



# THE PIVOT PALETTE

A quarterly publication of PIVOT Management Consultants

## MISSION

Be a premier provider of management consulting services to industry in the high technology, manufacturing / design, services, healthcare, education and government fields.

Be the best partner a business leader can have to help accelerate the move along the path of continuous quality improvement and quality system enhancement, rethinking and changing the way our client's business is done internally and for the marketplace and industry our client serves.

Implement operational improvements across all functions and levels of our client's organization to achieve improved strategic and marketplace position, delivering value added measurable results.

Provide a positive, rewarding, collaborative work environment within PIVOT that fosters personal growth, fulfillment and success for our associates, suppliers and clients.

## VISION

Together we will. . .

Work to fully understand the requirements of our jobs, the requirements of our clients and the systems that support us.

Provide error free services, analysis information, education and skills training on time to our clients.

Practice ethical, honest and fair behavior in our interactions with clients, associates and suppliers. We will not promise anything we cannot honestly deliver.

Inspire trust and respect by our clients, associates and suppliers, through PIVOT's proven commitment to our mutual success.

Have fun!

## HEALTH CARE

### A 'ROOT CAUSE ANALYSIS' APPLICATION

Root cause analysis, a fairly well known and practiced methodology in the aerospace and automotive industries, is only now beginning to raise its head in the health care world.

Root cause is the most basic reason for a problem. If corrected, it will prevent the recurrence of that problem. It should be remembered though, that the Root Cause is sometimes a 'system', not a single factor.

Let us conduct a simple root cause analysis of an investigation of a Hemolytic transfusion reaction. The investigation started when a patient was diagnosed with Hemolytic Transfusion Reaction. Investigation indicated that blood was given to the correct patient. However, blood was Typed and Crossmatched based on a sample from WRONG patient.

As we establish the causal sequence, we see that patient A was admitted to bed 2. However, patient A was led to *bed 1*. Per the original order, the blood order for Patient A went to bed 2. Accordingly, the Medical Technician drew blood from *Patient B* on bed 2!

When we start asking 'Why' as part of our root cause analysis, the first question that comes to mind is, "When Patient A was assigned to Bed 2, why was he sent to Bed 1?"

Now it is easy to set **blame** on the technician or nurse who put patient A to bed 1 instead of 2.

But is the issue really that simple? The answer would be yes, if the response to the question is, "Because Bed 2 was not ready." How did this happen? The ADT was not updated! Here we discovered one **process issue!** Why? Computer system down? No IT support? Budget constraints? Something to be

worried about?

If we investigate further, and move to the next process step we discover that the Adgraph was not updated either. Did the RN not have time? Click on holiday? **Staffing issue?**

What about the Patient in Bed 2 when the blood was drawn? Apparently there was no wrist band check. So is that a **competency issue?**

Let us take it a step further. Why was the wrist band not checked? The Medical Technician worked a double shift and was exhausted! So, it may be a **staffing issue!**

Actually, that was not all. Upon examining the wrist band, the print letters were found to be too small to read. Why was that? Well, it had to do with the equipment capability/quality and the fact that it was purchased from the lowest bidder vendor. It thus may be a **policy issue!**

This is getting really confusing. It does, however, show that identifying a cause may not be a simple matter of putting blame. Rather, it is a matter of conducting Root Cause Analysis in order to prevent such a failure from occurring again!

We have come a long way in health care as we have learned from industry on how to improve quality; that finding the root cause is not always easy (we need to get to the system, to remove barriers to change, review systems, provide training, etc.) - it is absolutely necessary! *What do you think is the root cause above?*

Extracted from Kaiser Permanente presentation:  
*Root Cause Analysis in Health Care*

## VALUE FROM ISO 9000

The standards yield more than the obvious benefits - so says an article in the February 2000 issue of World Trade magazine. The ISO 9000 international quality assurance standard is being revised to focus far more on continuous improvement and customer satisfaction in the next millennium, and that means more emphasis on "process." The article says that at its heart, ISO 9000 is a communication tool that is documentation based. When all employees are involved in documenting their work procedures and analyzing how the company operated, they are well prepared to perform other tasks that involve gathering, sorting and culling information. They will be able to better monitor information flow throughout a company's supply chain, better able to provide strategic analysis to aid a marketing or sales department, and in the long run, better able to maximize technology use. The article goes on to describe seven specific, not so obvious benefits (pretty much like what we described under Radical Thinking? some issues ago):

- ISO 9000 As the Basis for Knowledge Work
- ISO 9000 As an Interpersonal Communication Tool
- ISO 9000 As a Team-Building Tool for Information Flow
- ISO 9000 As an Information-Sharing Tool
- ISO 9000 As a Basis for Monitoring Information Flow
- ISO 9000 As a Training Tool for Knowledge Management Skills
- ISO 9000 As a Basis for Continued Knowledge Management

You can read more details on this in the Feb, 2000 issue of World Trade.

