Training for results means knowing which performances have to be changed—before you select and design an intervention. And that ain't just whistlin' "learning objectives."

BY GLORIA A. REGALBUTO

Over time, certain principles have become "self-evident" to practitioners in training and development: We believe that education and development are intrinsically valuable. We believe that the opportunity to learn is an inalienable right because it directly influences a person's ability to become a full participant in the economy. ● Most recently, we have come to believe—and claim ardently—that investments in training and development have a direct effect on an organization's bottom line. ● Our professional journals are full of articles that make that claim or start from that assumption. Why shouldn't we assume it to be true? But the field

Targeting the Bottom Line

seems to have suffered a great deal from the fact that others do not accept on faith a connection between workplace training and bottom-line results. They would like to see some proof. ● Many practitioners frequently bemoan their fate: "Oh, what a brave new world it would be if only the CEO could see it as we do!" Such comments are often followed by practical questions about how to "persuade," "prove," or "market" the connection.

The common wisdom

When someone asks me how to prove it, I wonder how the questioner has become so convinced of its existence. If a connection between training and bottom-line results has never been measured, how can we be so sure that it exists? Everyone just seems to "know." It's anecdotal—common wisdom.

We seem to want a magical incantation that can be used to "make the case." Once the case is made, the issue would never have to be addressed again. We want to believe in the connection in the way that many people "want" to believe in extraterrestrials—because to do otherwise would make it impossible for us to continue to do what we do.

This concerns me deeply. It may seem heretical, but I am not convinced that training and development activities consistently return investment. I am even ready to assert that most training programs, as currently designed and applied, cost more than they return. I believe this because of the numbers of practitioners I meet who fit the following statements:

▶ They believe so firmly in the intrinsic values of training and development that they think measurement is superfluous—even demeaning. (They tend to use the terms "education," "learning," and "human potential" more frequently than other practitioners.)

▶ They conduct "needs assessments" by mailing out lists of potential courses and asking respondents to indicate which they would be most likely to attend.

▶ They don't understand the relationship between training or other performance interventions and bottom-line results.

▶ They don't believe that the results of training are measurable, or are unaware of methods used to measure results.

▶ They measure their results in terms of head-count processed through classrooms.

▶ They do not conduct or do not know how to conduct adequate upfront performance analyses.

▶ They know how to conduct front-end analysis and they understand its importance, but are unable to do such analyses because of organizational barriers (such as a lack of information, permission, or time).

Any of those behaviors or beliefs can make it difficult to make the connection between the training and development function and contribution to the bottom line.

By definition, training is an expense. It inevitably affects the bottom line. At minimum, we know there is a negative effect. But many trainers claim the opposite: that training provides return on investment. Unfortunately they often make such claims without any attempt to demonstrate that return.

The key to measuring the organizational results of training or other performance interventions is to target those results at the outset—during the process of front-end analysis.

The best available technology

The methods for measuring organizational results exist and are well-publicized (I compiled a 15-page bibliography as early as 1986). But

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What Is Performance Technology?

Instead of assuming that all performance problems are related to the lack of certain skills or knowledge, the performance technologist asks, "Why is the worker not performing as expected?" In other words, the practitioner engages in performance analysis or front-end analysis.

A lack of skills or knowledge is only one possible cause of a performance gap. Other possibilities include problems with raw materials, equipment, or work spaces; a lack of money or staff; poorly designed work methods; or insufficient motivation.

The performance technologist examines the system in which the performance exists, in an attempt to track down the causes of a problem. The tools to be used—the particular technology or intervention—will be determined from the analysis.

The story of a training manager at a large glassware manufacturing company illustrates the role of a performance technologist.

Too many defective items were making it past a group of glassware inspectors. In response to the problem, the workers' supervisor asked the training manager to deliver a course in glass defect identification.

If the workers had not known how to identify defects, providing such a course would have been the appropriate solution. It certainly would have been the training manager's easiest course of action.

But a performance technologist does not assume that a lack of skill or knowledge is the problem—he or she analyzes the situation first.

