conwaymanagement | NEWS

How You Win Says A Lot

by William E. Conway, Chairman & CEO, Conway Management Company

Not too long ago, the New England Patriots received their third Super Bowl ring in four years. (And shared one ring with Russian President, Vladimir Putin!)

Most people would acknowledge that repeated success in the National Football League (NFL) is difficult to achieve. Whether or not you are a sports fan, a brief review of some of the key characteristics of the Patriots' organization may provide some insights into how they **play and win** that we can translate to other teams and other organizations.

First of all, as a father of 5 and a grandfather of 13, I like the way the team plays. They display all of the characteristics that as parents and coaches, we try to teach our kids. Their behavior is what we would like all teams (sports, academic, management, kids' Little League, R&D, sales and marketing, improvement, new product development. etc.) to emulate and follow.

- **The Patriots win with team-work.** Three years ago, the Patriots set a new tone in the Super Bowl by refusing to be introduced individually in the starting line ups. They came out as a team. Now everyone does it that way.

- In almost **every game, every player who is dressed for the game plays.** In any given game 40 players actually play! Is that an anomaly in the NFL? Indeed!

- **The success of the team is what is most important.** After injuries hammered their defense, the Patriots asked Troy Brown, a wide receiver (an offensive position), to switch to play a defensive back and safety. Did he do it? Yes. Did he struggle? Yes. Did he have less time in the limelight? Yes. So what? The team won. And after they won, the team discussed with Troy that they needed to renegotiate his contract. After the season ended, the team put him on waivers. He wanted to play for the Patriots, he didn't sign with another team. Later, the Patriots announced that they had renegotiated the contract (at a reduced salary) and that Troy Brown would be back.

- **They win and maybe, just maybe, they don't have the best athletes.** By most every account, Tom Brady is not the best passer in the NFL. Leave that honor to Peyton Manning or others. Do they have the best running backs? No. The best offensive and defensive lines? No and No. But they win.

- **They prepare.** They recognize that the better prepared they are, the more knowledgeable they are about the opposing team's defense and offense, the more it will look familiar during the game. The coaches and players *study, change and improve their work* so that they know where the opposing quarterback is going to throw the ball! They don't get ruffled; they know they are ready and they play. They win.

- **They look ahead to the next challenge and don't expect past glories to carry them through.** You may have read that when the Patriots are together as a team, no one wears the Super Bowl rings. It just isn't done. That was last year.

- **No prima donnas.** Everyone rides the bus.

Getting to the Root Cause of Success

by John Petrie, Director, Conway Management Canada

Most of us have used fishbone charts and the "5 Whys" to help figure out the root cause for a particular problem, such as shorted orders, too much inventory or equipment downtime.

Have you thought of using the same tools to understand what causes a good thing to happen, so that you can identify the root cause and take action to get more of what you want? Here are two examples:

What causes sales?
- In the consumer products sector, one of the possible causes is good retail distribution.
- *Why...what causes that?* Products that are profitable for the retailer to sell.
- *Why...what causes that?* Innovative products.
- *Why...what causes that?* A new product development process with fast cycle time.
- *Why...what causes that?* A respected process owner and the right people involved.
- *Why...what causes that?* The right structure and resources provided by senior management.

What causes employee satisfaction?
- Apart from compensation, involvement in things that affect them is among the most important causes.
- *Why...what causes that?* Clear and frequent communications.
- *Why...what causes that?* Managers who believe that this is a good thing.
- *Why...what causes that?* Expectations created and rewards and recognition provided by top leaders.

At your next leadership team meeting, think about trying out this concept. Here are possible steps:

- Pick something that benefits the business and that you would like more of.
- Draw a fishbone chart to develop possible causes of the good outcome.
- For the causes that you consider to be the most important, ask "Why" 5 times — drill down to get the root cause.
- When you have the root cause, consider whether or not you are doing enough to get the results you want. If not, decide what else needs to be done, by whom, by when and for what result. ■

How You Win Says A Lot... *continued from page 1*

- **They use variation and innovation** to outwit their opponents. Mike Vrabel, the offensive tackle, caught a winning pass in the end zone. Adam Vinateri, the place kicker, threw a game winning pass to the end zone.

