Dannible & McKee, LLP

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Understanding Valuation for a Professional Design Firm

Presented by:

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About Dannible & McKee, LLP

- Dannible & McKee, LLP is a full-service CPA firm that delivers superior outcomes through a combination of technical knowledge, deep understanding of individual clients' businesses and a commitment to personal, responsive service
- Our clientele consists of companies across New York State and the United States and represents a diversity of business enterprises
- Dannible & McKee is headquartered in Syracuse, NY and has additional offices in Binghamton, NY, Schenectady, NY, Auburn, NY and Tampa, FL
- We provide assurance, accounting, tax, forensic, valuation and advisory services
- Industries include: A/E, Automotive, Construction, Healthcare, Manufacturing, Not-for-Profit, and Retail/Wholesale

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Dannible/McKee and Associates, Ltd.

Dannible/McKee and Associates, Ltd. has gained national recognition as one of the leading consulting firms to the A/E industry.

For over 40 years, our consultants have worked with firms throughout the country in determining the fair market value of their firm, developing creative strategies for ownership transfer and establishing buy/sell agreements among owners to ensure success in the ownership transition process.

Learn more at **dmconsulting.com**

Dannible/McKee and Associates, Ltd.

Business Valuation

- Internal Ownership Transition
- Mergers & Acquisitions
- Estate & Gift Tax
- Employee Stock Ownership Plans (ESOPs)
- Stock Option/Stock Bonus Plans
- Buy/Sell Agreements
- Shareholder Disputes

Ownership Transition

- Internal Transition Plans
- Stock Redemptions
- Non-Statutory Deferred Compensation Plans
- Employee Stock Ownership Plans (ESOPs)
- Recapitalizations
- Mergers & Acquisitions
- Buy/Sell Agreements

A/E/P Consulting

- Benchmarking/Financial Analysis
- Incentive Compensation Plans
- FAR Overhead Rate Analysis
- Mergers & Acquisitions
- Litigation Support/Expert Witness
- Employee Benefit Plans

Deborah E. Finch, CPA/ABV, CVA

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Academic and Professional Credentials

- Certified Public Accountants in New York State
- Accredited in Business Valuation (ABV)
- Certified Valuation Analyst (CVA)
- Bachelor of Science Degree, Accounting, cum laude, Lemoyne College

Positions and Experience

- Partner, Dannible & McKee, LLP, Certified Public Accountants and Consultants
- Principal, DM Consulting Group (a business valuation company)
- Valuation and Ownership Transition Consultant to Architectural, Engineering & Design Firms

Professional Memberships and Organizations

- American Institute of Certified Public Accountants (AICPA)
- New York State Society of Certified Public Accountants (NYSSCPA)
- National Association of Certified Valuators and Analysts (NACVA)

Deborah E. Finch, CPA/ABV, CVA

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Publications and Seminars

- “Succession Planning for the Design Professional” – National Seminar, Instructor
- “Multi-State Income Tax Issues for A/E Firms” - online article, July 2015
- “Valuing a Professional Design Firm: How Does Your Firm Measure Up?” – AIA New Your State – Saratoga Design Conference – October 2015
- “Planning for the Future” – Construction Contractor – Winter 2016 edition
- “Why Your Internal Ownership Transition Plan is Failing” – ACEC National Convention, May 2019
- “Tax Planning Strategies for A/E Firms and Their Owners” – Webinar, October 2019

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Publications and Seminars

- “Avoiding Common Pitfalls in Business Valuation and Ownership Transition” – D&M Tax & Financial Planning Seminar – November 2022
- “Critical Elements of Effective Buy/Sell Agreements” – D&M Tax & Financial Planning Seminar – November 2023
- “Why Now is the Time to Start Planning Your Company’s Business Succession” – CNY Business Journal, Ask the Experts Series, June 2024
- “Is Your Design Firm Reaping the Benefits of the Enhanced Commercial Buildings Energy-Efficiency Tax Deduction” – online article, April 2025
- “Planning for the Future: Five Business Succession Options and Their Tax Implications” – online article, May 2025

Proper Accounting Basis and Format of Financial Statements for Valuation Purposes

"Revenue is vanity…margin is sanity…cash is king."

~ Unknown

Methods of Accounting for A/E Firms

Cash Method of Accounting

- **Income Recognition** – Revenue is recognized when cash is received; expenses are recognized when cash is paid
- **Advantages** – Popular because of its simplicity and flexibility and most small businesses are allowed to use this method for tax reporting purposes
- **Disadvantages** – Not in accordance with GAAP, understates net income in a growing firm, understates net worth on balance sheet and fails to match revenue with costs incurred to generate that revenue

Accrual Method of Accounting

- **Income Recognition** – Revenue is recognized when earned; expenses are recognized when incurred
- **Advantages** – Properly matches revenue and expenses (to manage firm for profitability), complies with GAAP
- **Disadvantages** – Not as simple as cash method