In this case, the training manager interviewed the glassware inspectors and asked about difficulties they were encountering on the job. The cause of their poor performance quickly became evident—the light bulbs in the work area hadn't been changed in years.

A little research uncovered related grievances filed by union members. Many worker's compensation claims had been filed, involving headaches and eye strain among the employees.

The workers had the skills and knowledge to perform their jobs. They just didn't have enough light to see the products they were inspecting.

The training manager could have satisfied the supervisor's request by providing a training program. But that wouldn't have solved the problem and it may have left workers feeling resentful that their skills were being questioned. Instead, the performance technologist recommended a lighting consultant and a work-station redesign.

For a more detailed discussion of performance technology, see Gloria Regalbuto's May 1991 Training & Development article, "Recovery From Occupational Schizophrenia." (Call ASTD Customer Support for back issues, 703/683-8129.)

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not many practitioners use them.

Most practitioners are familiar with Donald L. Kirkpatrick's stages of training evaluation: reaction, learning, behavior, and results. But many of us never seem to get beyond levels one and two. It seems contradictory that such a well-known "truth"—that training is worth the time and expense—is so little tested. Why? If the methods exist and are fairly easy to access, why don't we use them?

One answer is suggested by ASTD's October 1991 National HRD Executive Survey on the topic of performance technology. The survey addressed three issues:

▶ To what extent are members of our field currently responsible for performance improvement in their organizations?
▶ What kind of access do training departments have to performance-related information (including employee, organizational, and strategic information)?
▶ How are training and course offerings determined?

The results showed that training or HRD functions in more than half of the 181 companies surveyed do have access to a broad range of performance information. But their roles do not currently include diagnoses and recommendations on performance improvement beyond the applications of classroom training interventions.

Conclusion: We do just what we are asked to do—deliver training. Corollary: We do not do what we are not asked to do—improve human performance in the workplace.

In other words, our organizations do not ask us to deliver what they need; they ask us to deliver what they believe we can provide. But the technologies at our disposal are more powerful than that. And what we are asked to provide—training—is often ineffective, unnecessary, and expensive. Occasionally, it is even harmful.

If we really are delivering training only because we are being asked to do so—and not because it is what's needed to improve performance—then measurement may serve only to expose the negative effects our activities have on the bottom line.

