		Profitability Ratios		Leverage Ratios	
MVIC/Net Sales	0.89	Net Profit Margin	0.19	Fixed Charge Coverage	N/A
MVIC/Gross Profit	1.13	Operating Profit Margin	0.19	Long-Term Debt to Assets	0.00
MVIC/EBITDA	4.19	Gross Profit Margin	0.79	Long-Term Debt to Equity	0.00
MVIC/EBIT	4.62	Return on Assets	0.56	Long Term Best to Equity	0.00
MVIC/Discretionary Earnings	2.89	Return on Equity	0.69		
MVIC/Book Value of Invested Capital	3.18				
Earnings		Liquidity Ratios		Activity Ratios	
EBITDA	\$543,000	Current Ratio	3.28	Total Asset Turnover	2.88
Discretionary Earnings	\$786,000	Quick Ratio	3.28	Fixed Asset Turnover	7.77
N/A Net Assileta				Inventory Turnover	N/A

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BIZCOMPS® Advanced Search Results Prepared: 11/2/2010 9:03:32 PM (PST)

Search Criteria

Total transactions found meeting criteria: 19 Your search results are based upon this criteria:

1. SIC Code (8711)

Transaction Summary					
<u>Statistic</u>	<u>Count</u>	Range	<u>Mean</u>	<u>Median</u>	Coefficient of Variation
Sale Date	19	12/31/1997 - 7/28/2008	N/A	N/A	N/A
Annual Gross	19	\$145 - \$8,630	\$1,873	\$1,211	N/A
SDE	19	60.000 - 2,700.000	447.632	265.000	N/A
Sale Price (Excludes Inventory)	19	\$103 - \$12,200	\$1,295	\$510	N/A
SDE To Annual Gross	19	0.063 - 0.602	0.299	0.290	0.475
Rent To Annual Gross	12	0.003 - 0.130	0.028	0.020	1.214
Sale Price To Annual Gross	19	0.147 - 1.414	0.583	0.538	0.459
Sale Price To SDE	19	1.172 - 4.519	2.183	1.932	0.432

Tra	nsactions								
<u>No</u>	SIC Code	Business Description	<u>Annual</u> <u>Gross</u>	SDE	SDE To Annual Gross	Sale Date	Sale Price	Sale Price To Annual Gross	Sale Price To SDE
1	8711	Engr-Automated Machinery	\$145	\$65	0.448	12/31/1997	\$103	0.710	1.585
2	8711	Engineering Services	\$204	\$103	0.505	4/11/2005	\$153	0.750	1.485
3	8711	Engineering Services	\$216	\$88	0.407	1/4/2006	\$170	0.787	1.932
4	8711	Environmental Engineers	\$241	\$145	0.602	1/3/2005	\$170	0.705	1.172
5	8711	Environmental Services	\$251	\$114	0.454	12/31/2004	\$135	0.538	1.184
6	8711	Environmental Consulting	\$264	\$60	0.227	6/30/2003	\$120	0.455	2.000
7	8711	Product Design	\$675	\$250	0.370	3/1/2007	\$547	0.810	2.188
8	8711	Engineering Services	\$876	\$265	0.303	12/13/2001	\$525	0.599	1.981
9	8711	Electrical Engineers	\$880	\$284	0.323	7/28/2008	\$510	0.580	1.796
10	8711	Engineering Services	\$1,211	\$82	0.068	6/18/1999	\$178	0.147	2.171
11	8711	Civil Engr-Water Related	\$1,336	\$360	0.269	12/6/2002	\$475	0.356	1.319
12	8711	Engineering Services	\$1,519	\$271	0.178	6/2/2004	\$800	0.527	2.952
13	8711	Engineering Services	\$1,725	\$391	0.227	6/24/2005	\$1,050	0.609	2.685
14	8711	Engineering Services	\$1,779	\$112	0.063	12/14/2000	\$500	0.281	4.464
15	8711	Engineering Services	\$1,939	\$562	0.290	2/28/2005	\$1,000	0.516	1.779
16	8711	Engineering Services	\$2,534	\$479	0.189	4/25/2008	\$873	0.345	1.823
17	8711	Site Development	\$2,669	\$737	0.276	9/15/2006	\$1,350	0.506	1.832
18	8711	Engineering Services	\$8,500	\$1,437	0.169	11/15/2005	\$3,750	0.441	2.610
19	8711	Engineering Services	\$8,630	\$2,700	0.313	4/29/2005	\$12,200	1.414	4.519

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BIZCOMPS® Transaction Report Prepared: 11/2/2010 9:02:44 PM(PST)

	Details
 ~	Dotailo

Business Description Engineering Services SIC 8711 Engineering Services NAICS 54133 Engineering Services Location Colorado, United States