Financial Statement Format for A/E Firms

DEF Associates, P.C.
Historic Balance Sheet - Accrual Basis

Assets	December 31, 2024	December 31, 2023
Current assets:		
Cash and cash equivalents	$ 186,247	$ 136,821
Trade accounts receivable	962,000	612,500
Work-in-process	186,210	208,300
Less: Allowance for doubtful accounts	(83,520)	(26,000)
Net accounts receivable	1,064,690	794,800
Prepaid expenses	76,200	23,500
Due from stockholders	6,241	14,516
Other receivables	7,600	4,000
Total current assets	1,340,978	973,637
Property and equipment:		
Land	10,000	10,000
Building and building improvements	420,000	400,000
Furniture and fixtures	320,429	265,402
Automobiles	25,679	25,679
	776,108	701,081
Less: Accumulated depreciation	(393,359)	(339,761)
Net fixed assets	382,749	361,320
Cash value of officers' life insurance	12,900	6,200
Total assets	$1,736,627	$1,341,157

Financial Statement Format for A/E Firms

DEF Associates, P.C.
Historic Balance Sheet - Accrual Basis

Liabilities and Stockholders' Equity	December 31, 2024	December 31, 2023
Current liabilities:		
Current portion of debt	$ 46,500	$ 32,500
Demand note payable	138,200	105,400
Deferred income taxes	220,000	170,000
Trade accounts payable	376,000	353,000
Client retainers	83,000	-
Payroll taxes withheld	21,500	20,200
Other accrued liabilities	87,266	77,332
Total current liabilities	972,466	758,432
Deferred income taxes	48,000	16,000
Long-term debt	260,000	215,000
Stockholders' equity:		
Common stock	15,000	15,000
Retained earnings	441,161	336,725
Total stockholders' equity	456,161	351,725
Total liabilities and stockholders' equity	$1,736,627	$1,341,157

Financial Statement Format for A/E Firms

DEF Associates, P.C.
Accrual Basis Income Statement - A/E Format

	2024		2023		Industry
	Amount	**% Net**	**Amount**	**% Net**	**Standard**
Gross revenue	$3,925,399	115.00%	$2,813,039	115.00%	
Less: Consulting & reimbursables	512,009	15.00%	366,918	15.00%	
Net revenue	3,413,390	100.00%	2,446,121	100.00%	100.00%
Less: Direct labor	960,396	28.14%	701,905	28.69%	30.60%
Contribution margin (gross profit)	2,452,994	71.86%	1,744,216	71.31%	69.40%
Indirect (overhead) expenses	1,884,305	55.20%	1,213,220	49.60%	49.30%
Operating income	568,689	16.66%	530,996	21.71%	20.10%
Other income (expense):					
Interest expense	(63,200)	-1.85%	(43,275)	-1.77%	
Interest income	28,500	0.83%	18,200	0.74%	
Miscellaneous income	4,200	0.12%	6,200	0.25%	
	(30,500)	-0.90%	(18,875)	-0.78%	-1.80%
Net income before discretionary items	538,189	15.76%	512,121	20.93%	18.30%
Less: Discretionary expenses:					
Discretionary bonuses	350,000	10.25%	250,000	10.22%	5.10%
Profit sharing contribution	35,000	1.03%	30,000	1.23%	2.60%
Net income before taxes	153,189	4.48%	232,121	9.48%	10.60%
Provision for income taxes:					
Current taxes (refund)	(11,000)	-0.32%	25,000	1.02%	
Deferred tax	82,000	2.40%	40,000	1.64%	
	71,000	2.08%	65,000	2.66%	0.70%
Net income (loss)	$82,189	2.40%	$167,121	6.82%	9.90%

Methods of Valuation for a Design Firm

"Managers and investors alike must understand that accounting numbers are the beginning, not the end, of business valuation."

~ Warren Buffett

A/E Firm Valuation

A proper business valuation is both an **art** and a **science**

- The **science of business valuation** is represented by systematic approaches, quantitative analysis, fact gathering and research about the subject company, the industry in which it operates and other internal and external factors impacting the company's business and ability to generate future cash flows
- The **art of business valuation** is represented by those who have the depth of experience and expertise in the science of valuation to achieve the best result by weighting the underlying components of value and taking into account all relevant issues at hand

A/E Firm Valuation

Business valuations for A/E firms are conducted for a variety of strategic, legal, tax and financial reporting purposes, including the following:

- **Internal Ownership Transition**
- Estate, Gift & Income Tax
- Employee Stock Ownership Plans
- Financial Reporting
- Allocation of Purchase Price
- Buy/Sell Agreements
- Reorganizations and Bankruptcies
- Business Planning
- Mergers & Acquisitions
- Litigation & Ownership Disputes
- Dissenters' Rights Cases
- Shareholder Oppression Cases
- Goodwill Impairment
- Family Limited Partnerships
- Recapitalizations
- Stock Option Plans

Standards of Value

- The proper **Standard of Value** for valuing a closely-held A/E firm is an assumption or set of assumptions regarding the specific characteristics of the buyer and seller (either hypothetical or actual) in a given set of circumstances surrounding a particular transaction
- There are **three** principal **Standards of Value** for valuing a closely-held business
  - ***Fair Market Value (FMV) – IRS Value***
  - ***Fair Value (FV) – Stockholder's Value (defined by statute)***
  - ***Investment Value (IV) – Merger/Acquisition Strategic Value***

