

ASQ



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Vancouver Section News

American Society for Quality

The Society of Professionals Dedicated to the Advancement of Quality

ASQ MEETING FEBRUARY 5TH

Internal and External Stakeholder and Customer Satisfaction Measurement

Presented by: Valerie Jenkinson, Senior Partner, Nova Quality Training and Consulting

Valerie Jenkinson, our February presenter, will outline reasons for customer/stakeholder dissatisfaction. Her presentation will provide a blueprint for determining key indices and will go through a step by step process for measuring satisfaction, both internally and externally. She will further look at the manager's roles and responsibilities in focusing the organization on customer satisfaction while maintaining a profitable bottom line. Valerie will include a Q & A session to assist participants in challenging some of the practices within their own departments and companies.

Valerie Jenkinson has delivered this and similar presentations and workshops to organizations and companies in both the private and public sectors throughout Canada, the US and Great Britain. Valerie has over 25 years senior level experience as both a manager and trainer, and started her own company in

1980. Nova Quality Research specializes in Customer Satisfaction Measurement and Employee Attitudinal Studies. Nova Quality Training and Consulting trains and consults on organizational change, assisting companies and organizations to become more customer focused. Nova Quality Research was sold to POLLARA, the largest Canadian owned market research company, in 2000. As past President of Nova Quality Research and present President of Nova Quality Training, she has current, first hand knowledge of sales and customer satisfaction issues. Combined with her dynamic style, knowledge, and motivational ability, Valerie has become one of the experts and leading trainers in the areas of Customer Satisfaction, Internal Customers, Needs Assessment, Sales and Conflict Resolution.

While Valerie has been twice nominated as Canadian Woman of the Year in the

Quality category, Nova Quality Training and Consulting was also presented with the Award of Distinction in the Customer Focus category by the Quality Council of BC. Visit www.novaquality.com for more information.

February 5th Meeting

LOCATION:

CSA (Canadian Standards Association), Richmond Office, 13799 Commerce Parkway. (Parkway is off #6 Road between Westminster Hwy. & Cambie Rd.)

TIMES:

Registration 6:00 pm
Program 6:30 pm
PARKING: Free, onsite

PRICES:

Members: \$10
Guests: \$15, Students: \$5

PREREGISTRATION:

To attend this program, please register online at www.asq.bc.ca or call ASQ Vancouver at 604-451-0150

Notes from the Chair – Ten Principles of Quality

by Ian MacNab, Chair

I have found our monthly meetings very informative and am surprised that more members do not attend on Thursday evening. Not only have our guest speakers been exceptional, but our fellow ASQ members have told us what they are doing and this has been most valuable.

At the January 8th meeting Walter Wardrop provided many angles on quality improvement from the Association for Manufacturing Excellence conference he attended. From his examples it is easy to see that we can and should set our goals high - there are plenty of opportunities to apply our quality principles. By using continuous, unlimited improvement and striving for

excellence goals (like saving a plant one million dollars a year), striving for higher amounts in years after are achievable.

Like many things, quality improvement can become a way of life. The writings of Karate Sensei **Gichin Funakoshi** have helped me to think of the way we can apply quality:

1. **Quality is for everybody, all the time.**
2. **Endeavor to apply Quality all the time.**
3. **One who practices Quality considers the customer.**
4. **First you must know yourself. Then you can know others.**
5. **Put Quality into everything you do.**
6. **Quality is like hot water. If you do not give heat constantly it will again become cold.**
7. **Identify areas of potential; they have the greatest opportunities for improvement.**
8. **As the situation changes, react.**
9. **When you leave home, think that millions of opportunities are waiting for you.**
10. **Devise at all times.**

American Society for Quality – Vancouver Section 0408

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Consumer-driven Six Sigma saves Ford \$300 Million

- by Scott M. Paton, Quality Digest's editor in chief, Sept 01

Ford Motor Co. made "Quality Is Job 1" a household slogan in the 1980s as it introduced revolutionary new products and used Total Quality Management to drive down costs and capture market share. Lately, however, the No. 2 automaker has been plagued by quality gaffes that have cost it dearly in customer satisfaction and market share. In fact, according to a recent J.D. Power & Associates survey, Ford has fallen behind archrival General Motors Corp. in overall quality and now ranks last among the big-seven automakers.

