

CALCULATING ROI FOR TECHNOLOGY INVESTMENTS

Alex Corman
Technology Finance Partners



Copyright © 2012 Technology Finance Partners. All rights reserved.

Abstract: In this short white paper, the author discusses the value of producing a business case analysis (also known as a cost-benefit analysis or a return on investment analysis) to support a significant technology investment. The author provides step-by-step instructions for building a business case analysis and for calculating key financial metrics such as ROI, NPV and payback period, and documents best practices in the production and defense of a business case analysis.

For more information, please contact info@tfpllc.com

INTRODUCTION

Businesses routinely encounter opportunities to reap an expected benefit in the future after committing funds today to a technology investment. Determining whether to move forward or to stand put can be a difficult decision. It may be disconcerting to commit funds today, a monetary bird in the hand, with the hope that greater funds will be reaped in the future. How can the firm evaluate the technology investment opportunity in an analytical, dispassionate way, and increase the likelihood of making the right decision?

A critical tool that helps the company answer this question is a **business case analysis (BCA)**. A **business case analysis** is a financial assessment crafted by a project manager or analyst to help the firm make an informed decision as to whether a proposed investment is in the best financial interest of the company's shareholders. A business case analysis often takes the form of a **cost-benefit analysis (CBA)**, otherwise known as a **return on investment analysis**. A cost-benefit analysis is a depiction of current and future inflows and outflows of capital that result from a significant business decision. A cost-benefit analysis is summarized in key financial metrics that can help a company make an informed go/no-go decision or choose the most promising project among several that are competing for funding. Technology Finance Partners' practice is to use the terms business case analysis, cost-benefit analysis and return on investment analysis interchangeably. This paper takes the same approach.

Business case analyses are routinely employed by companies looking to make informed decisions about the deployment of capital, particularly in resource-constrained environments. Given that a company likely cannot fund all possible projects that it is considering, the business case is a transparent tool to aid in rational decision making on investments of a sufficient magnitude.

This paper is intended to provide instruction into the process of producing a cost-benefit analysis in support of high magnitude financial decisions. We will argue that producing a business case analysis and deriving key financial metrics such as return on investment is a useful effort and reduces the likelihood of unwisely consuming scarce financial and human resources. Technology Finance Partners' goal is to persuade the reader to invest the time and effort to thoroughly evaluate contemplated projects, and to provide specific instruction into the steps for producing a meaningful business case analysis.

VALUE OF A BUSINESS CASE ANALYSIS

WHY PRODUCE A BUSINESS CASE ANALYSIS?

In a dynamic corporate environment in which speed to market may be critical, a project manager may consider the production of a business case analysis to support a technology investment wasteful effort. If there is a problem that needs to be resolved, or an opportunity should be exploited, why not devote company resources immediately to the task?

One reason is to ensure that the resources to be expended in pursuit of these goals are more than commensurate with the opportunity. There may well be an opportunity of avoiding perhaps \$1 million of expenses. But it may not be worth avoiding these expenses if it costs \$2 million to build a new infrastructure to do so.

More commonly, a company may be in a capital- or resource-constrained mode. If an enterprise has several investment opportunities, and it cannot pursue them all because of a lack of financial, technical or management resources, how can it be confident that it will be pursuing the investments that will provide the greatest return to

shareholders? Without a business case analysis, the company may choose haphazardly, or land on favored manager's "pet project."

An accurate, transparent, and conservative business case analysis provides a good starting point for discussion and debate of the investment opportunities that are under consideration. A business case analysis is summarized in several key financial metrics that enable the opportunities to be evaluated in a dispassionate and rational comparative basis. With this concept in place, management is therefore most likely to make informed investment decisions that are in the best interests of shareholders.

OBJECTIONS TO PRODUCING A BUSINESS CASE ANALYSIS

There are many reasons why a company or individual may be reluctant to undertake the effort to calculate ROI and other financial metrics. Two common objections follow:

Objection #1: It takes effort and wastes time to produce a business case analysis and to calculate financial metrics.