Fair Market Value

- IRS Revenue Ruling 59-60 defines **Fair Market Value** as:

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

Fair Market Value

- **Tax Situations** - **FMV** standard is the most recognized and accepted standard used in all tax situations (estate, gift, income tax, purchase price allocations, etc.)
- **Key Elements** - **FMV** standard assumes that the parties to the transaction are "hypothetical," the transaction is at "arm's-length" and that the buyer and seller are able and willing
- **Premiums and Discounts** - **FMV** considers a premium for control and a discount for minority interest
- **Not Unique** - Since **FMV** is based on a hypothetical buyer and a hypothetical seller, this value can be affected by an actual buyer or seller's unique motivations

Fair Value

- **State Law** - **FV** is the appropriate standard for state actions including dissenting rights cases and shareholder oppression cases
  - The **FV** definition and application can vary from state to state and based on the legal purpose of the valuation
- **Uniform Business Corporation Act Definition** - **FV** is defined as "the value of the shares immediately before the effectuation of the corporate action to which the dissenter objects, excluding any appreciation or depreciation in anticipation of the corporate action"
- **FV vs. FMV** - **FV** possesses some characteristics of **FMV** in that there is commonly a willing buyer <u>but</u> <u>not</u> a willing seller
  - However, the parties are typically known and the buyer may be more knowledgeable than the seller
  - <u>Many valuation experts consider **FV** to be **FMV** without discounts for minority interest or lack of marketability</u>

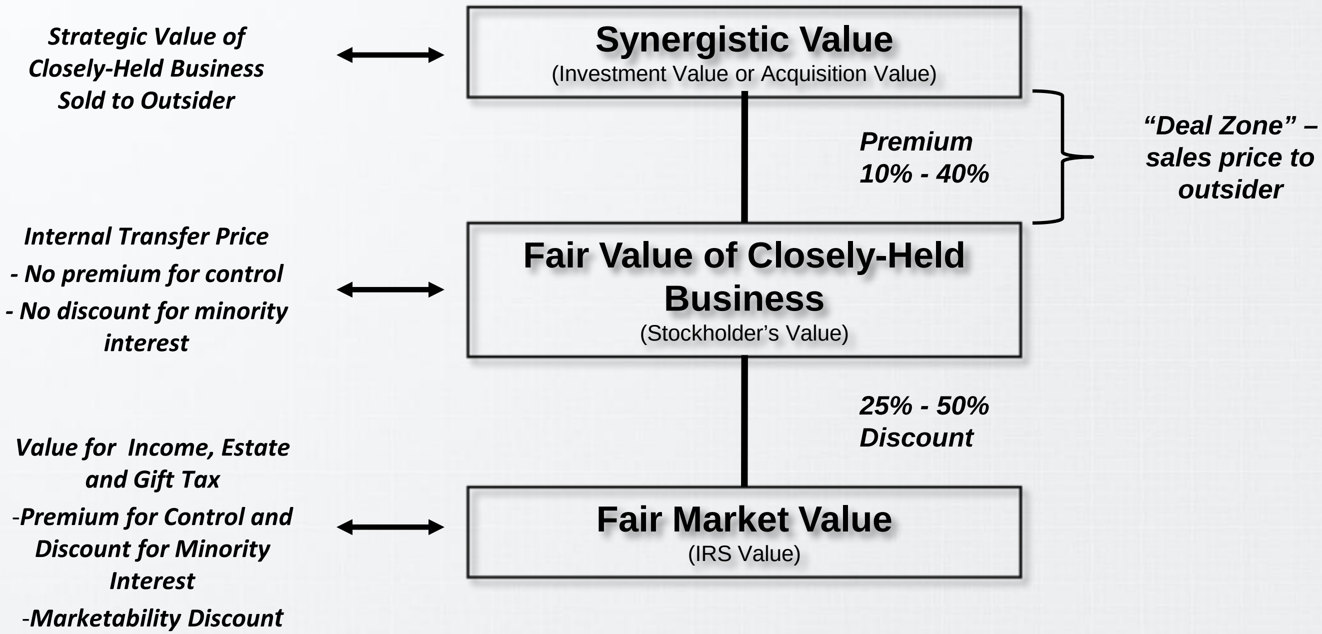
Investment Value

- **International Glossary of Business Valuation Definition** - **IV** is defined as "the value to a particular investor based on individual investment requirements and expectations"
- **IV vs. FMV** - In contrast to **FMV**, **IV** identifies a particular buyer or seller and the attributes that buyer or seller brings to the transaction
- **Synergistic Value** - **IV** is commonly referred to as synergistic value because of synergies between the buyer and seller (geographic location, specific product or service offerings, know-how, customer base, competition, etc.)
- **Mergers/Acquisitions** - The **IV** standard is typically used in merger/acquisition transactions

Levels of Value

- **Levels of Value** refer to the value of a business enterprise considering the characteristics of marketability in the public or private marketplace and the degree of control to be exercised by the buyer over the future operations of the enterprise
- In arriving at the proper **Level of Value** in valuing closely-held businesses, valuation discounts and premiums are often applied
- Alternatively, adjustments to the **Discount Rate** or **Capitalization Rate** under the **Income Approach** are applied to reach the appropriate **Level of Value** conclusion