Although Ford has recently faced more than its fair share of very public quality problems, including the Explorer tire debacle, it actually began overhauling its quality process nearly two years ago. As might be expected with an organization with \$180 billion in annual revenue and 345,000 employees scattered around the globe, the results take time to show.

Ford didn't just decide to overhaul its quality processes; it has redefined the way it approaches its business. Instead of acting like the manufacturing behemoth that it is, Ford wants to be known as a consumer products company.

The corporation that pioneered the assembly line is starting to seem more Sam Walton than Henry Ford. "Ford Motor Company's vision is to become the world's leading consumer company for automotive products and services," said Ford CEO Jacques Nasser at a recent internal meeting. "To do that, we are focusing intensely on our customers and have made customer satisfaction our highest priority."

Nasser knows that improving customer satisfaction translates directly into improvements in the bottom line. "Our data show that customers who are highly satisfied

remain loyal," says Louise Goeser, Ford's vice president of quality. "In fact, one and a half points of customer satisfaction drive about one point more loyalty. In North America alone, this translates into more than \$2 billion in incremental revenue and roughly \$100 million in profit."

Enter Six Sigma

To achieve Nasser's vision of becoming a consumer products company and gain the coveted increase in customer satisfaction, Ford turned to Six Sigma. The program, pioneered by Motorola and made famous by Jack Welch's General Electric, utilizes many of the same tools as TQM, QS-9000 and other quality initiatives. Its name derives from its goal: to enable processes to produce results with no more than 3.4 defects per million.

Ford began its Six Sigma odyssey in late 1999 when the director of quality for Ford's global truck business was looking for new ways to improve quality. "I was looking for a way to improve our quality faster than we were," recalls Phong Vu, who's now Ford's Six Sigma czar, officially known as director of corporate deployment for Consumer Driven 6-Sigma. "I did research, visited with Mikel Harry of Six Sigma Academy, and benchmarked with GE and other large companies that were using Six Sigma."

Top management seized upon Vu's suggestion as a perfect method to achieve their twin goals of improving customer satisfaction and improving quality. Ford formally launched its Six Sigma process, which it calls Consumer Driven 6-Sigma, in January of 2000. The first phase of Ford's Six Sigma effort is to focus on immediate customer satisfaction issues. "In order to accelerate our quality improvement efforts, we have identified the top 25 customer

concerns by vehicle line at each of our assembly plants, and there will be Six Sigma projects associated with each of these concerns," Nasser explained.

And, unlike many quality initiatives, Ford's senior management fully supports the Six Sigma initiative. "We put together a plan to implement Six Sigma throughout the whole company in October 1999 with a couple of leading groups," recalls Goeser. "Two other groups jumped on board once they got through executive training. In December 1999 and January 2000, we started with the top management group, and then moved on to the officer group and the leadership group, which comprises our top 350 people." In fact, not only did Nasser go through Six Sigma training, but he also regularly champions Six Sigma projects.

Training for Success

Once the top leadership at Ford had been trained, the company quickly began rolling out the process throughout Ford's entire global operations. Leadership training was followed by training for the people who would become the backbone of the Six Sigma process: Master Black Belts, Black Belts and Green Belts. In the first year and a half of the initiative, Ford trained nearly 10,000 employees in Six Sigma, a feat aided by the purchase of a \$6 million training license from Six Sigma Academy.

"We have 2,300 Black Belts trained currently," notes Vu. "We want to maintain about 2,500 Black Belts at all times. And we have a goal to train all of our salaried professional employees to be Green Belts within the next four years. We already have more than 6,000 Green Belts trained." Ford hopes to increase that number to 10,000 by the end of the year.

