

THE PERFORMANCE EQUATION

$$P = \frac{\text{ABILITY}}{\text{OPPORTUNITY}} \times \text{WILLINGNESS}$$

The equation is visually styled with the following elements:

- P**: Large black letter on the left.
- =**: Black equals sign.
- ABILITY**: Red text above the fraction.
- K + S**: Red text above the horizontal line of the fraction.
- R_e**: Green text below the horizontal line of the fraction.
- OPPORTUNITY**: Green text below the fraction.
- x**: Black multiplication sign.
- A**: Large blue letter.
- WILLINGNESS**: Blue text written vertically to the right of the 'A'.

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The Formula for Dramatic and Sustainable Performance!

by
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THE PERFORMANCE EQUATION

Ask any group of professionals to define the elements of performance and you will get a list, a long list. Ask them to define the relationship between these elements and you will get a discussion, a long discussion. Long list and long discussions are not actionable.

We reduced these lists down to four basic elements and defined the relationship between each element. In the process we create the Performance Equation the formula for dramatic and sustainable performance.

ELEMENTS OF PERFORMANCE

The Performance Equation reduces performance to four basic elements that are common to all human performance. This was accomplished by consolidating the lists of performance elements most often cited by HRD, OD and HR professional. All aspects of human performance can be placed under one or more of these four elements.

Knowledge (1)

To achieve high performance people must “know” what they are doing, and be “proficient” in doing it. Knowledge of the steps in a good decision making process, for example, increases one’s performance in decision making. Knowing how to do each step in a decision making process also increases performance. The more in-depth the knowledge the more one knows what and how to do things.

Skills (2)

Skill is one’s level of proficiency in doing tasks. Knowing the steps in decision making, and knowing how to do each step, does not necessary mean one can perform each tasks well. Knowing how to play golf, for example, does not translate into being a good golfer. One must be able to swing the club’s with some proficiency – we call that proficiency skill.

Roadblocks in the Environment (3)

To achieve high performance, people must have the opportunity to use their ability to perform. Environmental roadblocks are those aspects of an organization’s infrastructure and culture that inhibit the use of ability. A training program to develop high performance teams, for example, may be rendered useless by a hostile culture and negative attitudes as participants learn that, “This is not the way we do things around here!”

Kurt Lewin’s Force Field Analysis (1951) views the environment as a set of counterbalancing driving and restraining forces. Restrainers are those forces that inhibit or punish people for using their ability. A restrainer is the organizational equivalent of tripping a runner in a foot race – the more often they are tripped, the poorer their performance will be. Restrainers have the effect of reducing the opportunity to perform.

Attitude (4)

To achieve high performance, people must be willing to use their knowledge and skills, and be willing to overcome the inherent environmental roadblocks that will inhibit their performance. When we consolidated the elements related to the willingness to perform we came down to one element, attitude.

There has been a great deal written about the effect of attitude on performance. What they all recognize is that attitudes are fickle - they can change dramatically and quickly – and they are powerful. Boiled down to a single phrase, “Think you can, think you can’t, either way you will be right!”

Every human performance problem, no matter how complicated, can be reduced to these four basic elements - knowledge, skills, environmental roadblocks, and attitudes. People will consistently maximize their performance when they have the ability, willingness and opportunity to perform.

THE FORMULA FOR PERFORMANCE

Performance is like a jig saw puzzle. To solve the puzzle you have to gather the pieces and put them together. Understanding the relationship between the four elements of performance (pieces) has allowed us to fit the pieces together and solve the puzzle – the result is the Performance Equation, the formula for dramatic and sustainable performance.

Knowledge + Skills – The Ability to Perform

The Performance Equation states that knowledge and skills are additive, when combined they create the “ability” to perform.

Knowledge without skills is not actionable. Knowing how to do something, but having no proficiency in doing it, will deliver minimal performance – it makes you a consultant. But, even consultants must have the skill to impart their knowledge in order to achieve high performance as a consultant. Knowledge and skills must combine to result in performance.

