

AMS UPDATE



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MAKING ZERO THE GOAL -- ZERO DEFECTS, THAT IS

A recent episode of the television show 30 Rock revolved around two characters on the show attending a Six Sigma corporate retreat. The jokes arose mainly from poking fun at ridiculous acronyms and team-building exercises. And while they were not actual Six Sigma acronyms or exercises, the fact that the show is set at NBC, which is owned by GE – there is no doubt the makers of 30 Rock have been touched by Six Sigma.

GE is one of Six Sigma's most prominent adherents and champions. And, on their website, they sound a little like they might be a little touchy about the jokes. "What is Six Sigma?" asks the GE website, "First, what it is not. It is not a secret society, a slogan or a cliché. Six Sigma is a highly disciplined process that helps us focus on developing and delivering near-perfect products and services." It is also something you will be hearing more about at AMS in the future.

Wait, you might be thinking, what about all the

work we have done with ISO9001: 2000 requirements? Now we're changing to a new quality system?

No. Six Sigma is a measure of quality striving for perfection; it is a data-driven approach for the elimination of defects in any process. It works in tandem with ISO9000 and the two systems compliment each other.

Companies use Six Sigma because it helps identify and fix problems, while also exposing areas of opportunity. Six Sigma also helps reduce costs, increase revenues, improve process speeds, raise quality levels and expand customer relationships. The focus on customer satisfaction perfectly dovetails with the most recent focus of ISO9001 requirements.

Facts and data are the backbone of Six Sigma. They are equally as important as a thorough understanding of customers' needs,
Continued on page 2

What is Six Sigma Quality?

Just what is Six Sigma? Six Sigma is a reference to the level of quality produced in a manufacturing process. Most traditional companies believe that 99.9% good quality is a terrific achievement. Perhaps by historical standards it is. However, consider what 99.9% good quality would mean in everyday life in the United States:

Unsafe drinking water once per week
No electricity for nearly one hour per month
500 wrong surgical procedures per week
2 short or long landings at most airports each week
20,000 wrong drug prescriptions per year
2,000 lost articles of mail per hour

Perhaps 99.9% is not so good, after all.

World-class companies ship products to their customers with 99.99966% good quality. From a statistical point of view, this means that they are shipping Six Sigma quality--no more than 3.4 parts per million defects. This is nearly zero.

The term six sigma (also written 6, using the lower case Greek letter for sigma σ) refers to the number of standard deviations away from the mean (or average) point in a bell curve (also known as a "normal distribution"). The

Continued on page 2

Individual Highlights:

Zero Defect Goal	1
Six Sigma Quality	1
Healthwise	3
Perfect Attendance	3
Calendar	3
Puzzle	4

THE ZERO DEFECT GOAL OF SIX SIGMA

Continued from page 1

because they are the basis for the decisions and the actions a company must take to improve processes. Relying on facts and data enables a company to remove personal reactions and preferences as stumbling blocks and eliminate both trial and error and gut feel as problem-solving tools. Six Sigma results in more efficient problem solving by identifying the best solution early.

One of the major differences between both systems is that ISO 9001 is a shell of requirements without any tools, whereas Six Sigma is a methodology connecting tools and procedures for applying these tools through a "red thread."

Requirements of ISO 9001:2000 are, for example:
 Define quality management information needs
 Collect quality management system data
 Provide quality management information
 Improve quality management system

Tools provided by Six Sigma to meet these requirements are, for example:

Dashboards as a set of key performance indicators to monitor all processes at a reasonable degree for all relevant managerial levels.

Operational definitions to describe exactly how, when, where, with which tools, by whom, how often and how much data should be collected.

Data displays to help draw business-relevant conclusions and tests to justify the significance of conclusions drawn from data collected.

DMAIC: Define-Measure-Analyze-Improve-Control as a methodology for process improvement at a project level.

