



DANNIBLE & MCKEE, LLP

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Understanding A/E Financial Statements and Key Ratios

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Charla A. Roth, CPA

Charla A. Roth, CPA, is a partner at Dannible & McKee, LLP and a principal at Dannible/McKee and Associates, Ltd and has over 22 years of experience providing audit, accounting and consulting services for a variety of clients. She specializes in working with architectural and engineering firms and has extensive experience performing Federal Acquisition Regulation (FAR) overhead audits. In addition, she has managed the contract audit services with the New York State Department of Transportation from 2011 to the present. Charla also has proficient knowledge in numerous accounting software packages including Ajera, Deltek Vision, QuickBooks and more.

Academic and Professional Credentials

- Certified Public Accountant in New York State (CPA)
- Bachelor's of Science, Accounting, State University of New York at Oswego, 2002
- Master's of Accounting, State University of New York at Oswego, 2003

Professional Affiliations and Memberships

- American Institute of Certified Public Accountants (AICPA)
- New York State Society of Certified Public Accountants (NYSSCPA)
- Accounting & Financial Women's Alliance (AFWA) - Past-President and Treasurer

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 client's business 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.
- 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 A/E 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 the owners to ensure success in the ownership transition process.



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Introduction

Important questions:

- Do your internal financial reports provide all of the information needed to most effectively manage your firm?
- Could decision making be improved if better financial analysis were performed?

Uses of your accounting and financial reporting system

- External financial reporting
- Income tax compliance
- Internal reporting and analysis – Managing your Firm for Profitability!

Introduction

You must go beyond the basic statements:

- The balance sheet and income statement are only the starting point for successful financial management.
- Applying other financial statement analysis methods is a necessary step in analyzing the success, failure, and progress of your business.
- It is also critical for a firm to understand and utilize detailed reports available in its accounting system.

Introduction

Five Great Ideas

1. Improve your basic financial statements.
2. Use ratio analysis and industry benchmarking.
3. Include budgets and forecasts as part of your financial analysis.
4. Evaluate detailed reports that should be produced and consider who should receive financial reports.
5. Perform analysis!

... The Balance Sheet

- Represents a snapshot of the financial position of the firm at a specific point in time.
- Demonstrates the basic accounting equation whereby:

$$\text{Assets} - \text{Liabilities} = \text{Stockholder's Equity}$$

- Balance sheets for A/E firms are not significantly different from other businesses.
- The most significant assets are usually accounts receivables and work in process.
 - **Accounts receivable** – Represents amounts billed to clients for the performance of services. Should be reduced by allowance for uncollectible accounts.
 - **Work in process** - Represents the costs accumulated for contracts in progress, which include direct labor and direct/reimbursable expenses. Work in process reflected on the firm's balance sheet should be reported at **full billable value**.

Sample Architects, P.C.
Historic Accrual Basis Balance Sheet Analysis

Sample Balance Sheet: Accrual Basis

	For the Year Ended December 31,				Variance	
	2023		2022			
	Amount	%	Amount	%	Amount	%
<u>Assets</u>						
<u>Current assets:</u>						
Cash	\$ 152,015	2.75%	\$ 191,828	3.85%	\$ (39,813)	-20.75%
Accounts receivable	2,612,528	47.33%	2,687,590	53.99%	(75,062)	-2.79%
Work-in-process	1,604,778	29.08%	926,350	18.61%	678,428	73.24%
Refundable income taxes	8,437	0.15%	4,987	0.10%	3,450	69.18%
Prepaid expenses & other assets	44,786	0.81%	59,126	1.19%	(14,340)	-24.25%
Total current assets	4,422,544	80.13%	3,869,881	77.74%	552,663	14.28%
<u>Long-term assets:</u>						
Fixed assets, net	970,025	17.57%	985,927	19.81%	(15,902)	-1.61%
CSV life insurance	126,785	2.30%	121,963	2.45%	4,822	3.95%
Total long-term assets	1,096,810	19.87%	1,107,890	22.26%	(11,080)	-1.00%
Total assets	\$ 5,519,354	100.0%	\$ 4,977,771	100.00%	\$ 541,583	10.88%
<u>Liabilities and Stockholders' Equity</u>						
<u>Current liabilities:</u>						
Accounts payable	\$ 726,842	13.17%	\$ 731,277	14.69%	\$ (4,435)	-0.61%
Accrued liabilities	220,897	4.00%	238,591	4.79%	(17,694)	-7.42%
Current portion of long-term debt	134,492	2.44%	107,572	2.16%	26,920	25.03%
Line of credit	800,000	14.49%	500,000	10.04%	300,000	60.00%
Deferred income taxes	1,017,500	18.44%	926,400	18.61%	91,100	9.83%
Total current liabilities	2,899,731	52.54%	2,503,840	50.30%	395,891	15.81%
<u>Long-term liabilities:</u>						
Long-term debt	385,618	6.99%	324,518	6.52%	61,100	18.83%
Deferred income taxes	60,500	1.10%	28,200	0.57%	32,300	114.54%
Deferred compensation	132,152	2.39%	126,933	2.55%	5,219	4.11%
Total liabilities	578,270	10.48%	479,651	9.64%	98,619	20.56%
<u>Stockholders' equity:</u>						
Common stock	50,000	0.91%	50,000	1.00%	-	0.00%
Additional paid-in-capital	250,000	4.53%	250,000	5.02%	-	0.00%
Retained earnings	1,741,353	31.55%	1,694,280	34.04%	47,073	2.78%
Total stockholders' equity	2,041,353	36.99%	1,994,280	40.06%	47,073	2.36%
Total liabilities & stockholders' equity	\$ 5,519,354	100.0%	\$ 4,977,771	100.01%	\$ 541,583	10.88%