Skill without knowledge makes you a natural. These “natural skills” come from our DNA. Each of us is born with “gifts differing” according to Myers and Briggs. Tiger Woods would be a very good golfer based on his “natural ability” alone – his potential to be a great golfer was much greater than most. But to achieve the highest performance possible for him required the acquisition of knowledge. That is why, when at the peak of his career, he changed his basic swing based on knowledge he had developed over time.

Knowledge and skills are inseparable from the perspective of performance. Knowing the steps in a decision making process immediately translates into increased performance – I do a step that I had skipped previously. Each time you do the steps in a decision making

PERFORMANCE EQUATION

ABILITY

$$P = \frac{K + S}{R_e} \times A$$

OPPORTUNITY

WILLINGNESS

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Figure 1

process your skill increases and you learn something – your knowledge increases. Knowledge increases proficiency and developing proficiency (experience) generates knowledge. Knowledge and skills are in a symbiotic relationship when it comes to performance.

People who possess the ability to perform are deemed competent. Some jobs require a great deal of more competence than others. Developing competence takes time, energy and money. Henry Ford recognized this when he stated that he wanted to create jobs so simple that people did not have to think. In other words, they required bare minimum competence.

There is a rich body of work in HRD on competency modeling (Lucia and Lepsinger) that identifies knowledge, skills *and* attitudes as the elements of individual competence. The performance equation places attitudes as a separate element because people with negative attitudes possess the ability to perform; they are just not willing to use that ability to achieve high performance.

Divided by Roadblocks in the Environment – The Opportunity to Perform

Environmental roadblocks are in the denominator because they dramatically reduce the opportunity for individuals to use their existing abilities and/or develop new abilities. Think of ability as the accelerator on a car and environmental roadblocks as the brakes. It is hard to get performance out of your car when you have one foot on the accelerator and the other foot on the brake.

Environmental roadblocks can be internal or external. External environmental roadblocks would include such things as government regulations, physical distances, and cultural differences in language and customs.

In their book *The Disciplines of Market Leaders*, Wiersema and Tracy (1995) demonstrate how internal environmental roadblocks are both inherent and widely present in organizations. They argue that to achieve market leadership companies must focus and organize around one of three value disciplines – Organizational Efficiency, Product Leadership, or Customer Intimacy.

If a company organizes around Organizational Efficiency, for example, it will develop a culture and infrastructure that is dominated by policies, procedures, and rules that create high levels of efficiency and drive out deviation and inefficiency. This highly efficient and controlled culture and infrastructure will create environmental roadblocks to developing new products, for example, because innovation requires freedom and inefficiency, both of which fall outside this value discipline. Therefore, the more focused an organization becomes, the more environmental roadblocks it creates to doing anything outside of that focus. This is why large bureaucratic companies are so highly resistant to anything that requires change.

Environmental roadblocks are also prevalent within a single value discipline. Reward, measurements, and recognition systems, for example, are designed to specifically

encourage certain behaviors and discourage others. When these systems are designed to do one thing – say encourage product champions by rewarding individual contributions – they create resistance to doing other things – like using teams to create new products.

The Performance Equation states that the level of environmental roadblocks an individual will face is a function of the compatibility between what the individual is trying to do and what the organization is set up to do. It is this reality that spawns the continuous reliance in many organizations on reorganizing, re-training, re-trenching, and re-staffing. An organization that re-organizes to do a better job on “X” often ends up sub optimizing, reducing their ability to deal with “Y”. But all of the “re’s” in the world will not eliminate the environmental roadblocks to performance; they just move them around!

Despite the strong emphasis placed on drivers and support by many leading experts in the field (such as Mager and Pipe, 1970), they are removed from the denominator of the equation for two reasons. First, they are not a restrainer and they do not reduce the opportunity to perform. Second, in terms of performance, they have a temporary affect that is directly related to attitudes, not opportunity. Visible management support, for example, can encourage people to be courageous and ignore or work around a punishing reward system in the short term.