Who knows what will happen in the next few seasons? The offensive and defensive coaches have been hired away to other coaching jobs. That will make things more difficult, but with the way the Patriots *study, change and improve work,* and the winning and innovative culture of the organization, I'm sure that they will find ways to succeed. ■

Coping with Demand Fluctuations in Service Industries

by Sheila Julien, Senior Associate, Conway Management Company

Variation in customer demand is a perennial problem in every business. Because you never know just how much of the products or services the customers will want at any particular time, you always end up with too much capacity or inventory of one thing and too little of another.

We have long known about ways to mitigate this problem in manufacturing: use of common components, mixed model production lines, finished goods inventory, and designing production so the product differentiating steps are done toward the end of the process so they can be directed by actual customer demand rather than forecast.

But service industries suffer from a more difficult problem. Variation in product demand can be buffered by finished goods inventory. But service providers cannot hedge against the possibility of excess volume by stocking capacity in a warehouse. Service industries must maintain the capacity to handle surges in demand. But when the capacity goes unused, it is lost forever. As Henry Ford once said, "Time waste is worse than material waste because there can be no salvage."

While you cannot escape variation in customer demand, you can design effective means to cope with it. First, study the nature of the variation in your business. Use histograms and run charts to understand and quantify the nature and range of the variation and any trending or cycles in the demand. Then evaluate your different options for reducing your vulnerability to demand variation to provide the best service at the least cost. Following are three staffing models for coping with demand variation:

Generalists, supplemented with a few specialists

Train generalists who can handle 80 or 90% of the work that comes in. When those few customers or transactions arrive that require something beyond a generalist's skill, refer the work to the appropriate specialist. This reduces the number of people needed to maintain reasonable wait periods, because you will have less variation in total service transactions per day or hour than variation by each type of transaction. The more specialization you have, the more people you need to reliably handle variation in daily or hourly volume.

Most banks operate this way – a teller line can handle any of the most frequent customer needs, but for those few special transactions, customers are directed to a cubby or office for specialized help. Personal care physicians also follow this model – able to handle the vast majority of needs, but referring patients to specialists when their needs exceed the generalist's skills. Society would need to employ far more physicians and

longer waits would ensue if specialists were needed to handle most health needs.

This works very well when you have a great deal of variation in the type of work, but 80% of the volume can be anticipated and effectively trained for. It works best in jobs with a stable workforce.

Specialists, supplemented with a few generalists

But in some situations, the converse approach works best. Train specialists who handle the bulk of the work each day, but have a small team of multi-skilled staff to handle any variation of demand. This method blends the advantages of specialization (shorter learning curve and often greater speed and fewer errors) with an effective hedge against random fluctuations in daily or hourly volumes.

Call centers sometimes manage volume fluctuations in this way. Another example might be a retail operation with a senior position who knows and does any of the jobs as they require the resources. This method works well where:

- *there are not too many categories of work*

- *turnover is too high or the work too dissimilar or complex to maintain a staff of generalists.*

A histogram can help you evaluate and design this approach to handling your volume. For example, if daily volumes for each specialty range between 1800 and 2200, you might staff specialists to handle 1800 transactions per day. Then combine the excess volumes across all the different specialties into another histogram and staff to handle this additional "mix-uncertain" volume with your multi-skilled staff. Establish a smooth and automatic way to distribute the work appropriately.

Cross-training

Cross-train people so that they can move into the positions with excess demand when necessary. Retail operations often use this method. More help is paged to come to the cash registers when lines reach a certain length.

This method works in situations where the business has:

- *the ability to effectively cross-train people to handle several different jobs with good quality*

- *an easy way of signaling when individuals should change what they are doing to accommodate the excess demand and when to change back*

- *ability to quickly shift resources.*

Cross training does not work well in situations where the cross-trained individuals do not spend enough time in each role to maintain their skills. Nor is it as effective at handling demand variation where one cannot move quickly and easily between the jobs.