Levels of Value



Premise of Value

- **Premise of Value** is an assumption regarding the most likely set of transactional circumstances that may be applicable to the subject valuation. The three (3) main **Premises of Value** are:
  - **Going Concern Value** - The value of a business enterprise that is expected to operate into the future
    - The intangible elements of going concern value result from factors such as having a trained workforce, an operational plant and the necessary licenses, systems and procedures in place
  - **Orderly Liquidation Value** - The liquidation value at which the asset or assets are sold over a reasonable period of time to maximize the proceeds received
  - **Forced Liquidation Value** - The immediate liquidation to minimize the timing in which the sale proceeds are received (i.e. auction price)

Elements of Value – Revenue Ruling 59-60

IRS Revenue Ruling 59-60 introduced **eight (8)** factors that must be considered in determining the fair market value of a closely-held business which are applicable in design firm valuation

- The **nature of the business** and **history of the enterprise** since its inception
- The **economic outlook in general** and the condition and outlook of the **specific industry** in particular
- The **book value of the stock** and financial condition of the business
- The **earning capacity** of the business
- The **dividend-paying capacity** of the business
- Whether or not the enterprise has any **goodwill or intangible value**
- **Sales of the stock** and the **size of the block** of stock to be valued
- The **market price of stocks** engaged in the same or **similar line of business** having their stocks actively traded in a free or open market

Valuation Approaches

- Valuations of closely-held businesses fall into any one of three (3) general approaches
  - **Asset Approach -** Value of the business is based solely on the value of the entity's assets net of liabilities, including both tangible and intangible assets
  - **Income Approach** - Most widely used method of valuing a closely-held business where value is the sum of the present values of the expected future economic benefits attributable to the ownership interest
  - **Market Approach** - Value of a closely-held business is determined by reference to the market values of comparable companies who are either publicly-traded or were recently sold in the private marketplace

Valuation Approaches – Asset Approach

- **Book Value Method** – The value of the business is determined by reference to its historic book value (assets – liabilities) as reflected on its financial statements

- **Adjusted Book Value Method** – The value of the business is determined by reference to the historic book value, adjusted to fair market value to reflect the settlement of its assets and liabilities in cash as of the date of valuation
  - Presents the value of all tangible and intangible assets and liabilities
  - Generally represents "liquidation value"

Valuation Approaches – Asset Approach
Adjusted Book Value Method

- Due to the limitations inherent in financial statements prepared under GAAP, adjustments to a firm's historic balance sheet are required to determine the fair market value of a design firm under this method

- The valuation adjustments common to design firms in determining the value under the Adjusted Book Value Method include:

  - Securities and investments

  - Billed receivables and an allowance for uncollectible accounts receivable

  - Unbilled work-in-process

  - Property, plant and equipment (based on depreciation methods employed)

  - Real estate (if any)

Valuation Approaches – Asset Approach Adjusted Book Value Method

- Libraries, maps & drawings
- Value of joint ventures, other investments, etc.
- Cash surrender value of life insurance
- Unrecorded liabilities (vacation pay, sick pay, deferred compensation, etc.)
- Deferred income taxes

Valuation Approaches – Asset Approach

Pros	Cons
• Easy to calculate and understand • Establishes "baseline" value or liquidation value of the business	• Ignores future earning capacity of the business • Financial statements prepared under GAAP may not be representative of market value due to historical cost principle

- Although Revenue Ruling 59-60 requires that the Asset Approach be considered in business valuation, it is seldom relied upon in rendering a final conclusion of value for operating companies in which value is more appropriately determined by reference to earnings or cash flow

Valuation Approaches – Asset Approach

Consider the following example of **Firm A** and **Firm B**

	Firm A	Firm B
Book Value per Balance Sheet	$500,000	$500,000
Annual After-Tax Earnings	$100,000	$200,000

Are both firms worth the same?

Valuation Approaches – Income Approach

- The **Income Approach** is most reflective of the "forward looking" premise of business valuation

- Under the **Income Approach**, the value of a closely-held business equals the *present value of the expected future economic benefits discounted at the appropriate rate to reflect the risk associated with the entity*

- The **Income Approach** can be represented by a fraction (or series of fractions) where present value equals:

Expected Future Economic Benefit Stream
Discount Rate

Valuation Approaches – Income Approach
The Economic Benefit Stream

- As illustrated above, the two critical components of the income approach are the **economic benefit stream** and the **discount rate** used to convert the economic benefit stream to present value
- The economic benefit stream should match the characteristics of the denominator (e.g. pre-tax or after-tax) and should be appropriate for the ownership interests being valued
- The economic benefit stream used to value design firms under the income approach is usually reflected as **after-tax net income**
- In order to predict future earnings, the firm's past earnings may be used as a guide
- Revenue Ruling 59-60 indicates: *"Prior earnings records usually are the most reliable guides for future expectancy."*