The key difference between drivers and restrainers is that removing restrainers *allows* people to use their ability, where adding drivers *encourages* people to use their ability – even when the opportunity does not exist. Think of this relationship as trying to get people to jump off a cliff. The cliff is the roadblock, and people don’t want to jump – “I’ll break my leg!” To encourage people to jump the company provides a support system in the form of an ambulance, emergency medical personnel and good health insurance coverage. This support system is saying – “Jump, and if you break your leg, we will take care of you!” Most people would prefer a ladder to climb down (removing the roadblock).

Drivers do not remove a roadblock, but they encourage people to ignore or work through the roadblock. Therefore drivers fall under the willingness to perform, not the opportunity to perform.

Multiplied by Attitudes – The Willingness to Perform

Attitudes are a multiplier on the equation because they reflect the willingness of people to use their ability and to overcome environmental roadblocks. When people are willing to use their skills, willing to learn new skills, and willing to overcome environmental roadblocks, they can maximize their performance. Keller’s (1983) ARCS model taps into the power of attitude in learning. It claims four personal factors - attention, relevance, confidence and satisfaction - as motivators of learning.

Negative attitudes often create an unwillingness to use existing skills, develop new skills, or overcome environmental roadblocks to performance. Richard Clark (1999) points out when we believe we cannot succeed, for example, our control values are violated, stress occurs and we look for ways to withdraw from the task. Participants with a negative

attitude toward a training program, for example, are likely to find some reason not to learn even if they have to resort to complaining about the food or the temperature of the classroom.

It should be noted that attitudes are also an outcome of the relationship between Ability and Opportunity. People who have the ability to perform, but are inhibited or punished for using their ability, are in a toxic situation – they can do good things and have bad things happen to them (Mager and Pipe, 1970). An example would be a manager who collaborates with another function to achieve a critical organizational goal but is then punished for overspending the budget and falling behind on other tasks in the process. These types of situations quickly develop an attitude of “it is safer to do nothing than to do something”. This “can’t do” attitude reduces performance and develops resentment and a cynical work force.

On the other hand, an organization that provides the opportunity for people to develop and to use their abilities tends to create positive attitudes and a motivated work force. 3M, for example, has historically provided people with the ability to go from being a B student from North Dakota State to a world expert on vibration dampening in sky scrapers. It comes as no surprise that 3M has historically had a highly motivated workforce that turned out over 80,000 new products.

Ability, Willingness and Opportunity

Knowledge plus skills creates the ability to perform. Removing environmental roadblocks creates the opportunity to perform. Developing positive attitudes creates the willingness to perform. When ability and willingness are met with opportunity, dramatic and sustainable performance can be achieved.

To maximize performance and the organizations return on its investments in performance, you must ask three critical questions:

1. Do people have the ability to perform?
2. Do people have the opportunity to perform?
3. Do people have the willingness to perform?

If the answer to any of these question is no, maximum performance will not be achieved.

THE EFFECT ON PERFORMANCE

Elements¹

Each element of performance, by itself, has a significant impact on performance.

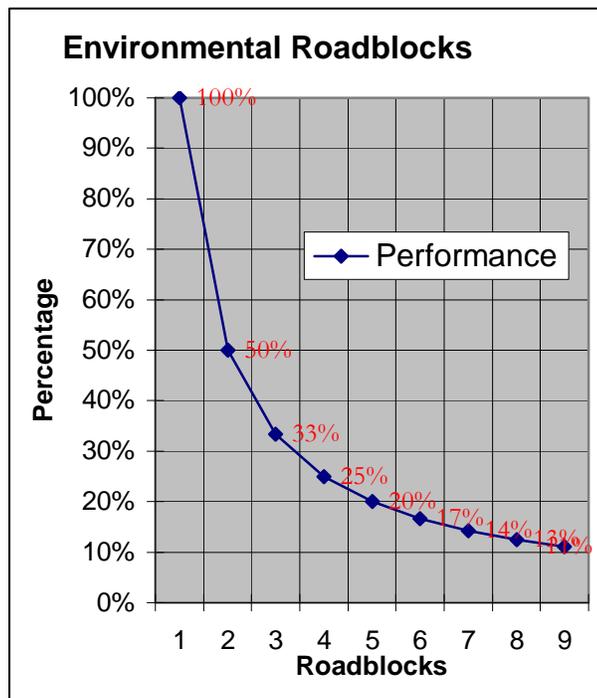
A 10% reduction in Knowledge and Skills results in a 10% reduction in overall performance. This reduction is proportional; each 10% reduction reduces overall performance by 10%.