The art of skepticism: front-end analysis

I may seem pessimistic, but I've always found it best to start with the worst-possible-case assumption—that classroom training is not worth its cost—and then to determine ways to avoid it and still get the desired results.
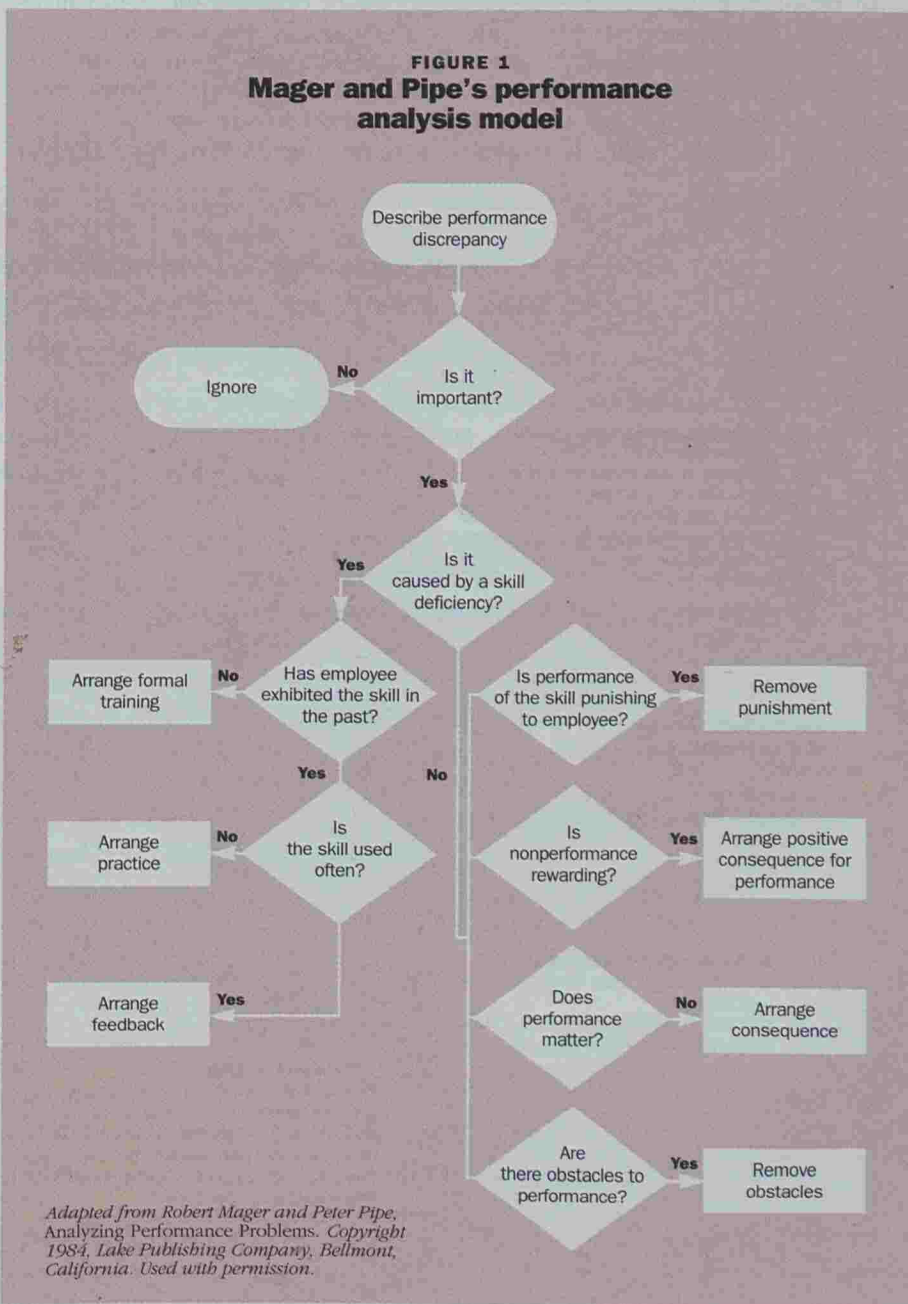
Much of my support for this approach comes from my own consulting experience. Sixty to 80 percent of the problems people ask me to solve don't turn out to be related to lack of skills or knowledge. Instead, they involve any or all of these possible performance barriers:

▶ a lack of clear goals and direction
▶ insufficient staff
▶ a lack of equipment, or inappropriate equipment
▶ insufficient funding
▶ insufficient or inappropriate motivation or rewards.

If it's true that our organizations are asking us for the wrong interventions, then we may have to find ways to avoid giving them what they've asked for. How do we get them to ask for appropriate things? How do we avoid having to react negatively to management requests?

One way is to design a training

FIGURE 1
Mager and Pipe's performance analysis model

Adapted from Robert Mager and Peter Pipe, *Analyzing Performance Problems.* Copyright 1984, Lake Publishing Company, Bellmont, California. Used with permission.

function that proactively anticipates training needs.

Many authors have found various ways to differentiate the terms "needs analysis," "performance analysis," "front-end analysis," and "needs assessment." All four terms are sometimes used to refer to the process used to determine the causes of an observed performance discrepancy or "opportunity." More frequently, these terms (especially needs assessment) refer to processes used to determine the learning or behavior objectives for a course of training.

In other words, what has been referred to as needs analysis or assessment, performance analysis, or front-end analysis can be described as the process used to determine the differences between desired and actual performances. The resulting gap, discrepancy, or opportunity defines the learning, behavior, or performance objectives for a course.

One of the most widely used models of performance analysis is that of Robert Mager and Peter Pipe. They introduce the model in the book, *Analyzing Performance Problems.* (See Figure 1 on page 31.)

Mager and Pipe's model describes the concept of performance analysis. In order to conduct such an analysis, a practitioner devises or selects methods for gathering information to support or disprove the issues raised in the analysis. These methods might include job observation, surveys and questionnaires, work samples, interviews, and focus groups.