## NEW ESD STANDARD ARRIVES

The ESD Association's new S20.20 ESD Control Program Standard was approved and released last fall. It covers the requirements necessary to design, establish, implement and maintain an ESD control program to protect electrical or electronic equipment from human body model discharges greater than or equal to 100 volts. The new standard has applications beyond military contracts. Companies with existing ESD control programs will find the document helpful in evaluating and modifying these programs. Companies without ESD control programs will find the document helpful in providing guidance needed to develop one. Copies of the new documents can be obtained from the ESD Association; (315) 339-6937.

## PIVOT WEB SITE

We have a new look and new features at our web site - as many of you have discovered. Many of you have even joined our list to be notified when we add new articles or publish the new PIVOT Palette; we hope you find this site valuable. If there is someone you know who could benefit from our site or the article, please ask them to join our mailing list from our web site ([www.pivotmc.com](http://www.pivotmc.com)). No notification is sent unless a person has joined our list. Also, we welcome any comments and articles that may be of interest to our visitors and readers. Please do not hesitate to send us your comments.

## THE KNOWING-DOING GAP

Business managers have a multitude of sources for advice on what needs to be done, write the authors of *The Knowing-Doing Gap*. Every year, companies spend billions of dollars on training programs and management consultants, searching for ways to improve. But it's mostly all talk and no action, according to Stanford University Professors Jeffrey Pfeffer and Robert I. Sutton, authors of *The Knowing-Doing Gap*. They wondered why knowledge of what needs to be done frequently fails to result in action or behavior consistent with that knowledge. The problem, they found, is that managers don't apply this available knowledge. The most common obstacles to action?

- Talk substitutes for action.
- Memory substitutes for thinking.
- Fear prevents acting on knowledge.
- Measurement obstructs good judgement.
- Internal competition turns friends into enemies.

Although these reasons seem intuitive and the book is broken into chapters with similar titles, this book is not filled with obvious platitudes. Real and detailed case studies give managers the tools to ensure that knowledge is not only accumulated, but used.

Each chapter contains tips on what to do and what to avoid, and provides examples of how a lethargic company culture can be transformed. *The Knowing-Doing Gap* is a useful how-to guide for managers looking to make changes. Yet, as Pfeffer and Sutton point out, it takes more than reading their book or discussing their recommendations. It takes action.

If you have any comments/suggestions, please contact:  
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## GETTING TO THE ROOT OF THE MATTER

Much has been written about the overall value of implementing an ISO 9000 quality management system. But where is most of this value of actually obtained? We find it usually boils down to implementing the corrective action portion of the system effectively. Effective corrective action always means that you are effectively finding the root cause of each problem, and implementing its correction. This means not just doing a repair, like replacing a defective part, but finding out why that part became defective in the first place and eliminating its cause! This is not always easy.

But just how do we find the root cause? A lot of money has been spent in the past looking and troubleshooting and testing and fixing, and not all of the effort and money spent has worked. The root cause was not necessarily found, or even looked for! Thus, the problem is destined to be repeated. And sometimes, again and again! I know of companies who brag that their products never go out the door defective. That is well and good, but the process of checking and rechecking is expensive! If the root cause of each problem is eliminated, the need for all the repair, retest and re-inspection tasks is minimized.

Let's first define just what is a root cause. It is the original reason(s) for nonconformance of requirements within a process and when removed, the non-conformance is eliminated. Problems have a way

of growing and producing more problems. If the root cause is not found and eliminated, the problems often occur again or reappear in a different form. In most cases, revising a process specification and/or providing training to the right person often eliminates a root cause.

There are a number of techniques in the literature for finding root cause, among them prominently, the Ishikawa Fishbone Diagram, known as the cause and effect diagram. Although effective, I personally prefer the method I call, The Seven Whys. This involves asking the question, "why", after each step which isolates a problem to a

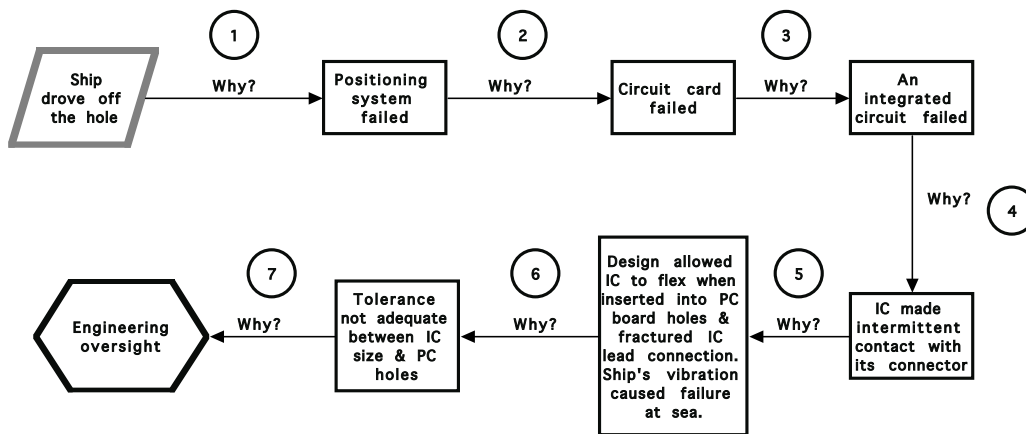
successively lower level component of the nonconforming system. Almost always, the root cause will be found before one gets to ask the seventh why, depending on the complexity of the system.

