Session No. 561

But Does It *Really* Work?
Using Performance Technology for Safety Results

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Performance Technology Overview

Most organizations understand the value of improving performance of their employees. Today's safety professionals are taking many different approaches within the organization, even though many efforts are conceived and implemented in isolation. Since many of these initiatives are not integrated into the total performance system, the outcomes can be a bit hazy and achievements hard to pin down.

> "No problem can be solved from the same level of consciousness that created it. We must learn to see the world anew." —Albert Einstein

In order to achieve lasting results with true organizational change and transformation, today's safety professionals would be well served to adopt an integrative approach using the science of Human Performance Technology (HPT). HPT would assist in their initiatives across all three levels of the organization: worker, work, and workplace.

Human Performance Technology is not meant to replace safety system components, such as the three E's (engineering, education, and enforcement), basic OSHA compliance strategies or issuing PPE; rather HPT is a powerful process that can help integrate performance improvement initiatives at all three organizational levels, based on the following fundamental principles:

- **R**esults focused: begin with the end in mind
- **S**ystemic: take a systems viewpoint
- **V**alue added: focus on what really matters to the organization
- **P**artner: with clients and other performance professionals

HPT provides a systematic process to follow on what can often be a not-so-systematic path. In addition to identifying human performance gaps and possible solutions, this standardized

approach offers the ability to measure the success of your efforts and eliminate the guesswork that follows when a performance gap must be evaluated.

HPT is results-based and systematic. Rather than focusing on a 'wants-based' or 'needs-based' approach, HPT follows a 'results-based' approach to improving performance, distinguishing it from many compliance-based activities. The process is driven by a business need and a performance need, justified by the results of a cause analysis.

One of the cornerstones of HPT is the concept of systems thinking. Organizations are complex systems! Taking a holistic view of the entire system is critical if performance improvement is to be achieved. Merely tweaking various parts of the system will yield only marginal or unsustainable results. That is why many safety initiatives fail – they are approached as individual activities, and not on a holistic basis.

The HPT process helps articulate your business goals, links those goals to human performance, diagnoses the current state of performance within the organization, finds root causes of performance deficiencies, implement solutions, and evaluates the results of the interventions. Being business focused means having a clear understanding of what your organization's strategic priorities are and using those priorities to guide your management decisions. The process of analyzing performance begins with an analysis your business, which brings forward the focus on goals for your organization. While you may believe your business goals are clear and understood by everyone, this assumption is often wrong. If your business is typical, most of your employees will have difficulty stating what your business goals are and identifying how work assignments affect those goals.

Although individual performance by workers creates output (or results) for the organization, HPT begins at the end of the process by considering the business output or goals of the business, and then applying those goals backwards to the departments, teams, and individuals who will work toward satisfying those goals. The process of identifying your business goals is critical to the application of HPT. This approach is in clear contrast to most safety activities which are often conducted with little or no correlation to business goals.

After a rigorous analysis of present and desired levels of performance, root causes are identified for the performance gap. HPT then uses a wide range of interventions that are drawn from many other disciplines, including behavioral psychology, instructional systems design, organizational development, and human resource management in order to improve performance, guide the change management process, and evaluate results.

This paper offers readers a high level view of the HPT process and its application to solving safety issues. Readers will:

- Discover the origin and underlying principles of HPT;
- Explore various models of the HPT process;
- Apply analysis models to determine performance gaps and their root causes; and
- Evaluate the impact of interventions.

A small but growing number of safety professionals are now using HPT to vastly improve organizational results. These methods yield tremendous gains in performance – which translate into bottom-line business results.

Why Training (Usually) Never Works

In a recent survey (American Society of Training and Development & the Conference Board), 98% percent of the respondents indicated problems with obtaining high performance from their workforce! Clearly this is an issue worth exploring. The traditional approach to performance (and safety compliance) is training. The theory goes that if you provide the workforce with training, behaviors will change and results will be delivered. The reality, however, is that scenario rarely works.

