Put a Dollar Value on Your Training Programs

Thought it couldn't be done? Find out how with this comprehensive system.

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Human resource accounting (HRA) long has been a human resource objective. However, recent attempts to place a value on human resources have not met with much success, a result of cumbersome methods and vague assumptions regarding human resource cost factors. An additional reason involves the role of human resource managers in overall business operations. Only recently have these managers begun to play a significant role in determining the strategic course of a business unit. Involvement in strategic business concerns eventually leads to better understanding of the role played by human resources within business. The trend couples with growing interest in understanding the economic consequences of employee behavior. In other words, line managers want to know the economic consequences of high vs. low performance and positive vs. negative attitudes—a marked shift from describing human resources in cost figures alone.

Asset models

As noted by Cascio, HRA methods may be divided into two major areas: asset models and expense or utility models.[1]

Asset models focus on the costs associated with human resources within an organization. Two of the most prominent asset models are the historical-cost and replacement-cost methods. In both methods, experts, usually managers, estimate the costs associated with various employee parameters. In the historical-cost method, for example, managers have to estimate the amount of money spent on selection, training and other human resource activities for their employees for a given period. These figures are then used to determine the costs associated with human resources within the organization. The R.G. Barry Corporation was one of the first organizations to use this method when reporting human resource costs.[2]

The replacement-cost method also requires experts to determine cost factors associated with various human resource parameters. However, the categories used in the replacement-cost method deal with costs associated with losing an employee.

Figure 1—Replacement-Cost Method Categories

Measuring The Costs To Replace An Employee

- —Lost revenues due to poor performance
- —Training for incumbent who failed
- —Training for a new incumbent
- —Downtime between incumbent changeover
- —Start-up time for new incumbent
- —Relocation expenses for new incumbent
- —Legal and staff costs of justifying removal decisions

Figure 1 lists a number of factors often used by organizations when determining the costs for replacing an individual due to termination. A recent survey of 64 companies indicated that the average cost to replace individuals at the first and second levels of supervision was approximately $57,000.[3]

If training is being provided to first-line supervisors in the area of general supervision of employees, someone would be required to estimate the number of supervisors who were kept from failing on the job due to the training. When that number is finally agreed upon, it can be multiplied by the cost to replace one individual (i.e., $57,000 for a first-line supervisor) to represent the savings to the company from the training program. The total cost of the training then can be subtracted from the savings to identify the overall economic benefit of the training program.

For example, if 100 first-line supervisors were given training in the day-to-day supervision of their employees, and the cost per trainee was $500, and five of the supervisors were kept from failing by the training program, then the total economic benefit of the program would be $235,000 (assuming a cost-to-replace figure of $57,000 per supervisor). (See Figure 2.)

The most prevalent problems with the asset models are that no universally accepted accounting procedures exist for estimating the various parameters included in the historical-cost and replacement-cost methods. In other words, the categories used in both of the asset models require managers to estimate the costs associated with those categories. A second problem concerns the exclusive

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Figure 2—Training Program Economic Benefit Example
The Replacement-Cost Method

No. of Supervisors Prevented from Failing	×	Replacement Cost Per Supervisor	=	Total Savings To The Organization
5		$57,000		$285,000

Minus

No. of Supervisors Trained	=	Training Cost Per Supervisor	=	Total Cost of Training
100		$500		$50,000

Total Economic Benefit To The Organization: $235,000

focus on costs. The economic consequences of an employee's behavior or actions on the job are neglected in favor of the cost to the organization of having the employee on board. With the asset models, employees are analogous to capital. They are cost factors that must be amortized over their tenure with the organization, but the value of their behavior is not determined.

Expense model

The expense model attempts to measure the economic consequences to the organization of an employee's behavior.