Number Of Employees

Transaction Data

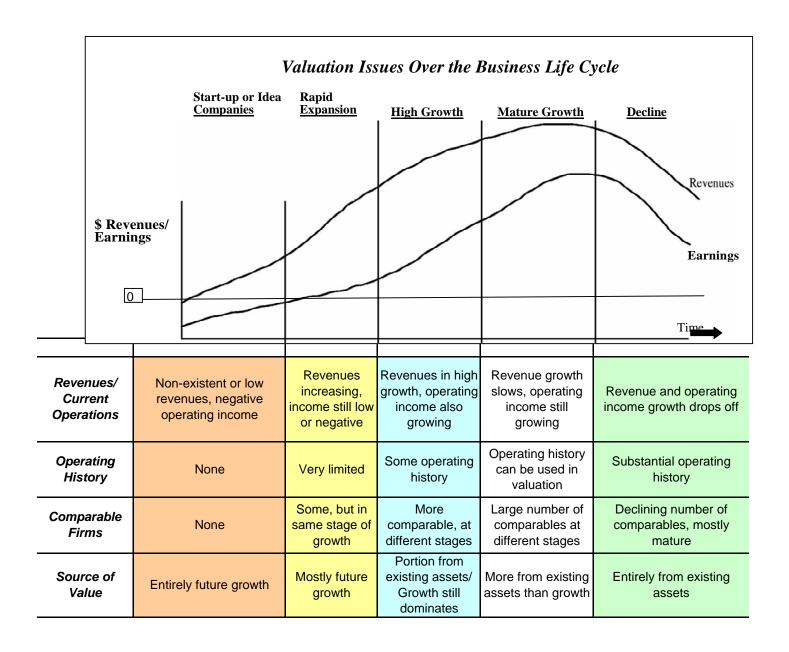
Sale Date 4/25/2008 Days On Market N/A Ask Price (000) \$750.0 Sale Price (000) (Excludes Inventory) \$873.0 Percent Down 88.0% Terms on Outstanding Consideration 5 Yrs @ 7%

Income Data (\$000's)		Asset Data (\$000's)	
Annual Gross Sales	\$2,534.0	Inventory Value	\$0.0
Franchise Royalty	No	Furniture, Fixtures and Equipment	\$188.0
SDE	\$479.0	Value Of Real Estate	N/A
Operating Ratios		Valuation Multiples	
SDE/Annual Gross Sales	0.189	Sale Price/Annual Gross Sales	0.345
Rent/Annual Gross Sales	0.021	Sale Price/SDE	1.823

N/A = Not Available
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Adapted From:

"Investment Valuation - Tools and Techniques for Determining the Value of Any Asset", 2nd edition, Aswath Damodaran, p. 639



Stages of Company Development

- An important determinant of value and also an indicator of which valuation approaches are appropriate
 - Stage influences perceived risk, which in turn impacts valuation
- Value creation occurs throughout the stages but is not sequential or linear
- Achievement (or non-achievement) of significant milestone events affects value



Description of Stages

Stage	Operational Development	Typical Financing	Valuation Approach Typically Applicable
1	No product revenues to date and limited expense history, typically an incomplete management team with an idea, plan, and possibly some initial product development	Seed capital (common stock)	Asset-based
2	Still no product revenue but substantive expense history, as product development is underway and challenges are thought to be understood	1 st & 2 nd rounds (preferred stock)	Asset-based
3	Significant progress in product development; key development milestones met and development is near completion, but generally no product revenue	3 rd & 4 th rounds (preferred stock)	Market (maybe income)

May 23, 2006

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Description of Stages (cont'd)

Stage	Operational Development	Typical Financing	Valuation Approach Typically Applicable
4	Additional key development milestones met and some product revenue, but still operating at a loss	Mezzanine rounds (preferred stock)	Market, income
5	Product revenue and operating profitability or breakeven/positive cash flows	IPO or other liquidity event (common stock)	Market, income
6	Established financial history of profitable operations or generation of positive cash flows	IPO or other liquidity event (common stock)	Market, income



Factors to be Considered in Performing a Valuation

- Milestones achieved by the company
- State of the industry & economy
- Members of management & board of directors
- Marketplace & major competitors
- Barriers to entry
- Competitive forces
- Existence of proprietary technology, project, or service
- Workforce & workforce skills

- Customer & vendor characteristics
- Strategic relationships with major suppliers or customers
- Major investors in the company
- Cost structure & financial condition
- Attractiveness of industry segment
- Risk factors faced by the enterprise
- Qualitative & quantitative factors