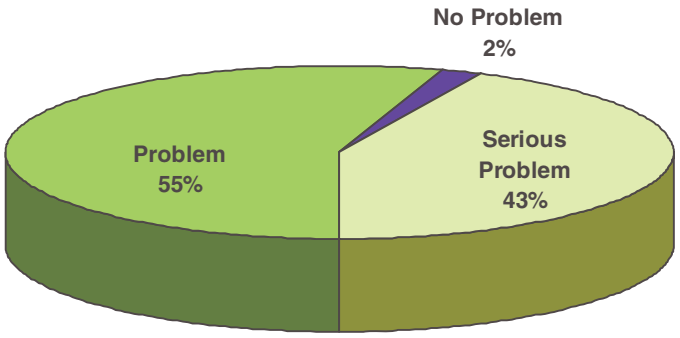

Exhibit 1. Percentage of Companies Indicating Problems in Obtaining High Performance from Workforce

Several studies measured the effects of training on performance. They used various measures (such as returned value on investment, overall changes or value as a result of training) but the outcomes were startling similar. These studies (Conference Board, Robinson and Robinson, Baldwin and Ford, Brinkerhoff, Broad) showed the wasted value of training ranged from 85% to 96%; or put another way, training accounted for results just 4% to 15% of the time.

Robert Brinkerhoff offers an impact distribution that illustrates this phenomenon. Results are defined as something that provides a measurable impact to the organization (value-added, profit, accomplishing the mission, or whatever metrics the organization uses to define success and end-goals).

Certainly these results will vary between populations and the various courses attended, but there is a fairly predictable bell-curve of results from training.

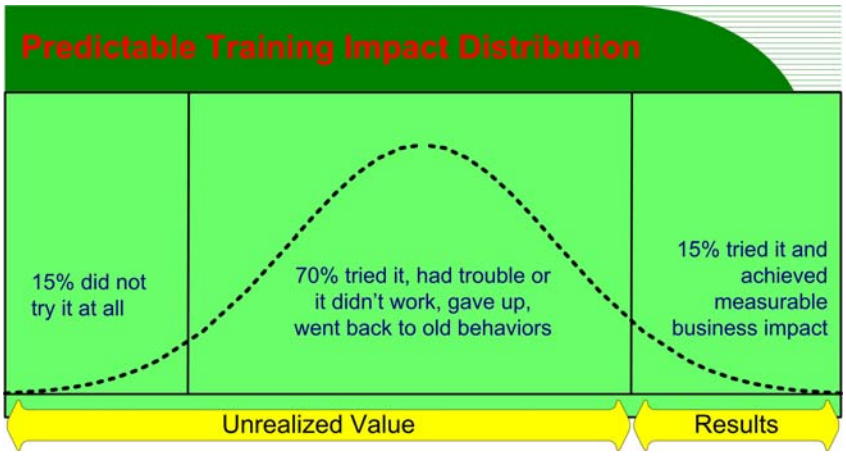

Exhibit 2: Predictable Training Impact Distribution

Learning and development programs provide value only when new skills and knowledge are transferred and applied to the work of the organization. Leo Burke, from Notre Dame University said it best: "The real question is: What can you do on Monday, what can you do Monday six weeks from now, Monday six months from now?"

There are quite a few underlying reasons for these results. Let's examine these factors in three different phases of the training cycle – before the training event, during the training event, and after the training event.

Let's say that we send 100 supervisors off to training. In cases where training did NOT contribute to a measurable or important business impact, to what extent (percentage estimate) does each of the following failure reasons explain the real reasons for a lack of impact?