A 10% reduction in Attitude results in a 10% reduction in overall performance. This reduction is also proportional with each 10% reduction in Attitude resulting in a 10% reduction in overall performance.

Knowledge and skills (ability) and attitude (willingness) have an equal impact on performance.

The impact of Environmental Roadblocks on performance is more dramatic. The initial environmental roadblocks have a much greater negative impact on performance than additional roadblocks. The first environmental roadblock results in a 50% percent reduction in overall performance while the seventh roadblock only results in an additional 3% reduction in overall performance.

The positioning of Environmental Roadblocks in the denominator of the performance equation recognizes the disproportionate impact environment has on performance.



At first glance a 50% reduction in performance due to the first environmental roadblock may intuitively seem too dramatic. In a sport metaphor this would be like a professional basketball team taking the court with no opposing team – they should be able to score every time. But when the defense takes the court, even a bad defense will dramatically reduce the ability of the team to score.

Simple Performance Problem²

A simple performance problem is one in which only one element of the performance equation is the problem. In these situations, if knowledge and skills or attitudes are at 50%, of their potential, an intervention made to increase ability or willingness to its maximum results in a 100% increase in performance.

A 50% increase in environmental roadblocks results in an 80% reduction in performance. An investment made to eliminate the organizational roadblocks results in a 400% increases in performance.

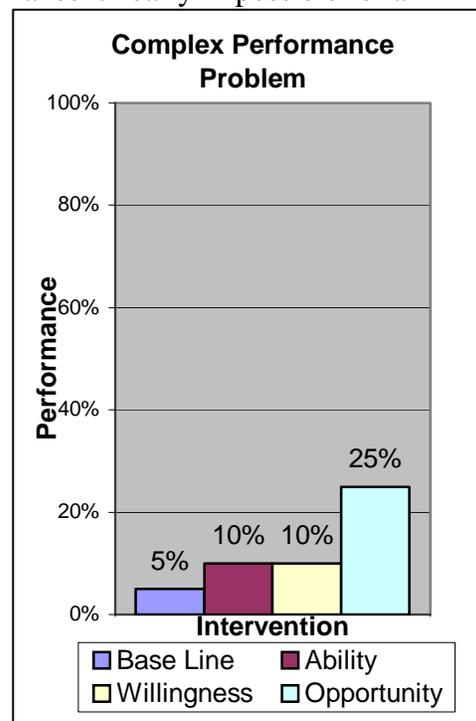
By and large this is how HR, HRD, and OD view their world. They are focused on their narrow specialty and ignore the other elements of performance. This is the Industrial Age approach of breaking work into an assembly line and holding people accountable for just their piece.

When confronted with a simple performance problem, this narrow focus can deliver significant results. But, let's look at what happens when we approach a complex performance problem (involves more than one element) with a narrowly focused intervention.

A Complex Performance Problem³

Most performance problems are multi-dimensional. In these situations, the interrelationship of the elements of performance makes it nearly impossible for a narrowly focused intervention on one element to achieve dramatic increases in performance. When increases are achieved, the relationship between the elements makes it almost impossible to sustain those increases over time.