Valuation Approaches – Income Approach Process

Normalization Process	•Restatement of historic financial statements that can be used to determine future economic benefit stream •Normalization adjustments include adjustments for ownership characteristics (control vs. minority), GAAP departures, extraordinary or nonrecurring items, non-operating items, taxes and synergies
Define Benefit Stream	•Single period benefit streams (capitalization method) and multi-period benefit streams (discounted method) are usually defined as “net income” or “net cash flow” •Whether earnings or cash flow is used, it is important to determine who will receive benefit stream – equity holders or invested capital holders (debt and equity holders)
Develop Discount Rate	•Build-Up Method •Capital Asset Pricing Model (CAPM) •Weighted Average Cost of Capital (WACC)
Calculate Present Value	•Utilizing either the capitalization method or the discounted method, apply the proper discount or capitalization rate to the economic benefit stream to determine present value under the Income Approach

Valuation Approaches – Income Approach
The Economic Benefit Stream

The earnings stream should be adjusted to take into consideration:

- Abnormal/extraordinary items
- Non-operating or non-recurring items that are not expected to replicate in future years
- Accounting methods which fail to reflect economic value (i.e. long-term contracts, depreciation methods, etc.)

Valuation Approaches – Income Approach
The Economic Benefit Stream

Common adjustments to the income stream for the design profession include the following:

- Discretionary bonuses and salaries
- Pension, profit-sharing and retirement plan contributions
- Depreciation
- Non-recurring expenses relating to marketing, office start-up expenses, E&O claims, etc.
- Rent and other related-party charges
- Non-operating items of income including gains on fixed asset sales, investment gains, etc.
- Income taxes

Valuation Approaches – Income Approach
The Economic Benefit Stream – Effective Tax Rate

- The historic and adjusted earnings stream should take into consideration the appropriate tax rate applicable for the firm

- **C Corporations** - The tax rate should be the tax rate applicable to the subject entity

- **S Corporations, Partnerships, LLCs, LLPs, and Sole Proprietorships** - The tax rate should be the tax rate applicable to the individual owners of the subject entity

Valuation Approaches – Income Approach Determining the Economic Benefit Stream

- Historic earnings, adjusted for abnormal and non-recurring items are usually the best indicator of future earnings in a design firm
- Under the income approach, the "look-back period" should be the most recent period and most representative of future performance
- Most design firm valuations utilize a five (5) year look-back period as this generally encompasses a complete business cycle of a design firm
- For firms that have been in business less than five (5) years, a shorter period is used

Valuation Approaches – Income Approach
Determining the Economic Benefit Stream

- Past earnings should not simply be averaged in order to arrive at future earnings – evaluation of the recent trends and expected future performance of the firm needs to be taken into consideration
- Consider the following example of two design firms and their historic after-tax adjusted net income for a representative five (5) year period:

Year	Firm A	Firm B
20X1	$5,000	$45,000
20X2	15,000	20,000
20X3	15,000	15,000
20X4	20,000	15,000
20X5	45,000	5,000
Total	$100,000	$100,000
Average	$20,000	$20,000

Based on the above, both firms would have average earnings of $20,000; however, both firms have very different trends.

Valuation Approaches – Income Approach
Determining the Economic Benefit Stream

- A more representative approach would be to weight the earnings in order to give benefit to the discernable trend in earnings demonstrated by each firm
- Consider the following weighted average earnings calculation for Firm A:

Year	Earnings	Weight Factor	Weighted Earnings
20X1	$5,000	1	$5,000
20X2	15,000	2	30,000
20X3	15,000	3	45,000
20X4	20,000	4	80,000
20X5	45,000	5	225,000
	Total		385,000
	Divided by: Weight Factors		15
	Weighted Average		$25,667

This weighting reflects the upward trend in earnings for Firm A. In similar fashion, Firm B would have a weighted average earnings of $14,333, each resulting in a different valuation.

Valuation Approaches – Income Approach
Determining the Discount Rate

- The **Discount Rate** or **Cost of Capital** (the denominator) represents the rate of return required to attract funds to the investment
- The **Discount Rate** incorporates certain investor expectations relating to the future economic benefit stream including the expected rate of return, inflation and the risk (uncertainty) surrounding future economic benefits
- **Discounted Future Earnings (Cash Flow) Method** - A method under the income approach in which a series of future economic benefits is converted to present value using an appropriate **Discount Rate**
- **Capitalization of Earnings (Cash Flow) Method** - A method under the income approach in which the economic benefits for a single period are converted to present value through division by a **Capitalization Rate**
- As illustrated in the foregoing, the key difference between a **Discount Rate** and a **Capitalization Rate** is the expected long-term growth rate of the business being valued

Capitalization Rate = Discount Rate - Long-Term Growth Rate

Valuation Approaches – Income Approach
Determining the Discount Rate

- The **Discount Rate** or **Cost of Capital** is determined under one of several methods
  - **Build-Up Method (BUM)**,
  - **Capital Asset Pricing Model (CAPM)**
  - **Weighted Average Cost of Capital (WACC)**