Before Training - preparation & readiness	During Training – the actual learning intervention	After Training – the application environment
• Wrong people attended • No clear reason for attending • Lack of preparation and focus • Didn't need it; already used it	• Could not learn it • Wanted to learn it, but instruction failed • Bad training design or materials • Facilitator did bad job	• Didn't get any manager support • Had no opportunity to try it out • Lack of peer support • No incentive to use it • Lack of feedback and coaching

Table 1: Training Failure Modes

Looking at the data, the failure mode distribution usually looks something like this:

Before Training	During Training	After Training
>40%	<10%	>50%

Table 2: Failure Mode Analysis Estimate

To test some of these reasons, simply recall the last training event, seminar or workshop you attended. Now let's ask a few questions about the impact of your participation:

- Did you meet with your manager prior to attending the event?
- Did you go with the specific intent to learn new skills or with an expectation of enhanced performance upon your return to the job?
- Was there a direct link between your job performance and the material/skills presented?
- Did you learn something new, gain fluency or a new skill as a result of attending the event?
- If so, does this directly correlate to your work performance?
- Did you meet with your manager after the event to discuss the new/enhanced skills acquired?
- Did your manager offer to help/coach you to implement these skills in a way that would result in enhanced performance?
- Was your performance measured before attending and again afterward?
- The bottom line question – were you able to apply what you learned in a way that produced measurable results in order to influence one of the organization's key indicators or goals?

Despite the data, at the first sign of performance problems, organizations usually look first towards training to solve problems. Many organizations (and managers) view lack of performance as a worker issue that can best be solved by training or re-training the employee.

How many times have we seen an incident report conclude the employee was "careless" or "not paying attention" then a decision was made to send the employee to training and/or remedial training? Robert Mager's Performance Analysis Tool begins with the question about skill/knowledge: "Could the worker do the task if a gun were put to his or her head?" If the answer is yes, or if they have ever done the task correctly, training is clearly not going to solve the performance issue.

Origin and Underlying Principles of HPT

HPT is a field of study related to process improvement, lean, six sigma, organization development, motivation, instructional technology, human factors, learning, performance support systems, knowledge management, and training. It is focused on improving performance at the organization, process and individual performer levels. The origin or inception of HPT traces back mainly to the work of Thomas Gilbert, Geary Rummler, Karen Brethower, Roger Kaufman, Robert Mager, Peter Pipe and Joe Harless.

The International Society for Performance Improvement provides a wonderful overview of the underlying origins and principles of Human Performance Technology.

Human Performance Technology (HPT) uses a wide range of interventions that are drawn from many other disciplines including, behavioral psychology, instructional systems design, organizational development, and human resources management. As such, it stresses a rigorous analysis of present and desired levels of performance, identifies the causes for the performance gap, offers a wide range of interventions with which to improve performance, guides the change management process, and evaluates the results. Taken one word at a time, a description of this performance improvement strategy emerges.

Human: the individuals and groups that make up our organizations
Performance: activities and measurable outcomes
Technology: a systematic and systemic approach to solve practical problems

Principles of Human Performance Technology
Human Performance Technology (HPT) has been described as the systematic and systemic identification and removal of barriers to individual and organizational performance. As such, HPT is governed by a set of underlying principles that serve to differentiate it from other disciplines and to guide practitioners in its use.

HPT focuses on outcomes. Focusing on outcomes, that is results, allows for questioning, confirming, and reconfirming that people share the same vision and goals, the job procedures support productivity, efficiency, and quality, and that people have the knowledge, skills, and motivation they require.

HPT takes a systems view. Taking a systems view is vital, because organizations are very complex systems that affect the performance of the individuals that work within them.

HPT adds value. This is an assessment that clients will be asked to make. Clients should be offered a process that will help them fully understand the implications of their choices, set appropriate measures, identify barriers and tradeoffs, and take control.

HPT establishes partnerships. Performance improvement professionals work in partnership with clients and other specialists. A collaborative effort involves relevant stakeholders in the decision-making process and involves working with specialists in their areas of expertise.

Be systematic in the assessment of the need or opportunity. Analysis occurs in the beginning of the project. Needs or opportunity analysis is about examining the current situation at any level or levels (society, organizational, process, or work group) to identify the external and internal pressures affecting it. This process will determine the deficiencies or performance gaps that are to be remedied. The output is a statement describing the current state, the projected future state, and the rationale or business case for action or non-action.

