



Quarter 2 1999

## MISSION

**B**e 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

**T**ogether 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!

# THE PIVOT PALETTE

A quarterly publication of PIVOT Management Consultants

## PFD'S

## & ISO 9000

**I**n the last few years, especially with the ascendancy of ISO 9000, a significant change has been occurring within the industry in the way work instructions and procedures are created and documented.

It has long been known that Process Flow Diagrams (PFDs) are a strong tool for operations analyses, particularly by production engineers, to examine cycle time reduction potential and reengineering efforts.

However, it was discovered that applying the PFD process to the creation of work instructions and procedures themselves, had additional benefits to an organization. The concept resulted in PFDs being used as the work instructions or procedures directly instead of taking the additional time to translate them into the traditional text form.

At PIVOT, we have been creating and facilitating PFDs over the last six years with our clients for process optimization and have found them to be a powerful tool, particularly in gaining employee 'buy-in' of individual processes as well. We create PFDs in small teams of employees with a coach. The coach provides the team with the requirements for the task to be charted and helps them move through each step in the affected process (how they do it now) as they document each step for the team members to see. The PFD is then entered into a computer using process flow software for future ease of review, publication and update. The computer output goes through a 'redline' review by the team members to correct minor errors. Any interfaces to other processes are examined to ensure process continuity.

Management, prior to formal release, reviews the corrected PFD. If a process change is required to meet the initial ISO 9000 requirement, then the process owner conducts a brief training session with

all the employees involved in that process to ensure everyone understands the requirement and the need to be consistent.

The end result is a document that: a) is more likely to be used and updated by the employee when the process changes in the future due to continuous improvement initiatives, b) is a much more faithful rendition of all steps, branches and decision points in the process, c) uses far less paper than the text equivalent, and d) is displayed in a manner that allows people to quickly see unnecessary steps, paperwork problems, redundancies and difficulties in their current process which they are often able to correct on the spot.

There are other benefits as well. For example, ISO 9000 Registrars typically have no difficulty accepting that format in lieu of the old style text when certifying their clients to ISO 9000.

Creating a written procedure is often rife with errors especially when there is a decision point where one may choose one of several alternatives. Most importantly, no one uses them, especially on the shop floor. Why? Because written instructions are often too confusing to use! People prefer to use PFDs instead.

PFDs for ISO 9000, offer a powerful advantage in that they are created by the people performing the process, achieve employee buy-in, don't require significant writing skills, are simpler to follow and are accepted by the employees and ISO 9000 Registrars. Remember, only 10% of the effort is in writing the procedures; 90% is in effectively implementing them. PFDs will increase the likelihood of use, greater ease in achieving ISO 9000 Registration and lower overall costs!

*Jim Schaming, PE, Partner, PIVOT*

## BALDRIGE AWARD WINNERS BEAT THE S&P 500

Stock invested in companies that won the Malcolm Baldrige National Quality Award outperformed (on average) the S&P 500 by over 250%! The April 1999 issue of *Quality Progress* describes a study conducted to evaluate the stock performance of Baldrige Award recipients. Although this has been touted in the past, the current study adjusts the returns for risk and performance of the market as a whole - and once again proves that quality pays off for shareholders. Although many companies apply for the award each year, there is a much greater number that evaluate their own organization on the detailed scoring system without submitting an application. Additionally, many U.S. states have modeled their own quality awards and criteria on the Baldrige Award and are helping companies improve their quality efforts and organizational performance. For those not familiar with the Baldrige Award, its core values and concepts are:

- Customer-driven quality
- Leadership
- Continuous improvement and learning
- Valuing employees
- Fast response
- Design quality and prevention
- Long range view of the future
- Management by fact
- Partnership development
- Public responsibility and citizenship
- Results focus

## TQM DOES PAY!

Another study, also cited in the April 1999 issue of *Quality Progress*, states that TQM, when implemented effectively, improves financial performance dramatically. According to the authors, effective implementation means that the key principles of TQM such as focus on customer satisfaction, employee involvement and continuous improvement, are well accepted, practiced and deployed within a firm. The research uses the winning of quality awards as a proxy for effective implementation of TQM. The study used a sample from about 140 different award givers, including customers who have developed quality awards systems for their suppliers and used primarily publicly traded companies to ensure they used objective and historical financial data. The study examined performance over two five-year periods. They found that over a

five-year period, a portfolio of winners beat the S&P 500 index by 34% - a clear case, once again, that TQM is a good investment!

## CHANGE MANAGEMENT KEY TO SUPPLY CHAIN MANAGEMENT SUCCESS

Supply chain management has been eluding many since there is no consensus on its definition. Yet, among people with experience, there is consensus on why supply chain management projects succeed or fail: it works only if senior management is committed and involved. Not that technology integration is easy, essential project elements such as preparing the organization for change, developing a sense of the scope of the change, communicating the motivation and need to change and training are much more difficult to accomplish than finding technology that works. Supply chain management needs to be viewed as a way of doing business, not a set of software applications that need to be installed and run. That is why the organization must be prepared for change. You can read more about this special report in *Automatic ID News* (April 1999), but remember, PIVOT excels in implementing Change Management.