In addition to the above three models for organizing staff to handle demand variation in service industries, the following three tips can help you reduce your vulnerability to demand variation:

Shift as much volume *as possible to a different customer interface that is less time sensitive.*

Use self-service technology *where the customer can complete the transaction on-line instead of waiting for a customer service representative to become available. Examples include:*

- *On line loan applications*

- *Internet order businesses such as Amazon.com, where no one has to wait for the next available cashier to purchase books. Bubbles in ordering patterns equivalent to rush hours at a retail establishment are smoothed out through the workday as orders are packed and shipped in the order in which they are received.*

Utilize technical support operations that shift communication *from telephone consultation to e-mail so that they can handle the daily random and cyclical surges in demand without creating unacceptable call wait times.*

So, while you cannot escape variation in customer demand, you will be able to handle variation at lower cost and higher service levels by selecting the most appropriate staffing model and by employing technology and process designs that reduce your vulnerability to it. ∎

The Waves of Change
Reflections on Improvement
Bill Conway on CD

Since the founding of Conway Management, we have worked with thousands of people interested in real business process improvement. Starting with the Portsmouth Naval Shipyard in 1983 to the present, we have seen unprecedented successes, some failures, and too many companies who made just incremental improvements.

You've heard Bill say "The natural state of things is that everything in the world is all fouled up." Lots of people over the years have said they don't agree with that assessment. And looking back, Bill realized that these were the people whose improvement efforts most often fell short. Now, for the first time, Bill talks about this bold statement, and what it means to anyone who seeks professional and personal improvement. It is powerful and motivating!

The CD runs approximately 20 minutes. We're offering it for $9.95 per copy for a limited time only.

visit
**www.conwaymgmt.com/
movie**
to see a demo

You can order your copy on our website at
www.conwaymgmt.com
or
by calling Kim Haines at
800.359.0099, extension 31.

conwaymanagement | **NEWS**
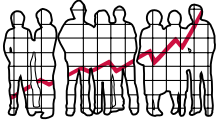
The Power of Histograms
Helping you understand the nature of the problem

by Sheila Julien, Senior Associate, Conway Management Company

All processes have some variation. We see it everywhere. A process may *typically* require 20 minutes, but will sometimes take 22 minutes, 18 minutes, or maybe even 35 minutes. Volume of calls, transactions, or orders may *average* 2500/day, but some days will see more volume and others less. A machine might be set to cut material into 2-foot widths, but actual widths may vary by 3/4 of an inch or so.

To understand how a process is functioning (or mal-functioning) we often need to understand the nature of the variation. How widely does the process vary? Within what range? Does the process variation follow a *normal* distribution — by that we mean, does the most frequently occurring outcome equal the calculated "average" outcome and is the outcome equally likely to be above average as below average?

Histograms are diagnostic tools helping us to better understand the nature of the variation.

They are often confused with Pareto charts, because both are displayed as bar charts. But while a Pareto chart will graph different categories (such as Product A, Product B, etc.) or causes (such as "lost orders," "missing customer number," etc.), histograms **always** have quantitative ranges (such as "1 to 10," "11 to 20," etc.) along the x-axis. Histograms are actually more similar to run charts because they both tell you about the range and average of individual outcomes in a time period. But histograms tell you the variation in aggregate and run charts tell you about the variation over time.

### Why does the distribution of the process variation matter?

Here is an example:

