

# BEST CLASS



**TECHNOLOGY  
INVESTMENT  
DECISIONS**



BY RICHARD L. WERNER

According to a survey by Mainstay Partners, less than 12% of 450 companies could accurately measure the business impact of their technology spending. In fact, an astounding 72% of companies couldn't effectively connect their IT investments to their business strategy and goals.

In an industry that often demands significant technology investments, how can contractors measure the effectiveness of their investments, cross the ROI divide, and become IT-smart companies?

One way to determine the reasonableness of investments – and to put the investment into a justifiable perspective – is to measure how it will help your company outperform your Best in Class (BiC) competitors, and to quantify the investment through a reliable methodology.

While my article in the March/April 2004 issue of *CFMA Building Profits*, “Using Benchmarks & Metrics to Become a ‘Best In Class’ Contractor” focused on the metrics that drive job profitability at the Gross Margin level, this article focuses on the financial value of being a BiC contractor at the Net Income level and discusses these concepts in relationship to IT spending.

## Definition of a Best in Class Contractor & Financial Value

According to CFMA's *2004 Construction Industry Annual Financial Survey*, BiC contractors sit in the top quartile of the five indicators shown in Exhibit 1: Return on Assets, Return on Net Worth, Fixed Asset Ratio, Debt to Equity Ratio, and Working Capital Turnover.

The 2004 Financial Survey included the Debt to Equity Ratio and Working Capital Turnover, and excluded the Days in A/R indicator. Thus, the 2004 indicator set contained two profitability, two leverage, and one liquidity indicator, compared to the 2003 indicator set, which had two profitability, one leverage, and one efficiency indicator. These changes represent a significant improvement, making the 2004 indicators more effective for measuring BiC financial performance.

For purposes of this article, the definition of BiC financial value is the difference in Net Income (in dollars and as a percentage of Annual Revenue) between BiC Contractors and Average Contractors, as presented in the 2004 Financial Survey and adjusted for revenue differences. (BiC also refers to companies with top financial metrics.)

## Financial Performance

Exhibit 2 shows the financial performance for Average

Contractors (All Companies) and BiC Contractors in the Industrial & Nonresidential, Heavy & Highway, and Specialty Trade construction segments. Except as indicated, all information in the exhibit is shown as a percentage of Annual Revenue.

While Exhibit 2 contains a wealth of interesting information, Metrics 1 and 7 highlight the financial value of becoming a BiC contractor. As might be expected, Exhibit 2 shows that most financial characteristics, independent of construction segment and size, are significantly better for BiC participants than for average participants.

## THE FINANCIAL VALUE OF BECOMING A BEST IN CLASS CONTRACTOR

Exhibit 3 illustrates the financial value of becoming a BiC contractor. These calculations assume the Average Contractor as the baseline and the BiC Contractor as the goal. Here is a description of the calculations for the three construction segments:

- **Item 1** comes from the "All Companies" squares in Metric 1, Exhibit 2.
- **Item 2** matches the "BiC" squares in Metric 1, Exhibit 2.

Interestingly, in two of the three construction segments, BiC Contractors report less revenue than Average Contractors. This is understandable, but not intuitive.

- **Item 3** shows the difference between Items 1 and 2. The magnitude of this difference varies from a low of -13% for Specialty Trade Contractors to a high of 38% for Heavy & Highway Contractors.
- **Item 4** comes from the "All Companies" squares in Metric 7, Exhibit 2.
- **Item 5** matches the "BiC" squares in Metric 7, Exhibit 2.

EXHIBIT 1: INDICATORS TO DETERMINE BiC CONTRACTORS

| Indicator                | Indicator Type | Formula  | INDUSTRIAL & NONRESIDENTIAL |      | HEAVY & HIGHWAY |      | SPECIALTY TRADE |      |
|--------------------------|----------------|--|-----------------------------|------|-----------------|------|-----------------|------|
|                          |                |  | All Companies               | BiC  | All Companies   | BiC  | All Companies   | BiC  |
| Return on Assets         | Profitability  | Net Earnings/<br>Total Assets                        | 4.0                         | 8.4  | 5.1             | 8.2  | 6.3             | 15.1 |
| Return on Net Worth      | Profitability  | Net Earnings/<br>Net Worth                           | 16.9                        | 31.3 | 11.9            | 19.8 | 16.5            | 33.9 |
| Fixed Asset Ratio        | Leverage       | Fixed Assets/<br>Net Worth                           | 25.7                        | 19.7 | 67.5            | 68.8 | 30.6            | 21.7 |
| Debt to Equity Ratio     | Leverage       | Total Liabilities/<br>Net Worth                      | 3.2                         | 2.7  | 1.3             | 1.4  | 1.6             | 1.2  |
| Working Capital Turnover | Liquidity      | Revenue/<br>(Current Assets-<br>Current Liabilities) | 18.2                        | 18.2 | 10.4            | 13.7 | 8.4             | 8.2  |



- **Item 6** shows the difference between Items 4 and 5. As you might expect, this difference is positive for all construction segments. The difference varies from 0.8% of Construction Revenue for Heavy & Highway Contractors to 1.9% of Construction Revenue for Specialty Trade Contractors.