Again, the performance analysis process starts with the assumption that there is, in fact, a performance "gap" or "discrepancy." Once the discrepancy has been identified, it's possible to take the first step in calculating return on investment.

Return-on-investment calculation

In *Approaches to Training and Development,* Dugan Laird refers to that "first step" in his description of the "Measurement and Evaluation Cycle." (See Figure 2.)

In order to determine whether a training intervention has an effect on the bottom line, you must first know or be able to estimate the cost of the current performance. That cost is "baseline number one." Once the cost is known, performance objectives can be targeted.

FIGURE 2
The ME cycle—Measurement and Evaluation

Source: *Dugan Laird,* Approaches to Training and Development, *Copyright 1985, Addison-Wesley. Adapted with permission of the publisher.*
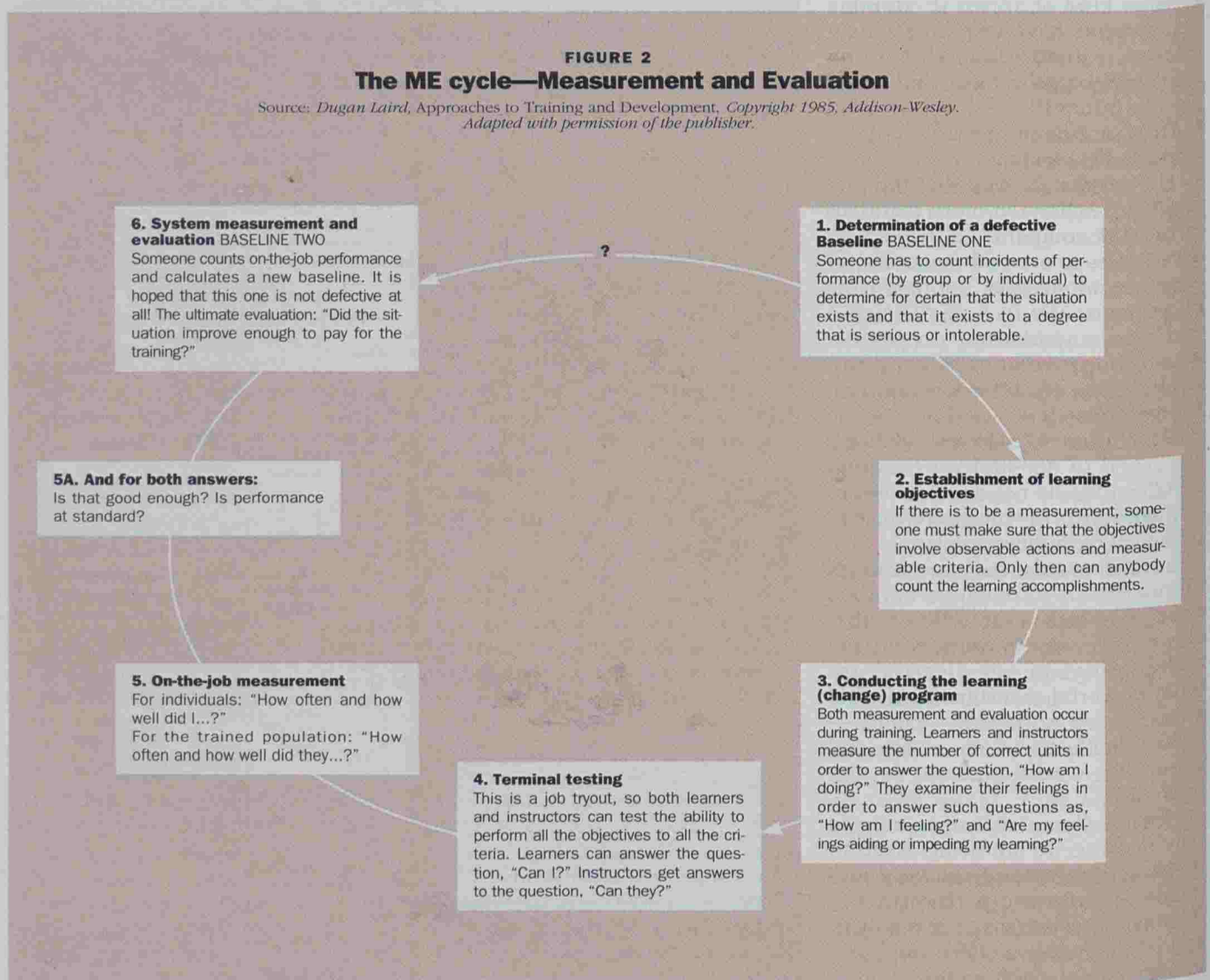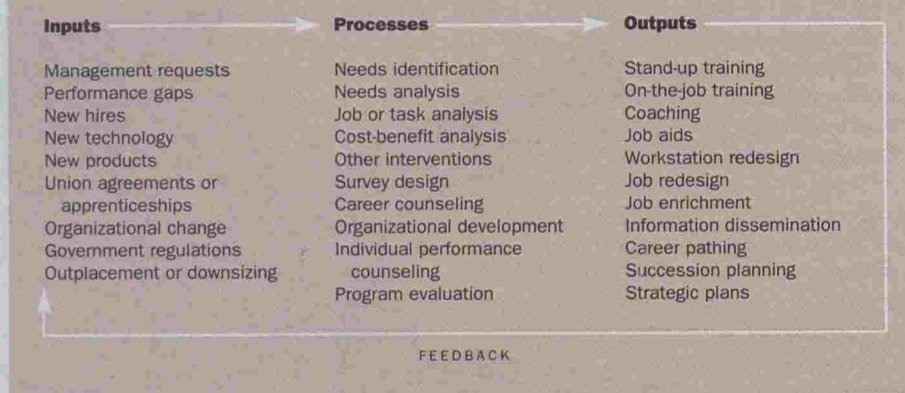
6. System measurement and evaluation BASELINE TWO
Someone counts on-the-job performance and calculates a new baseline. It is hoped that this one is not defective at all! The ultimate evaluation: "Did the situation improve enough to pay for the training?"