	SELECTED INFORMATION ON BUSINESS AND FINANCING STAGES						
STAGE	YEARS IN BUSINESS	FINANCING <u>LABEL</u>	TYPICAL INVESTMENT HOLDING PERIOD (YRS)	<u>ATTRIBUTES</u>	FUNDS NEEDED FOR	TYPICAL FINANCING SOURCES	DISCOUNT RATE
	Business generally not yet formed	Seed/Pre-seed	See Start up	Earliest stage of funding. Entrepreneur's ideas are explored. Often no business plan, incomplete management team, limited expense history, and little assurance that that the basic technology is feasible. Exploratory R&D and possibly some product development.	Support entrepreneur's exploration of idea	Friends, family, angels, bootstrap, incubators	80% - 100%
2	less than 2	Start up	10+	No product revenues, substantial expenses, product development is underway and business challenges are thought to be understood. Should be able to demonstrate a competitive advantage. Have basic management structure and business plan, may have product development. No R&D is needed before company becomes operational. Conventional wisdom is that 2/10 startups will fail within 2-3 years, 1 will become big success, 1 a moderate success, and 4 will survive making only small profits and a negligible return for investors. Timmon's indicates a failure rate of over 60%.	Broadening management/employee team, completing business plan, developing beta or alpha model and prepare to commence operations	Friends, family, angels, bootstrap, incubators,	50% - 70%
3	less than 3	Early (First) Stage	5 - 10	Significant progress in product development, key development milestones have been met, management team hired, have working product, have an established organization and development is near completion. There may have been some revenues, but the company generally is not profitable. Product development completed and	Establish first major marketing efforts, hire sales and support staff in anticipation of higher sales volumes, product enhancements, product line expansion	Venture capital, strategic business partners	40% - 60%
4	4 - 10	Expansion (Second) Stage	4 - 7	Met additional milestones, and has some product revenue, but is still operating at a loss or marginal profitability. Sufficient product shipments to have market feedback. At this stage, the company usually has a marketing system, solid management and existing or pending sales.	Working capital and fixed asset needs to support the growth of the company with active production and sustainable sales.	Venture capital, strategic business partners	35% - 50%
5	4 - 10	Third Stage	3-5	Rapid sales growth with positive contribution margins have reduced downside risk. Profitable, but cash poor. Has product revenue and has recently achieved breakthrough measures of financial success such as profitability, breakeven, or positive cash flow. Working capital needs outstrip internally generated cash flow. A liquidity event (IPO, sale) could occur at this stage. Possible secured bank credit.	Fund rapid growth and working capital needs.	Venture capital, sale or bank loan	30% - 40%
6	4 - 10	Fourth Stage	3 - 5	Rapid growth toward liquidity point. Sufficient success that risk to outside investors is much reduced. Cash out point in a couple of years, but form of cash out has not been determined. Additional debt to limit equity dilution.	Continuing need for outside cash to sustain rapid growth.	Venture capital, sale or bank loan	25% - 35%
6	4 - 10	Bridge to IPO	1 - 3	Established financial history of profitable operations or positive cash flows. Type of exit has been identified and timing is affected by outside market conditions.	Ongoing capital needs, buy out early stage investors, bridge to IPO.	Venture capital, debt	20% - 35%

SOURCES:
"QED Report on Venture Capital Financial Analysis", QED Research, 1987

[&]quot;New Venture Creation - Entrepreneurship for the 21st Century", 5th Ed., Jeffry A. Timmons "The Valuation of Private Equity Securities Issued in Other Than a Business Combination", AICPA Practice Aid

[&]quot;Venture Capital & Buyouts", Brian Coyle, Glenlake/AMACOM

[&]quot;Financing Your Business With Venture Capital", Frederick Lipman

[&]quot;From Concept to Wall Street", Oren Fuerst & Uri Geiger

[&]quot;A Method for Valuing High-Risk, Long Term Investments", William A. Sahlman, Harvard Business School #9-288-006, 8/12/03

Venture Valuation of Angel and Seed Companies

Darien Kusler

Oregon Health Sciences University – Oregon Graduate Institute Winter Term 2005

Introduction

Several academic business valuation methods exist for determining the potential investor return on capital in seed and angel investments, also referred to as new venture investments. These methods include specific industry heuristics or comparables; the Net Present Value (NPV) method; Adjusted Present Value (APV); Monte Carlo Simulation; Real Options analysis; and the Venture Capital Method (VCM).

Each of these academic models are helpful in valuing private companies, but the high level of uncertainty (risk) and lack of liquidity involved with a new venture investment opportunity coupled with the dynamics of capital markets compels investors to practice valuation as an art form and not a precise science. From the entrepreneur's perspective, a thorough working knowledge of business valuation will assist new venture management in negotiating and justifying investment requirements, ownership stake, and the preferred shareholder terms.

Entrepreneurs also need to remain mindful of the local market for investor resources and its influence on valuation. Local capital market influence can work to the benefit of the new venture firm in offering local expertise and networking opportunities. Likewise, geographic location, limited funding supply, and lack of experienced industry professionals and knowledge can all work to the detriment of a new venture's success.

Valuation Models

In general, academic valuation models have significant benefit for the entrepreneur in building awareness of a realistic business valuation to offer potential investors, who many times ask the valuation question as an "acid test" of a promising business opportunity. As Peter Kolchinsky notes, "[If the entrepreneur's valuation is extremely high] the investor may see the entrepreneur as naïve or delusional and not bother to engage in negotiations. Time is on the investor's side; eventually, an entrepreneur with unreasonable expectations will discover that investors are not interested and will lower valuation until it falls into investor's negotiating range." Let under the entrepreneur in building awareness of a realistic business valuation to offer potential investors, who many times ask the valuation question as an "acid test" of a promising business opportunity. As Peter Kolchinsky notes, "[If the entrepreneur's valuation is extremely high] the investor may see the entrepreneur as naïve or delusional and not bother to engage in negotiations. Time is on the investor's side; eventually, an entrepreneur with unreasonable expectations will discover that investors are not interested and will lower valuation until it falls into investor's negotiating range."