The variation in these differences seems a bit high, and the Heavy & Highway difference seems low considering the complexity of Heavy & Highway work and the probability that a BiC Heavy & Highway Contractor would operate more effectively than the Average Heavy & Highway Contractor.

One possible reason: The Heavy & Highway segment is the only segment where the BiC Contractor is larger than the Average Contractor – in fact, significantly larger (38%).

- **Item 7** equals Item 4 multiplied by Item 1.
- **Item 8** equals Item 5 multiplied by Item 2.
- **Item 9** shows the difference between Items 7 and 8. As indicated, the dollar differences between BiC Contractors and Average Contractors are significant – ranging from \$610,000 per year for Specialty Trade Contractors to \$1,678,000 per year for Heavy & Highway Contractors.

**EXHIBIT 2: FINANCIAL CHARACTERISTICS OF CONTRACTORS BY INDUSTRY SEGMENT\***

| Metric Number | Metric                           | INDUSTRIAL & NONRESIDENTIAL |       | HEAVY & HIGHWAY |       | SPECIALTY TRADE |       | Comments      |
|---------------|----------------------------------|-----------------------------|-------|-----------------|-------|-----------------|-------|---------------|
|               |                                  | All Companies               | BiC   | All Companies   | BiC   | All Companies   | BiC   |               |
| 1             | Annual Revenue (\$MM)            | 106                         | 104   | 86              | 119   | 46              | 40    |               |
| 2             | Annual Revenue (%)               | 100.0                       | 100.0 | 100.0           | 100.0 | 100.0           | 100.0 |               |
| 3             | Cost of Construction (%)**       | 94.0                        | 93.8  | 90.7            | 90.1  | 86.1            | 83.5  |               |
| 4             | Gross Margin (%)                 | 6.0                         | 6.2   | 9.3             | 9.9   | 13.9            | 16.5  | PM's Focus    |
| 5             | SG&A Expense (%)                 | 4.8                         | 3.9   | 6.6             | 5.9   | 11.5            | 12.3  |               |
| 6             | Income from Operations (%)       | 1.2                         | 2.3   | 2.7             | 3.9   | 2.4             | 4.2   | CFO's Focus   |
| 7             | Net Income (% of Revenue)        | 1.2                         | 2.3   | 2.2             | 3.0   | 2.5             | 4.4   |               |
| 8             | Net Worth (\$MM)                 | 7.5                         | 7.8   | 15.8            | 18.0  | 6.5             | 5.2   |               |
| 9             | Return on Net Worth (ROE) (%)    | 16.9                        | 31.3  | 11.9            | 19.8  | 16.5            | 33.9  | Owner's Focus |
| 10            | Assets (\$MM)                    | 31.6                        | 28.9  | 36.9            | 43.4  | 17.2            | 11.7  |               |
| 11            | Return on Assets (%)             | 4.0                         | 8.4   | 5.1             | 8.2   | 6.3             | 15.1  | CFO's Focus   |
| 12            | Labor Costs (% of Total Costs)** | 10-20                       |       | 40-60           |       | 50-80           |       |               |
| 13            | Technology Costs (%)             | 0.1                         | 0.1   | 0.2             | 0.1   | 0.3             | 0.3   |               |

\* From CFMA's 2004 Construction Industry Annual Financial Survey. For specific information, see pages 126, 170, and 223 of the survey. Except as indicated, all information is shown as a percentage of Annual Revenue. Average, not median, values were used for aggregation.

\*\* Based on SHAKER's experience and research.



Clearly, becoming a BiC Contractor creates significant increases in annual Net Income. However, it is incorrect to assume that an Average Contractor's Revenue will change to match BiC Contractor Revenue during the transition.

This assumption is not realistic, or even desirable, and unnecessarily distorts the analysis. Assuming that Average Contractor Revenue does not change during the transition, Items 10-13 in Exhibit 3 show the appropriate calculation adjustments:

- **Item 10** reflects the adjustment to BiC Contractor Net Income due to the difference between BiC Contractor Revenue and Average Contractor Revenue.