1. Determination of a defective Baseline BASELINE ONE
Someone has to count incidents of performance (by group or by individual) to determine for certain that the situation exists and that it exists to a degree that is serious or intolerable.

5A. And for both answers:
Is that good enough? Is performance at standard?

2. Establishment of learning objectives
If there is to be a measurement, someone must make sure that the objectives involve observable actions and measurable criteria. Only then can anybody count the learning accomplishments.

5. On-the-job measurement
For individuals: "How often and how well did I...?"
For the trained population: "How often and how well did they...?"

3. Conducting the learning (change) program
Both measurement and evaluation occur during training. Learners and instructors measure the number of correct units in order to answer the question, "How am I doing?" They examine their feelings in order to answer such questions as, "How am I feeling?" and "Are my feelings aiding or impeding my learning?"

4. Terminal testing
This is a job tryout, so both learners and instructors can test the ability to perform all the objectives to all the criteria. Learners can answer the question, "Can I?" Instructors get answers to the question, "Can they?"

FIGURE 3
Basic workflow elements for HRD

Inputs	Processes	Outputs
Management requests	Needs identification	Stand-up training
Performance gaps	Needs analysis	On-the-job training
New hires	Job or task analysis	Coaching
New technology	Cost-benefit analysis	Job aids
New products	Other interventions	Workstation redesign
Union agreements or apprenticeships	Survey design	Job redesign
	Career counseling	Job enrichment
Organizational change	Organizational development	Information dissemination
Government regulations	Individual performance counseling	Career pathing
Outplacement or downsizing		Succession planning
	Program evaluation	Strategic plans

FEEDBACK

This is the point at which performance or needs analysis should be done.

What is the source of the performance discrepancy? If the issue has nothing to do with a skills or knowledge deficit, then designing a training program will not fix the problem. It will be a wasted expense. Even if the discrepancy is related to a skills and knowledge deficiency, a traditional training program may not be the only alternative. Job redesign, job-aid design, automation, or computer-based training may be more effective and less costly. (See Figure 3.)