Be systematic in the analysis of the work and workplace to identify the cause or factors that limit performance. Cause analysis is about determining why a gap in performance or expectations exists. Some causes are obvious such as new hires lack the required skills to do the expected task. This step in the systematic process will determine what should be addressed to improve performance. The output is a statement of why performance is not happening or will not happen without some intervention. Job task analysis includes the identification of the important tasks that employees must perform and the knowledge, skills, and abilities to perform them. The output is performance

objectives that describe the desired performance, delineate the conditions under which the performance is done, and identify the criteria for successful performance.

Be systematic in the design of the solution or specification of the requirements of the solution. Design is about identifying the key attributes of a solution. The output is a communication that describes the features, attributes, and elements of a solution and the resources required to actualize it.

Be systematic in the development of all or some of the solution and its elements. Development is about the creation of some or all of the elements of the solution. It can be done by an individual or a team. The output is a product, process, system, or technology. Examples include training, performance support tools, a new or re-engineered process, the redesign of a workspace, or a change in compensation or benefits.

Be systematic in the implementation of the solution. Implementation is about deploying the solution and managing the change required to sustain it. The outputs are changes in or adoption of the behaviors that are believed to produce the anticipated results or benefits.

Be systematic in the evaluation of the process and the results. Evaluation is about measuring the efficiency and effectiveness of what was done, how it was done, and the degree to which the solution produced the desired results so that the cost incurred and the benefits gained can be compared.

This process is represented by the HPT Model:

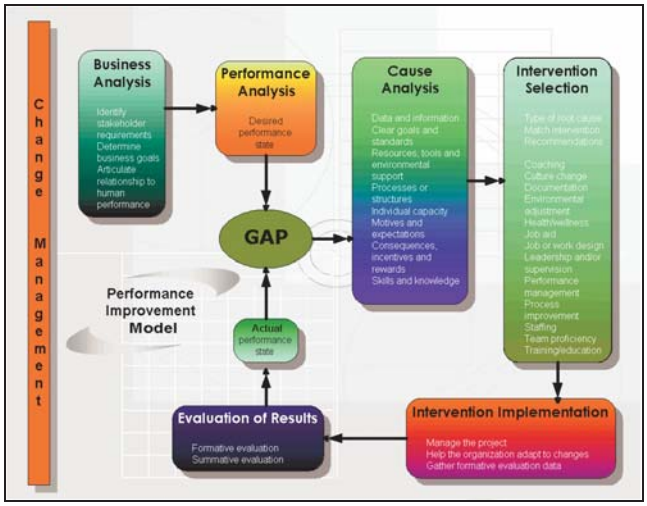

Exhibit 3: Human Performance Technology

Geary Rummler and his colleague Alan Brache introduced another systems-approach model called the Nine Performance Variables. In this three-by-three matrix model, the Performance Technologist looks at all the contributing factors/causes at the worker/job, department and organization level.

	Goals	Design	Management
Organization Level	Organization Goals	Organization Design	Organization Management
Process Level	Process Goals	Process Design	Process Management
Job/Performer Level	Job Goals	Job Design	Job Management

Table 3: Nine Performance Variables

When we start to diagnose performance issues using the Nine Performance Variables, we start to see these types of issues, instead of focusing solely on the worker level:

- Expectations
- Performance standards
- Feedback/Consequences
- Tools/Resources
- Job design
- Workflow
- User friendly software
- Ergonomics
- Time to complete
- Correct behavior punished

The following model of Human Performance divides the work environment into three areas: information, means and motivation; and two levels: what the organization can provide (data, methods and processes, incentives/consequences) and what the employee brings to the job (skills, knowledge, capacity and willingness to work.

	Information	Means	Motivation
Organization Provides	**Data**	**Methods**	**Consequences**
	Providing Information	Equipment and Supplies	Pay & Benefits
	Directions and Expectations	Working Conditions and Processes	Advancement
	Providing Feedback	Work Organization	Empowerment
Employee Brings	**Knowledge**	**Capability**	**Willingness to Work**
	Knowledge, Skills and Abilities	Individual Capacity to do the Work	Motives

Table 4: Human Performance Model

This model provides a good framework for identifying the organizational factors that will influence performance and safety results. It also provides a context for asking the question, "Where is the *greatest* leverage for increasing safety performance?" The research indicates the greatest leverage – the greatest chance for improved effort with the least effort – comes when an organization provides good data, clear expectations, efficient work processes, sufficient resources, coaching, feedback, incentives and appropriate consequences. Coincidentally, these are lower-cost items to the organization.