Income Statement

- A period-to-date summary of revenue and expenses that calculates the net income or loss for the period.
- The income statement format for a design firm differs significantly from that of a manufacturing or retail entity due to the nature of closely held professional service firms.
- “Bottom line” net income or loss often is not truly representative of the firm’s profitability due to discretionary bonuses paid to a firm’s owners at year-end in addition to other discretionary expenses.
- The proper income statement format is essential in order to manage the firm for profitability in addition to providing comparisons with peer firms in the A/E industry.

Income Statement

Specific key elements of the firm's income statement:

- Gross revenue – Represents gross fees billed to clients including reimbursable expenses.
- Net revenue – Defined as the firm's gross revenue less reimbursable expenses.
 - This is the revenue earned on the firm's labor and is used as a basis for providing “common-sized” income statement comparisons and comparisons with industry standards.

Income Statement

Direct labor – Represents labor charged directly to projects based on time incurred on projects at the billable rates established by the firm for the level of personnel engaged on the project.

- Many financial ratios and metrics for design firms are expressed as a percentage of direct labor for comparability.
- Industry standard percentage of direct labor to net revenue is often in the range of 32% to 34%.

Contribution margin – Defined as the firm's net fee revenue less direct labor and direct project expenses.

- So named because it represents the firm's "contribution" to cover overhead expenses and provides for net profit.
- Industry standard gross profit percentage is often in the range of 66% to 68%.

Income Statement

Indirect expenses – Overhead expenses in connection with the firm's operations including labor overhead (payroll taxes, insurance, benefits, etc.), occupancy costs, marketing costs and office expenses.

Net income before discretionary items – Represents the firm's pre-tax net income available for discretionary payouts such as shareholder bonuses, employee bonuses and retirement plan contributions.

- Most significant performance measure of the firm's profitability in comparison with peer firms.
- Industry standard ratio of pre-discretionary net income to net revenue is often in the range of 8% to 15%.

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Sample Income Statement: General Format

Sample Architects, P.C.
Traditional Income Statement
For the Year Ended December 31, 2023

	Amount	%
Revenue	\$ 9,882,468	100.00%
Cost of sales	1,728,362	17.49%
Gross profit (margin)	8,154,106	82.51%
<u>Selling, general & administrative expenses</u>		
Payroll expense	4,732,596	47.89%
Vacation, sick & holiday pay	526,847	5.33%
Payroll taxes	486,597	4.92%
Fringe benefits	426,580	4.32%
Office rent expense	333,000	3.37%
Depreciation	236,215	2.39%
Other Operating Expenses	968,105	9.80%
Total indirect expenses	7,709,940	78.02%
Operating income	444,166	4.49%
Other income / (expense)		
Interest income (expense)	(52,615)	-0.53%
Other income	11,252	0.11%
Pre-tax net income	402,803	4.08%
Income tax expense	(120,000)	-1.21%
After-tax net income	\$ 282,803	2.86%

Sample Income Statement: A/E Format

Sample Architects, P.C. Income Statement - A/E Format

	For the Year Ended December 31,			
	2023		2022	
	Amount	% Net	Amount	% Net
Gross revenue	\$ 9,882,468	118.59%	\$ 10,856,901	134.50%
Reimbursable expenses	1,549,410	18.59%	2,785,074	34.50%
Net revenue	8,333,058	100.00%	8,071,827	100.00%
Direct labor	2,685,624	32.23%	2,731,584	33.84%
Direct expenses	178,952	2.15%	182,684	2.26%
Gross profit (margin)	5,468,482	65.62%	5,157,559	63.90%
<u>Indirect expenses</u>				
Indirect labor	1,696,972	20.36%	1,772,843	21.27%
Vacation, sick & holiday pay	526,847	6.32%	452,480	5.43%
Payroll taxes	486,597	5.84%	490,506	5.89%
Fringe benefits	276,580	3.32%	256,843	3.08%
Office rent expense	333,000	4.00%	333,000	4.00%
Depreciation	236,215	2.83%	234,009	2.81%
Other Operating Expenses	968,105	11.62%	984,587	11.82%
Total indirect expenses	4,524,316	54.29%	4,524,268	54.29%
Operating income	944,166	11.33%	633,291	7.85%
Other income / (expense)				
Interest income (expense)	(52,615)	-0.63%	(59,158)	-0.73%
Other income	11,252	0.14%	7,591	0.09%
Net income before discretionary items	902,803	10.83%	581,724	7.21%
Discretionary bonuses	350,000	4.20%	-	0.00%
Profit-sharing contribution	150,000	1.80%	150,000	1.86%
Pre-tax net income (loss)	402,803	4.83%	431,724	5.35%
Income tax expense	(120,000)	-1.44%	(110,000)	-1.36%
After-tax net income	\$ 282,803	0.83%	\$ 321,724	0.83%

Statement of Cash Flows

- A period-to-date summary of sources and uses of the firm's cash.
- Calculates the change in cash from the beginning of the period to the end of the period.
- Illustrates the sources and uses of the firm's cash between three broad categories of activities.
 - **Operating activities** – Include the sales and delivery of services and cash paid in connection with the performance of those services (i.e. labor, outside consulting and reimbursable expenses).
 - **Investing activities** – Include primarily the purchase and/or sale of property, plant and equipment.
 - **Financing activities** – Include inflow of cash from banks and shareholders and the outflow of cash for debt repayments and dividends.