The chart to the right shows the results of using narrowly focused interventions to increase ability, or willingness, or opportunity on a complex performance problem. In this example knowledge, skills, attitude, and environment were each reduced by 50% to show significant problems in each area. When the performance equation is calculated using this data, it results in a base line performance of 5%.



An intervention that increases knowledge and skills to their maximum levels, but does not address issues with attitudes and environmental roadblocks, results in a 100% increase in the base line from 5% to 10%. But the effect on overall performance is minimal. 95% of potential performance is left on the table!

An intervention that increases attitude to its maximum level, but does not address issues with ability and environmental roadblocks, also results in a 100% increase in the base line from 5% to 10%. But again, the effect on overall performance is minimal. 95% of potential performance is left on the table!

An intervention that eliminates all environmental roadblocks, but does not address issues with ability and attitudes, it results in a 400% increase in the base line from 5% to 25%. The effect on overall performance of an intervention in the environment is greater, but still leaves 75% of potential performance on the table!

In this example, the knowledge and skills intervention developed fully competent people. The attitude intervention achieved the highest level of positive attitude possible. The opportunity intervention removed every single environmental roadblock to performance. Each of these interventions, on their own, would have been declared a success and able to report dramatic “results.”

But when measured by the amount of performance improvement that was left on the table and not realized, each of those efforts left a tremendous untapped potential for performance improvement. This is because the achievement made in each of these narrowly focused interventions was dramatically offset by the other elements of performance.

The Performance Equation also states that these minimal increases in performance will be very hard to sustain over time. In most cases, things will go back to normal after the narrowly focused intervention has been completed.

- **Increased Ability** – People who have achieved a high level of competence soon become frustrated when they lack the opportunity to perform. A common refrain of training participants is, “This is just not the way we do things around here.” Because organizational cultures reward those who comply and punish (or at least strongly discourage) those that do not, deviating from how things are done in an organization can have significant negative consequences for the individual – even when it increases individual performance.

It takes a courageous individual to challenge these cultural norms and they will do so at great personal risk. The reality that you can do good things (apply what you have learned) and have bad things happen to you, significantly reduces the willingness to perform. Healthy individuals soon abandon trying to apply their learning and things go back to the way they were before the training intervention.

- **Increased Willingness** –Typically, management launches some great new effort with lots of fanfare and motivation-building meetings. But if management fails to provide people with the ability or environment to achieve success, people soon learn talk is cheap and management is not really serious. When this happens too often, people become cynical of everything management says and does.

Even highly motivated people eventually become frustrated when they lack the ability and opportunity to perform. And, over time, they simply give up and go back to the way things have always been done.

- Decreased Environmental Roadblocks – These efforts will sustain performance for a longer time because they remove obstacles to using ability. But without the ability to perform, people can't take full advantage of the opportunity to perform. They experience the “Peter Principle” – they have just reached their highest level of incompetence.

Not surprisingly, people soon feel insecure and vulnerable knowing that management has the option of letting them go and replacing them with someone who has the ability to perform. They also know that someone is going to get blamed for the failure to get more results, and that someone will probably be them. You can almost hear management saying, “We gave you the opportunity and you blew it!”

This often leads to high levels of finger pointing, blaming, and “scape-goating”. Attitudes again go down as people become frustrated, resulting in a decrease in performance.

Organizations that develop a pattern of running narrowly focused interventions to address complex performance problems actually run the risk of making things worse. As the organization cycles through more and more management programs, people learn that little will change. Eventually this creates negative attitudes, develops cynical employees, and destroys management credibility.

Management, on the other hand, becomes increasingly frustrated that despite its continued investment, things just do not seem to improve. If this situation is repeated often enough, trust becomes an issue, finger pointing becomes the norm, and an adversarial relationship will develop between management and employees.

