

# How Much Is the

**M**ANY HR PRACTITIONERS consider a training evaluation complete when they can link business results to the program. But for the ultimate level of evaluation—return-on-investment—the process isn't complete until the results have been converted to monetary values and compared with the cost of the program. This shows the true contribution of training.

Here's a basic formula for calculating ROI:

- ▶ Collect level-4 evaluation data. Ask: Did on-the-job application produce measurable results?
- ▶ Isolate the effects of training from other factors that may have contributed to the results.
- ▶ Convert the results to monetary benefits.
- ▶ Total the costs of training.
- ▶ Compare the monetary benefits with the costs.

The nonmonetary benefits can be presented as additional—though intangible—evidence of the program's success.

It's useful to divide training results into hard data and soft data. Hard data are the traditional measures of organizational performance. They're objective, easy to measure, and easy to convert to monetary values. Man-

agement tends to find hard data highly credible. Hard data is available in most types of organizations, including manufacturing, service, not-for-profit, government, and educational.

Hard data represent the following areas of a work process:

- ▶ output
- ▶ quality
- ▶ time
- ▶ cost.

For example, a government office that approves applications for visas typically collects data in all four areas to measure overall performance: output (the number of applications processed), quality (the number of errors in processing applications), time (the time it takes to process and approve an application), and cost (for processing each application).

Soft data are needed on training programs that focus on developing such "soft" skills as communication. Typically, soft data—such as employee absenteeism and turnover—are subjective because they have to do with behavior. They're difficult to measure and convert to monetary values. And when compared with hard data, soft data are usually found to be less credible as a performance measure.

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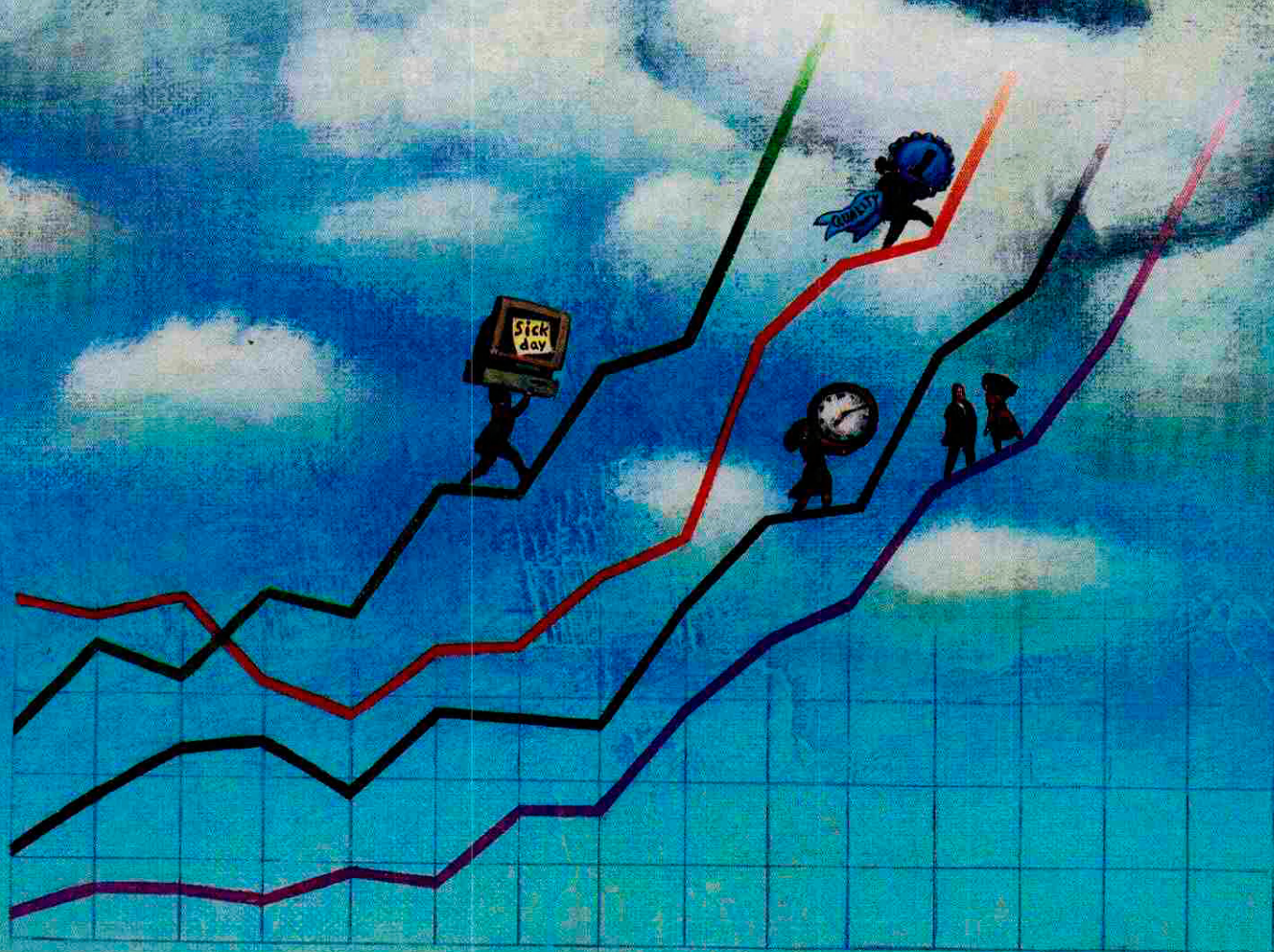
*This third—and final—article in the series on training ROI shows how to convert program results to monetary benefits. It's easier than you think.*