... The Historical Financial Statements

FAR Overhead Rate Statement

- Required for many Engineering firms and some Architectural firms that do work for Federal, State or local government agencies
- Calculates the overhead rate from the firm's annual income statement
- Makes adjustments in accordance with FAR Part 31 including subtracting unallowable expenses
- Can be prepared internally or audited by a CPA firm

Improved Financial Statement Analysis

You must go beyond the basic statements.

- The balance sheet and income statement are only the starting point for successful financial management.
- Applying other financial statement analysis methods is a necessary step in analyzing the success, failure, and progress of your business.

Other types of financial statement analysis include:

- Fluctuation analysis
- Common size financial statements
- Ratio analysis
- Industry comparison

Fluctuation Analysis

- Fluctuation analysis represents the study of changes in amounts from period to period.
- Analyze both dollar changes and percentage changes.
- Use statements with fluctuation data presented.
- Understand relationships among different balances.
 - These relationships can help to explain a significant fluctuation.
 - In addition, they can lead you to investigate why a balance did not change from year-to-year as expected based on changes in related balances.

Utilizing Budget and Forecasts

- It is difficult to run a business without a plan!
- Goals need to be established.
- It also critical that reports compare actual data to budgets.
 - With appropriately detailed budgets, variances between actual and planned performance easily can be identified.
 - With proper analysis of the cause of the variance, management can respond to get operations back on track.
 - Too often significant time is spent preparing budgets that aren't used during the year.
 - Remember that budgets are only useful if they are used in analysis!

Common Size Financial Statements

- Common size financial statements are statements showing only percentages rather than dollar amounts. These percentages are based on a key amount on the statement.
- The common size ratios give a starting point. You can quickly get a feel for any unusual changes that have occurred, adjusted for the overall size of assets and the relative amount of sales.
- When comparing the financial statements of different firms, particularly if one is much larger, it is useful to prepare statements showing only percentages. By doing this, changes in proportions are clearer, making efficiencies and inefficiencies easier to identify.
- In addition, it is often effective to compare year-to-year financial statements of your firm in percentages terms.

Ratio Analysis and Benchmarking

- Financial statements can be analyzed using key financial ratios.
- Financial ratios are a numeric calculation involving the comparison of meaningful amounts from the financial statements.
- Ratios are not ends in themselves, but provide insights into the operation of a firm.
- They serve as “benchmarks” against which the firm can evaluate itself and are only useful when:
 - Compared with the same ratios, for the same firm, from previous periods.
 - Compared with some predetermined standard.
 - Compared with the same ratios for other firms in the same industry.
 - Compared with average ratios for the industry within which the firm operates.

Ratio Analysis

- Financial analysts group ratios into categories, which tell us about different facets of a firm's finances and operations.
- Following is an overview of some of the ratio categories along with formulas for key ratios.
- In addition to general ratios applicable to most companies, there are a number of specific ratios that apply to A/E firms.

Liquidity Ratios

Liquidity ratios provide an indication of a firm's short-term financial situation or solvency

These ratios provide an indication of a firm's ability to meet its obligations which will come due within the next 12 months

Key ratios for the design industry include the Current Ratio, Working Capital, Accounts Receivable Turnover Ratio, Average Work-in-Process

Liquidity Ratios

Current Ratio Without Deferred Taxes

$$\text{Current Ratio Without Deferred Taxes} = \frac{\text{Current Assets}}{\text{Current Liabilities - Deferred Taxes}}$$

Current Ratio Without Deferred Taxes

	D.M. Associates							
	Current Ratio Without Deferred Taxes							
	Years Ended December 31,							
	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Current Assets	\$1,831,994	\$1,796,013	\$1,826,966	\$1,939,928	\$2,328,626			
Current Liabilities	\$394,972	\$453,490	\$762,245	\$787,843	\$1,007,862			
Current Ratio	4.64	3.96	2.40	2.46	2.31	N/A	2.67	N/A
Five-Year Average (20X5-20X9)	3.15							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Liquidity Ratios

Working Capital

Working Capital = Current Assets - Current Liabilities

Working Capital

**D.M. Associates
Working Capital
Years Ended December 31,**

						Industry Standard*		
	20X5	20X6	20X7	20X8	20X9	Lower	Median	Upper
Current Assets	\$1,831,994	\$1,796,013	\$1,826,966	\$1,939,928	\$2,328,626			
Current Liabilities	(853,472)	(940,690)	(1,167,445)	(1,286,643)	(1,584,662)			
Working Capital	<u>\$978,522</u>	<u>\$855,323</u>	<u>\$659,521</u>	<u>\$653,285</u>	<u>\$743,964</u>	N/A	N/A	N/A

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Liquidity Ratios

Days Fees in Unbilled Work-in-Process (Average Days of Work-in-Process)

$$\text{Days Fees in Unbilled Work-in-Process} = \frac{\text{Work-in-Process}}{\text{Daily Fees Generated}}$$

Days Fees in Unbilled Receivables (Average Work-in-Process)