One of the most difficult elements of implementing Six Sigma is the data collection aspect – but AMS is already doing this as part of the SPC process and now with the aid of Plexus. In the coming months, it will be a matter of learning how to use the information we have been collecting to better meet our customers needs and systematically figure out how to eliminate defects and get as close to "zero defects" as possible. To achieve Six Sigma Quality, a process must produce no more than 3.4 defects per million opportunities. Implementing Six Sigma process will move us ever nearer to being nearly flawless in executing our key processes – and in doing so realize AMS's most important goal -- customer satisfaction. And while idea of making a comedy show 99.99966% defect free makes for a good joke, we are on our way.

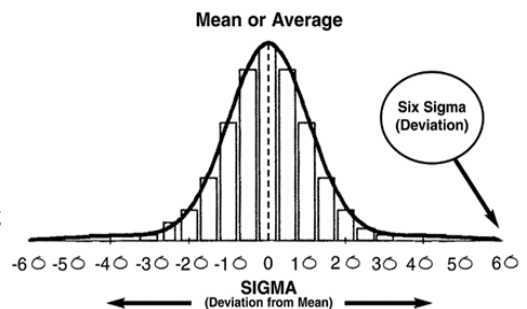
WHAT IS 6σ QUALITY?

continued from page 1

bell curve is a natural phenomenon experienced in large populations of almost anything. Imagine, for example that you are harvesting corn. The size of most of the ears will be centered around the mean (average) of the population. A few ears will be moderately large and fewer still will be very large. The same relationship appears in the smaller sizes-- a moderate number are smaller than the mean, and a still smaller number are very small. If a million ears are harvested, only three to four ears will fall in the very largest category (six sigma from the mean) and only 3-4 ears will fall into the smallest category (six sigma from the mean in the other direction). The size of all the other ears will fall into a "normal distribution" as defined by the bell curve shown in chart at right. This same relationship tends to hold for populations of people. If the height or weight of a large population is measured and plotted on a graph, the statistics will fall into the classical normal distribution.

In manufacturing, the naturally occurring variations in processes will also tend to fall into a normal distribution, for example, the dimensions of stamped or injected-molded parts, the thickness of plating, or the amount of solder on a printed circuit board.

Achieving six sigma delivered quality to the customer is not an easy feat, especially considering the rolled throughput yield where the yields of each sequential processes are multiplied together to compute the final yield (the percentage of good parts produced by a given process). For example, if there are four processes, each with a 99% yield, the rolled throughput yield is $(0.99) \times (0.99) \times (0.99) \times (0.99) = 96\%$. So each input increases the chance of deviation – and deviation from the ideal that is our goal to provide customers.



Healthwise – March is National Nutrition Month

At the end of a long winter it is easy to be in hibernation mode, but the American Dietetic Association has named March National Nutrition Month to remind people that sensible eating – even when comfort food is calling – is a path to lifelong health.

Choose foods sensibly by looking at the big picture. A single food or meal doesn't make or

break a healthy diet. When consumed in moderation in the appropriate portion size, most foods can fit into a healthful diet.

Find your balance between food and physical activity. Regular physical activity is important for your overall health and fitness, plus it helps control body weight, promotes a feeling of well-being and reduces the risk of chronic diseases.

PERFECT ATTENDANCE – February 2008 through January 2009

AMS would like to acknowledge the following individuals for their teamwork in the last year.

BLAKE AMERPOHL
MARGE ANDERSEN
KAREN BEHLKE
TRISH BIZEAU
TIM BOWDEN
CRAIG DEAN
BRIAN ECKERMAN
DENNIS GRAVERT
ARCHIE HAFER
MIKE HILL
TRACY JONES
TOM LOHMAN
MIKE LUEBKE

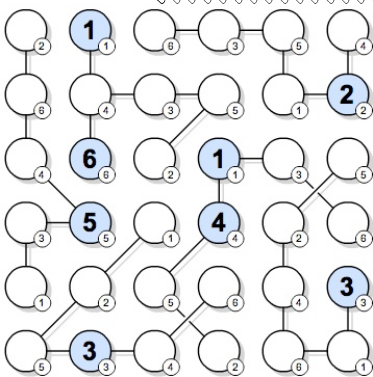
TERRY MARKEE
ERIC PERKINS
DAVE PETERSON
DAN QUALE
DAN STOLTE
PAUL STONE
WALLY STURDIVANT
SEAN TEIPNER
PERRIE VANDER MAUSE
TOM WARD
MARK ZUEHLKE