- The **Build-Up Method** is the most popular method for developing a **Discount Rate** as it "builds" a discount rate beginning with the market rates of return to determine the appropriate **Discount Rate** for the company being valued
  - The **Build-Up Method** builds a capitalization rate starting with a "risk-free" investment rate, then increasing this base rate for additional risk/returns associated with equity investments in closely-held stocks

Determining the Discount Rate – Build-Up Method

Market Driven Rates of Return – Firm Cannot Control

Risk-Free Rate	Market rate of return on an investment free from risk. Generally equal to the 20-year Treasury Bond rate as of the date of valuation or normalized rate derived by Kroll's Cost of Capital Navigator	3.50%
Equity Risk Premium	Market rate of return that investors must receive to entice them to invest in the public equity markets often derived by Kroll	5.50%
Size Premium	Market rate of return that investors must receive to entice them to invest in smaller businesses compared to those which comprise the Equity Risk Premium often derived by Kroll	10.73%

Industry Driven Rates of Return – Firm Has Little Control ← **Industry Risk Premium**

Firm Driven Rates of Return – Firm Has Complete Control ← **Subjective Risk Premium**

Industry Risk Premium	Market rate of return that investors must receive to entice them to invest in a particular industry whose rates of return are determined by Kroll	1.23%
Subjective Risk Premium	Final component of Build-Up Method which considers the particular quantitative and qualitative information of the subject company being valued including size, operations, management strength, diversification, etc. determined by the valuator	7.00%
	Discount Rate	27.96%
	Less: Long-Term Sustainable Growth Rate	-3.00%
	Capitalization Rate	24.96%

This results in a capitalization rate of 25% or an earnings multiplier of 4.00 for the firm (1 / 25% = 4.00)

Build-Up Method – Subjective Risk Premium

The additional risk factors to be considered in developing a capitalization rate or earnings multiplier are based on the individual circumstances existing in each particular firm. These factors include, but are not limited to:

- The size of the firm and the nature of its design practice
- Geographic area served
- Marketing and management strength
- Contract backlog
- Stability or irregularity of earnings
- Earnings diversity
- Growth trend in revenue
- Financial performance compared to industry norms
- Depth of management
- Depth of ownership

Valuation Approaches – Income Approach

Pros	Cons
• Considers future earnings potential • Measures value in terms of benefit stream – net income, EBITDA, cash flows • Flexible and versatile	• Establishing reliable projections of future performance can prove difficult • Need for subjective input on factors like discount rates • Complexity

Valuation Approaches – Income Approach

Consider the following example of **Firm A** and **Firm B**

	Firm A	Firm B
Annual After-Tax Earnings	$100,000	$100,000
Book Value per Balance Sheet	$500,000	$1,000,000

Are both firms worth the same?

Valuation Approaches – Market Approach

- **Public Multiples of Value Method** - Uses guideline publicly traded companies and applies median multiples of items such as earnings, cash flow, EBITDA, revenue, and book value
- **Comparable Transaction Method** - Various services provide details on the acquisition of private companies. From these databases, comparable companies can be selected and median multiples can be determined similar to those with public companies as indicated above
- **Industry Rules of Thumb** - A formula based valuation calculation using multiples of company data such as sales, net income, or EBITDA using multiples commonly applied for actual transactions within specific industries

Valuation Approaches – Market Approach

Guideline Public Company Multiples Sample

	ACM	EEI	FLR	HIL	TDY	TTEK	VSR	VSEC	WLDN
Enterprise Value / Revenue	0.44	0.30	0.40	0.45	1.68	0.88	0.21	0.79	0.39
EV / EBITDA	11.49	10.33	9.27	6.23	14.30	9.04	(26.49)	8.41	9.88
EV / Common Equity	1.69	1.02	2.93	1.99	2.68	1.63	0.61	1.99	1.64

	Median	Mean
Enterprise Value / Revenue	0.44	0.62
EV / EBITDA	9.27	5.83
EV / Common Equity	1.69	1.80

ACM	*Aecom*
EEI	*Ecology and Environment*
FLR	*Fluor Corporation (NEW)*
HIL	*Hill International Inc*
TDY	*Teledyne Technologies Incorporated*
TTEK	*Tetra Tech, Inc.*
VSR	*Versar Inc.*
VSEC	*VSE Corporation*
WLDN	*Willdan Group, Inc.*

Valuation Approaches – Market Approach

Pros	Cons
• Easy to calculate and understand • Considers external factors including market multiples at the valuation date • Utilizes key value indicators that buyers in a particular industry might consider	• Comparable public companies often are not really comparable to a privately held company that is considerably smaller and often less diversified • Rules of thumb often provide a very basic calculation that does not consider all relevant factors