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BY JACK J. PHILLIPS



# Training Worth?





## The conversion

Here are five steps for converting either hard or soft data to monetary values.

**Step 1: Focus on a single unit.** For hard data, identify a particular unit of improvement in output (such as products, services, and sales), quality (often measured in terms of errors, rework, and product defects or rejects), or time (to complete a project or respond to a customer order). A single unit of soft data can be one employee grievance, one case of employee turnover, or a one-point change in the customer-service index.

**Step 2: Determine a value for each unit.** Place a value on the unit identified in step 1. That's easy for measures of production, quality, time, and cost. Most organizations record the value of one unit of production or the cost of a product defect. But the cost of one employee absence, for example, is difficult to pinpoint.

**Step 3: Calculate the change in performance.** Determine the performance change after factoring out other potential influences on the training results. This change is the output performance, measured as hard or soft data, that is directly attributable to training.

**Step 4: Obtain an annual amount.** The industry standard for an annual-performance change is equal to the total change in performance data during one year. Actual benefits may vary over the course of a year or extend past one year.

**Step 5: Determine the annual value.** The annual value of improvement equals the annual performance change, multiplied by the unit value. Compare the product of this equation to the cost of the program, using this formula:  $ROI = \text{net annual value of improvement} - \text{program cost}$ .

There are several other ways to convert data to monetary values. Some are appropriate for a specific type of data or data category; others are appropriate for any type of data. Here are some options.

**Converting output to contribution.** When a training program has produced a change in output, the value of the increased output can be determined from accounting or operational records. In for-profit organizations,

this value reflects the "profit contribution" of an additional unit of product or service. In not-for-profit organizations, the contribution or value may show in the savings from producing an additional unit of output for the same input.

The calculations for measuring such contributions depend on the organization and its records. Most monitor performance output. If such data aren't available, managers may use marginal-cost statements and sensitivity analyses to pinpoint the values as-



■ *Perhaps the highest cost of poor quality is customer dissatisfaction, which is difficult to quantify* ■

sociated with changes in output.

For example, a bank's sales seminar for consumer-loan officers resulted in an increase in the volume of loans (output). To measure the training's return-on-investment, it was necessary to determine the value (profit contribution) of one additional consumer loan—an easy item to calculate from the bank's records.

The first step was determining the yield, also available from bank records. The next step was calculating the average spread between the cost of funds and the yield received on a loan. For example, the bank could obtain funds from depositors at 5.5 percent on average, minus the cost of making a loan, including advertising and employees' salaries.

**Calculating the cost of quality.** The cost of quality is an important measure in most manufacturing and service firms. Because many training programs are designed to improve

quality, the HR department must place a tangible value on quality improvement. For some quality measures, that's easy. For example, if quality is measured as a product-defect rate, the value of an improvement is shown in eliminating the cost to repair or replace a defective product.