Some of the common valuation models for determining a startup's terminal value and associated valuation are listed in the table below along with their strengths and weaknesses for valuing new venture firms:

Model	Strengths	Weaknesses
Comparables (a.k.a. Market Value Approach): Price Multiples Industry heuristics Merger & Acquisition comparables	Simplistic in application and generally accepted within the industry the firm operates in. Comparables are typically market based and understood by most investors. Generally, all valuations should include a comparable valuation in calculating a terminal value.	Disruptive technology firms may be difficult to compare to existing public firms. When comparing to public firms, the illiquidity of a new venture or private firm should be adjusted by as much as 25-30%. Information on comparable private firms may be difficult or impossible to find.
Net Present Value Method (NPV)	NPV accounts for the tax benefits in the discount rate, which is based on the firm's capital structure or Weighted-Average Cost of Capital.	The WACC formula assumes a constant effective tax rate and capital structure, both of which are likely to evolve in new venture firms. Also, the cash flow profile of new venture firms with early negative outflows followed by distant positive inflows is very sensitive to discount rate assumptions. If using the NPV method, entrepreneurs should create several scenarios (worst case, most likely, and best case) for arriving at a range of values. Comparable company information is required to calculate Beta and target capital structure, which may not fit the strategy and risk profile of a startup firm.
Monte Carlo Simulation	Can be used in combination with the other valuation techniques to simulate multiple probable values for a single variable.	The relationships between variables and shapes of probability distributions makes Monte Carlo Simulation difficult to apply.
Adjusted Present Value Method (APV)	Similar to NPV, but allows for changing capital structure and useful in situations where the effective tax rate is changing.	Complicated to calculate with many of the same weaknesses of NPV, except the weaknesses in applying WACC are overcome.
Venture Capital Method (VCM)	The most popular method for valuing startup firms. Simple to understand and implement.	Requires terminal values to be generated from other methods, typically NPV or APV. VCM is generally calculated with a large discount rate that can undervalue a new venture opportunity significantly. Reasons for the use of large discount are discussed below.
Options Analysis	A very powerful tool that overcomes many of the weaknesses of NPV and APV. Provided entrepreneurs and investors have clear milestones or "gated" strategy process. This method allows stakeholders to determine an accurate valuation in situations where waiting to learn more might be advantageous and otherwise undervalued using NPV or APV.	Option Analysis relies on terminal values from other methods such as NPV or APV. Weaknesses of this method include the capability of putting real world decisions into mathematically solvable problems. Options pricing can artificially inflate values achieved by NPV/APV and incorrectly identify investments that should be avoided.

Table 1: Valuation Models²

Options analysis remains one the most promising and least understood valuation methods. Its applicability to early stage ventures would appear to offer the investor some flexibility in conserving capital and in valuing an opportunity based on an array of strategic options to more efficiently manage investment portfolios. Many experts attribute the low utilization rate of options analysis (considered to be less than 10% of all firms worldwide) to a lack of understanding of its practical application, a shortage of software tools for employing options analysis (coincidentally, DCF and NPV were not popular until desktop spreadsheet software became available), and finally to the complexity of implementing real options analysis. Consider the case of Airbus which implemented real options to value contract "sweeteners," like asset value guarantees, financial support, and performance guarantees in the sale of its airplanes. Similar to venture capital term sheets, neither Airbus nor its customer knew how to value seemingly complex contractual concepts with discounted cash flow. More importantly, Airbus did not understand the cost of these contractual terms. In the end, Options analysis helped the firm justify some of its contractual services costs and ensure profitable business negotiations. For investors and entrepreneurs alike, Decision Tree Analysis combined with Monte Carlo Analysis could be the future for analyzing opportunities and avoiding unnecessary risk.

In interviews with SmartForest Ventures, Cascadia Partners, and Capybara Ventures the preferred method for valuing a new venture investment opportunity was the Venture Capital Method (See diagrams in the appendix). Generally, none of firms interviewed subscribed to a particular method for arriving at a terminal value, but preferred instead to look at the more qualitative aspects of the opportunity given that most were very early stage opportunities and lacked verifiable quantitative data. In determining a terminal value all of the investment professionals interviewed employed a comparables approach through subscription services such as VentureOne, PWC Money Tree, and VentureWire. 4567

Mr. Embree noted in his presentation at Angel Oregon 2005 that early stage VC's don't use discounted cash flow, net present value, or Black-Scholes (options analysis). Comparables of what other investors are paying for similar investments, competition for investment dollars in the local market, and the appeal of a particular technology or market segment are more appropriate. §

The key criteria in determining the appeal of a new investment (and therefore its pre-money valuation) mentioned by each venture professional was the quality and direct market experience of the management team. Mr. Embree stated that, "patents are virtually worthless...[when considering new opportunities]." Instead he preferred to focus on the strength and experience of the management team versus the intellectual property of the firm, even though both aspects are important to the success of a new venture. Mr. Rosenfeld also mentioned, "[Capybara Ventures] is looking for relevant direct experience in [the new venture's] target market." Ms. Kenny also offered her key criteria for determining the valuation of a potential investment:

- 1. Total estimated investment over the life of the opportunity. Certain industries are favored and given higher valuations (consider a software firm with low capital equipment expenditures and expected industry returns versus a manufacturing company).
- 2. Liquidity and exit path. Time to exit and the expected return are key. Before the downturn in venture investments in technology companies (often referred to as pre-bubble) the typically time to exit for seed and early stage investors was 5 to 8 years. Post-bubble the time to exit extends 8 to 10 years from the initial investment.
- 3. Management team and their relevant experience in the market they are pursuing. At least one member needs to have very "deep" industry experience from a business management perspective.
- 4. Other terms and liquidation preferences, all of which fall under the terms in a term sheet and sometimes referred to as "preferred terms."