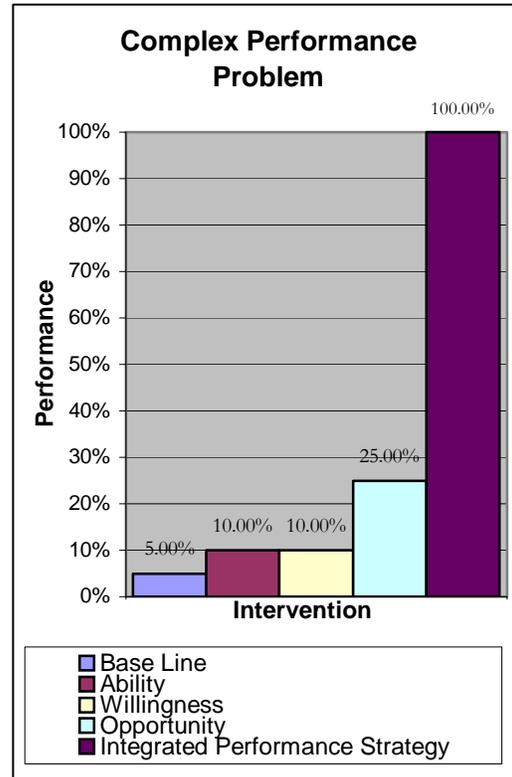
This analysis dramatically demonstrates the limitations of current narrowly focused interventions and the tremendous potential we have for even more dramatic increases in performance.

INTEGRATED PERFORMANCE STRATEGIES

The Performance Equation identifies a tremendous untapped potential for performance improvement. By identifying the elements and relationship between the elements of performance, the Performance Equation allows for the development of Integrated Performance Strategies as an alternative to narrowly focused interventions that address only one element of performance. The Performance Equation states that when ability and willingness are met with opportunity, dramatic and sustainable performance is consistently possible.

An integrated strategy achieves 100% of the Performance Index and results in a 1900% increase over the base line of 5%. This is almost five times greater than the intervention to remove environmental roadblocks and 19 times greater than either the training or attitude interventions.

Integrated Performance Strategies tap this potential because they integrate HR, HRD, and OD activities into a single coordinated effort that develops the ability to perform, creates the willingness to perform, and assures that ability and willingness are met with the opportunity to perform.



And, these increases can be sustained over time. By recognizing the relationships between the elements of performance, Integrated Performance Strategies assure that ability to perform is met with increased opportunity to perform, which creates positive attitudes, which increases the willingness of people to apply their training and overcome any remaining environmental roadblocks. This upward spiral of performance will not only be sustained, but will improve over time.

The really good news is these increases can be achieved with little if any additional costs. Organizations are already investing in HR, HRD, and OD, and there is little if any increased cost for combining these efforts into an Integrated Performance Strategy. No increase in cost and dramatic increases in performance results in a tremendous increase in the return on the organization's investment in performance improvement.

Integrated Performance Strategies also dramatically reduce the "scrap and rework" of excessive politics, unproductive competition for resources, cynical workforces, damaged careers, finger pointing, and blaming that are often created when using narrowly focused interventions in response to complex problems.

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EXHIBITS

¹ Table 1 (below) uses the Performance Equation to analyze the effect of each element on performance.

Contribution to performance								
	K	S	Re	A	Perf. Index		% of PI	% Change
1	10	10	1	10	200	Highest Attainable Performance	100%	
2	5	5	1	10	100	Lack of Ability	50%	-50%
3	10	10	1	5	100	Bad Attitude	50%	-50%
4	10	10	5	10	40	Environmental Roadblocks	20%	-80%
Table 1								

On Line 1 a ten-point scale is used to measure knowledge (K), skills (S), attitudes (A) and environmental roadblocks (ER). Knowledge, skills, and attitudes are at 10 on a ten-point scale, indicating these elements are at their maximum level. The scale is reversed for Environmental Roadblocks (ER) with one being highest performing (the absence of roadblocks) and 10 being the lowest performing (maximum number of roadblocks).