The most obvious cost of poor quality is the waste generated by mistakes: defective products, spoiled raw materials, and discarded paperwork. Such waste is translatable to monetary values. In addition, employee errors can cause expensive rework. The most costly rework is when a product is delivered to a customer and returned for repair. Maintaining a staff to perform rework is added overhead. In most manufacturing plants, the cost of rework is from 15 to 70 percent of productivity. In most banks, about 35 percent of operating costs are due to rework.

Perhaps the highest cost of poor quality is customer dissatisfaction. It can lead to lost business. Customer dissatisfaction is difficult to quantify. Typically, sales-and-marketing managers and marketing surveys are the best sources for measuring the effects of customer dissatisfaction.

**Converting employees' time.** Many training programs focus on reducing employees' work time. Employee time is money, including wages and benefits. A training program may enable a team to perform tasks in less time or with fewer members; time management can help individual employees save time. The value of the time saved is an important measure of a program's success, and conversion is relatively easy. The most obvious time savings is the reduced labor costs of performing work. The monetary savings equal the hours saved, multiplied by the per-hour labor cost.

For example, after attending a time-management training program, participants estimated that they now save an average of 74 minutes per day, worth \$31.25 per day or \$7,500 per year in labor. This time savings is based on the participants' average salary, plus benefits.

Generally, the average wage (with a percent added for employee benefits) is sufficient for most ROI calculations. But some employees' time is



worth more. Some experts recommend that "employee maintenance" costs other than employee benefits be figured into the average labor cost per employee, including such items as office space, furniture, telephone, utilities, computers, calculators, and administrative support. Then, the average wage rate may rise. The most conservative approach is to use salary plus employee benefits.

In addition to a reduced labor cost, other benefits can result from a time savings, including improved service, avoided penalties, and added opportunities for profit.

A word of caution: Time savings are realized only when the amount of time saved translates to a cost reduction or profit contribution. The time saved must be used productively.

**Using historic costs.** Sometimes a company's records will show the cost and value of one unit of improvement. It's necessary to identify the appropriate records and tabulate the actual cost of items in question. Historic data are usually available for hard data and some selected soft data.

For example, a training program for improving safety performance used various measures for all safety-related items, including the accident-frequency rate and the total cost of workers' compensation. By examining the company's records and using a year of data, the HR department was able to calculate the average cost of each safety measure.

**Using internal and external experts.** When converting soft data without historic records, it's recommended to consider input from experts on the processes involved. They can provide the cost (or value) of one unit of improvement. They tend to be close to the situation and to have earned management's respect. When internal experts aren't available, external experts can fill in the gap. Most experts use their own approaches, so it's best to explain specifically what's needed. They should understand the processes and be willing to provide estimates, with explanations.

In one organization, a training program for reducing the number of employee grievances ended in soft data, to be monitored by the organization. Except for one instance of reimbursed

## HARD AND SOFT DATA

Here are some examples of hard and soft data.

### HARD

#### Output

- ▶ units produced
- ▶ items assembled or sold
- ▶ forms processed
- ▶ tasks completed

#### Quality

- ▶ scrap
- ▶ waste
- ▶ rework
- ▶ product defects or rejects

#### Time

- ▶ equipment downtime
- ▶ employee overtime
- ▶ time to complete projects
- ▶ training time

#### Cost

- ▶ overhead
- ▶ variable costs
- ▶ accident costs
- ▶ sales expenses

### SOFT

#### Work Habits

- ▶ employee absenteeism
- ▶ tardiness
- ▶ visits to the dispensary
- ▶ safety-rule violations

#### Work Climate

- ▶ employee grievances
- ▶ employee turnover
- ▶ discrimination charges
- ▶ job satisfaction

#### Attitudes

- ▶ employee loyalty
- ▶ employees' self-confidence
- ▶ employees' perceptions of job responsibilities
- ▶ perceived changes in performance

#### New Skills

- ▶ decisions made
- ▶ problems solved
- ▶ conflicts avoided
- ▶ frequency in use of new skills

#### Development and Advancement

- ▶ number of promotions or pay increases
- ▶ number of training programs attended
- ▶ requests for transfer
- ▶ performance-appraisal ratings

#### Initiative

- ▶ implementation of new ideas
- ▶ successful completion of projects
- ▶ number of employee suggestions

back pay, the organization had no records on the costs of grievances (such as, the cost of external assistance or the time involved in working with a complainant). An expert had to estimate—in this case, the manager of the labor-relations department. He based his estimate on his perception of the average settlement when a grievance is lost, including such costs as arbitration and legal fees. He also factored in an estimated amount of time spent by supervisors, staff, and employees



■ *Time savings are realized only when used productively* ■

associated with the grievance. This internal estimate, though imprecise, was appropriate for the analysis. And management found it credible.