An overview of the key personnel in Ford's Consumer Driven 6-Sigma initiative follows:

Green Belts - They receive one week of training that includes a basic understanding of how Six Sigma works and an overview of the Black Belt tools. Green Belts learn to help Black Belts do projects faster. Green Belt training allows the people who are affected by the Six Sigma projects to be able to continue to monitor and control the improvement and to do their jobs better. Ford divides Green Belt training into three different classes: technical, manufacturing and transactional, depending on the type of employee receiving training. In addition to assisting Black Belts with projects, Green Belts often have the task of maintaining the improvement once the projects are complete. "After the Black Belt completes the project, the control has to be maintained by the people who are there, the Green Belts," explains Vu. "If they don't understand the control or cannot manage the control, you lose the control as soon as the Black Belt is gone. You lapse back into the same problem that you had before."

Black Belts - Ford assigns Black Belts to the Six Sigma process full time for two years. They receive four weeks of intensive training on Six Sigma tools, particularly those used in the define-measure-analyze-improve-control cycle, which is central to Six Sigma. Black Belts typically use tools such as process mapping, cause-and-effect diagrams, failure mode and effects analysis, design of experiments, and mistake proofing in their daily work. The training is anything but theoretical, however. Black Belts work on actual projects during their training. They follow each week of training with four weeks of application, during which they go out and work on a relevant segment of a project. Black Belt candidates must have a project approved and a Project Champion before beginning the training.

Master Black Belts - Usually hand-picked by management, Project Champions and other Master Black

Belts, these employees must also receive a tier-one or tier-two ranking, which are Ford's highest levels of performance appraisal. Master Black Belts' mission is to teach, coach and mentor. They teach Black Belt and Green Belt classes, they coach Black Belts and Green Belts as needed to help complete projects, and they act as mentors to Black Belts. "My core job responsibility is to help Black Belts with the tools, eliminate road blocks and support them during the various phases of their projects," explains Mike Stock, a Ford Master Black Belt. Master Black Belts also manage large, complex projects called megaprojects. These projects usually involve several Black Belts. In addition, Master Black Belts coach senior leaders within Ford on how to apply Six Sigma within their departments.

Project Champions - These employees, typically managers, work with Master Black Belts to identify Six Sigma projects and provide necessary resources to the key personnel involved. They receive three to five days of training. To date, Ford has trained more than 1,700 Project Champions.

The Rubber Meets the Road

Ford selects Six Sigma projects based on three main criteria: They must relate to customer satisfaction, the results must reduce defects by at least 70 percent, and each project should average \$250,000 in cost savings. On average, Ford projects have exceeded the cost-reduction goal.

Once projects have been identified and assigned, the Black Belts begin to work through the DMAIC cycle, asking key questions, using a variety of tools and focusing on delivering specific results.

The Ford DMAIC cycle follows:

Define. During this first stage, Black Belts work to identify the customers involved and what matters to them. The Black Belts define the scope of the project and form a team charter. It's important that they also know

the time frame for the project and the potential financial gains. Common tools at this stage include a process scope contract, process mapping and a CT matrix.

Measure. The second stage requires Black Belts to develop process measures, called "Y's," which enable them to evaluate the performance of the process. At this stage, it's essential that the Black Belts ascertain the current process performance accurately so they can assess it against the desired process performance. They also identify the input variables that cause variation in process performance. Basically, Black Belts need to know what the process is, which process outputs affect the customer, which process inputs affect the outputs, how the process is currently performing and the best level of performance the process is capable of producing. Common tools at this stage include process mapping, cause-and-affect diagrams, failure mode and effects analysis, gage R&R, and graphical techniques.

Analyze. The third stage forces Black Belts to prioritize the input variables that cause variation in process performance, analyze data to determine the root causes of problems and opportunities for improvement, and validate process input variables with data. The analyze stage requires Black Belts to be certain that they know which process inputs actually affect customers and by how much. They also look at possible combinations of process variables to see their effect on the process. At this stage, Black Belts begin to look at the effect of changing process inputs on the process performance and how similar processes function at different locations. They need to determine both the number of observations to make valid conclusions and the confidence level required to make valid assumptions. Common tools at this stage include process mapping, graphical techniques, multivariate studies, hypothesis testing, and correlation and regression analysis.

