

Evaluating Project Proposals Part 1: Financial Evaluation

This is the fourth of a series of articles on projects. In earlier articles, we learned the impact of projects that are not done right, how to estimate project costs, and how to estimate the benefits of projects. In this issue, we examine what is involved in the financial evaluation of project proposals.

BY LEN MIDDLETON

Once the costs and benefits of a maintenance or engineering project have been properly estimated, the financial evaluation can be as simple as a spreadsheet exercise, where the projects with the best return get approved, and the competing proposals (and yes, you are competing with other departments for scarce resources) get deferred, maybe forever.

Money available for use now has greater value than the same amount of money that might be available in the future. The factors that determine this are: the flexibility in having the funds for immediate use; the risks involved in the funds' future value (e.g. inflation, ability to receive funds versus potential default); and the ability to compound interest.

For example, let's look at the situation with 30-day treasury bills (T-bills). These are considered the closest thing in the market to a risk-free investment and hence they pay little in interest. The risk is low as they are guaranteed by the government (so there is little chance of default), and with the short 30-day time horizon, one can forecast the range of value the available funds will have fairly well.

So how does this have an impact on project evaluation? Let's look at some considerations. First, as well as estimating costs and benefits, it will be necessary to estimate cash flow.

All else being equal, getting back the money sooner is better than getting it back later, as it reduces the exposure to unforeseen risks and maximizes flexibility in making financial allocation decisions. When the cumulative cash flow from the project returns the investment made in it (refer to the cumulative cash flow diagram from our December 2007 issue), that is the project payback point, and the time required is the payback period. It is a simple concept that organizations use and emphasizes flexibility and being able to address unknown or

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changing circumstances.

To calculate, estimate the monthly cash flow from the project benefits and calculate the cumulative cash flow by adding the previous month's cumulative cash flow to that month's cash flow. When the cumulative cash flow equals the project cost, then that time is the payback period.

Project proposals can then be evaluated based upon which proposals would have the shorter payback period. This calculation does not address the amount and the time the capital is tied up during project execution, nor does it address or evaluate project risk.

To invest in the business, the capital used has a real cost. These costs include interest on the money borrowed, or dilution of ownership shares, if shares are sold to raise capital. There are also 'opportunity costs' to consider, including what other investment could provide a suitable return.

All else being equal, getting back the money sooner is better than getting it back later, as it reduces the exposure to unforeseen risks and maximizes flexibility in making financial allocation decisions.

'Discounted cash flow' helps to address the time and rate of return for the organization. Discounted cash flow calculates the compounding effect and the difference between the value of money now (present value) and in the future (future value) based upon a given interest or discount rate. Spreadsheets have functions for NPV (Net Present Value) and IRR (Internal Rate of Return) to evaluate cash flow impact.

To calculate Net Present Value, the cash flow estimates (both positive and negative cash flows) are discounted by a fixed rate for the period of evaluation. If the Net Present Value is greater than zero, then the return on the investment is worth more than the cost of the investment. The

discount rate is sometimes referred to as a 'hurdle rate' for that reason. As we can forecast events in the near future better than the distant future, typically the evaluation period is limited (e.g. five years).

The Internal Rate of Return is the discount rate, that when applied to the cash flows, would result in the Net Present Value being equal to zero. Internal Rate of Return is an iterative calculation that the spreadsheet function will perform, when provided with the cash flows and the estimated discount rate to use as a starting point. Higher Internal Rate of Return indicates a higher return on the investment. Like Net Present Value, the evaluation period is typically limited.

Discounted cash flow can also be used

in payback calculations where the payback cash flow is discounted, thereby resulting in a longer payback period with the amount of delay depending upon the discount rate.

A matter of risk

Currently, 90-day treasury bills pay around 2% per annum (April 2008). To take on more risk demands a higher return. The question then becomes: how much risk is an organization prepared to accept and what is the needed 'risk premium' or higher return that is required to accept that additional level of risk. Risk tolerance and the resulting risk premium will differ between industries and between organizations.

How do organizations address the risk premium? They can do it informally by evaluating proposals with similar perceived levels of risk. Or after evaluating the potential financial benefits, they can further evaluate the proposals with sufficient levels of returns and examine the potential risk involved.

A more formal approach is to address the risk by adjusting the discount or hurdle rate for the perceived level of risk. A perceived higher level of risk will result in a higher hurdle rate being applied to the proposal.

Perceived risk will depend upon past history (or lack of history) of projects undertaken by the organization and its members. If the organization has a negative history of certain types of projects or organization members have a history of not delivering, then the perceived risk is adjusted accordingly, be it informally or formally. This is where a reputation for under-promising and over-delivering will aid you in getting proposals approved.

Impact on maintenance and engineering

Different organizations have different criteria for evaluating proposals. This is very much the realm of the finance and accounting departments and their guidance and support can be extremely useful in understanding how proposals are evaluated by the organization and what information is required in their evaluation.

Effectively engaging finance and accounting at the proposal stage can also help to assure these departments that you have all the information required for evaluation, and that they understand where the numbers come from, as well as the validity of those numbers.

Similarly if you have developed a reputation for delivering more than you promise, then the hurdles imposed will be much less and your proposals will benefit from informal risk evaluation.

In the current tightening economic environment, you will need to present a good, credible story to get the needed resources to make significant changes. Take advantage of the resources in finance and accounting that are available to you to ensure your story will be effectively heard. **MRO**

Len Middleton of Asset Management Solutions of Toronto can be reached via e-mail at len@asset-management-solutions.com. His next column will be *Evaluating Project Proposals — Part 2: Other Considerations*, and will cover non-financial evaluation and a structured approach to evaluation.

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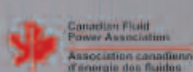
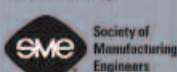
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