5. Competition among investors for financing the opportunity. If several investors are evaluating the same opportunity, the valuations and preferred terms negotiated with the startup firm tend to make the opportunity less attractive. This is a one reason why entrepreneurs need to consider the other benefits of doing business with one investor over another as the guidance and experience of the venture capital professional can extend beyond just the capital inputs.⁹

In determining the ownership percentage to investors and ultimately the pre-money valuation of a startup is dependent on how compelling the startup's story is with relation to the market, competitive advantage, the technology behind the startup, financial requirements, future financing requirements (dilutes initial shareholder ownership), and the experience of the management team. Current rules of thumb regarding ownership 33-50% will go to investors of a seed round, while 25-60% will go to investors of the 1st and 2nd rounds. Each of the investment firms interviewed felt it was critically important to offer management and employees an ownership stake ranging between 15% and 30% of the business. ¹⁰

Dana Callow of Millenia Partners wrote, "The valuation of a company at a discreet point in time is subject to a certain range of interpretation. Most seasoned venture investors will value a company within 10-15% range of each other if they have exhausted all quantitative and qualitative data available." This highlights another important consideration between entrepreneurs and investors - venture capital investors and their representative firms have personalities that correlate with particular industries, geographies, growth goals, and access to other professional services like lawyers and investment bankers. Building value is the common goal between investor and entrepreneur. The goodness of fit between the two parties can have a positive impact on the success of a startup business.

Considering that most venture capital investor funds are funding several ventures at one time (many of which will fail), the lack of liquidity of startup investments, the ample supply of opportunities to consider (deal flow), and the additional business consulting or mentoring they provide entrepreneurs; venture capital investors seek to earn a relatively high rate of return on their investments. Also, considering many entrepreneurs are overly-optimistic in their target financial projections, venture investors feel justified in discounting terminal values at 50% or higher depending on the startup's position in the funding cycle. 12

It is evident from discussions with venture professionals that the pre-money valuations for early-stage startup firms is in the single digits. They are typically valued well below \$5 million pre-money. The risk is considerable for firms at this stage and investors are less optimistic about the exit horizon for these firms and the potential for additional capital infusions to maintain them until another financing round can occur or the initial business concept is proven to be unworkable. Therefore, very early-stage venture investors seek a return of nearly 100% on money invested in these ventures.

Some typical investor returns and probabilities are noted in the table below:

Funding Stage	Probability of Success ¹³	Investor's Required Return [™]
Seed Funding:	30% (Very Low)	100% (Extremely High Risk)
Characterized by incorporation, business plan development, and very early product development. Data requirements by investors are typically soft with an emphasis on value proposition, team, disruptive / innovative technology. 15	33 to 50% ownership to investors.	Funding: \$500k Pre-Money Valuation: \$1M+
R&D Capital:	40%	70% (Very High Risk)
Also referred to as Series A, often is the first institutional financing round and reflects progress made in the Seed round. Characterized by continued development, hiring staff, and validating business model/product. Investors will be looking for data on validation of technology and time to market. 16	25 to 60% ownership to investors	Investment: \$3M+ Pre-Money Valuation: \$3-10M
Go-to-Market Capital:	50%	50% (High Risk)
Also referred to Series B. Characterized by early revenue streams and a complete development. Operational development, scale up, and product enhancement for continued revenue growth are the goals of this round. Investors will be looking for hard data on preliminary revenues and go-to-market strategy. ¹⁷	25 to 65% ownership to investors	Investment: \$8M+
Evnancian Canital	900/	Pre-Money Valuation: \$8-32M
Expansion Capital: May be several rounds (Series C+) before "Bridge Level" and IPO. This round is intended to strengthen balance sheet, provide operating capital, finance an acquisition, develop additional products, or prepare the company for exit via IPO or acquisition. Investors are looking for hard data in support of the valuation at this time in form of predictable revenue, EBITDA, and comparables of public firms to arrive at a valuation of the company. 18	80%	30% (Moderate Risk) Investment: \$13.5M+ Pre-Money Val.: \$20-100M

Table 2: New venture risk and return

The typical exit strategy for nearly all new venture opportunities according to Jeff Karan of Woodside Capital Partners is mergers and acquisitions (M&A). Historically, 90% of all startups realize liquidity through M&A, while 10% pursue an initial public offering (IPO). At the moment, nearly 100% of startup firms liquidate through M&A considering the state of the public markets and the return of the historical IPO standards, such as:

• A revenue run rate of \$40 to \$60 million and over \$15 million of that per quarter

- At least 3 quarters of profitability
- Growth rates in excess of 20% to 25%
- Valuations based on multiples of revenues and earnings¹⁹

A final consideration for entrepreneurs is the deal structure including the terms or "preferences" that investors require for the valuation and capital they are offering. ²⁰ The simpler and less complex deal structures are associated with lower valuations. Complexity is directly related to the concepts discussed previously including: ²¹

- Startup's history and achievement of milestones to date
- The experience of the management team
- Total estimated investment until exit
- The time to exit or investment horizon
- Options available for liquidity
- Competition among investors for the opportunity, including local capital constraints

The preferences in the term sheet are designed to protect the investors and offset risk. Investors expect that the startup is creating shareholder value and that investors participate in the potential "upside" of a successful venture beyond just the initial investment through warrants and conversion rights. Investors also want to ensure some level of control over the startup through board membership (voting and veto rights), approval of dilutive issues (stock issuance or M&A activity), and inspection of information.