Four different Customer Service Departments respond to telephone calls in 40 seconds, *on average*. Their surveys say that their customers are satisfied with response time 50 seconds or less. Since each department averages 40 seconds, there should be few complaints. But all four are receiving more and more complaints. Why? What should they do about it? Hire more Customer Service Reps? Maybe, but maybe not. In this example, the four organizations have four **different** underlying problems. The histograms help point them in the right direction.
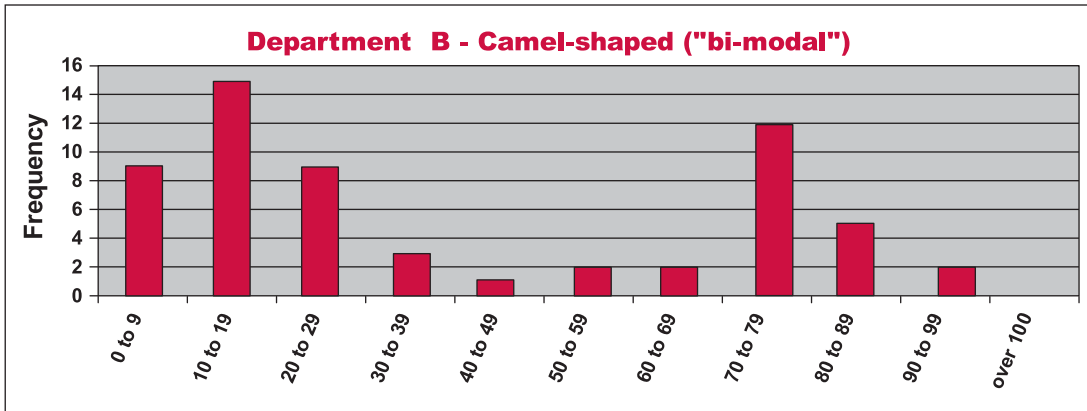
In **Department A**, as in all four cases, the average response time is 40 seconds - well within the target. But the histogram shows you that although the average response time is 40 seconds, the most frequent wait time is under 10 seconds and nearly 40% of calls have to wait more than 50 seconds. This is sometimes called a "cliff" distribution. When you see this distribution, you realize you should expect many complaints despite a satisfactory "average" performance. Whenever you have a distribution such as this, the calculated average has little relevance.

Furthermore, this particular distribution shows that for many of the calls, the department has more than enough people

Department A - Skewed with a long tail
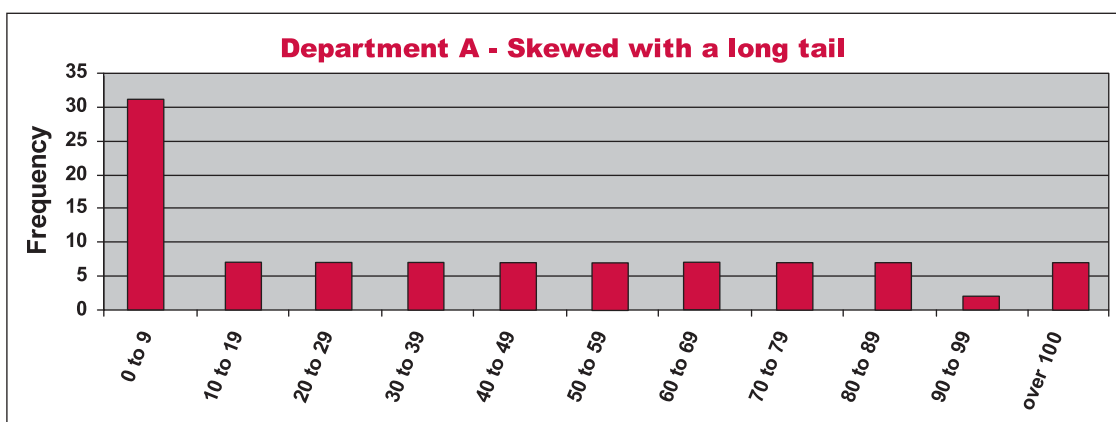
available and other times they have too few. That is, resources are inefficiently scheduled and do not match call patterns. Perhaps reps all work the same 8 hour work schedule, rather than following call patterns. The department should test the idea that call patterns differ from scheduling practices. If this is found to be true, the department could significantly reduce complaints over wait time by realigning the work schedules to better match the call patterns.

In **Department B**, the average response time is also 40 seconds. But the histogram for this department's call wait times shows that almost nobody waits 40 seconds. Either the call is answered pretty quickly (10-20 seconds) or the caller will probably have to wait 70 seconds or more. This "camel-shaped" distribution is sometimes called bi-modal, and if you have this sort of distribution, any calculation of an "average" is worse than meaningless - it is misleading. In this particular example, the calculated average is actually the least likely wait time.