A training program's utility lies in its ability to improve the participants' effectiveness beyond their pre-training level. Several assumptions must be made before determining the utility of a training program:

■ *Performance differences among employees occur on most jobs.* In the typical job situation, a normal or bell-shaped curve of job performance exists among all employees on the job. Some individuals perform at a low level, while approximately the same percentage perform at a high level. The majority of individuals perform at an average level. In this situation the performance difference between a high and average performer is fairly large. However, there are some job situations where the differences between high and average performers is very small. For example, jobs such as tellers, utility collectors, casino game operators and insurance underwriters have very small performance differences between the best and average performances. Even small mistakes cannot be tolerated on these jobs, and action is taken at the outset to produce small differences between high and average performers. Such jobs wouldn't benefit from training programs. And, performance differences in these types of jobs are not tolerated for very long, if at all.

■ *Training programs result in improved employee performance.* However, evidence suggests that not all training programs have an impact on employees' performance.[4] Furthermore, some training programs are not designed to produce an immediate impact on performance. These programs are designed to acquaint employees with the organization and their position in it. Nonetheless, the power of a training program to produce performance improvement is critical in determining its overall utility to the organization.

■ *Increases in employee performance yield increases in company profitability.* The difference in the dollar contribution to the company of high vs. average or average vs. low performance has been referred to as the "standard deviation of job performance in dollars."[5] It represents the "value" to the company of developing an employee from an average to a high level of performance. We will continue to refer to this concept as "value" rather than the standard deviation of job performance in dollars. Low value contributes little to company profitability. On the other hand, if value is large, even ineffective training programs contribute something to company profitability.

Several factors can influence the value of a given job. For example, the degree of direct impact on the quantity and quality of a product helps determine a job's value. Jobs which include responsibility for human resources, budgets and assets typically have larger values than jobs which do not. Jobs with large decision-making authority and direct impact on products or service typically have large values. Also, the nature of the products may influence a job's value. Jobs in companies whose product market changes continuously are likely to have larger values than jobs in continuous processing or involving products with stable markets. Jobs such as sales, underwriting, pricing control and product management likely have large values. Similarly, service jobs such as investment counselor, banker and insurance agent, involving high risk or cost to either the employee or user also are likely to have large values. In these jobs, a change in per-

Figure 3—What Is Training Worth In Dollars?

Utility =

(Years Duration of Effect on Performance) × (Number Trained) × (Performance Difference Between Trained and Untrained Employees) × ("Value") − (Number Trained) × (Cost Per Trainee)

formance from average to high will have a large economic payback to the organization. Therefore, any training program that produces an increase in an individual's performance, from low to average or average to high, will have a high utility for the organization

Utility formula

Utility is a function of the duration of a training program's effect on employees, the number of people trained, the validity of the training program (or the performance difference between trained and untrained employees), the value of the job for which the training was provided, and the total cost of the program (see Figure 3).[6] Of all the factors in the utility formula, the validity of the program and the value of the target job are the most difficult to calculate.

The validity of a training program is determined by noting the performance differences between trained and untrained employees. The simplest method for obtaining this information is to have supervisors rate the performance of each group. However, other measurements such as production outcomes (quantity, quality), service indicators (e.g., customer satisfaction, repeat business) and direct sales also can indicate performance. While the latter clearly are more objective performance indices and therefore more desirable, it may be that the only common measurement among all the employees is some form of supervisory assessment of behavior. At a minimum, supervisory performance ratings should be obtained before and after training and compared to a control group of employees who have not attended training.

When using the utility formula, convert the employee performance ratings to standard scores with an average of 50 and a standard deviation of 10. For example, if the performance of an untrained group has an average of 50, and the performance of a trained group has an average of 60, the overall validity or performance difference between trained and untrained employees for this hypothetical program would be 60 minus 50 divided by 10—1.0. In other words, this particular training program increased the trained employees' performance one standard deviation above that of untrained employees.

In the past, value, the second variable, has been difficult to calculate in the utility formula. But Hunter and Schmidt's procedure is rapidly gaining acceptance among professionals in the area.[7] In this procedure, supervisors or individuals expert in subject matter estimate the yearly value to the company of the products and services for outstanding, average and marginal employees. The cost to the organization of having a consultant or external group provide the products and services to the organization is used as a benchmark by the subject-matter experts in making their estimates. The average of the estimates across all the experts is obtained for each level of performance: outstanding, average and marginal. The difference between the outstanding and average performer or the average and marginal performer is considered "value." In most studies, the difference between outstanding and average vs. average and marginal has been generally the same.