D.M. Associates								
Days Fees in Unbilled Receivables (Average Days of Work-in-Process)								
Years Ended December 31,								
	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Work-in-Process	\$101,035	\$139,400	\$168,630	\$176,242	\$186,125			
Daily Fees Generated	\$8,069	\$9,975	\$11,030	\$12,569	\$14,345			
Average Days of Work-in-Process	12.52	13.97	15.29	14.02	12.97	9.90	19.60	30.60
Five-Year Average (20X5-20X9)	13.75							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Liquidity Ratios

Days Fees in Billed Receivables (Average Collection Period)

$$\text{Days Fees in Billed Receivables} = \frac{\text{Accounts Receivable}}{\text{Daily Fees Generated}}$$

Days Fees in Billed Receivables (Accounts Receivable Turnover)

D.M. Associates								
Days Fees in Billed Receivables (Average Collection Period)								
Years Ended December 31,								
	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Total Accounts Receivable	<u>\$1,371,763</u>	<u>\$1,248,199</u>	<u>\$1,310,035</u>	<u>\$1,423,843</u>	<u>\$1,768,738</u>			
Daily Fees Generated	<u>\$8,069</u>	<u>\$9,975</u>	<u>\$11,030</u>	<u>\$12,569</u>	<u>\$14,345</u>			
Average Days to Collect	<u>170.00</u>	<u>125.13</u>	<u>118.77</u>	<u>113.28</u>	<u>123.30</u>	<u>47.50</u>	<u>66.00</u>	<u>82.80</u>
Five-Year Average (20X5-20X9)	<u>130.10</u>							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Leverage Ratios

Leverage ratios measure the extent to which a firm's operations are financed by debt capital versus equity capital

Leverage ratios also provide an indication of a firm's vulnerability to business downturns

Key leverage ratios for the design industry include the Debt/Equity Ratio and Bank Debt/Equity Ratio

... Leverage Ratios

Debt/Equity Ratio

$$\text{Debt / Equity Ratio} = \frac{\text{Total Debt}}{\text{Total Equity}}$$

Debt / Equity Ratio

D.M. Associates Debt / Equity Ratio Years Ended December 31,								
	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Total Debt	\$1,589,484	\$1,554,930	\$1,614,913	\$1,577,339	\$1,758,586			
Total Equity	\$1,151,132	\$1,226,384	\$1,321,532	\$1,351,907	\$1,446,929			
Debt / Equity	1.38	1.27	1.22	1.17	1.22	N/A	0.70	N/A
Five-Year Average (20X5-20X9)	1.25							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Leverage Ratios

Bank Debt/Equity Ratio

$$\text{Bank Debt / Equity Ratio} = \frac{\text{Total Bank Debt}}{\text{Total Equity}}$$

Bank Debt / Equity Ratio

D.M. Associates Bank Debt / Equity Ratio Years Ended December 31,						Industry Standard*		
	20X5	20X6	20X7	20X8	20X9	Lower	Median	Upper
Total Bank Debt	\$798,278	\$636,010	\$489,238	\$342,466	\$195,694			
Total Equity	\$1,151,132	\$1,226,384	\$1,321,532	\$1,351,907	\$1,446,929			
Bank Debt / Equity	0.69	0.52	0.37	0.25	0.14	N/A	0.25	N/A
Five-Year Average (20X5-20X9)	0.39							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Operating Ratios

Operating ratios measure the firm's ability to utilize its resources to generate revenue and profit; such resources includes the firm's labor force, asset base

Operating ratios also measure the firm's ability to control costs in performing services

Key operating ratios for the design industry can be further categorized into Net Income Ratios, Labor Ratios, Overhead Ratios and Staff Ratios, each predicated on the key components of a properly-formatted income statement for a design firm

Operating Ratios

Net Revenue per Chargeable Hour

$$\text{Net Revenue per Chargeable Hour} = \frac{\text{Net Revenue}}{\text{Total Chargeable Hours}}$$

D.M. Associates Net Revenue per Chargeable Hour Years Ended December 31,

						Industry Standard*		
	20X5	20X6	20X7	20X8	20X9	Lower	Median	Upper
Net Revenue	<u>\$2,400,001</u>	<u>\$2,887,495</u>	<u>\$3,230,000</u>	<u>\$3,599,999</u>	<u>\$4,162,500</u>			
Chargeable Hours	<u>27,300</u>	<u>31,200</u>	<u>36,400</u>	<u>40,300</u>	<u>45,500</u>			
Net Revenue per Chargeable Hour	<u>\$87.91</u>	<u>\$92.55</u>	<u>\$88.74</u>	<u>\$89.33</u>	<u>\$91.48</u>	<u>\$105.55</u>	<u>\$122.45</u>	<u>\$141.31</u>
Five-Year Average (20X5-20X9)	<u>\$90.00</u>							

* 2021 PSMJ A/E Financial Performance Benchmark Survey Report.

Operating Ratios

Direct Labor Cost per Chargeable Hour

$$\text{Direct Labor Cost per Chargeable} = \frac{\text{Direct Labor}}{\text{Total Chargeable Hours}}$$

D.M. Associates Direct Labor Cost per Chargeable Hour Years Ended December 31,								
	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Direct Labor	\$813,559	\$962,500	\$1,113,793	\$1,216,216	\$1,378,311			
Chargeable Hours	27,300	31,200	36,400	40,300	45,500			
Net Revenue per Chargeable Hour	\$29.80	\$30.85	\$30.60	\$30.18	\$30.29	\$35.05	\$38.70	\$43.23
Five-Year Average (20X5-20X9)	\$30.34							

* 2021 PSMJ A/E Financial Performance Benchmark Survey Report.