Response: It is true that building an effective and comprehensive business case analysis requires effort and expertise. However, compared to wasting resources on an ill-considered project, the costs of building a cost-benefit analysis are insignificant. That being stated, a company or budgeting department may impose a scale qualification to be subject to a business case analysis, i.e. only projects with projected costs over a certain threshold require the production and approval of a business case analysis.

Objection #2: Business case analyses are subject to "gaming"

Response: It is true that business case analysis outcomes may be distorted, deliberately or unintentionally, by the person who produces it. This is particularly likely to occur if there is to be a favorable outcome to the individual who produces the business case analysis if the project were to be approved; if an approved project results in more influence, additional compensation, or greater job security to its project manager, then the individual has an incentive to exaggerate the expected benefits or to minimize the expected costs. Business case analyses by their nature can be very sensitive to their inputs, so even a small adjustment in one or two cells can have a significant effect.

To minimize this risk, Technology Finance Partners recommends the use of a corporate-approved template for every company business case analysis that makes it harder to adjust important assumptions without reviewers seeing the inputs that have been shifted. On these templates, we recommend highlighting areas of key assumptions, and requiring comprehensive documentation for all projections. It can be helpful for project managers to defend their business cases analyses and their projections in writing and/or in a live meeting with the financial decision makers. In the end, go-forward decisions should be predicated on the production of a business case analysis that not only meets the required ROI threshold, but is also consistently transparent and conservative.

Finally, the company may consider hiring disinterested third parties to produce business case analyses for contemplated projects. Without any financial incentive on the part of the third party to make unrealistic projections, the company is likely to avoid the issue of "gaming." Doing so provides the additional benefit of delivering BCA expertise that the company may otherwise lack.

PRODUCING A BUSINESS CASE ANALYSIS

As previously explained, a business case analysis is a critical tool the project manager leverages to demonstrate that the project under consideration merits the expenditure of company resources and attention. Producing a business case analysis should be iterative; it is rare that a comprehensive analysis is produced, reviewed and approved without significant changes along the way. Business case analysis production typically encompasses four steps per iteration. These steps are:

1. Forecast benefits
2. Project costs
3. Map benefit and cost projections
4. Calculate key financial metrics

Let us examine these steps in turn:

1. FORECAST BENEFITS

Often the most challenging step, forecasting benefits requires understanding the current state and the contemplated future state, then assigning a financial value to the difference. Data collection and process mapping may be essential components of this step.

By way of a simplified example (with dollars and volumes in small scale to promote simplicity), consider a fictional enterprise; AgileCorp is contemplating the purchase of next-generation design software. The project manager believes that the company will realize two benefits from purchasing the software: the software will enable AgileCorp to reduce the number of labor hours required to build its primary product, and it will give it the capacity to launch a new product into the marketplace. The project manager wants to be certain that the project is in the shareholders' interests. Therefore, he begins to build a business case analysis.

The project manager gathers current staffing levels and labor rates, and projects the value of the first benefit.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Hours Required--Current State	0	5,000	5,000	5,000	5,000	5,000
Costs: Current State at \$15/hour	\$0	\$75,000	\$75,000	\$75,000	\$75,000	\$75,000
Hours Required--Future State (Hours X Rate)	0	4,500	3,800	3,800	3,800	3,800
Costs: Future State at \$15/hour	\$0	\$67,500	\$57,000	\$57,000	\$57,000	\$57,000
BENEFIT #1: Reduced Labor Costs*	\$0	\$7,500	\$18,000	\$18,000	\$18,000	\$18,000
* (Future State Costs - Current State Costs)						

To calculate the second benefit, the project manager estimates the number of new products he expects the company will sell in each of the next five years. The project manager then determines the net revenue (gross revenue – cost of goods sold) per unit that he expects to earn per unit.