For the investor the preferences can increase the return on an investment significantly. For the entrepreneur the preferences can make impact management decision making and change the balance of a valuation in favor of the investor. The preferences need to be reviewed and negotiated carefully to ensure both sides share in the growth of startup.

Conclusion

With the possible exception of real options theory, the academic valuation models reviewed in this paper favor established businesses with positive cash flow, stable capital structures, and consistent performance. Coincidentally, these are not characteristics of early stage startup firms.

The contemporary approach to valuing startups includes the use of recent venture funding comparables, the Venture Capital Method, and a lot of confidence. Without quantitative evidence to support a startup's valuation, entrepreneurs and investors practice a tactful art. Negotiating talent and an awareness of the valuation process are the only practical tools an entrepreneur has to find balanced funding and practical advice for the new venture. Ideally, the fit between the venture investment team and the entrepreneur will promote an alignment towards creating value and wealth for the team.

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¹ Peter Kolchinsky, "Director's Note: Setting a Valuation," http://www.evelexa.com/archives/012302.cfm (23 January 2005).

² Josh Lerner and John Willinge, *A Note on Valuation in Private Equity Settings*, Harvard Business School Publishing, Article 9-297-050, 13.

³ Mike Hanley, "Reality Bites," <u>www.cfoeurope.com/displaystory.cfm/1736887/1 print</u> (July/August 2001).

⁴ Wayne Embree, Managing Partner – Cascadia Ventures, personal interview conducted on March 8, 2005.

⁵ Eric Rosenfeld, Managing Partner – Capybara Ventures, personal interview conducted on March 10, 2005.

⁶ Clare Kenny, CFO Smarforest Ventures, personal interview conducted on March 14, 2005.

⁷ My personal thanks to each of the investment professionals that met with me to discuss venture financing.

⁸ Wayne Embree, Angel Oregon 2005 Presentation on Negotiations, Valuation, and the Term Sheet.

⁹ Clare Kenny, personal interview conducted on March 14, 2005.

¹⁰ Wayne Embree, Angel Oregon 2005 Presentation on Negotiations, Valuation, and the Term Sheet.

¹¹ A. Dana Callow, Jr. and Michael Larsen, "Understanding Valuation: A Venture Investor's Perspective," Millenia Partners website (see References), P 5.

¹² Robert C. Higgins, *Analysis for Financial Management* – 7th Edition (New York: McGraw-Hill, 2004).

¹³ Clare Kenny, personal interview conducted on March 14, 2005. Special thanks to Clare for sharing her presentation "Valuation: The Art of the Deal" and insights on the venture investing where the IRR and probabilities were gathered from Vinod Khosla, Kleiner Perkins 2002.

¹⁴ Clare Keny, personal interview

¹⁵ A. Dana Callow, Jr. and Michael Larsen, P 1-4.

¹⁶ A. Dana Callow, Jr. and Michael Larsen, P 1-4.

¹⁷ A. Dana Callow, Jr. and Michael Larsen, P 1-4.

¹⁸ A. Dana Callow, Jr. and Michael Larsen, P 1-4.

¹⁹ Anthony Nassar, "Featured Interview – A Well Traveled Path to Liquidity (Jeff Karan, Managing Partner of Woodside Capital Partners)," http://www.venturemomentum.com/ezine/feb2004issue.htm.

²⁰ A complete discussion of all term sheet terms and preferences is beyond the scope of this paper. The reader is encouraged to read the Angel Oregon 2005 Resource Guide which includes an annotated term sheet from Perkins Coie LLP.

²¹ Wayne Embree, Angel Oregon 2005 Presentation on Negotiations, Valuation, and the Term Sheet.

Selection of Capitalization Rates — Revisited

by JAMES H. SCHILT, ASA, CFA

Nine years ago, in the second issue of <u>Business Valuation News</u> (predecessor to <u>Business Valuation Review</u>) there was published an article by this author entitled "Selection of Capitalization Rates for Valuing A Closely Held Business." As it continues to be referred to, it is time to test its current validity.

Reproduced below is the original table of risk premiums that were intended to be added to the prevailing risk-free rate of return.

Table 1. Risk Premiums for Discounting Projected Income Streams

Category	Description	Risk Premium
1	Established businesses with a strong trade position, are well financed, have depth in management, whose past earnings have been stable and whose future is highly predictable.	6-10%
2	Established businesses in a more competitive industry that are well financed, have depth in management, have stable past earnings and whose future is fairly predictable.	11-15%
3	Businesses in a highly competitive industry that require little capital to enter, no management depth, element of risk is high, although past record may be good.	16-20%
4	Small businesses that depend upon the special skill of one or two people. Larger established businesses that are highly cyclical in nature. In both cases, future earnings may be expected to deviate widely from projections.	21-25%
5	Small "one man" businesses of a personal services nature, where the transferability of the income stream is in question.	26-30%

This "Risk Premium" column was meant to include equity risk, industry risk, and the company-specific risk. The Ibbotson and Sinquefield data on historical stock and bond market returns reported in 1982, the year in which the original article was published, showed that the equity risk premium for common stocks of small publicly traded companies was equal to 15.0 percent over long-term U.S. Treasury bonds based on an arithmetic mean of average annual returns from 1926 through 1981. This is similar to the mid-point between Categories 2 and 4 in the table—subdivisions that cover probably a majority of companies that business appraisers encounter. The latest data published by Ibbotson Associates, successor to Ibbotson and Sinquefield, are for the period 1926-1990, and provide an equity risk premium of 12.0 percent. This is at the lower end

Hanrahan & Associates, LLC.