When you have a bimodal distribution, there is a good chance that you have a mixture of two different types of events. It suggests that in one type of situation, wait times range between 0-30 seconds and in another, wait times range between 70 and 90 seconds. The next step would be to develop and test hypotheses about why there would be two different ranges of outcomes. Do they differ by shifts? Morning vs. afternoon; lunch hour vs. non-lunch hour? The department should ask the people closest to the work for their ideas about why wait times are either quite short or too long but seldom in between. Then segregate the data along those lines and test whether they indeed have two different processes — and then work on the subset that yields the unsatisfactory results.

In this example, Department B might segregate the data into calls that came in between 11:30 and 1:30, when the staff is going through lunch rotations — and discover that calls arriving between these hours have significantly longer wait times. It is clear that to reduce the number of complaints, the department need not add resources throughout the whole day, but only to find ways of increasing coverage between 11:30 and 1:30.

In **Department C**, the average response time is also 40 seconds. And unlike Departments A & B, most people who call Department C actually wait about 40 seconds. This process produces a "normal" bell-shaped distribution. Unfortunately, the bell is too wide. Even though the average and the most likely occurrence are below the customer requirement, the variation around the average is
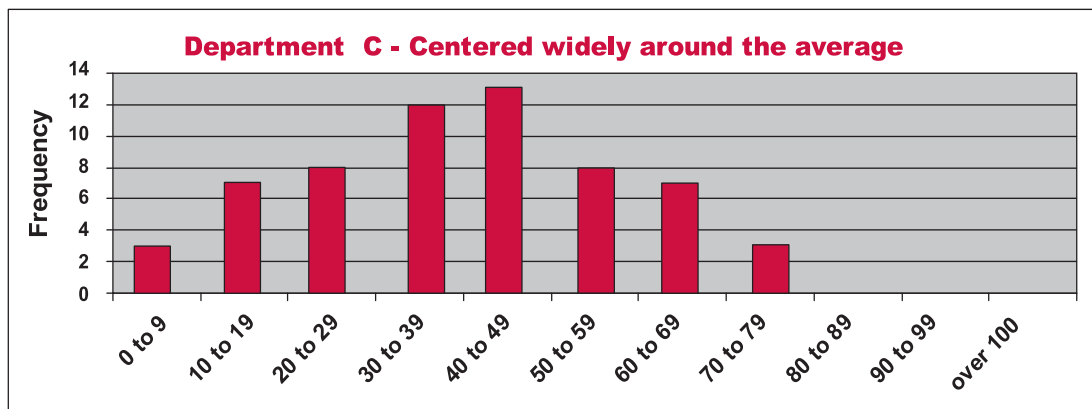
vidual calls frequently exceed the customer satisfaction threshold.

Department C could do two things to reduce the number of complaints about wait time. They can either make changes to shift the average wait time to 20-30 seconds or they can try to find and reduce the causes of variation — so that fewer call wait times are significantly higher than the average. Reducing the width of the variation is usually the most cost effective approach.

Department C will want to develop and test ideas about what contributes to the variation in call wait time. Does the experience or training of the telephone reps affect the wait time? Tools? Environment? Scheduling? Perhaps all of these and more affect this result. Find and correct the biggest contributor to variation in wait time to gradually reduce the frequency with which response time is much above the average.

In **Department D**, like Department C, the average wait time, 40 seconds, is also the most likely wait time. But call response time varies within a much narrower range for Department D. Instead of wait times averaging 40 seconds plus or minus 20 seconds, Department D wait times average 40 seconds plus or minus 5 seconds.

