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RESEARCH NOTE MEASURING RETURN ON INVESTMENT QUICK REFERENCE GUIDE

THE BOTTOM LINE

Following a structured approach to measuring return on investment assures consistent calculations. Using the tips in this quick guide, you can effectively measure the real benefit your company will receive from a technology investment.

Return on investment (ROI) is a textbook methodology for financial managers — and is rapidly being recognized as a critical metric for understanding the value of a technology investment. The following is a quick guide to completing an ROI analysis.

ASSESS THE ROI POTENTIAL

Without opening a spreadsheet, you can use some key criteria to assess a project and the likelihood of a positive ROI:

- **Breadth** – How many people will be helped by the application? The greater the number of people, the greater the potential ROI.
- **Repeatability** – How often will people use the application? The more often an application is used, the greater the ROI.

The objective should be to maximize the benefit rather than minimize the cost.

Secondary factors to consider include:

- **Cost** – The more costly the task, the greater the benefit from automation or appropriate technology support.
- **Knowledge** – The greater potential to re-use the information in the system, the greater the potential ROI.
- **Collaboration** – Communication between employees is costly, so the greater the collaboration component, the greater the potential ROI.

Financial measurements should only be compared to other internal decisions — not to other companies' financial measurements.

GATHER DATA

Costs and benefits can be either one-time or recurring, so be sure to include them appropriately. Follow these basic rules when gathering and including costs in the calculation:

- Count everything that is directly associated with the project. For example, "I purchased a Web server for this project."

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- Don't count infrastructure items not associated with the project. For example, "I used the existing Web server."
- Do count infrastructure items that were driven by the project. For example, "The company purchased a Web server because of this project and two others like it" means you should include 1/3 of the cost.

Benefits are more difficult to assess and can be either directly quantifiable or indirect productivity-based gains. It's easy to claim that productivity gains should not be included since there are no direct benefits or reductions in budgets from increased productivity. However, you should consider the additional employees you would need to hire to do the same work, or the increase in output from the same number of employees. The challenge is to fairly account for gains in productivity. To do this, correct for inefficient transfer of time — which simply means that the total time saved rarely equals the total additional work performed. To measure, follow these rules:

- 1) Measure based on fully loaded cost.
- 2) Correct for inefficient transfer of time by adjusting your productivity estimate using a value of 100 percent for line workers who may have no opportunity to be inefficient to 50 percent for general employees.
- 3) Find a corroborating measurement that supports the change. For example, if the legal department saves 10% of their time do you expect them to fire 10 percent of the lawyers or increase their productivity by 10 percent?

Increased worker efficiency is one of the primary benefits of technology. If you don't believe in indirect benefits you probably shouldn't have purchased computers for your staff.

When in doubt, you may want to survey your users and average their estimates. If you choose a conservative estimate consider calculating the ROI twice, once for the expected ROI and once for the worst-case scenario.

THE CALCULATIONS

There are a number of different financial metrics — and some are more useful than others. A quick list of the primary calculations and their value to the decision-making process:

- **ROI** is the most important metric to use for choosing an application and prioritizing projects within a company during budgeting. $ROI = \text{average benefit over three years} / \text{initial cost}$.
- **Payback Period** is the time it takes for benefits returned to equal the initial cost of the project. This is a key measurement of risk — in the rapidly-changing technology area, look for payback periods of less than one year and don't be afraid to discard a solution in favor of a better one once it's past its payback period.
- **NPV** is net present value — the value of the ongoing benefits discounted back to the present year. NPV tells you if the project should not be undertaken but it doesn't tell you to proceed. If the calculation is less than 0, you shouldn't proceed with the project (you'd be better off putting the money in the bank). A value greater than 0 can't be compared to other projects unless the time

QUICK GUIDELINES

Fully loaded cost = average salary x 1.35

Software maintenance = 18% annually

Hardware maintenance = 10% annually

Average correction factor = 50%

horizons and the magnitude of the investment are the same, so don't use that as your metric to proceed — turn to ROI instead.

- **TCO** provides a good metric for budgeting purposes but can't be used to judge the bottom-line benefits of a project since it only calculates lowest cost rather than greatest return. Cost is a factor in the ROI analysis, so use ROI instead.
- **IRR**, or internal rate of return, calculates the effective interest rate of a project but has a serious flaw: it assumes a reinvestment rate equal to the IRR. In most cases the calculation is misleading and it should NEVER be used for evaluating technology. Use MIRR if you need to.
- **cROI** means cumulative ROI over a three-year period and is used by some research firms, but it is primarily a marketing metric since it dramatically overstates the ROI by using the sum of the benefits over three years. Do not use it as a metric.

UNDERSTANDING A BAD ROI

If your initial calculations yield an ROI less than expected, don't panic — take a closer look at the calculation. If the ROI is drastically negative, there are probably breadth and repeatability issues or unreasonably high costs. If the ROI is simply lower than you need to proceed, it's likely you can fix it — and gain appropriate benefits from your investment — by considering the following:

- **Change cost timing.** Move costs out of the initial year by spreading training or consulting investment over one or two years.
- **Negotiate on price.** A small percentage decrease in price can dramatically increase the ROI depending on the magnitude of the project.
- **Ramp costs with users.** Gradually increasing costs for training and other areas as employees begin to use the technology may be more accurate and will improve the ROI.
- **Change deployment strategy.** Using the technology to support a smaller key (high-ROI) return group first, or looking at outsourced solutions or consulting can drive a positive initial ROI — and the technology can be deployed more broadly later.
- **Re-examine your correction factors.** If you've been overly conservative with your correction factors and productivity gains you may be passing up technology that can help your company. The objective is not to be conservative or aggressive but as accurate as possible.

COMMON MISTAKES

Including too many unassociated costs

Using an aggressive a correction factor

Not including indirect benefits

Including benefits from employees not on the critical path.

Not including maintenance savings from old or discarded equipment.

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