Named below are AMSers who have made it at least halfway to a full year of perfect attendance --

SHANE ANDERSON
WILLIAM BREWSTER
JEFF COX
DEB JAY
JIM LOHMAN
BOB NELSON
ELI STOLLENWERK
JANET WHITE

Great Job! Your teamwork and dedication are the pillars of AMS's operation and even if it is not said everyday it is appreciated every day.

Great Start --good work



Puzzle solution

CALENDAR – MARCH 2009

ANNIVERSARIES

Terry Markee..... 5 years on 3/1
Garry Schumacher 14 years on 3/2
Barb Paves 9 years on 3/15
Blake Amerpohl 8 years on 3/27
Tom Ward 9 years on 3/27
Tracy Jones 4 years on 3/28
Chris Feller..... 2 years on 3/30

BIRTHDAYS

Deb Jay.....March 4
Melanie OlsonMarch 4
Michelle MichalskiMarch 7
Jenny CrouchMarch 9
Andy HirschfieldMarch 10
Justin GriggsMarch 12
John Hamersmeier.....March 13
Sue Anderson.....March 15
Bobby Zimmerman.....March 20
Dennis Gravert.....March 22
Len Fernando.....March 26

REMINDER

Daylight Savings is Sunday March 8 at 2AM. We lose an hour. Remember to set your clocks and change the batteries in you smoke alarms.

CHANGE YOUR CLOCK



CHANGE YOUR BATTERY

WELCOME

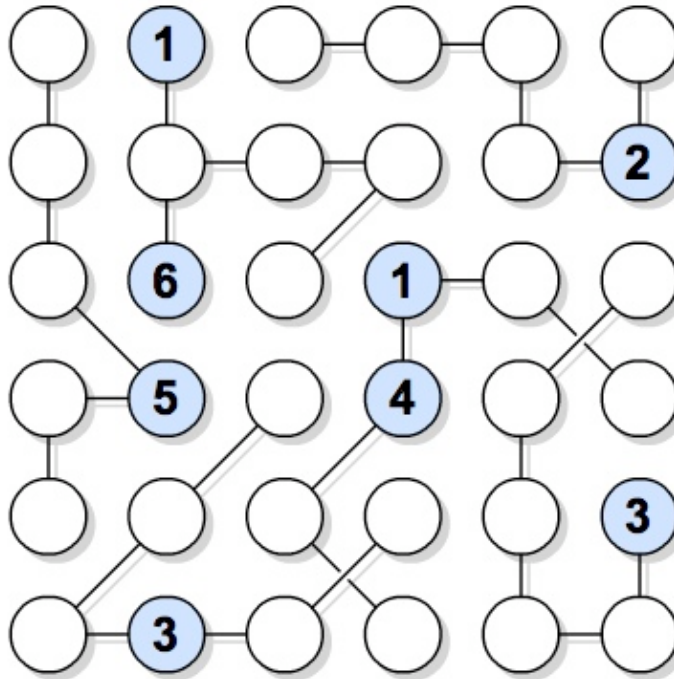
New to AMS: Jeremy Babcock, Justin Caves and Erick Kuntz. And welcome back Ian Anderson and Mario Davilo!



**Anderson
Machining
Service, Inc.**

PUZZLE

Yet another Sudoku variation – Strimko!



How to play:
 The object of the puzzle is to fully fill in the given grid with missing numbers observing three simple rules. You have numbers 1 through 3 for a 3 x 3 grid; 1 through 4 for a 4 x 4 grid; 1 through 5 for a 5 x 5 grid; 1 through 6 for a 6 x 6 grid; and so on.

Rule #1
 Each row must contain different numbers.

Rule #2
 Each column must contain different numbers.

Rule #3
 Each stream must contain different numbers.

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