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
New Products Sold--Current State	0	0	0	0	0	0
Net Revenue, Current State	\$0	\$0	\$0	\$0	\$0	\$0
New Products Sold--Future State	0	2,000	2,500	3,000	3,000	3,000
Net Revenue, Future State at \$10/unit	\$0	\$20,000	\$25,000	\$30,000	\$30,000	\$30,000
BENEFIT #2: Increased Net Revenue*	\$0	\$20,000	\$25,000	\$30,000	\$30,000	\$30,000

*(Future State Increased Net Revenue - Current State Increased Net Revenue)

2. PROJECT COSTS

Projecting costs is often a more straightforward task than projecting benefits. If the project is a technology investment, the vendor typically provides complete cost projections for both technology acquisition and ongoing maintenance.

To be comprehensive, cost projections should encompass internal costs that are incurred in addition to acquisition costs. In the case of AgileCorp, one should assume that employee time is consumed engaging and maintaining the software. The project manager may calculate costs as follows:

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Software Acquisition	\$100,000	\$0	\$0	\$0	\$0	\$0
Software Maintenance	-	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Total Software Cost	\$100,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Additional Employee Hours Required	1,000	150	50	50	50	50
Additional Labor Cost at \$15/hour	\$15,000	\$2,250	\$750	\$750	\$750	\$750

3. MAP BENEFIT AND COST PROJECTIONS

Now that benefits and costs have been projected, the two must be aligned and timed in a single view: typically, a cost-benefit analysis. Using the values calculated above, a cost-benefit analysis may appear as follows:

Benefits	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Reduced Labor Costs	\$0	\$7,500	\$18,000	\$18,000	\$18,000	\$18,000
Increased Gross Profit	\$0	\$20,000	\$25,000	\$30,000	\$30,000	\$30,000
Total Benefits	\$0	\$27,500	\$43,000	\$48,000	\$48,000	\$48,000

Costs	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Software + Maintenance	\$100,000	\$15,000	\$15,000	\$15,000	\$15,000	\$15,000
Labor	\$15,000	\$2,250	\$750	\$750	\$750	\$750
Total Costs	\$115,000	\$17,250	\$15,750	\$15,750	\$15,750	\$15,750

Annual Net Benefits	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Net Benefits (Benefits - Costs)	(\$115,000)	\$10,250	\$27,250	\$32,250	\$32,250	\$32,250

The final table, **Annual Net Benefits**, is the critical output from this stage. It tells the project manager or analyst precisely what net cash flows to expect from the project, and the timing that the company may expect to receive or disperse such flows. These values will enable the analyst to determine the key financial metrics used to evaluate the project, and to make the critical go/no-go decision.

4. CALCULATE KEY FINANCIAL METRICS

The next step in producing a business case analysis is to calculate key financial metrics. One of the simplest may be determined by using basic arithmetic and the projections displayed above.

Total Net Benefit or **Net Benefits** are the sum of all the annual net benefits that have been calculated. Adding the annual net benefit values above from year 0 to year 5, total net benefit= \$19,250. That is to say, if the company were to value dollars equally regardless of when funds are dispersed and earned, and if all benefit and cost projections are accurate, then AgileCorp will earn over five years \$19,250 more than it spent in pursuit of this project. On this elementary basis, one might make a preliminary conclusion that the investment is a sound one.

Net Benefits	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Net Benefits (Benefits - Costs)	(\$115,000)	\$10,250	\$27,250	\$32,250	\$32,250	\$32,250	\$19,250

We will cover the more meaningful key financial metrics in the next section.

KEY FINANCIAL METRICS

There are numerous financial metrics that a company may employ to evaluate a proposed investment. Descriptions of how to derive their values, and the metrics' strengths and weaknesses, follow:

RETURN ON INVESTMENT

One of the most commonly-applied financial metrics is **Return on Investment**, or **ROI**. **ROI** is defined as:

$$\frac{\text{Total Benefits} - \text{Total Costs}}{\text{Total Costs}}$$

Total net benefit, or total benefits – total costs, have already been calculated to be \$19,250. Total costs throughout the lifetime of the investment are \$195,250. Therefore, ROI is \$19,250/\$195,250 = 9.9%. This outcome is lower than one might hope for, but, significantly, is positive. According to this metric, the company is expected to earn a 9.9% return from its investment over the course of five years. If the company's management believes that a 9.9% return over five years is acceptable, then they might consider this to be a sound investment (unless a project with higher expected returns is competing for the same resources).