Use of their procedure to determine value makes it possible for organizations to use the utility formula in determining the usefulness of human resource programs. Figure 4 shows the results from several studies as reported by Schmidt, Hunter and Pearlman.[8] Studies dealing with the determination of value for target jobs indicate that value is typically between 40 and 70 percent of the average yearly salary for the job in question.

Figure 4—"Value" Estimates Per Year

- Entry-Level Park Rangers—$4,450
- Computer Programmers—$10,413
- Budget Analysts—$11,327
- 2nd Level Managers—$30,000

—OR—

- 40%–70% of Average Yearly Salary

Cost/benefit analysis

Let's take the example of a supervisory training program in participative management. The utility formula requires us to describe the duration of the effect on the trainees, the number of people trained, the performance difference between trained and untrained employees (in standard score form), the value of the job and the cost per trainee. Let's assume that the duration of the effect on trainees is roughly two years, that 20 supervisors are trained, that the performance difference due to training is three-fourths of a standard deviation (.75), that the value of the job is roughly $15,000, and that the cost per trainee is $1,000. Using these values, as shown in Figure 5, we find that the utility of this training program spread over a two-

Figure 5—Utility Of A Supervisory Training Program In Participative Management

Utility =

(Years Duration of Effect on Performance)	×	(Number Trained)	×	(Performance Difference Between Trained and Untrained Employees)	×	("Value")	–	(Number Trained)	×	(Cost)
2	×	20	×	.75	×	$15,000	–	20	×	$1,000

$430,000

year period is $430,000. This example shows that the utility of a training program for an organization typically is greater than line management and even human resource management would suggest. It is very likely that many human resource programs which are well conceived and implemented have great utility for their organizations.

Finally, Schmidt, Hunter and Pearlman reported that typical performance differences due to training range from .39 to .65.[9] These results suggest that the typical training program leaves much to be desired in terms of validity. However, as shown in the utility formula, the use of even slightly valid programs with jobs having high values produces large paybacks to the organization. For instance, in the example provided, if the program validity was approximately two-thirds of that given (i.e., .50 instead of .75), program utility would still be $280,000.

Comprehensive program design

The utility formula provides a unique approach to training program design because it identifies performance and value. By focusing on those jobs in the organization with large values and determining the training programs which have the largest validity for critical aspects of those jobs, a comprehensive approach may be followed in designing overall training programs. The steps include:

- *Review all jobs in the organization.* Determine those positions with the largest performance difference among employees and the largest values. These positions have the greatest potential for training.
- *Analyze training needs for targeted jobs.* Identify the critical job functions.
- *Determine training programs which have the greatest validity.* Obtain information to make these determinations from training evaluation literature or training evaluations done in your organization. While "gut feel" of the power of a training program is useful, it cannot replace a well-conducted evaluation.
- *Estimate utility for all programs.* Compare the programs to determine the ones with the greatest utility for the organization.
- *Make decisions regarding which programs to use.*

Use of this five-step utility-based procedure will lead to true training-induced performance gains among employees. Only the most cost-effective programs will be run, thus saving the organization time and money.

No matter how powerful the utility formula may be, continued research should improve the formula. We need to identify the value for key jobs throughout our organizations. While some work has proceeded along these lines, much more effort would identify those positions which have maximum impact on productivity. Furthermore, organizations with extensive and costly training programs should establish performance measurement systems in order to determine the performance baseline for untrained employees. When this baseline is determined, training evaluation studies might better indicate the validity or performance differences between trained and untrained employees. Finally, we need information regarding the "half-life" of our training programs. We know that many programs require refresher courses to sustain their impact over a period of time. In particular, those dealing with technical subjects such as engineering clearly need frequent revision. Also, programs that deal with employees' awareness and attitudes require constant updating to maintain their efficacy. On the other hand, skill-building programs probably require less rework due to their learning-dependent nature.

Conclusions

The economic impact of well-designed and properly implemented human resource programs, including training, is probably larger than most managers realize. Sustained effort in this area by major organizations and consulting firms using a wide array of training programs will eventually identify just how effective and economically useful programs are to an organization's bottom line.

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