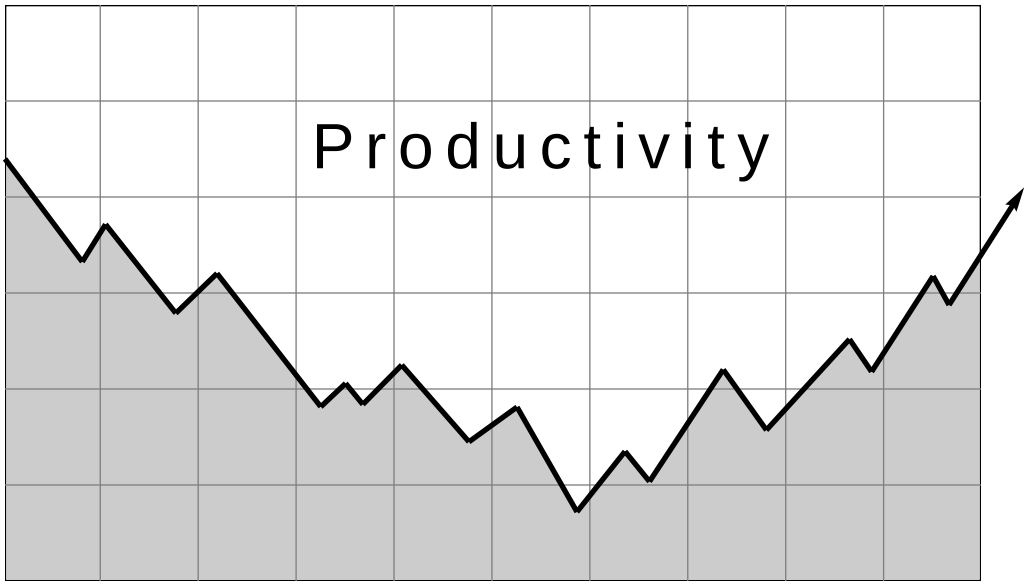

Old Dog, New Tricks

How Measurement Turned a Company Around

In the mid-1990s one of the oldest names in the water/wastewater business was in turmoil. Faced with a move to a new location, a new outsourced manufacturing process, two union formation attempts, poor documentation, missed orders and generally unhappy customers, USFilter Wallace & Tiernan Products was on its last breath.

"We had to sink, to rise," said Joseph Millen, executive vice president of the municipal equipment group for USFilter and the man whose task it was to turn around the situation.

Background

Wallace & Tiernan Products began in 1913 with the invention of the world's first chlorinator by Charles Wallace and Martin Tiernan. It was the first practical and effective means for the controlled feeding of chlorine gas to sterilize drinking water. It was a major advancement in the field of public health. During World War I the company produced more than 4,000 mobile units for the military.

Over the years, the company has developed dry chemical feeders for granular and powdered materials for many industries. It also has developed small diaphragm pumps for feeding liquid sodium hypochlorite for the disinfection needs of swimming pools and small water supplies. Today, the range of products includes equipment for liquid, dry and gas feeding.

In 1996 USFilter acquired Wallace & Tiernan from North West Water (a United Kingdom water utility). A continued series of problems and circumstances put the company on the brink of extinction.

"In early 1997 there was some talk of closing down. However, the brand still had value," Millen said.

The problems were numerous. After being purchased, the company moved to Vineland, N.J., from Bellville, N.J. With the move came the loss of many experienced employees in the component manufacturing process. Therefore, the company decided to outsource most of the parts process at the new plant.

The hope was to find suppliers to manufacture the parts up to the standards necessary based on the company's drawings and documentation. However, Wallace & Tiernan could not qualify suppliers fast enough and the documentation they provided to produce the parts was not good enough. The end result was missed orders, late orders, unhappy customers and a built-up backlog.

"Fortunately, through all this, there never was a degradation of the equipment," Millen said.

With some of the orders more than two years late, something had to be done. Millen was brought in to help fix the problems. Trained as a mechanical engineer with a Masters in environmental engineering, Millen is a strong proponent of goals and process measurement. Everything is measured.

Recovery

The first step was to address the backlog issue. Every single order was analyzed and prioritized by date. A metric was set up for date discipline in the backlog. Only if an order dealt directly with the public's health or a safety violation was the date log superceded for order fulfillment. (For a description of metrics, see the sidebar on the next page.)

Of course, the customers had to be contacted and advised of order progress. Distributors and representatives were crucial to this process. These people needed to calm the customer as well as validate their need in real terms.

"These people were the glue to the operation. They had the closest contact with the customer," Millen said.

At the beginning of the recovery, Millen would field five to eight hostile calls from customers a day. Therefore, Millen would meet with his managers and review the backlog status everyday.

"Our action steps were based on priority due to the use of metrics," Millen said. "We measured change, progress and improvements."

For example, they not only measured how late they were on the orders, but they had a metric with a weighted value of time late. Therefore, these measurements had concrete numbers for comparison.

While measurements were important for success, people also were vital. "We had to make employees and suppliers aware of the problems, show them how they fit in to the solution, make them personally accountable for their actions and emphasize how we win as a whole team," Millen said.

In the beginning, it was a tenuous worker situation. There were two attempts at organizing unions. These efforts defocused some of the energy of employees and management of the task at hand.