If you calculate the equation (knowledge plus skills, divided by environmental roadblocks, times attitudes) you get a Performance Index of 200. This is the maximum level of performance that can be achieved. The “% of PI” shows the percentage of the performance index (percent of 200) that has been achieved. In this case 100% of the performance index of 200 has been achieved. The “% Change” tracks the change from the base line performance of 200.

The % Change column shows the affect of a 50% reduction on each element of the equation.

² Tables 2, 3, and 4 show the impact that narrowly focused intervention have on a Simple Performance Problem. This is referred to as a simple performance problem because it involves only one element of the Performance Equation.

An Simple Performance Problem - Lack Ability								
	K	S	Re	A	Performance Index		% of PI	% Change
	10	10	1	10	200		100%	
1	5	5	1	10	100	Training Problem	50%	
2	10	10	1	10	200	Problem fixed	100%	100%
Table 2								

On line one in Table 2 knowledge and skills are reduced by 50%, to demonstrate a problem with ability. Attitudes are at the maximum and environmental roadblocks are at

the minimum. When an investment is made to increase ability from 5 to 10, it results in a 100% increase in performance to the maximum Performance Index of 200.

In Table 3, attitude is reduced by 50% to demonstrate a problem with willingness. Ability is at the maximum and environmental roadblocks are at a minimum. An investment made to increase attitudes from 5 to 10 results in a 100% increase in performance to the maximum Performance Index of 200.

An Simple Performance Problem - Bad Attitudes								
	K	S	Re	A	Perf. Index		% of PI	% Change
	10	10	1	10	200		100%	
1	10	10	1	5	100	Attitude Problem	50%	
2	10	10	1	10	200	Problem Fixed	100%	100%
TABLE 3								

In Table 4, environmental roadblocks are increased by 50% to demonstrate a problem created by environmental roadblocks that limit the opportunity to perform. Attitude and ability are both at the maximum. First notice how a 50% reduction in opportunity results in an 80% reduction in performance. Clearly removing environmental roadblocks has a significantly greater effect on performance than either ability or attitudes. An investment made to reduce organizational roadblocks from 5 to 1 result in a 400% increase in performance to the maximum Performance Index of 200.

An Simple Performance Problem - Environmental Roadblocks								
	K	S	Re	A	Perf. Index		% of PI	% Change
	10	10	1	10	200		100%	
1	10	10	5	10	40	Env. Roadblocks	20%	
2	10	10	1	10	200	Roadblocks Removed	100%	400%
TABLE 4								

³ Table 5 shows the effect when the narrowly focused interventions in Figures 2, 3, and 4 are used to address a complex performance problem.

A Complex Performance Problem								
	K	S	Re	A	Index	Situation	% of PI	% Change
	10	10	1	10	200.00	Highest possible	100%	
1	5	5	5	5	10	A performance problem	5.00%	-95.00%
2	10	10	5	5	20	Apply Training	10.00%	100.00%
3	5	5	5	10	20	Improve attitudes	10.00%	100.00%
4	5	5	1	5	50	Remove Roadblocks	25.00%	400.00%
						Table 5		

Row 1 represents a performance problem where each element of performance has been reduced by 50%. The Performance Index is 10, indicating only 5% of the performance potential has been achieved.

In Row 2, the training effort again moved knowledge and skills to the maximum 10 points each. This results in a 100% increase in performance (% Change) over the base line of 5% (% of PI) to 10%. But, notice that *a 100% improvement over the base line has only achieved 10% of the available performance*. In this complex performance situation, environmental roadblocks and attitudes dramatically offset the investment made to maximize ability, resulting in a relatively small increase in performance when compared to the potential that could be achieved.

In Row 3, the investment in developing positive attitudes also resulted in a 100% increase in performance over the base line, but again only achieved 10% of the available performance. Note that ability and attitudes had the same overall affect on performance.

In Row 4, the investment to remove environmental roadblocks resulted in a 400% increase in performance over the base line. That translates to 25% of the performance index. Removing environmental roadblocks delivered more than twice the results as the interventions on ability and attitude, but still left up to 75% of the performance potential untapped.