Valuation Approaches – Market Approach – Rules of Thumb

Market Approach Example
Value Based on Industry Rules of Thumb

	Firm A	Firm B	Firm C
Value per book value:			
Book value	$ 1,400,000	$ 2,850,000	$ 2,200,000
Industry median multiple*	1.8	1.8	1.8
	$ 2,520,000	$ 5,130,000	$ 3,960,000
Value per net revenue:			
Net revenue	$ 9,200,000	$ 7,800,000	$ 8,900,000
Industry median multiple*	0.64	0.64	0.64
	$ 5,888,000	$ 4,992,000	$ 5,696,000
Value per EBITDA:			
EBITDA	$ 1,041,000	$ 720,000	$ 1,445,000
Industry median multiple*	4.23	4.23	4.23
	$ 4,403,430	$ 3,045,600	$ 6,112,350
Value per # of Employee:			
Number of employees	95	85	90
Industry median multiple*	$ 96,661	$ 96,661	$ 96,661
	$ 9,182,795	$ 8,216,185	$ 8,699,490

**Median for all firms from Zweig Group's 2024 Valuation Report of AEC Firms.*

Valuation Approaches – Market Approach – Rules of Thumb

Pros	Cons
• They are market driven • They can provide market comparisons • They may be used to develop a range of value • They are easy to use and understand • They can be used to determine “preliminary value”	• They are very general in nature • They often result in significant value ranges depending on the rule of thumb being employed • They ignore the specific characteristics of a given firm which contribute to value

Valuation of a Professional Design Firm

- Design firm valuation is best accomplished by utilizing a “hybrid” approach which considers the fair market value of the firm’s net assets at a particular point in time to establish a “minimum value” for the firm (i.e. orderly liquidation value)

- However, the fair market value of the firm’s net assets ignores the firm’s earning capacity and ability to generate future cash flow to owners which is reflected as “goodwill value” or “practice value”

- Therefore, the best approach to value a professional design firm is to consider both the value of the net assets as well as the firm’s future earning capacity

- Dannible & McKee commonly refers to this approach as the **“A/E Formula Approach”** to design firm valuation

- From a theoretical valuation perspective, this methodology is a “Capitalization of Earnings” model which is commonly used to determine the value of ongoing professional service firms

Total Firm Value = Adjusted Book Value + Goodwill Value

Valuation of a Professional Design Firm

- The starting point under the **A/E Formula Approach** is a detailed analysis of a firm's historical financial statements prepared on the accrual method of accounting

- Assets and liabilities are analyzed in detail to determine their "fair value" as of the date of valuation and represents a minimum value or floor value

- The firm's historic income statement is analyzed in great detail to ascertain the firm's future earning potential; key considerations include:

  - The trend in net fee revenue

  - Financial ratio analysis and comparison to industry norms

  - Pre-discretionary net income available to owners

  - Risk considerations (both quantitative and qualitative) affecting the firm's future earning potential

Valuation of a Professional Design Firm

- To determine the "goodwill value" of a professional service firm, the capitalization of earnings approach is used
- Under this approach, it is first necessary to adjust the firm's historic earnings stream for non-operating and non-recurring items of income and expense
  - In addition, adjustments for "discretionary items" are required to determine the net income available to the owners of the Firm
- The adjusted historic earnings are then used to help "predict" or ascertain the firm's future earning potential in the absence of multi-year projections or budgets
- A proper "earnings multiplier" is then applied to the adjusted earnings to determine goodwill value
  - The "earnings multiplier" is the inverse of the "discount rate" or "capitalization rate" which is used to convert a future earnings stream to present value

D.M. Associates – Example
Adjusted Book Value – 20X9

	Historic Book Value		Valuation Adjustments	Adjusted Book Value
Assets				
Current assets:				
Cash	$46,078			$46,078
Money market funds	143,373			143,373
Accounts receivable	1,768,738	(1)	-	1,768,738
Allowance for doubtful accounts	(170,683)	(1)	(210,000)	(380,683)
Unbilled work in process	-	(2)	562,098	562,098
Prepaid expenses	23,721			23,721
Prepaid insurance	129,303			129,303
Total current assets	1,940,530		352,098	2,292,628
Fixed assets:				
Leasehold improvements	465,100			465,100
Furniture and fixtures	260,799			260,799
Computers & software	312,847			312,847
Field equipment	408,791			408,791
Accumulated depreciation	(1,043,216)	(3)	268,000	(775,216)
Net fixed assets	404,321		268,000	672,321
Other assets:				
Libraries, maps & drawings	-	(4)	20,000	20,000
Investment in joint venture	5,000	(5)	182,500	187,500
CSV of officers life insurance	292,771	(6)		292,771
Loans receivable from stockholders	105,000	(7)	(105,000)	-
Other assets	27,654			27,654
Total other assets	430,425		97,500	527,925
Total assets	$2,775,276		$717,598	$3,492,874

D.M. Associates – Example
Adjusted Book Value – 20X9

	Historic Book Value		Valuation Adjustments	Adjusted Book Value
Liabilities and Stockholders' Equity				
Current liabilities:				
Accounts payable	$227,106			$227,106
Current portion of debt	146,770			146,770
Accrued profit sharing	219,612			219,612
Accrued liabilities	44,042	(8)	204,500	248,542
Payroll taxes withheld	50,067			50,067
Income taxes payable	25,265			25,265
Deferred income taxes	-	(9)	528,592	528,592
Total current liabilities	712,862		733,092	1,445,954
Long-term liabilities:				
Long-term liabilities	395,266		-	395,266
Total liabilities	1,108,128		733,092	1,841,220
Stockholders' equity:				
Common stock	5,000		-	5,000
Retained earnings	1,662,148	(10)	(15,494)	1,646,654
Total stockholders' equity	1,667,148		(15,494)	1,651,654
Total liabilities and stockholders' equity	$2,775,276		$717,598	$3,492,874