It took more than two months just to reverse the backlog trend. It took four months to get all the metrics in place. It wasn't until more than six months into the change that the company knew where they were and if progress was being made. They were then able to target goals for the upcoming months and put actions in place.

For example, from the initial product metric results the company knew that parts were out of standard. It took them awhile to find out if the drawings were accurate, if the supplier was at fault or if something else was wrong. Part of the problem was the company lost institutional knowledge and expertise in the move.

"Measurement is good, but you need to measure the right things," Millen said.

Millen estimates that they currently have between 200 and 250 metrics. Management is keen on explaining to employees and customers what they are measuring along with how it will help them succeed. They are plastered all over the plant. Millen often can be seen carrying around his binder containing the metrics.

"Businesses lose efficiency by not doing the fundamentals well," Millen said. "You can't achieve excellence without good fundamentals. Tracking these processes is a good start."

Commitment

Wallace & Tiernan also had the unique situation where they could harvest the expertise of other USFilter companies for advice. Experts in operations, material management and finance all came in and offered corrective measures at the start of the process.

"It was a true advantage to have these people come in. Senior management [at USFilter] was committed to correct problems and have us succeed," Millen said.

Of course, there also were many long hours from Vineland staff put in, espe-

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How Do You Know You've Won?

By Joanne Kelley

There's no goal line or home plate at the end of your project to improve your business. No Super Bowl rings, no gold medals or wreath of roses.

So how do you know if the results were worthwhile? More importantly, how do you prove it to your boss?

Establishing a methodology to measure success is one of the most important steps in any business improvement process. Without agreement in advance as to what the results of the process should be, managers who attempt significant change may find

- The project succeeds, but you don't receive appropriate credit because other executives claim that the improvement would have occurred without your action;
- You believe the project failed because it failed to meet one of your goals (e.g., reducing operating budgets) but your staff, using measurements such as employee satisfaction or fewer customer complaints, believes it succeeded. The reverse "employees see the project as a failure while managers see it as a success" is probably less common but not infrequent; or
- The project becomes derailed or veers off in a different direction without achieving the initial objectives.

Project spin-offs are not necessarily a bad thing. However, determining precise project metrics in advance (especially those that will measure bottom-line impact) can make it far easier to determine if a spin-off should take precedence over the original project or should wait until initial results are achieved as planned.

Sample Metrics

Managers already know how to use major business metrics such as personnel numbers and costs, size of departmental budgets, number of internal users served and number and accuracy of customer bills processed.

However, complex process innovation projects require a far more complex set of internal metrics that are applied and evaluated at frequent intervals to ensure that projects remain on track. While any set of metrics must be tailored to specific situations, it frequently is helpful to draw from sets of business-process metrics used in other companies or established in business literature.

Metrics used in the Six Sigma process are good examples. Six Sigma aims at improving quality in the processes that contribute to a final product or service so that there is little or no need to measure the quality of the ultimate outcome. Using "sigma" in the statistical sense—a measure of deviation from perfection—Six Sigma begins with the understanding that traditional customer-attitude measurements (e.g., rankings on a ten-point scale) are an artificial construct on the way customers actually experience a transaction that has gone wrong. In other words, when customers are dissatisfied, they do not experience this dissatisfaction as a comparison with other companies. ("I guess this is about the level of accuracy I expect from most companies.") Instead, customers experience the dissatisfaction as a deviation from their expectations. ("This is the third time in four months that my bill has been wrong, and I'm really mad!")

Six Sigma was developed in the 1980s at Motorola and has since been used at such major technology-oriented companies as GE and Allied Signal. It helps organizations focus on what the user or customer sees and feels and how those experiences differ from perfection. Those participating in the change/innovation project then focus on what it is possible for current processes to deliver and how those processes can be changed to get closer "on a consistent and predictable basis" to what the user/customer wants.

Measurements such as those used in Six Sigma are important because, ultimately, quality reduces costs. This is largely because companies save the money that would otherwise go into answering questions, reexamining accounts, identifying and correcting errors and processing refunds.

About the Author:
Joanne Kelley is managing director of TransFormance Group, a consulting division of SPL WorldGroup.

cially in the beginning. To their credit, faulty material never rose.

After the corrective measures took hold, it was time to look at the processes and procedures in place. Every element was analyzed and refined. For example, with regard to the inventory process, questions asked included the following.

- Was the count accurate?
- Was the material in the right place?
- Was the stock correct?
- Does the part resemble the drawings?

The goal was improvement and increased efficiency. Within nine months of the changes, the company doubled their throughput. They determined what automation was necessary by first gaining efficiency through their understanding of the business process.

Even today, Millen meets monthly with his management team on the metrics. "By sharing data, everyone has a piece in the success or failure of the operation. Analyzing the data leads to actions needed."

New Goals

Millen is constantly resetting his goallines. "If you don't, somebody will pass you by," Millen said. "Never be content with past results."

Five years from rock bottom, the company finally is now able to look outward instead of inward. The goal is an increased level of profitability. Customers are demanding higher quality at lower prices. The company feels it has the processes and people in place to meet these demands. They feel they know where to start when looking for the answers.

"This turnaround did not occur because of one person or process. USFilter nurtured it and made it successful. It was a true team effort with the help from good senior management," Millen said.

Wallace & Tiernan has become a benchmark for other USFilter companies. While not the most profitable, the company has laid the groundwork on how to use metrics and strategies to foster growth.