For a corporate project management office or finance department, projecting expected ROI reveals a straightforward, investment-based factor to help make the no/no-go decision on the investment. If a company wishes to earn a return of at least 40% on all investments, then it can set a simple rule whereby only projects with an expected ROI of 40% or greater are considered.

It should be noted that there are weaknesses of the ROI approach; ROI does not give a company a sense of scale as

to the dollar value of return. A return of 9.9% may be referring to an investment of \$100 or \$100 million. ROI also does not take into account the **time value of money (TVM)**; in other words, it treats dollars paid or dollars received in future periods as equivalent to current dollars. Other metrics discussed next address these concerns.

NET PRESENT VALUE

Net Present Value or **NPV** estimates the value to a company of a proposed investment in terms that reflect the time value of money. It is expressed in dollar terms (or in terms of whatever currency is being applied), not as a percentage of the costs as does ROI. It is the most commonly-used and most meaningful outcome of a **discounted cash flow analysis**, in which net cash flows in a cost-benefit analysis are converted (or discounted) to current dollar values. It is, in our opinion, the single most valuable metric for making an informed investment decision of a contemplated technology or other investment. The NPV metric is particularly helpful when a company is operating in a capital-constrained mode; if a company has a number of investment opportunities and can afford to invest in only one or few, comparing each investment's projected NPV is a simple mechanism for validly comparing "apples-and-oranges" projects.

Recall that the project manager estimates that AgileCorp will earn \$19,250 more in expected benefits than it pays in costs to acquire the software. The software seems like a sound investment at first glance. However, this running total of net benefits fails to take into account the time value of money; the dollars earned later in the lifetime of the software is misleadingly treated on the same basis as money paid today. A company typically values dollars in hand today more than dollars received in the future. In order to evaluate all cash flows on fair terms, an analyst must adjust future period cash flows.

To determine NPV, the analyst applies a "**hurdle rate**," also known as the **cost of capital** or **discount rate**. Analysts often apply a default hurdle rate of 10%, though this varies by company and by the perceived riskiness of the investment. (More risky investments should apply higher hurdle rates than do less risky investments, thereby diminishing NPV to reflect the greater variability of possible outcomes.) Using the 10% hurdle rate example, the project manager applies the hurdle rate by dividing the value of the benefits less costs by 1.10 in year one, and by 1.21 in year two (1.10×1.10) and by 1.33 in year three ($1.10 \times 1.10 \times 1.10$), etc. The discounted net benefits are summed to determine NPV as in the example below:

Calculating NPV							
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Net Benefits (Benefits - Costs)	(\$115,000)	\$10,250	\$27,250	\$32,250	\$32,250	\$32,250	\$19,250
Discount Factor with Hurdle Rate=10%	1.00	1.10	1.21	1.33	1.46	1.61	
Discounted Value	(\$115,000)	\$9,318	\$22,521	\$24,230	\$22,027	\$20,025	(\$16,879)

In this case, the projected NPV or total net benefit reflecting the time value of money of the proposed investment is **minus \$16,879**, not \$19,250. A proposed project with an estimated $NPV < 0$ is by definition a poor investment.


NPV may also be calculated simply using an Excel function. One must be sure to subtract the year 0 initial investment outside the parameters of the NPV function itself; year 0 cash flows are already valued with present day currency and therefore do not require discounting to current dollars.

PAYBACK PERIOD

Payback period is the projected time between the initial outflow of cash and the moment when accumulated benefits permanently overwhelm accumulated costs. In the example of AgileCorp, the payback period is sometime

between the end of year 4 and the end of year 5 when the running total of net benefits crosses from a negative value to a positive value (a more precise estimate may be made if the project manager creates a cost-benefit analysis with monthly rather than annual projections). Payback period is typically calculated with nominal dollars, although time-valued calculations are possible.