Michael R. Hanrahan CPA, CFP, CFE, CVA, MCBA – Graduated, cum laude, with a B.S. in Business (double-majoring in accounting and finance) from Eastern Illinois University, holds an MBA, a Graduate Certificate in Finance and a Master of Science in Finance (MSF) degree (magna cum laude). He earned his Certified Management Accountant (CMA) designation, which is currently inactive and is a Master Certified Business Appraiser (MCBA), one of only a few in the nation. He is also a CPA, Certified Financial Planner (CFP), Certified Fraud Examiner (CFE) and Certified Valuation Analyst (CVA).

His primary practice areas include business valuation, forensic accounting, divorce planning, financial modeling, commercial and economic damages, pension valuation, litigation support, fraud investigation; individual, business, corporate and trust taxation and planning, and individual and business financial planning. He has been qualified as an expert witness in Alaska Superior and federal district courts.

Currently managing member of **Hanrahan & Associates**, **LLC**, he was a Principal with Mikunda, Cottrell & Co. for over three years, ran Hanrahan & Company, P.C. for 16 years, and previously worked for Ernst & Whinney, AT&T Alascom and local CPA and consulting firms. He is past president of the Alaskan Chapter of the Institute of Management Accountants, is past secretary of the National Association of Certified Valuation Analysts (NACVA) Alaskan chapter, and is also a member of the American Institute of CPA's, the Alaska Society of CPA's, The Institute of Business Appraisers (IBA), Alaska Association of Tax Consultants, the National Business Valuation Group and the National Association of Forensic Economics. He has appeared on television, spoken and published on various accounting, tax, valuation and business topics, conducted education courses and seminars for the Alaska Bar Association, taught graduate and undergraduate university courses in finance, accounting and taxation, was appointed to NACVA's national teaching team to instruct **CVA** recertification courses, is on the NACVA Course Review Committee and is a member of the IBA Qualifications Review Committee.

BUSINESS VALUATION RELATED SERVICES

7/31/2010

VALUATION CREDENTIALS

Mike Hanrahan is one of only a few **Master Certified Business Appraisers** in the United States and the only Certified Business Appraiser in the State of Alaska. He also holds the Certified Valuation Analyst designation, has an MBA, a graduate Certificate in Finance and a Masters of Science in Finance (magna cum laude) degree. His CV and other information are available at **www.nationalbizval.com/alaska.htm**.

BUSINESS VALUATION OVERVIEW

There are five organizations in the United States, plus the Internal Revenue Service, which promulgate business valuation standards. These standards are similar to each other and recognize three general approaches to business valuation: the asset approach, the income approach and the market approach. In each of these approaches, there are several methods that can be employed.

Asset Approach - One of the alternatives to purchasing a business is to start one. One of the methods under this approach, The Adjusted Net Asset method, ascribes value to the business based on the fair market value of all the assets, both tangible and intangible, that make up the business.

Market Approach - The market approach is viewed by some authors as the most theoretically pure approach to determining value. Its roots come from the economic theory of substitution: "One will not pay more for an item than the amount at which they can obtain an equally desirable substitute." It ascribes value to the subject business based on an analysis of specific market transactions or general market data. Methods under this approach typically employ the use of multiples of a metric, such as net income, EBIT, EBITDA, net operating income, net sales or free cash flow.

Income Approach - This approach bases value on the anticipated future economic benefits accruing to the owner of the business. The first step in applying methods under the income approach is to estimate future sustainable economic income. These revenues, expenses and resulting earnings are the base to which various income valuation methods are applied.

The extent to which each approach and different methods are employed depends on the type of engagement, the level of work requested and the available data.

The estimated fees stated for each of these services described below <u>excludes</u> data, research, resource and related fees, which could be more than \$1,200 for a Full Valuation engagement. The fees also <u>exclude</u> any outside meeting time or time related to preparation for or testimony at any hearing, trial, conference or deposition.

FULL VALUATION – FULL FORMAL REPORT

This type of valuation is normally required for estate, gift, dissenting shareholder actions, litigation and other situations where a comprehensive valuation with a complete discussion of the methods and data is required. It entails a detailed inquiry as to historical business operations, current operations, competition, staffing, prior transactions and other facets of the business. Procedures include research of the economic and market factors affecting the business, analysis of 10–20 years of historical operating and balance sheet data, review of a detailed questionnaire completed by the owners/managers, review of existing contracts and agreements having

an impact on value, researching market data for guideline transactions, a SWOT analysis and applying valuation methodologies from the three approaches, if possible.

This service generally requires about 50 business days to complete and fees average \$18,000. Larger and more complicated businesses or business interests would be more. The report is generally about 30-40 pages, plus approximately 25 pages of appendices and exhibits. The retainer, which is applied to the final bill, is usually \$5,000, more if there is a shortened time frame.