In contrast, what the individual brings to the organization, while very important, typically offers less leverage for improving performance and results. For example, organizations often presume that training offers the greatest opportunity to improve safety performance. However the research shows that training actually has a very minimal effect on behavior (and safety results), but that simpler solutions, like providing a written job aid, giving immediate feedback on performance (especially positive feedback) and self-recognition of hazards offer much greater performance at a fraction of the cost.

Putting HPT to Work in the Safety Profession

Much of traditional safety work relies on compliance training, safety manuals, rules, procedures and discipline. All of this certainly has its place, but tends to be reactive. No organization has reached world-class levels of safety performance through being reactive. One of the big hurdles for organizations as they pass through the continuum of safety excellence is to get past the "compliance" mentality into the "excellence" mentality. An example of this can be found in the organizations who have achieved SHARP, CHASE or VPP status (OSHA recognition programs). Organizations that are recognized at these levels have transcended the notion of "good safety is having a good safety manual." They have actually implemented safety *practices* that are effective. They not only have a policy about Job Safety Analysis, they actually do them. Supervisors and workers actually do them, not just lip service, not just the "safety department." They have begun to integrate safety into the line functions of the organization and have also started to measure safety not as the lack of injuries, but as a way of doing business that also boosts quality and productivity.

That's a very big turning point! Now when we focus on productivity, safety becomes an adjective, not a verb. Business results are the leading indicators, safely is how they are accomplished. But make no mistake, production is always the reason for a business to exist, that is what must be measured and achieved, but we can always improve on efficiency, quality, health and safety.

So when we take a systems approach to safety we focus on results. It isn't just the absence of an incident, but rather the increase in output or the ability to make more widgets with less cost (fewer injuries, less absenteeism, higher level of quality.

With a systems approach to safety, we begin to integrate safety training into job skills training. When we train a new employee, safely is how they learn to do it ("safely training," versus "safety training").

Since there has never been a study depicting the correlation between the amount of safety training (or the number of inches of the safety manual) to the safety results, it takes our common sense and an understanding of performance technology lead us to realize that we need to focus our

attention on what really causes safety. Those organizational variables at the worker, job, department and meta-levels are what really drive safety and results.

The tools and techniques of HPT give safety professionals a whole new perspective/way of looking at increasing safety results and organizational results.

A wonderful quote comes from Harry Mikel & Richard Schroeder, early Six Sigma pioneers:

> "You don't know what you don't know
> You can't do what you don't know
> You don't know until you measure
> You don't measure what you don't value
> You don't value what you don't measure"

Bibliography

Brinkerhoff, R.O. *Telling training's story*. San Francisco: Berrett-Koehler Publishers, 2006

Gilbert, T. *Human competence: Engineering worthy performance*. New York: McGraw Hill, 1978.

Harless, J. H. *An ounce of analysis is worth a pound of objectives*. Newnan, GA: Harless Performance Guild, 1975.

International Society for Performance Improvement, *What is human performance technology,* http://www.ispi.org/hpt_institute/#What, Silver Spring, MD: ISPI

Kirkpatrick, D.L. *Evaluating training programs*. 2nd ed. San Francisco: Berrett-Koehler Publishers, 1998.

Mager, R. M., & Pipe, P. *Analyzing performance problems*. Belmont, CA: Pitman Learning, 1984.

Rummler, G., & Brache, A. *Improving performance: How to manage the white space in the organizational chart*. San Francisco: Jossey Bass, 1991.

Schein, E. H. *Organizational culture and leadership*. San Francisco: Jossey-Bass, 1985.

Senge, P. M. *The fifth discipline: The art and practice of the learning organization*. NY: Doubleday, 1990.

Stolovitch, H., & Keeps, E. (Eds.). *A handbook of performance technology*. San Francisco: Jossey Bass, 1992.