Payback Period		Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Net Benefits (Benefits - Costs)		(\$115,000)	\$10,250	\$27,250	\$32,250	\$32,250	\$32,250
Running Total		(\$115,000)	(\$104,750)	(\$77,500)	(\$45,250)	(\$13,000)	\$19,250

Payback occurs 

Payback period is a critical metric for companies that require expeditious return of capital because of limited cash resources or other reasons. In some instances, companies will not consider funding a project unless the payback period is shorter than one year. Companies with greater financial stability may be willing to endure a longer payback period if the expected return, calculated as ROI or NPV, is particularly favorable.

OTHER FINANCIAL METRICS

Other financial metrics applied to evaluating potential corporate investments are:

Internal Rate of Return: The internal rate of return, or **IRR**, is the hurdle rate that one would need to apply to arrive at a NPV=0. A higher internal rate of return is preferable; if a project has an internal rate of return of 40%, then it would imply that to achieve a similar rate of return, the company would need to find an investment that returns 40% annually. IRR is calculated through trial-and-error, by testing increasing hurdle rates until NPV=0 is the outcome. We suggest calculating IRR using the function in Excel or a financial calculator. In the example of AgileCorp, IRR is 4.76%.

IRR may be incalculable or may return multiple values if annual cash flow directions are irregular (i.e. it does not move permanently from negative to positive a single time over the lifetime of the investment). Also, like ROI, IRR does not give a sense of the scale in dollar terms of a proposed investment. NPV is often a more useful metric than IRR for these reasons.

Profitability Index: The profitability index, or **PI**, is calculated as:

$$\frac{\text{Future cash flows (discounted or nominal)}}{\text{Initial Investment}}$$

The higher the PI, the more favorable is the projection. A project is considered to be worthy of investment if it has a PI>1. In the example of AgileCorp, the present value of future cash flows (excluding Year 0 outlay) is \$98,121. PI, therefore, is \$98,121/\$115,000=85%. 85% is less than 1; therefore PI would indicate that the project is not a sound investment.

Economic Value Added: Economic Value Added is a capital budgeting and investment metric devised by Stern Stewart and Company. Like other key financial metrics, it seeks to ensure that shareholder funds are consistently applied to the most promising investments. It leverages the concept of **Economic Profit**, in which investment outlays are burdened by gains the company may have otherwise earned by applying those funds elsewhere.

According to the company, **EVA** “is calculated as the difference between the Net Operating Profit After Tax (NOPAT) and the opportunity cost of invested capital. This opportunity cost is determined by the weighted average cost of Debt and Equity Capital ("WACC") and the amount of Capital employed.” In other words, EVA represents net profits less a capital charge proportional to the magnitude of the investment. Economic Value Added adds a level of nuance in that it dynamically burdens outflows by the value created or lost to date: WACC is not held constant. Stern Stewart has achieved success in using EVA to not only assess the viability of project-level investment opportunities, but also to determine how a company might most profitably allocate capital to the most promising business lines.

LEVERAGING FINANCIAL METRICS

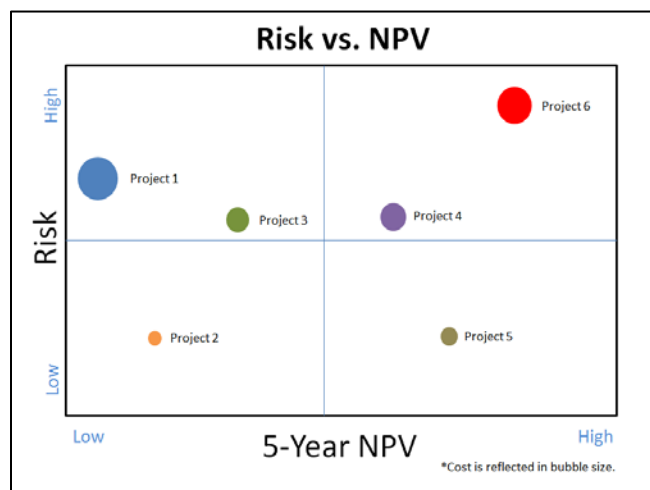
None of the financial metrics discussed above is a panacea for addressing all of the concerns and issues related to a project. Financial decision-makers looking only at one or two metrics have incomplete visibility into investible projects and are not fully empowered to maximize shareholder returns. The best practice is to consider several metrics before undertaking a major technology investment. For the most informed decision-making, Technology Finance Partners suggests calculating NPV, ROI and payback period at a minimum.