Department D - Centered tightly around the average
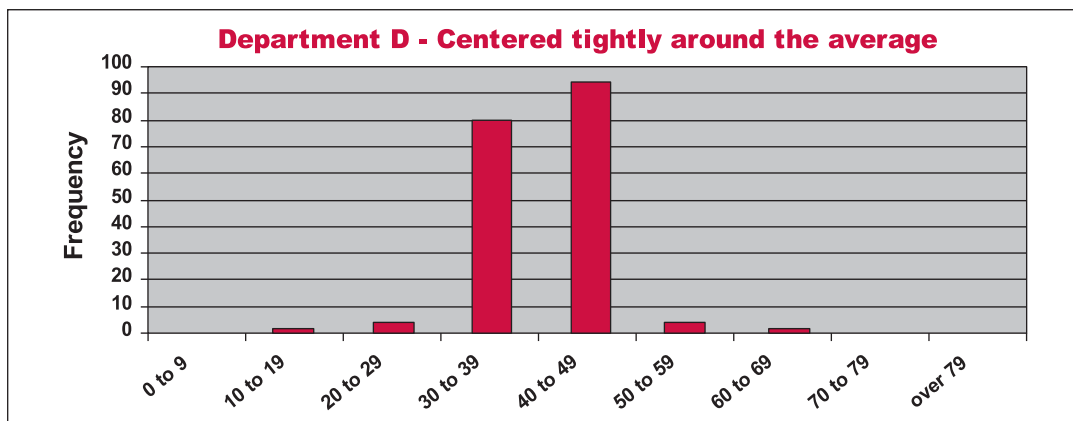
If Department D is receiving an increasing number of customer complaints despite the facts that the average (40 seconds) is 10 seconds better than what we think the customer requires and the variation around the average is very tight, then the best next step is to re-examine customer specifications.

Department D's problems appear to be due to changing customer expectations. Wait times that were satisfactory for callers last year may no longer be acceptable. Department D will not be able to reduce customer complaints about call wait times until they recalibrate their internal targets to the customers' new expectations and change the internal processes to shift the average downward.

For all four departments, the presenting problem was the same: More and more customers were complaining about the wait times when they called customer service — despite the fact that the average wait time was 40 seconds, well within the target that the most recent survey data said that customers would accept. But the underlying situation for each department is different. The histogram helps illustrate the nature of the underlying problem so that the departments can focus their resources on the right thing. ◼

Tips & Template Histogram Tool

Histograms can be created in Excel with the Toolpak. At Conway, we have a much simpler template for generating histograms.

If you are interested in our Tips & Template Histogram Tool, please call or send us an e-mail at j.hammond@conwaymgmt.com

Conway Management Announces Partnership with Motorola University

Conway Management is pleased to announce an innovative partnership with Motorola University.

Almost all organizations are engaged in some kind of Improvement activity. Some are dedicated, and some just dabble in various efforts. But practically everyone who is trying to make Improvement uses a blended approach to Improvement and use a variety of tools, methods and techniques.

One approach that we see being used in a variety of ways is Six Sigma. When we researched the Six Sigma Marketplace, we saw that the vendors offering Six Sigma differ widely in the quality of the deliverables as well as their approach and focus.

We have seen how well The Right Way To Manage© and Six Sigma can work together and have found that Six Sigma fits very well under The Right Way To Manage© umbrella. Since many clients are using some of the tools and techniques of Six Sigma, we decided to partner with a vendor that offers all of the Six Sigma help that a client might need and one that respects the power, simplicity and effectiveness of The Right Way To Manage©. Motorola University is such a partner. As a matter of fact, several times over the past twenty-two years, Motorola has engaged the help of Conway Management to help its internal Improvement efforts!

As the inventor of the Six Sigma methodology, Motorola can lay claim to the most long-standing and time-tested experience in the Six Sigma industry. They have built upon this experience and continued focusing their efforts on advancing the Six Sigma methodology to offer the most power-ful Six Sigma training available. Motorola University offers a full range of public and on-site courses as well as web-based training and their materials and their instructors are the best in the Six Sigma business.

For more information about Conway Management and Six Sigma training, please contact Mary Jane King at mj.king@conwaymgmt.com

The Right Way To Manage© & Six Sigma Training©

The Right Way To Manage© is copyrighted by Conway Management Company
Six Sigma is a registered trademark and service mark of Motorola, Inc.

conwaymanagement | EH

15 Trafalgar Square, Nashua, NH 03063-1989 • www.conwaymgmt.com

Return Service Requested