Without a baseline measure of the cost of the performance discrepancy, no return-on-investment calculation can be done after the intervention has been selected, designed, and implemented.

Needs forecasting

Where do performance discrepancies come from? Some gaps are noticed because of the effects of a performance problem (for example, productivity is down) or because a work method is about to change. In any case, those who are responsible for designing training usually are not given enough lead time to perform effective analyses. (Remember, a common barrier to the performance of such analyses is a lack of time.)

In almost every case, front-end analysis or needs analysis is a reactive rather than proactive action. It is a way of responding to a request for a training (or performance) intervention.

Being proactive requires what I call a needs-forecasting system. A proactive needs-forecasting system allows the performance analyst to get slightly ahead of the game. It is also the source of the necessary baseline information for calculating return on investment. (See Figure 4.)

The design of such a system starts simply with determining the possible sources of performance discrepancies within an organization. These are the "inputs" to the training function, as shown in Figure 3. They often include the following:
- requests from management
- observed performance gaps
- new hires
- new technology
- union agreements or apprenticeship programs
- organizational change, including job redesign
- government regulations
- outplacement or downsizing.

FIGURE 4
General training workflow system
Copyright 1987, Strategic Performance Systems.
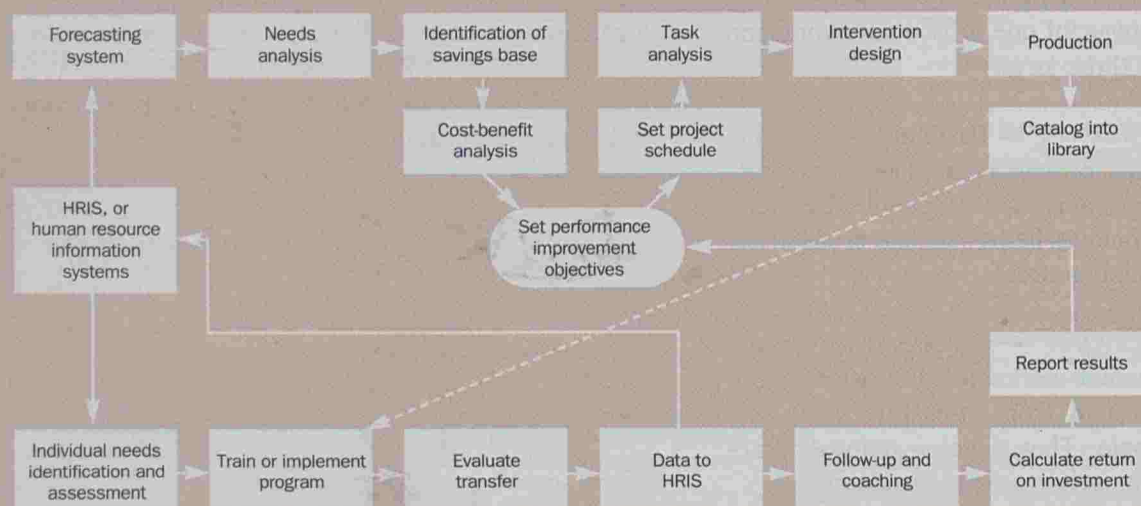
Information sources

Designing a forecasting system means tapping into information sources that can provide you with clues to upcoming changes such as the ones listed above. Ask to be included in the circulation of reports containing such information, or create your own sources. Finding the sources is a matter of asking managers how they know what they know.

Some of the most common sources of information about possible performance discrepancies:

▸ strategic business plans
▸ management seminars
▸ managers and supervisors
▸ HR information systems
▸ cost accounting functions
▸ capital asset budgets
▸ research and development, and engineering
▸ the customer service and quality functions.

Strategic business plans. Pay special attention to plans for expansion in labor, products, services, or geographic locations. Downsizing, "right-sizing," or other plans that affect numbers of workers will affect job design and cause changes in performance expectations. Plans to merge, reorganize, or introduce new operating methods or new technologies will also cause performance needs to change.