Operating Ratios – Labor Ratios

Net Multiplier Achieved

$$\text{Net Multiplier Achieved} = \frac{\text{Net Revenue}}{\text{Direct Labor}}$$

Net Multiplier Achieved

D.M. Associates Net Multiplier Achieved For the Year Ended December 31,						Industry Standard*		
	20X5	20X6	20X7	20X8	20X9	Lower	Median	Upper
Net Revenue	\$2,400,001	\$2,887,495	\$3,230,000	\$3,599,999	\$4,162,500			
Direct Labor	\$813,559	\$962,500	\$1,113,793	\$1,216,216	\$1,378,311			
Net Multiplier Achieved	2.95	3.00	2.90	2.96	3.02	3.03	3.31	3.73
Five-Year Average (20X5-20X9)	2.97							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Operating Ratios – Labor Ratios

Net Payroll Multiplier

$$\text{Net Payroll Multiplier} = \frac{\text{Net Revenue}}{\text{Total Labor (Direct + Indirect)}}$$

Net Payroll Multiplier

D.M. Associates Net Labor Multiplier (Revenue Factor) For the Year Ended December 31,						Industry Standard*		
	20X5	20X6	20X7	20X8	20X9	Lower	Median	Upper
Net Revenue	\$2,400,001	\$2,887,495	\$3,230,000	\$3,599,999	\$4,162,500			
Total Labor	\$1,281,195	\$1,552,419	\$1,780,980	\$1,967,027	\$2,256,489			
Net Labor Multiplier	1.87	1.86	1.81	1.83	1.84	1.76	1.94	2.19
Five-Year Average (20X5-20X9)	1.84							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Operating Ratios – Labor Ratios

Chargeable Ratio (Payroll Dollars)

$$\text{Chargeable Ratio} = \frac{\text{Direct Labor}}{\text{Total Labor (Direct + Indirect)}}$$

Chargeable Ratio

D.M. Associates Chargeability Ratio For the Year Ended December 31,						Industry Standard*		
	20X5	20X6	20X7	20X8	20X9	Lower	Median	Upper
Direct Labor	\$813,559	\$962,500	\$1,113,793	\$1,216,216	\$1,378,311			
Indirect Labor	467,636	589,919	667,187	750,811	878,178			
Total Labor	<u>\$1,281,195</u>	<u>\$1,552,419</u>	<u>\$1,780,980</u>	<u>\$1,967,027</u>	<u>\$2,256,489</u>			
Chargeability Ratio	<u>63.50%</u>	<u>62.00%</u>	<u>62.54%</u>	<u>61.83%</u>	<u>61.08%</u>	<u>53.70%</u>	<u>58.90%</u>	<u>64.60%</u>
Five-Year Average (20X5-20X9)	<u>62.19%</u>							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Operating Ratios – Overhead Ratios

Overhead Rate (Before Discretionaries)

$$\text{Overhead Rate} = \frac{\text{Total Overhead}}{\text{Total Direct Labor}}$$

Overhead Rate Before Discretionary Payments and Taxes

	D.M. Associates							
	Overhead Rate Before Discretionary Payments and Taxes							
	For the Year Ended December 31,							
	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Total Indirect Overhead (Including Interest)	<u>\$1,422,877</u>	<u>\$1,775,028</u>	<u>\$1,905,849</u>	<u>\$2,053,102</u>	<u>\$2,353,162</u>			
Direct Labor	<u>\$813,559</u>	<u>\$962,500</u>	<u>\$1,113,793</u>	<u>\$1,216,216</u>	<u>\$1,378,311</u>			
Overhead Rate	<u>174.90%</u>	<u>184.42%</u>	<u>171.11%</u>	<u>168.81%</u>	<u>170.73%</u>	<u>136.00%</u>	<u>162.00%</u>	<u>188.10%</u>
Five-Year Average (20X5-20X9)	173.99%							

* 2023 PSMJ A/E Financial Performance Benchmark Report.

Operating Ratios

Net Income Before Discretionary Items / Net Revenue

$$\frac{\text{Net Income Before Discretionary Items / Net Revenue}}{\text{Net Revenue}} = \frac{\text{Net Income Before Discretionary Items and Taxes}}{\text{Net Revenue}}$$

Net Revenue & Net Income Before Discretionary Items and Taxes

D.M. Associates								
Net Revenue and Net Income Before Discretionary Items and Taxes								
For the Year Ended December 31,								
	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Net Income Before Discretionary Items and Taxes	\$169,844	\$185,046	\$268,418	\$339,559	\$465,505			
Net Revenue	\$2,400,001	\$2,887,495	\$3,230,000	\$3,599,999	\$4,162,500			
Percentage of Net Income Before Discretionary Items to Net Revenue	7.09%	6.41%	8.31%	9.45%	11.18%	13.30%	20.10%	30.10%
Five-Year Average (20X5-20X9)	8.49%							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Operating Ratios – Labor Classification