Improve. At this point, Black

Belts generate solutions to the problem and select the one that best addresses the root cause. They also face the sometimes-difficult dilemma of properly implementing the best solution. This involves cost-benefit analysis, validation of the problem solution, development of an implementation plan and communicating the plan. Common tools at this stage include process mapping, design of experiments, simulation and optimization.

Control. The final stage institutionalizes the improvement and implements the ongoing control. The goal is to sustain the gains that have been made. Black Belts complete a control plan, document the project, translate the opportunities identified to other parts of the organization, build systems and structures to institutionalize the improvement, and complete an audit plan. Common tools at this stage include control plans, statistical process control, gage control plans, preventive maintenance and poka yoke (a Japanese concept, translated as “mistake proofing”).

No Six Sigma project at Ford is considered finished until the entire DMAIC cycle is complete and Ford can audit the results to see the effect on customers and the bottom line.

Roadblocks

Despite Ford’s high-level commitment to Six Sigma, it did encounter a few obstacles when it began implementing the program. Like any new initiative in any organization, Six Sigma hit a few roadblocks, chiefly skeptical employees, resource allocation and data availability.

The first roadblock couldn’t be overcome with money; only time and success would prove Six Sigma’s value to Ford’s employees. “Every company I’ve ever known gets excited about various ideas and doesn’t always stick to them,” notes Goeser. “Ford, too, has seen things come and go. Some people felt that this, too, shall pass. Well, it hasn’t passed. We are well into our second

year and it has stayed high on the agenda. Even the skeptics are starting to see that we are committed to this. The results are impressive and so is the enthusiasm and the great work that people on these teams are doing.”

Commitment of resources, primarily people, also proved difficult. Even for Ford, sending its top-level management, senior managers and top 350 leaders through weeks of training in a relatively short amount of time taxes resources. Add to that the training of the nearly 10,000 others in the organization during the last two years and the issues of time, money and productivity collide.

The other major roadblock centers on data, which Six Sigma devours. “When we began, I don’t think that Ford’s infrastructure was set up to fully run Six Sigma,” recalls Stock. “Six Sigma requires a lot of data, and the internal measures that we need to take for our projects sometimes aren’t there. A big obstacle is obtaining the necessary data to complete your project. We had to go out and create measurement systems.”

Ford is improving the accessibility of data, which also happens to be a byproduct of Six Sigma. “We are breaking down the barriers,” says Stock. “Now, through a network of Black Belts, we are able to talk to one another and understand what we need to build databases that will enable us to share data. Six Sigma is transforming the corporation from looking at variation from something that’s going to get you into trouble to something that’s going to give you an opportunity to improve.”

Crossing the Finish Line

Even for one of the world’s largest corporations, Ford’s investment in Six Sigma is no small matter. Aside from the \$6 million training license, Ford invested thousands of hours in training, purchased new equipment and installed new software. But the results are impressive. In 2000, Consumer Driven 6-Sigma contributed \$52 million to the bottom

line. Ford estimates a \$300 million contribution from closed projects and a two-point increase in customer satisfaction in 2001. Vu estimates that 1,000 Six Sigma projects have been completed and that about 3,000 other projects are in various stages of completion. “We only consider a project complete when we can show to other Black Belts that the control works, the customer sees the results and the business sees the money,” he says.

Vu sees tremendous opportunity to use Six Sigma in the nonmanufacturing areas at Ford as well. “We haven’t fully tapped into the business side of the house,” he adds. “Many there haven’t used any kind of statistical analysis before. From a business and transactional perspective, we haven’t even scratched the surface, but we have seen some fantastic results from those projects that have been completed.”

Perhaps most promising of all is the second phase of Ford’s Consumer Driven 6-Sigma process, which Ford calls Design for Six Sigma. This phase, which is just beginning, focuses on using Six Sigma in product design processes to prevent problems before they occur. An added benefit is using Six Sigma to develop new products as well. “Design for Six Sigma isn’t just for preventing problems; it’s also for creating exciting new products,” says Goeser.