Management seminars. Many training requests are initiated because managers learn new concepts from seminars and publications. There's not much that can be done to predict such requests: many result from whim and accident. But it's a good idea to stay abreast of the latest management concepts and changes in your organization's culture.

Managers and supervisors. How do the people who ask you for training identify performance discrepancies in the first place? A supervisor may pinpoint some gaps through the following sources:

▸ observation
▸ a statistical quality control system
▸ a performance appraisal system.

As a performance technologist, you should also follow the available statistics and standards of performance measurement. You can use that information to determine future training needs for yourself.

For example, statistical quality control systems can be extremely helpful. They generate records of lost hours, costs, lost resources, and other statistics that can be directly tied to bottom-line losses caused by a performance deficiency. Statistical process control can provide a direct method of creating a baseline for your return-on-investment calculations.

Human resource information systems. Many human resource functions are

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not totally automated, but they can still generate information that can be extremely helpful in tracking performance. Consider the following kinds of data:

▶ staffing and labor plans
▶ turnover rates
▶ absenteeism reports
▶ employee survey information
▶ job and task analysis (usually done for compensation systems)
▶ applications for retirement (they can provide clues to the loss of critical staff and the need to train replacements)
▶ number of lost-time hours
▶ number of accidents by job class
▶ occupational hazard ratings
▶ critical staffing lists
▶ worker's compensation claims (especially those related to work methods).

Cost accounting. Another source of information is the accounting or cost accounting function in the organization.

You may be able to track information on amounts of materials used, generation of scrap, and relative expenditure of materials by departments or work teams. (For instance, does one shift consistently use material more efficiently than another?)

You may also glean valuable

budget, which would include purchases of new equipment and technology that necessitate training.

If you can get involved in the purchasing process, you may be able to contribute to negotiations over what training will be supplied by the manufacturer. You may also be able to establish quality benchmarks for the training.

Research and development, and engineering. Create rapport with the engineers. They are the people who redesign products, manufacturing and work systems, and work methods. You can make the introduction of new technology much more profitable more quickly if you can get into the loop at the start of the process.

Customer service and quality functions. Many organizations are installing total quality systems. But I've been surprised at the number of

Getting ahead

The details of creating a forecasting system are too complex to delineate here. The point is to get ahead of "need" in order to gain the time needed for adequate front-end or performance analysis. Such an analysis is critical to determining the causes of performance gaps and to identifying appropriate, cost-effective methods for closing them. The answer may not always be a training program.

When we don't have the time to perform an analysis, we are left with few options but to do what is requested of us—provide classroom training—even if it will not solve the problem.

For the performance technologist, good diagnostic skills alone are not enough; you also need the time to employ them. Identifying the company's performance improvement needs before management identifies them is one way of gaining that important edge.

Of course, that's not always possible. All of us must occasionally create training programs when we're not certain that they're really needed. In those cases, the performance analysis can be done as part of the job and task analyses, or as part of the classroom discussion with frontline workers. It's never too late to call attention to performance barriers.

In such cases, doing return on investment calculations, unasked, is probably not a great idea. The best managers and leaders are forced to make educated guesses occasionally. But we shouldn't make a profession of it. ■

THE BEST MANAGERS AND LEADERS ARE FORCED TO MAKE EDUCATED GUESSES OCCASIONALLY. BUT WE SHOULDN'T MAKE A PROFESSION OF IT

information from equipment reports. (For example, what is the expected "shop life" of a piece of equipment? How does that compare to the actual shop life of the equipment? What is the equipment's cost? What is the normal maintenance schedule? Is equipment undergoing repairs more frequently than should be necessary? Why?)

Capital asset budgets. The accounting department of your organization may also be able to supply you with information from the capital asset

total quality management efforts that are not connected with the training function.

Considering customer complaints and examining quality statistics are direct methods of identifying performance problems. But because training is out of the loop, many quality systems are excellent at identifying and quantifying the cost of performance problems, but have no way of implementing change in the behaviors that cause the problems in the first place.

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