- The misclassification of labor (between direct and indirect) can skew a firm's ratio analysis when compared to industry norms
 - When direct labor is classified indirect labor, the following ratios will be affected:

$$\begin{array}{lcl}
 \text{Chargeable Ratio} & = & \frac{\text{Direct Labor}}{\text{Total Labor (Direct + Indirect)}} \quad \downarrow \\
 \text{Net Multiplier Achieved} & = & \frac{\text{Net Revenue}}{\text{Direct Labor}} \quad \uparrow \\
 \text{Overhead Rate} & = & \frac{\text{Total Overhead}}{\text{Total Direct Labor}} \quad \uparrow
 \end{array}$$

- When indirect labor is classified direct labor, the following ratios will be affected:

$$\begin{array}{lcl}
 \text{Chargeable Ratio} & = & \frac{\text{Direct Labor}}{\text{Total Labor (Direct + Indirect)}} \quad \uparrow \\
 \text{Net Multiplier Achieved} & = & \frac{\text{Net Revenue}}{\text{Direct Labor}} \quad \downarrow \\
 \text{Overhead Rate} & = & \frac{\text{Total Overhead}}{\text{Total Direct Labor}} \quad \downarrow
 \end{array}$$

Staff Ratios

Staff ratios measure key financial barometers of a design firm compared to the staff employed by the firm

For this purpose, “technical staff” include those professionals who spend more than 50% of their time on chargeable projects for the firm

“Non-technical staff” include administrative personnel including accounting, IT, marketing, etc. who spend less than 50% of their time on chargeable projects for the firm

Staff Ratios

Net Revenue per Total Staff

$$\text{Net Revenue per Total Staff} = \frac{\text{Net Revenue}}{\text{Total Staff (FTEs)}}$$

Net Revenue per Total Staff

	D.M. Associates Net Revenue per Total Staff Years Ended December 31,					Industry Standard*		
	20X5	20X6	20X7	20X8	20X9	Lower	Median	Upper
Net Revenue	\$2,400,001	\$2,887,495	\$3,230,000	\$3,599,999	\$4,162,500			
Total Staff (FTEs)	21.00	24.00	28.00	31.00	35.00			
Net Revenue per Total Staff	\$114,286	\$120,312	\$115,357	\$116,129	\$118,929	\$146,448	\$170,743	\$201,445
Five-Year Average (20X5-20X9)	\$117,003							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Staff Ratios

Net Revenue per Technical Staff

$$\text{Net Revenue per Technical Staff} = \frac{\text{Net Revenue}}{\text{Total Technical Staff (FTEs)}}$$

Net Revenue per Technical Staff

D.M. Associates Net Revenue per Technical Staff Years Ended December 31,

	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Net Revenue	\$2,400,001	\$2,887,495	\$3,230,000	\$3,599,999	\$4,162,500			
Total Technical Staff (FTEs)	17.00	20.00	23.00	25.00	29.00			
Net Revenue per Technical Staff	\$141,177	\$144,375	\$140,435	\$144,000	\$143,534	\$178,981	\$211,619	\$246,135
Five-Year Average (20X5-20X9)	\$142,704							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Staff Ratios

Net Revenue per Project Manager

$$\text{Net Revenue per Project Manager} = \frac{\text{Net Revenue}}{\text{Total Project Managers (FTEs)}}$$

Net Revenue per Project Manager

	D.M. Associates							
	Net Revenue per Project Manager							
	Years Ended December 31,							
	20X5	20X6	20X7	20X8	20X9	Industry Standard*		
						Lower	Median	Upper
Net Revenue	\$2,400,001	\$2,887,495	\$3,230,000	\$3,599,999	\$4,162,500			
Total Project Managers (FTEs)	4.00	4.00	5.00	5.00	6.00			
Net Revenue per Technical Staff	\$600,000	\$721,874	\$646,000	\$720,000	\$693,750	N/A	\$803,775	N/A
Five-Year Average (20X5-20X9)	\$676,325							

* 2023 PSMJ A/E Financial Performance Benchmark Survey Report.

Targeted Financial Ratios

- Use targeted financial ratios as a means to meet your firms goals for profitability.
- For example, a firm might target the following income statement ratios:
 - Net Multiplier – 3.02
 - Chargeable or Utilization Rate – 63%
 - Overhead Rate – 155%
- Targeted financial ratios can be a useful part of your budgeting and long-term planning process.

Sample Balance Sheet Ratios

Sample Architects, P.C. BALANCE SHEET RATIOS

	<u>RATIOS</u>					
	<u>December 31, 2023</u>	<u>December 31, 2022</u>	<u>June 30, 2023</u>	<u>December 31, 2021</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Current Ratio	1.53	1.55	1.43	1.56	1.72	1.76
Days Fees In Accounts Receivable	72.43	67.83	77.88	71.43	75.69	63.35
Days Fees In Unbilled Fees	44.49	23.38	35.86	19.67	13.71	18.30
Total Debt To Equity	170.4%	149.6%	199.6%	150.8%	131.8%	128.4%