## PIVOT FORMS ALLIANCE WITH CHARTERED FACILITY MANAGEMENT (CFM) GROUP

Over the past few years we have been observing the increasing number of corporate mergers and how it challenges one to optimize use of facilities portfolios. We recognize that facilities constitute between 20 to 50 percent of a corporation's assets and offer tremendous opportunities for cost savings and value enhancements. To help you meet these challenges, we have formed an alliance with CFM Group, a full-service Strategic facilities planning, design, construction, operations and maintenance management consulting group. We now offer you the ability to address the life-cycle requirements of facilities with a focus on revenue/value-added services. Commencing with needs analysis, strategic and master planning, design and reviews for maintainability of new facilities; we can assist in reducing development, operating and maintenance costs. In clear alignment with our current methodologies, we will continue to assist you with the practice of planning, providing and managing productive work environments. Facility tune-ups and efficiency measures can be demonstrated within 60-90 days. Contact us for:

- Facilities and Portfolio Optimization
- Program Management
- Technical and Management Skills Augmentation
- Recycling, Waste Management and Regulatory Compliance
- Business Continuity Planning and Emergency Preparedness
- Seminars and Training sessions

If you have any comments/suggestions, please contact:  
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 or write to: PIVOT, P.O. Box 536, Upland, CA 91785-0536  
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PROBLEM SOLVING BY CHANGING THE REPRESENTATION

In his book *Tools for Thinking and Problem Solving*, Prof. Moshe Rubenstein writes that his daughter was in a junior-year-abroad program and there was a long period when they did not receive a letter from her, although he wrote weekly. They were worried but there was no way for them to get in contact with her by phone. So they changed the representation of the problem by introducing, what he calls, a surrogate goal: to create an incentive for her to call. He wrote her a short letter and added a postscript that read: "Just in case you ran out of money, I am enclosing a \$500 check with this letter." They dispatched the letter and four days later received a call from her. They had mailed the letter without the money!

The following problem is known as Maier's Hat Rack Problem. Imagine that you are in a room that is 20 feet wide and 40 feet long with a ceiling that is 8 feet high. On the floor you have two boards of lumber with dimensions of 2 inches x 1 inch x 60 inches and 2 inches x 1 inch x 42 inches, respectively, and a clamp wide enough to hold the two boards together. Your task is to use the lumber and the clamp to build a hat rack in the middle of the room approximately 10 feet away from any wall. The hat rack must be stable enough so that a jacket could also hang from it. What would you do?

To understand this problem you may use two full size pieces of lumber and a clamp. Or you may use two smaller pieces of lumber and a suitable clamp to create a scaled down model hat rack under a table. Alternatively you may use past experience and knowledge to create a visual representation of similar situations. You could also try drawing representations on paper.

Trying various representations may lead you to rearrange your past knowledge and recognize that a ceiling can support a column when it is wedged between a floor and a ceiling. You may be reminded of a bathroom fixture that consists of a post made up of two tubes, one sliding inside the other with a spring connection. The spring is compressed when the post is forced between the floor and ceiling.

Rearranging elements may help us to now only reproduce or retrieve knowledge we have, it may lead us to produce or create new knowledge by restructuring old knowledge. In the present example, old knowledge in the form of "columns support ceil-

ings" can produce new knowledge in the form "ceilings support columns."

Figure out the solution yet? You could also try working backwards - start with the expected end result and work out a solution!

Here is another problem to challenge your problem solving process. This problem was posed by Carl Duncker. A monk starts walking up a mountain at six o'clock in the morning one day and reaches a temple on the summit at six in the evening. The following day he rises early and starts on his way down from the summit at six o'clock in the morning and reaches the bottom at four o'clock in the afternoon. He follows the same narrow path on both days. Is there a spot on the path that the monk passed or occupied on both days (going up and going down) at precisely the same time? Think about it. Try a change in representation. want a hint? Think if there is anything you can apply from the knowing the process of converting degrees fahrenheit to degrees centigrade or finding the temperature at which they read the same. Or think of another representation - tracing the path. Or . . . can you change the representation by adding, removing or rearranging?

Getting tired of mind games? Try this one, and once again - think of your thinking process. (Hint: try backward problem solving - moving from the desired result to determining the solution). Cut out the pieces below (or make copies) and make a perfect square, using all five pieces. You may fax your answers to us (909-982-7161) or call us to discuss this approach in problem solving (877-pivotmc).



## Jenga®!

Jenga®. It is a game consisting of 54 wooden blocks and is meant for any number of players, ages 8 to adult. During the last Christmas season, one of our friend's children received Jenga® as a gift. Seeing what it was, I decided to purchase one for myself to use at upcoming parties, especially since the game can be played by any number of people and does not necessarily require previous or special skills. The game starts with building a tower with the wooden blocks. The object of the game is to remove one block at a time from the tower, and stack it on top. The last player to stack a block without making the tower fall wins the game. According to the manufacturer's instructions, a real pro can build a tower 36 stories high!

We started playing the game per the rules, trying to make it difficult for the next person to retain the tower in the upright position. Some of us in the group did not want to participate, fearing that their lack of dexterity

would cause them to embarrass themselves by losing.

However, the game was fun - especially for the winner! But we were not including everyone in the game, and the object of my purchasing the game had been to include everyone.

So we decided to change the rules of the game somewhat in order to get everyone involved. We decided to play to build the tower as high as we could build it, together.

We did manage to include everybody, since now it was not a win or lose situation - we were in it together. The first time round, with extreme difficulty and nervousness, we made it close to the 36 story record. Now we were in high spirits and sure that we could reach 36 stories. We made it to 37! Now we were elated. We were going to try again, staying within the rules of using one hand only, yet working together to make a

taller tower. In spite of our state of mild inebriation, we managed to get to 42 stories! I am sure we could have gone higher (the maximum possible would be 54, by our calculations), but decided to call it a night. The evening had gone well and we had all enjoyed each other's company.

Through playing this game, an old acronym came to mind. A friend, Dan Schulz, reminded me: TEAM - Together Everyone Achieves More!

Through a simple game it became clear that although we could have played by someone else's rules - to win and lose, we changed the rules somewhat and we were all winners. Together we had reached higher levels and we all felt terrific about it. Even a simple game had brought home the lesson: TEAM! Jenga®!

*Akhilesh Gulati, Partner*

### THE PIVOT PALETTE

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