To calculate the adjustment, multiply Metric 3 by Metric 5 by -1. The results are insignificant for Industrial & Nonresidential Contractors (\$46,000), moderate for Specialty Trade Contractors (\$264,000), and significant for Heavy & Highway Contractors (\$-990,000)

**EXHIBIT 3: THE FINANCIAL VALUE OF BECOMING A BiC CONTRACTOR**

| ITEM | ITEM DESCRIPTION  | INDUSTRIAL & NONRESIDENTIAL | HEAVY & HIGHWAY | SPECIALTY TRADE | COMMENTS                |
|------|---|-----------------------------|-----------------|-----------------|-------------------------|
| 1    | Average Revenue (\$)  | 106,000,000                 | 86,000,000      | 46,000,000      | Per Exhibit 2           |
| 2    | BiC Revenue (\$)  | 104,000,000                 | 119,000,000     | 40,000,000      | Per Exhibit 2           |
| 3    | Difference (\$)   | -2,000,000                  | 33,000,000      | -6,000,000      | Metric 2 - Metric 1     |
|      |   |                             |                 |                 |                         |
| 4    | Average Net Income (% of Revenue)                                 | 1.2                         | 2.2             | 2.5             | Per Exhibit 2           |
| 5    | BiC Net Income (% of Revenue)                                     | 2.3                         | 3.0             | 4.4             | Per Exhibit 2           |
| 6    | Difference (%)  | 1.1                         | 0.8             | 1.9             | Metric 5 - Metric 4     |
|      |   |                             |                 |                 |                         |
| 7    | Average Net Income (\$)   | 1,272,000                   | 1,892,000       | 1,150,000       | (Metric 1 x Metric 4)   |
| 8    | BiC Net Income (\$)   | 2,392,000                   | 3,570,000       | 1,760,000       | (Metric 2 x Metric 5)   |
| 9    | Difference (\$)   | 1,120,000                   | 1,678,000       | 610,000         | Metric 8 - Metric 7     |
|      |   |                             |                 |                 |                         |
| 10   | BiC Contractor Net Income Adjustment for Revenue Difference (\$)* | 46,000                      | -990,000        | 264,000         | -1(Metric 3 x Metric 5) |
| 11   | BiC Contractor Net Income Adjusted for Revenue Difference (\$)    | 2,438,000                   | 2,580,000       | 2,024,000       | Metric 8 + Metric 10    |
| 12   | Financial Value of Becoming a BiC Contractor (\$)                 | 1,166,000                   | 688,000         | 874,000         | Metric 11 - Metric 7    |
| 13   | Percentage of Increase in Net Income for a BiC Contractor (%)     | 92                          | 36              | 76              | Metric 12 / Metric 7    |

\* This adjustment is made for comparison purposes.

where the Annual Revenue for the BiC Contractor is 38% higher than the Annual Revenue for the Average Contractor.

- **Item 11** equals the sum of Items 8 and 10. It compensates for Net Income due to the Annual Revenue difference between BiC and Average Contractors.
- **Item 12** is the difference between Items 11 and 7. This item shows *the annual value* of becoming a BiC Contractor. The annual value increases are significant: \$1,166,000 for Industrial & Nonresidential Contractors; \$688,000 for Heavy & Highway Contractors; and \$874,000 for Specialty Trade Contractors.

- **Item 13** shows the percentage of increase in Net Income for a BiC Contractor compared to an Average Contractor.

The percentage increases vary from a low of 36% for Heavy & Highway Contractors to a high of 92% for Industrial & Nonresidential Contractors.

By normalizing revenue, the annual Net Income increases change somewhat, but are still significant in all three construction segments.

#### SIMPLIFIED COMPUTATIONS

Going through the longer derivation illustrates all of the variables involved. However, there is a simpler way

#### EXHIBIT 4: SAMPLE INVESTMENT EVALUATION

| Year         | Lease Payments (\$) | Increased Annual Operating Costs (\$) | Total Investment (\$) | Improved Net Income after Taxes due to Investment (\$) | Cumulative Net Savings (\$) |
|--------------|---------------------|---------------------------------------|-----------------------|--|-----------------------------|
| 1            | 62,500              | 12,500                                | 75,000                | -75,000  | -75,000                     |
| 2            | 62,500              | 25,000                                | 87,500                | 109,250  | 34,250                      |
| 3            | 62,500              | 25,000                                | 87,500                | 218,500  | 252,750                     |
| 4            | 62,500              | 25,000                                | 87,500                | 218,500  | 471,250                     |
| 5            | 62,500              | 25,000                                | 87,500                | 218,500  | 689,750                     |
| 6            | 0                   | 25,000                                | 25,000                | 218,500  | 908,250                     |
| 7            | 0                   | 25,000                                | 25,000                | 218,500  | 1,126,750                   |
| 8            | 0                   | 25,000                                | 25,000                | 218,500  | 1,345,250                   |
| 9            | 0                   | 25,000                                | 25,000                | 218,500  | 1,563,750                   |
| 10           | 0                   | 25,000                                | 25,000                | 218,500  | 1,782,250                   |
| <b>Total</b> | <b>312,500</b>      | <b>237,500</b>                        | <b>550,000</b>        | <b>1,782,250</b>                                       |                             |



Rather than focus only on the **COST** of the **Investment**,  
focus on how **FAR** the **Investment** will move your  
company's **FINANCIAL PERFORMANCE**  
toward **BiC Benchmarks**.

to calculate the financial value of becoming a Best in Class Contractor.