FULL VALUATION – LIMITED REPORT

This type of valuation is the same as above, except that the extent of the discussion in the report and the number of exhibits is limited. It requires the same analysis and procedures, but less effort in report writing.

This service generally requires about 45 business days to complete fees are estimated to be \$15,800. Larger and more complicated businesses or business interests would be more. The report is generally about 5-10 pages, plus appendices and exhibits. The retainer, which is applied to the final bill, is usually \$5,000, more if there is a shortened time frame.

LIMITED VALUATION (CALCULATION) – LIMITED REPORT

This type of valuation is used when the valuation analysis, procedures or appraisal methods are restricted by the client, particular circumstances or for other reasons. Such restrictions could result from time, cost or data constraints. This also includes situations where we agree in advance to limit the valuation approaches and methods, or the extent of the methods and procedures employed.

In such an engagement, all of the analysis and investigation necessary to a cogent full appraisal may not have been done and the report will state the limitations imposed, as well as the fact that if a full appraisal/valuation had been performed, the opinion of value might be different and that difference might be material.

Because of the restrictions, this service is not recommended for litigation purposes.

This service generally requires about 40 business days to complete fees are estimated to be \$12,000. Larger and more complicated businesses or business interests would be more. The report length depends on the circumstances of the limitations and would generally be between 5-10 pages, plus appendices and exhibits. The retainer, which is applied to the final bill, is usually \$5,000 more if there is a shortened time frame.

If a Full Valuation is later required, the information gathered and effort expended on the Limited Valuation can all be used, assuming there were no information restrictions and the valuation date, premise of value and standard of value have not changed.

BUSINESS PRICING

This service consists of assisting you in obtaining and analyzing information necessary to enable you to estimate a reasonable price for the company or business interest. Although it employs the same methods used to value a business, the actual procedures, analysis and data gathering are substantially limited in scope, do not entail those required under business appraisal standards, are not sufficient to constitute a business appraisal/valuation and are not adequate to warrant an expression of either an estimate or opinion of value. There is no opinion of value offered.

The fee for this service is about 40% of that for a full valuation, usually between \$5,000 and \$8,000, and generally takes 30 business days to complete. There is <u>no written report</u> issued. The retainer, which is applied to the final bill, is usually \$5,000.

In litigation cases, because there is <u>no opinion of value</u> being proffered with this level of service, there can be no court testimony.

If a Full Valuation is later required, the information gathered and effort expended on the Business Pricing can all be used, assuming there were no information restrictions and the valuation date, premise of value and standard of value have not changed.

REBUTTAL REPORT

This service is primarily for litigation related cases where a valuation report has been produced by the opposing party and you would like it reviewed and, if possible, challenged. With this approach, because an alternative opinion of value is not being offered, it is often necessary to conduct independent research regarding available market and other valuation data and be able to present the court with alternative valuation methods if they choose to disregard the opposition's report or valuation opinion.

Although information gathering can begin immediately, the bulk of the effort cannot be expended until the other side produces a report. As such, the time and extent of the analysis are constrained by court deadlines. Rebuttal report services are estimated to cost \$10,000 - \$15,000. Larger and more complicated businesses or business interests would be more. The report length depends on the circumstances. The retainer, which is applied to the final bill, is usually \$5,000, more if there is a shortened time frame.

APPRAISAL REPORT REVIEW

This is a formal review of an appraisal or valuation report in accordance with USPAP and IBA Appraisal Report Review Standards, including comparison with existing business appraisal standards. It is useful for determining if the appraisal report is relevant, credible, and transparent and whether the business appraisal methods used were generally accepted and were appropriately and correctly applied.

This service is different from the Rebuttal Report in that it is more formal, does not entail the independent research and does not present alternative calculations. This service is estimated to take 10 business days and cost \$3,000-\$5,000. The retainer, which is applied to the final bill, is usually \$5,000.

MEDIATION VALUATION

This service is limited to situations where the parties use a mediator, want to be a part of the valuation process and are willing to negotiate on calculating the value of the business. This service consist of gathering initial data on the business, performing basic analysis and market data research, and then meeting with the parties and the mediator to assist the parties in determining a value for the business for their purposes. The one day mediation meeting last for 3-8 hours and the parties will have mutually derived a valuation number or range for the business at the conclusion.

The fee for this service is usually between \$3,000 and \$6,000, and generally takes 10 business days after all information is received to complete. Because the parties are deriving their own value for the business, no report is issued. The retainer, which is applied to the final bill, is usually \$5,000.

LISTING FEE

In some dispute cases, I am hired but either no or minimal services are requested. In these cases, the minimum charge is a non-refundable "listing fee" of \$2,000, which will be withheld from the retainer. In cases where I am not hired but listed as an expert in litigation, the listing fee is \$2,000.

HOURLY CONSULTING

This service entails professional consulting on an hourly, as needed basis, to help you gather information, review reports and make decisions. These services include, but are not limited to:

- assisting your staff in understanding business appraisal methods
- reviewing the calculations or appraisals of others
- consulting on available market data sources
- suggesting wording for buy/sell agreements
- obtaining data for analysis
- incorporating uncertainty into valuation and project financial models

The retainer, which is applied to the final bill, is usually \$3,000.