Looking at multiple financial metrics is particularly critical when a company is operating in a capital-constrained mode. There may be several technology investments that are expected to return capital to the company. When considering multiple opportunities, the best practice is to create a simple schedule with an array of key financial metrics relating to several projects in a single view:

Projects Under Consideration		Project A	Project B	Project C	Project D	Project E
	Net Benefits	\$775,000	\$245,000	\$450,000	\$2,275,000	\$573,000
	NPV	\$505,243	\$172,902	\$54,048	\$1,510,174	\$409,938
	ROI	76%	75%	20%	86%	85%
	Payback Period (Months)	19	11	44	26	9
	Profitability Index	488%	590%	145%	1010%	673%
	Upfront Costs	\$200,000	\$50,000	\$1,000,000	\$250,000	\$100,000
	Risk	Low	Low	High	Very High	Medium

In this example, Project D has the highest projected net benefits, NPV, ROI and PI. On the other hand, it also has the second highest upfront costs, the second longest payback period and the highest perceived risk. A company with a conservative risk profile may avoid Project D despite its favorable NPV ranking. Project C is likely to be excluded because of its lowest ranking NPV and ROI and its high upfront costs and risk. Of the remaining three projects, Project E may be considered the most favorable due to its medium-ranked NPV, high ROI and fastest payback period. But this is subject to debate and discussion taking into consideration the particular financial priorities of the company. The company may be able to afford many or all of the contemplated projects; in that case, it may take the approach of choosing the combination of projects that maximizes NPV without exceeding its available budget.

It can be informative to depict investible projects in a graphical view comprising multiple factors, as depicted in the example below:



In this example, Project 5 has a relatively high NPV, relatively low projected costs, and one of the lowest measures of risk. For many companies, it is the best candidate for investment. A company with a strong risk appetite might consider Project 6, which has the highest projected NPV, albeit with the greatest risk and second highest projected costs. Project 1, with the lowest projected NPV, the second highest risk, and the highest projected costs, is the worst candidate for investment.

STRATEGIES FOR BUILDING AN EFFECTIVE BUSINESS CASE ANALYSIS

The following are general strategies and recommendations for producing and presenting effective business case analyses:

BE CONSERVATIVE IN ALL PROJECTIONS AND ASSUMPTIONS

The ethos of “being conservative” comprises making projections that represent highest likely costs and lowest likely benefits. A business case analysis that produces impressive financial metrics despite a conservative mindset can be very persuasive. A business case analysis that relies on aggressive assumptions is analytically dubious and unlikely to withstand scrutiny. Aggressive projections undermine the credibility of the analyst; there is no easier way for a financial gatekeeper to reject a cost-benefit analysis than to declare that the projections are “aggressive.”

One way to guard against aggressive projections is to be certain that the analysis is complete, particularly in its treatment of possible costs. If the business case analysis excludes internal development or maintenance costs, for example, then it is clear that the analysis is not providing a comprehensive picture of the environment.

A conservative mindset is not an asset to the analyst unless the CBA makes it clear that conservative assumptions are deployed throughout the analysis. The next recommendation addresses that tactic.

MAKE ASSUMPTIONS AND CALCULATIONS TRANSPARENT

If a reviewer evaluating a business case analysis cannot easily ascertain how an assumption is determined, or how a calculation is derived, then the reviewer may become concerned that an insufficiently conservative approach has been embraced. Even if the reviewer does not harbor this suspicion, an opaque analysis risks muddying “the story” of the project. The best practice is to generously annotate the sources, assumptions and calculations which underlie a cost-benefit analysis, as depicted in the example below:

Worst Practice: No Detail Provided

Benefit #1: Labor Savings	
Daily savings per employee	\$26.25
Annual savings per employee	\$5,119
Total pre-tax savings	\$255,938
Total after-tax savings	\$166,359