D.M. Associates – Example Income Statement

	For the Year Ended December 31,									
	20X5	% Net	20X6	% Net	20X7	% Net	20X8	% Net	20X9	% Net
Gross revenue	$2,945,147	122.71%	$3,640,777	126.09%	$4,025,925	124.64%	$4,587,740	127.44%	$5,235,849	125.79%
Outside consulting & reimbursables	545,146	22.71%	753,282	26.09%	795,925	24.64%	987,741	27.44%	1,073,349	25.79%
Net revenue	2,400,001	100.00%	2,887,495	100.00%	3,230,000	100.00%	3,599,999	100.00%	4,162,500	100.00%
Direct labor	813,559	33.90%	962,500	33.33%	1,113,793	34.48%	1,216,216	33.78%	1,378,311	33.11%
Gross profit (margin)	1,586,442	66.10%	1,924,995	66.67%	2,116,207	65.52%	2,383,783	66.22%	2,784,189	66.89%
Indirect expenses	1,408,347	58.66%	1,750,428	60.62%	1,862,649	57.67%	2,004,349	55.66%	2,306,373	55.42%
Operating income	178,095	7.44%	174,567	6.05%	253,558	7.85%	379,434	10.56%	477,816	11.47%
Other income/(expenses)										
Interest & dividend income	3,960	0.16%	3,216	0.11%	1,860	0.06%	5,478	0.15%	2,978	0.07%
Interest expense	(14,530)	-0.61%	(24,600)	-0.85%	(43,200)	-1.34%	(48,753)	-1.35%	(46,789)	-1.12%
Other Income	2,319	0.10%	31,863	1.10%	56,200	1.74%	3,400	0.09%	31,500	0.76%
Net income before discretionary items	169,844	7.09%	185,046	6.41%	268,418	8.31%	339,559	9.45%	465,505	11.18%
Discretionary bonuses	50,000	2.08%	45,000	1.56%	25,000	0.77%	200,000	5.59%	205,000	4.95%
ESOP / Profit sharing contributions	17,166	0.72%	20,598	0.71%	84,838	2.63%	86,270	2.40%	90,823	2.18%
Pretax net income (loss)	102,678	4.29%	119,448	4.14%	158,580	4.91%	53,289	1.46%	169,682	4.05%
Income tax refund (expense)	(36,964)	-1.54%	(44,196)	-1.53%	(63,432)	-1.96%	(22,914)	-0.64%	(74,660)	-1.79%
After-tax net income (loss)	$65,714	2.75%	$75,252	2.61%	$95,148	2.95%	$30,375	0.82%	$95,022	2.26%

D.M. Associates – Example
After-Tax Adjusted Net Income

	For the Year Ended December 31,				
	20X5	20X6	20X7	20X8	20X9
Pre-Tax Net Income (Loss) per Historic Financial Statements	$102,678	$119,448	$158,580	$53,289	$169,682
Adjustments					
1. Change in Work In Process	36,669	115,095	84,767	22,532	29,847
2. Accelerated Depreciation	20,000	20,000	43,000	56,000	75,000
3. Rent Expense	-	-	-	-	-
4. Officers' Compensation	50,000	68,000	72,000	83,000	95,000
5. Discretionary Employee Bonuses	-	-	-	-	-
6. Profit Sharing Contributions	17,166	20,598	84,838	86,270	90,823
7. Computer Software	-	21,050	(8,420)	(8,420)	(4,210)
8. Legal and Accounting	-	8,000	25,000	-	-
9. Other Income	-	(27,000)	(46,000)	-	(28,000)
Pre-Tax Adjusted Net Income	226,513	345,191	413,765	292,671	428,142
Income Taxes (40%)	(90,605)	(138,076)	(165,506)	(117,068)	(171,257)
After-Tax Adjusted Net Income	$135,908	$207,115	$248,259	$175,603	$256,885

D.M. Associates – Example
Capitalization of Earnings – A/E Formula Approach

	For the Year Ended December 31,				
	20X5	**20X6**	**20X7**	**20X8**	**20X9**
Adjusted Net Income	$135,908	$207,115	$248,259	$175,603	$256,885

Year Ended December 31,	Adjusted Net Earnings	Weight Factor	Total
20X5	$135,908	1	$135,908
20X6	207,115	2	414,230
20X7	248,259	3	744,777
20X8	175,603	4	702,412
20X9	256,885	5	1,284,425
	Subtotal		3,281,752
	Divide by Years		15
	Average Net Earnings		218,783
	Earnings Multiplier		4.00
	Practice Value (Goodwill)		$875,132

D.M. Associates – Example
Summary of Value - A/E Formula Approach

Adjusted Book Value	$1,651,654
Goodwill Factor	875,132
Value of D. M. Associates	$2,526,786
Value of D. M. Associates (Rounded)	$2,527,000

Questions

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