	<u>BALANCE SHEETS</u>					
	<u>December 31, 2023</u>	<u>December 31, 2022</u>	<u>June 30, 2023</u>	<u>December 31, 2021</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
<u>Assets</u>						
Cash	\$ 152,015	\$ 191,828	\$ 98,657	\$ 61,966	\$ 37,380	\$ 54,670
Accounts Receivable, Net	2,612,528	2,687,590	2,754,861	2,854,896	2,500,670	1,662,548
Work in Process	1,604,778	926,350	1,268,459	786,125	452,847	480,156
Refundable income taxes	8,437	4,987	8,437	8,437	12,658	2,987
Prepaid & Other Current Assets	44,786	59,126	44,786	68,952	62,594	52,847
Total Current Assets	\$ 4,422,544	3,869,881	4,175,200	3,780,376	3,066,149	2,253,208
Fixed assets, net	970,025	985,927	965,847	1,003,254	865,781	774,584
Cash surrender value	126,785	121,963	126,785	126,785	121,963	115,870
	<u>\$ 5,519,354</u>	<u>\$ 4,977,771</u>	<u>\$ 5,267,832</u>	<u>\$ 4,910,415</u>	<u>\$ 3,931,930</u>	<u>\$ 3,027,792</u>
<u>Liabilities & Stockholders' Equity</u>						
Accounts payable	\$ 726,842	\$ 731,277	\$ 836,338	\$ 325,687	\$ 268,753	\$ 89,584
Accrued liabilities	220,897	238,591	215,985	196,758	198,553	168,548
Current portion of long-term debt	134,492	107,572	128,459	124,597	106,548	96,254
Line of credit	800,000	500,000	750,000	625,000	240,000	100,000
Deferred income taxes	1,017,500	926,400	985,600	1,156,000	965,300	826,400
Total Current Liabilities	2,899,731	2,503,840	2,916,382	2,428,042	1,779,154	1,280,786
Long-Term Debt, net	578,270	479,651	593,125	524,856	456,801	421,538
Common Stock	50,000	50,000	50,000	50,000	50,000	50,000
Additional paid-in-capital	250,000	250,000	250,000	250,000	250,000	250,000
Retained Earnings	1,741,353	1,694,280	1,458,325	1,657,517	1,395,975	1,025,468
	<u>2,041,353</u>	<u>1,994,280</u>	<u>1,758,325</u>	<u>1,957,517</u>	<u>1,695,975</u>	<u>1,325,468</u>
Total Liabilities and Stockholders' Equity	<u>\$ 5,519,354</u>	<u>\$ 4,977,771</u>	<u>\$ 5,267,832</u>	<u>\$ 4,910,415</u>	<u>\$ 3,931,930</u>	<u>\$ 3,027,792</u>

Sample Architects, P.C.
INCOME STATEMENTS

RATIOS

	<u>December 31, 2023</u>	<u>December 31, 2022</u>	<u>June 30, 2023</u>	<u>December 31, 2021</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Net Multiplier	3.04	2.89	2.93	2.92	2.98	2.78
Net Payroll Multiplier	1.66	1.59	1.63	1.60	1.72	1.67
Utilization	54.7%	55.1%	55.5%	54.8%	57.9%	60.1%
Overhead Rate (Including Bonuses)	1.89	1.73	1.88	1.91	1.83	1.73
Overhead Rate (Before Bonuses)	1.76	1.73	1.82	1.77	1.74	1.65

INCOME STATEMENTS

	<u>December 31, 2023</u>	<u>December 31, 2022</u>	<u>June 30, 2023</u>	<u>December 31, 2021</u>	<u>December 31, 2020</u>	<u>December 31, 2019</u>
Revenues	\$ 9,882,468	\$ 10,856,901	\$ 6,437,552	\$ 14,587,216	\$ 12,059,745	\$ 9,578,462
Reimbursable and Direct Expense	1,728,362	2,967,758	1,056,831	3,658,475	1,846,840	1,958,745
Net Revenues	8,154,106	7,889,143	5,380,721	10,928,741	10,212,905	7,619,717
Direct Labor	2,685,624	2,731,584	1,835,548	3,743,948	3,425,684	2,745,684
Indirect Expenses and Overhead	5,024,316	4,674,268	3,408,005	7,059,877	6,208,401	4,690,847
Interest Expense	52,615	59,158	34,598	75,984	60,580	49,584
Other (income) expense	(11,252)	(7,591)	(10,847)	(16,579)	(20,159)	(8,564)
Pretax net income	<u>\$ 402,803</u>	<u>\$ 431,724</u>	<u>\$ 113,417</u>	<u>\$ 65,511</u>	<u>\$ 538,399</u>	<u>\$ 133,602</u>

INDIRECT EXPENSES AND OVERHEAD

	<u>December 31, 2023</u>		<u>December 31, 2022</u>		<u>June 30, 2023</u>	
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Indirect labor	\$ 1,696,972	63.19%	\$ 1,772,843	64.90%	\$ 1,125,486	61.32%
Vacation, sick & holiday pay	526,847	19.62%	452,480	16.56%	348,006	18.96%
Payroll taxes	486,597	18.12%	490,506	17.96%	335,948	18.30%
Fringe benefits	276,580	10.30%	256,843	9.40%	184,597	10.06%
Office rent expense	333,000	12.40%	333,000	12.19%	222,000	12.09%
Depreciation	236,215	8.80%	234,009	8.57%	159,426	8.69%
Other Operating Expenses	968,105	36.05%	984,587	36.04%	642,840	35.02%
Discretionary bonuses	350,000	13.03%	-	0.00%	100,000	5.45%
Profit-sharing contribution	150,000	5.59%	150,000	5.49%	100,000	5.45%
	<u>5,024,316</u>	<u>187.08%</u>	<u>4,674,268</u>	<u>171.12%</u>	<u>3,218,303</u>	<u>175.33%</u>
Interest	<u>(52,615)</u>	<u>-1.96%</u>	<u>59,158</u>	<u>2.17%</u>	<u>34,598</u>	<u>1.88%</u>
Total overhead	<u>\$ 4,971,701</u>	<u>185.12%</u>	<u>\$ 4,733,426</u>	<u>173.29%</u>	<u>\$ 3,252,901</u>	<u>177.22%</u>

Sample Income Statement Ratios

Industry Comparison

- In an industry comparison, we look at the firm's performance in relationship to other A/E firms.
- By comparing the firm to others, any differences in their operating efficiency will show up.
- Once a problem is identified, the firm can take action to correct the problem.
- Excellent data is available for the A/E industry.
- Industry comparison must be part of your firm's financial analysis.

