

Chapter 14

Managing Projects

Section 14.3, "How can firms assess the business value of information systems projects?"

Just as you can analyze the benefit of purchasing a new piece of equipment for your business, you can analyze the impact of an information system. Think about it: You tell the boss you need a new storage system for all the widgets you are producing. The boss will ask you to complete some type of analysis to see how the bottom line will be affected. The same is true for a new information system. Just how will it benefit the business overall? What benefits will your customers gain from the new system?

However, you can't reduce everything to dollars and cents. Sometimes the benefits of the new system will be measured in other ways, but you can employ several different methods to evaluate a new information system, just as you would a new storage system.

In this section we'll focus on mathematical models to evaluate the costs and benefits of information system projects. Financial models evaluate only costs versus benefits and tend to overlook the social and organizational dimensions of information systems. They don't include the costs of organizational disruptions or the savings from better decision making and enhanced employee performance.

Information System Costs and Benefits

One of the more difficult choices to make when evaluating new systems is to determine the tangible benefits versus intangible benefits. When a financial institution must decide whether to offer online banking, it may evaluate the system using one of the methods outlined in the text and determine that it will cost half a million dollars to implement. The immediate cost savings of not having employees interface directly with customers may be only \$250,000. On the surface you could say that the new system isn't worth the cost—the bank will lose \$250,000. But the intangible benefits the bank customers may enjoy could potentially be worth a million dollars. In that case, the new system's intangible benefits will far exceed the tangible benefits. Table 14.3 in the text explains some of the tangible and intangible benefits of information systems.

Capital Budgeting for Information Systems

There are several methods for analyzing a new system in terms of dollars and cents using capital budgeting techniques. Each method measures the financial worth of the system by determining the difference between cash outflows and cash inflows. The Learning Tracks on the Web site for this chapter helps you see how each method analyzes a proposed new system from a different perspective. Why not just have one, you might ask. Because in this case, one size does *not* fit all.

Financial models used to evaluate new systems are:

- Payback Method: time required to pay back the initial investment.
- Accounting Rate of ROI: approximation of the accounting income earned.
- Net Present Value: amount of money an investment is worth, taking into account its cost, earnings, and the time value of money.
- Internal Rate of Return: rate of return or profit that an investment is expected to earn.

Real Options Pricing Models

The system investment that looks good to one company may be all wrong for another company based strictly on the numbers. That's because no two companies are *exactly* the same. And the uncertainty of most IT projects makes it even more difficult to evaluate a project based solely on numbers. Real options pricing models offer strategic planners the ability to bring other factors into the evaluation and place a value on them. It uses these factors:

- Value of the underlying IT asset
- Volatility of the value
- Cost of converting the option investment into the underlying asset
- The risk-free interest rate
- The options' time to maturity

Limitations of Financial Models

Keep in mind that there are limitations to each financial model used to evaluate new systems. Using the online banking example, you can assume the initial cost will not be recouped until months or years after implementation. As we've seen in the last few years, the hardware costs can

change drastically within a short period of time. As soon as the system is installed, new technology can render it obsolete. How do you factor those realities into a financial evaluation model? Most of the time you can't.

On the other hand, you'll remember that the costs of adding new users to an existing network is marginal according to Metcalfe's Law and Network Economics. That must be factored into the financial models as well as elements of the TCO (total cost of ownership). It is not unusual for the personnel costs in the TCO model to be underestimated or even totally overlooked.

Summary

Potential new systems should be evaluated in terms of tangible and intangible costs.

All costs—hardware, software, and personnel—should be included in the bottom line so that the organization can truly determine the gains, or losses, associated with new projects.