Best Practice: Complete Detail of Assumptions and Projections

Benefit #1: Labor Savings		
Daily savings per employee	\$26.25	Calculated as 15% of employee's day X rate of \$175/day
Annual savings per employee	\$5,119	Assumes 195 days worked/year
Total pre-tax savings	\$255,938	Assumes 50 affected employees
Total after-tax savings	\$166,359	Assumes 35% blended tax rate

If the analyst has already conducted post-implementation analysis on a prior, similar project (as discussed below), then the results of that project may be usefully applied. For example, if a previous project had resulted in a 20% reduction of employee hours having been expended, the analyst might reference that project here. A 15% reduction for the current project might appear particularly conservative when viewed in that light because of the transparent nature of the analyst's documentation.

ITERATE THE BUSINESS CASE ANALYSIS

Following an initial evaluation, it is rare that an analyst understands the current environment, the projected environment, and all contingencies and exigencies sufficiently to produce a meaningful business case analysis. It is far more common that the analyst reviews the output with line workers, technology vendors, subject matter experts and divisional management on multiple occasions, and makes refinements based on their feedback and suggestions. Through these iterations, the business case analysis tends to become more complete, detailed, transparent and conservative—ultimately, the completed document becomes a much more accurate and defensible instrument for effecting change.

Transparency plays a significant role here as well. During a review of a business case, if a subject matter expert attests that unreliable equipment requires him or her to spend an additional 10 hours a month on maintenance, then that data point may be annotated in future iterations.

After a business case analysis has been revised several times, the best practice is to ensure that it has been reviewed and approved by all stakeholders before presenting to financial gatekeepers; often the analyst has a single opportunity to present to the decision-maker. We therefore advise that support from all other interested parties be obtained in advance.

FOLLOW-UP AND MEASURE POST-IMPLEMENTATION RESULTS

An often-forgotten component of the business case analysis process is to track actual project outcomes and financial impact. That this is rarely accomplished is understandable; in a busy environment, the analyst often

moves to the next project assessment without tracking the outcome of previously-approved projects.

This is unfortunate, because post-implementation tracking can help an analyst in two important ways: first, by tracking actual results, the analyst can measure how accurate he or she was in making initial projections. The analyst may change his or her business case analysis methodology and practices as a result of those findings. The result will be the production of business cases analyses that are more meaningful and reliable than would have otherwise been the case.

Second, tracking project outcomes enables analysts to more effectively defend assumptions used in future analysis. For example, if Project A executed several years in the past resulted in 5% less electricity usage annually, and if the analyst is able to document this convincingly, then he or she may leverage this in future analyses. Responding to an inquiry of how the analyst arrived at a 5% assumption of a future reduction in electricity usage from Project B under consideration, the analyst can refer persuasively to the previous experience. Assumptions are made more credible, and rely on less guesswork, when there are practical cases to which the author refers.

SUMMARY

For the reasons discussed in this document, producing a business case analysis for high-magnitude technology investments is well worth the effort and attention. Ultimately, a company may most effectively leverage its limited resources if it takes the time to rigorously analyze opportunities and to concentrate its capital in the projects most likely to have a significant favorable impact. A business case analysis is a critical tool that helps make this happen.

For companies that do not have in-house expertise for producing cost-benefit analyses, or who do but prefer that its internal resources focus on their core competencies, third party consultants are able provide this specialized and critical service. In fact, there are particular advantages in using a third party resource: a contracted analyst is less likely to resort to “gaming” the analysis to produce a desired result. Also, a third party may be able to apply experience and insight from similar engagements at that company or elsewhere.

Technology Finance Partners has been providing tools and analysis as part of our financial consulting services for more than ten years. We have expertise in producing customer-specific business case analyses in supporting enterprise software vendors during the sales cycle as well as in the firm’s evaluation of internally-generated opportunities. We also have experience in producing total cost of ownership calculations, pricing analysis, payment options and sales tools. To learn what we can provide to your company, contact us at info@tfpllc.com or at 650.353.4231.