Take the Average Contractor's Revenue (Item 1, Exhibit 3) and multiply it by the difference between the BiC Contractor Net Income Percentage (Item 5, Exhibit 3) and the Average Contractor Net Income Percentage (Item 4, Exhibit 3). For example, Specialty Trade Contractors should see an increase near \$874,000, or  $\$46,000,000 \times (4.4\% - 2.5\%)$ .

### How the Best Invest

Because of the potential increase in Net Income, becoming a BiC Contractor is worth considerable cost and effort. Usually, CFMs can help accomplish this goal by recommending investments that average construction firms are frequently reluctant to make.

Rather than focus only on the cost of the investment, focus on how far the investment will move your company's financial performance toward BiC benchmarks. When considering such investments as technology, training, staffing, or organizational and asset infrastructure, compare your company to peer BiC companies, and analyze the investment in that light.

For example, a new technology investment might initially cost \$250,000, with an annual operating cost of \$25,000, assuming the company experiences no reduction in overhead due to the new system.

A 10-year financial analysis, as shown in Exhibit 4, illustrates that a successful initial investment of \$250,000



plus the annual operating cost increase of \$25,000 will have a short pay-back period and a cumulative Net Income after Tax increases of \$1,782,250, with continuing Net Income after Tax increases of \$218,000 per year. Not bad.

There are several assumptions within Exhibit 4:

- **Lease Payments:** Lease payments for the \$250,000 initial investment span a 5-year period, with an 8% interest rate.
- **Increased Annual Operating Costs:** For Year 1, only half of the increased annual operating costs apply.

- **Improved Net Income after Taxes Due to Investment:** The annual value for an Average Specialty Contractor moving 25% closer toward BiC Contractor status is \$218,500, or  $0.25 \times \$874,000$ . The \$874,000 is derived from Exhibit 3, Item 12.

Year 1 assumes no increase in value; Year 2 assumes a 50% increase in value, and Years 3-10 assume the full \$218,500 increase in value.

- **Cumulative Net Savings:** The Cumulative Net Savings carry forward from year to year, totaling \$1,782,250 by the end of Year 10.

### THE BIGGEST ASSUMPTION

Without changing an Average Contractor's annual revenue and by investing wisely, the investment will

move the Average Contractor toward BiC Contractor status. This assumption implies that cost savings and operational efficiencies will result from the investment, rather than a more speculative assumption that some competitive advantage will produce the payback.

### BEYOND BEST IN CLASS

Does this mean a BiC company has no need for further investments? Not at all. This concept applies to all companies, although the data sets for comparison purposes differ depending on a company's position.

Within each data set, there is a range of values from the worst to the best. Using the BiC data set, a BiC Contractor could work toward being in the top 5% of all BiC Contractors. Furthermore, maintaining BiC status may require additional investments or investments that, if not maintained, would lead to an erosion of Net Income Percentages.

### Nine Places for BiC Improvement

There are many investment options for companies striving toward BiC benchmarks. In the February 2003 edition of *Benchmarking & Metrics Value of Best Practices Report*, the Construction Industry Institute (CII) identified nine core improvements as essential to all construction companies:

- 1) Change Management
- 2) Constructability
- 3) Materials Management
- 4) Start-Up Planning
- 5) Pre-Project Planning
- 6) Quality Management
- 7) Team Building
- 8) Technology Automation/Integration
- 9) Zero-Accident Techniques

As you examine these practices within your organization and analyze your company's potential to move toward BiC status, emphasize investments that make the most progress with the funds available.

### Some Final Words

In the final analysis, all investments – including IT investments – must optimize profits. There is a point of

optimum investment where either more investment or less investment reduces profit. Companies should strive for that point, both for individual investments and for the entire investment portfolio.

So, it's important to *realistically* estimate how far an investment will move your company toward BiC status or other company goals. If the amount of increase is negligible, perhaps the investment shouldn't be made.

That notwithstanding, it's also important to remember the nature of construction – where a 1% increase in the Cost at Completion of a \$5,000,000 job results in a \$50,000 reduction in Net Income. In our industry, well-considered investments (both those that involve technology and those that don't) can move a construction firm a long way toward BiC status. **BP**

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