**Using data from external studies.** For some soft data, it may

be appropriate to use research to estimate the value. It's fortunate that many databases contain studies on the costs of various items related to training, including employee turnover, absenteeism, and grievances, as well as safety and customer satisfaction. Ideally,



the data should come from a similar setting in the same industry.

For example, the evaluation of an HR program for reducing the turnover of branch managers in a financial-services company included the cost of employee turnover, including recruitment, orientation, and training for a new manager, as well as the costs of severance and unemployment pay for an exiting manager. Many HR practitioners don't want to calculate the cost of turnover, particularly when it's needed just for a one-time event, such as a training evaluation. In the example, the cost was determined (based on industry standards) to be about one-and-a-half times the average annual salary of an employee, adjusted for the average base salary of a branch manager.

**Using participants' estimates.** Sometimes, the people closest to an improvement can provide the most reliable estimates on its value. Training participants can estimate the value of a soft-data improvement they've made by applying the skills they learned in training.

For example, to calculate ROI on a supervisory training program on lowering the rate of employee absenteeism, it was necessary to determine the average value of one absence, without the benefit of historic records. During the training, participants estimated the cost of an absence, based on their personal experience. Next, supervisors were asked to estimate the average cost of an absence in their work units, based on how an employee's absence is compensated. Then, all of the estimated values were averaged.

**Using supervisors' estimates.** Participants' supervisors are another source for determining the value of a unit of improvement due to training. For example, after completion of a training program for managers at Yellow Freight Systems, participants estimated the value of the improvements directly related to the training. Their managers also provided estimates after reviewing the process by which the participants had created their estimates. Then, the managers either confirmed or adjusted participants' values.

**Using senior managers' estimates.** Se-

nior managers can place a value on an improvement, based on their perception of its worth, when it's too difficult to calculate the value or when other sources for estimates are unavailable or unreliable.

**Using HR's estimates.** This approach may be perceived as biased. After all, the HR department will determine the basis for its claim for improvements due to training. For example, in a training program for dispatchers at an oil company, the HR department esti-



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imated the cost of one employee absence to be \$200. Then, it used that value to calculate the savings due to training on reducing the absenteeism rate.

### **Raising credibility**

The conversion approaches assume that the data items can be converted to monetary values. Highly subjective soft data—such as a change in employee morale—are difficult to convert. The key question is: “Would I be comfortable presenting these results to senior management?” If the results don't meet this test, they shouldn't be converted to dollars and cents. Instead, they should be presented as intangible benefits.

When reporting training results, credibility is always an issue. It's crucial that the data be accurate and that the conversion process be believable. Many HR practitioners are more comfortable reporting that training result-

ed in a reduction in employee absenteeism from 6 percent to 4 percent, without placing a monetary value on the improvement. They assume that the people receiving the information will assign their own values. Unfortunately, those people may know little about the cost of absenteeism. Or, they may underestimate the actual value. That's why accurate ROI is important.

Less-than-precise estimates, assumptions, forecasts, and external data may make some HR practitioners hesitant to conduct conversion. But they can raise credibility by following these guidelines:

- ▶ Take a conservative approach when making estimates and assumptions.
- ▶ Use the most credible and reliable sources for estimates.
- ▶ Explain the approaches and assumptions used in the conversion.
- ▶ When results appear overstated, consider adjusting the numbers to achieve more realistic values.
- ▶ Use hard data whenever possible.

With soft data, senior management may adjust the results so that they're more linear and concrete. Or, they may adjust the results to reflect the time value of money because most investments in training are made at one time and the return is realized at a later time. Such adjustments are usually negligible compared with the benefits.

Many organizations are trying to become more aggressive in determining the monetary benefits of training. They're no longer satisfied just to report business results. Instead, they're converting business results to monetary values and comparing them with the cost of training to obtain the true return-on-investment—and the financial contributions of HR. ■

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