Industry Comparison

Sources of industry data

- PSMJ Annual Survey & Report on Financial Performance in Design Firms.
- Risk Management Association (RMA) industry statistics.
- Zweig White & Associates Valuation Survey of A/E Firms.
- Filings for publicly traded firms.

Selecting industry data

- Identify comparable industry using SIC or NAICS code or description for RMA or other general industry data.
- Obtain data for firms of a similar size or type.
- Verify that guideline firms are truly comparable.

Sample Industry

Comparison of Ratios

	Sample Architects, P.C. PSMJ RATIOS				
	Sample Architects, P.C.	Industry Standard Overall	A/E Industry	Architectural	21-50 Employees
<u>BALANCE SHEET RATIOS</u>					
Current Ratio	1.53	2.45	1.85	2.90	2.25
Days Fees In Accounts Receivable	72.4	68.8	64.7	63.4	67.7
Days Fees In Unbilled Fees	44.5	19.6	22.1	20.5	19.0
Total Debt To Equity	170.4%	71.2%	92.3%	53.0%	57.3%
<u>INCOME STATEMENT RATIOS</u>					
Net Multiplier	3.04	3.21	3.24	3.27	3.22
Net Payroll Multiplier	1.66	1.88	1.88	1.97	1.91
Utilization (Payroll Dollars)	54.7%	59.2%	58.5%	58.8%	59.9%
Overhead Rate (Including Bonuses)	189.0%	183.2%	191.4%	189.3%	182.0%

Detailed Reports

- The basic financial statements are not sufficient to effectively manage the company!
 - A firm must analyze more than just its balance sheet and income statement and the high-level ratios discussed above.
 - Detailed reports must be utilized by personnel throughout the firm.
- Accounting software is capable of producing countless detailed reports that can be tailored to the specific needs of your firm.
- For all reporting, consider meaningful breakdowns including by division, location, type of client, type of project or project manager.

Detailed Reports

- Categories for detailed accounting reports include:
 - General ledger reports
 - Subsidiary ledgers and reports
 - Accounts receivable
 - Work in process
 - Accounts payable
 - Journals
 - Sales
 - Purchasing
 - Cash disbursements
- For A/E firms, some of the most critical reports related to analysis of job profitability and labor utilization.

Timing and Distribution of Reports

- Financial reporting is only effective if the right people get the right reports!
- Frequency of reports
 - Reports should be produced at least monthly.
 - Depending on the capabilities of your systems and the nature of your business, more frequent reports may also be appropriate.
 - Sales, production and other types of reports may be needed daily or weekly as explained below.
- Periods included
 - Current month.
 - Year to date.
 - Any other meaningful grouping, including possibly quarter to date or rolling twelve months.

Timing and Distribution of Reports

Timeliness

- Reports need to be provided soon enough to be relevant for decision making!
- In no event should monthly statements take longer than two weeks into the following month (and hopefully they can be provided much sooner than that)!
- Some reports, such as employee utilization, might be produced on a weekly or even daily basis.
- If certain data or reconciliations delay the financial statements, make estimates and adjust in the following month.

Timing and Distribution of Reports

Report Distribution

- It is critical to determine which reports are relevant for specific personnel and groups of personnel.
- Verify that personnel are understand and are effectively using data.
- Obtain feedback on how reporting can be improved.
- Distribute electronically!

... Analyze and Take Action

Effective financial analysis is a four-step process.

- Prepare the proper reports.
- Distribute the reports to appropriate personnel timely.
- Perform analysis.
- Make management decisions based on the analysis.

It is critical that actual analysis is performed.

- Unfortunately, many firms stop somewhere between step 1 and step 2!
- Consider how much time is spent producing financial data versus the time spent using that data.
- Make time to perform analysis!

... Analyze and Take Action

- Financial analysis should be documented.
 - This allows the analysis to be distributed to others in the firm.
 - In addition, such analysis will be useful to the person performing as they do their work in future periods.
 - Such analysis can take many forms and you should consider what is easiest for the person performing the analysis and those that will use it. It could be in the form of:
 - E-mails.
 - Formal memos
 - Notes in an Excel spreadsheet.
 - Explanations written in the margins of a report.
- Financial analysis is only effective if you follow through by taking action based on your analysis.

Conclusion

- Evaluate the financial analysis performed by your firm.
 - Consider whether the proper reports are being produced and whether they are being distributed to the appropriate people.
 - Review the actual financial analysis that is performed and consider improving the documentation of this analysis.
 - Make certain that action is taken and decisions are made based on the financial analysis that is performed.

Conclusion

- Change is needed to achieve improved results - Don't be afraid to change.
- Consider how you can make the best use of the capabilities in your financial software.
- Be certain to analyze the cost versus benefit of any financial management project, including a project to improve financial reporting and analysis.
- Remember that financial analysis is a powerful tool that can help you run your firm more effectively and profitability.

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