The figure below illustrates the process of locating the root cause of an actual power plant relay failure. Finding and eliminating that failure's root cause enabled extension of relay life expectancy in a large

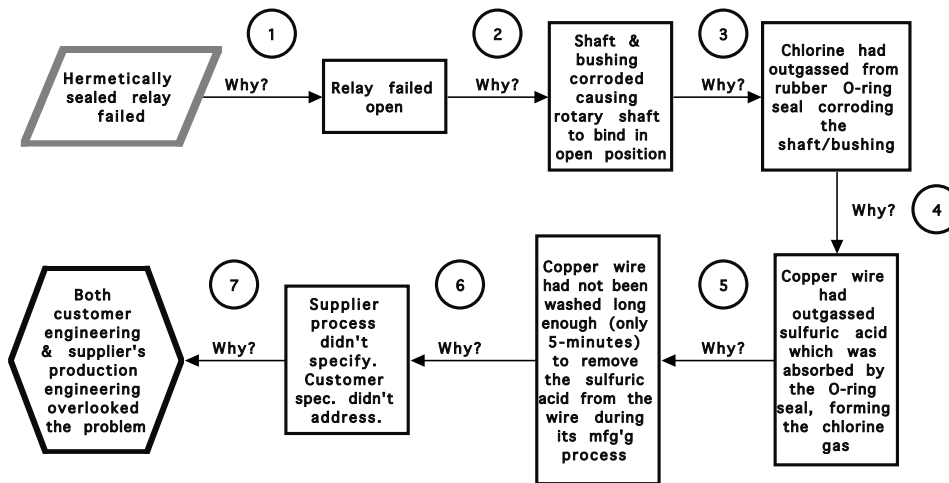
number of similar power plants across the country saving approximately \$1 billion per year!

Jim Schaming, PE, ASQ Fellow  
Partner  
PIVOT Management Consultants

### ACTUAL POWER PLANT RELAY FAILURE



### THE SEVEN WHY'S TO ROOT CAUSE



## Pay Now, Pay Later! Think Now, Think Later!

Many of you know that I am a Marine Engineer by profession and spent many years in the merchant marine. The primary responsibility of a marine engineer is to ensure that all machinery and equipment functions as it is supposed to, all the time.

I often heard other engineers tell stories of the times when they had severe breakdowns with a huge loss of time and money - and were then blamed for not keeping the machinery in running order. Prior records of the ship's engines and equipment showed no indication of latent defects. Records showed no maintenance either! The previous engineer had decided to forego preventive maintenance as everything was running well. Now the company paid heavily for that attitude - a breakdown at sea is a major expense, not only in dollars spent but also in delayed shipments, life endangerment and dissatisfied customers.

Loss of life is a very real possibility. Recently an Alaska Airlines plane crashed off of Los Angeles

airport with the tragic deaths of everyone aboard. One of the questions being raised is about the routine preventive maintenance that might have caught potential problems such as defects on the stabilizer jack screw.

The value of preventive action becomes evident when we consider my recent car accident. My insurance company decided that it was cheaper to pay me than try to repair the car. But I got 'top dollar.' My car was very well maintained and I had records to show how often I performed oil changes, brake checks etc. and it helped. Preventive maintenance had paid off - my car was almost in showroom condition in spite of having over 150,000 miles on it!

Preventive action is appropriate at the personal level as well. Last week I went to my dentist and he wanted to fill a cavity. As I sat in the chair dreading the drill, he asked me to hold a mirror and showed me the small indentation in the tooth. He explained that it was a cavity beginning to form and if I had it filled now, I would

avoid a 'root canal' in the future. Having built my career on 'preventive and predictive maintenance' I complied. It caused no discomfort, did not take too long and I was able to go straight to dinner. I decided it was better to pay with a preventive minor filling now than pay for the corrective action 'root canal' later.

Even our corporate and medical leaders are talking the preventive language these days; companies are setting up workout areas at their facilities, even paying for gym/spa memberships to reduce medical insurance premiums.

We now realize that corrective action is not enough, preventive action is also necessary - in fact this is built into the ISO 9000 standards.

We are beginning to understand that we can pay now or we can pay later - and it will be much more if we decide to pay later! Do you want to think about it now or worry about it later?

**Akhilesh Gulati, Partner**

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