Words of Wisdom

The Six Sigma team at Ford has learned a lot about what it takes to drive a successful Six Sigma effort. Beyond all of the training, the commitment of resources, the accessibility of data and huge sums



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paid to consultants, Ford has learned that Six Sigma success hinges primarily on two factors: committed senior leadership and a dedication to understanding customer needs.

“If you don’t have complete buy-in from your senior leadership, don’t try it,” cautions Vu. “It has to be complete buy-in; otherwise it doesn’t work. Six Sigma requires too many changes in the way the organization does business. If you don’t have complete buy-in, you’ll run into one barrier after another.”

Goeser, herself part of the senior leadership at Ford, echoes Vu’s sentiments. “You must have your senior leadership team committed to doing this,” she advises. “Expect that the first year will be the most difficult, but it will get easier from there.”

Stock urges organizations to study their customers before attempting Six Sigma. “Do you truly know what the customer thinks about your products?” he questions. “Do you have a clear metric, a clear measure of what the customer thinks is going on? You have got to start with the customer, and you have got to make sure that the measurements you use are truly relevant to what the customer thinks the issue is. Without that, you can’t even begin.”

Ford’s experience with Six Sigma proves that even a huge organization can be nimble enough to quickly implement a major restructuring in the way it thinks about the customer, approaches quality improvement and utilizes its most valuable resource -- its people. With the help of Six Sigma, Ford may yet make Quality Job 1, again.

Practical Application

Defining the problem

Many Ford Mustang owners expressed dissatisfaction with the amount of effort it took to close the hoods on their vehicles.

“They like to get under the hood,” says Mike Stock, a Ford Master

Black Belt. “But in some cases, they had to drop the hood from as high as 20 inches in order to get it to latch.”

Enter Consumer Driven 6-Sigma. Throughout the production assembly of any vehicle component, issues that arise are frequently treated on the spot or through rework after assembly. Although this approach can treat symptoms and provide a quick fix, Ford’s Consumer Driven 6-Sigma provides the tools to find the right solution and a lasting cure.

“Consumer Driven 6-Sigma allowed us to look at the interactions between all of the components to find the true root cause,” explains Stock. “The data it produced allowed us to identify all of the key contributors, and how much each truly impacted the overall issue.”

Measure phase

The Consumer Driven 6-Sigma team assigned to the problem relied on three main tools to identify the areas that were making the hoods hard to close.

The team used design of experiments to simulate how parts could be changed and what their effects would be. For example, the team altered the height of the hood latch bumper, or changed the angle and position of the latch relative to the hood-mounted striker, and dropped the hood to study the effect.

The team also used a component search analysis, which included changing and studying the locations of components on the actual vehicle assembly line. Such “line trials” identified other areas where variations in product occur.

Process mapping enabled the team to walk the entire manufacturing process to see where any variance occurred and where components were not matching specifications.

Much of the testing was done on a “coordination fixture,” a representation of the vehicle that was used to measure the suspected gaps, margins and fits. The coordination

fixture showed where each component is located in relationship to another. The team measured hood-drop heights with a gage that showed the effects of closing from various distances.

Improve/control phase

One of the major trouble spots in the Mustang hood-closing system involved the angle at which the latch and striker met. The team found the solution by changing the geometry of a support bracket to allow for expected variations.

Process mapping and assembly evaluation also showed variation in the way hood latches were installed. The hood latch was changed so that it will only fit one way, making it impossible to install the latch improperly.

“One of the objects of Consumer Driven 6-Sigma is understanding precisely what the process is and the material flow through the plant,” explains Stock. “That’s when you can see hidden sources of variation that you might have overlooked before. Then you can begin cutting costs by reducing the variations, and you improve the quality of the product at the same time.”

The result

Although Ford is still calculating final customer satisfaction figures on the adjusted hood-closing system, the team expects a 97-percent drop in related reported vehicle concerns.

Ford stands to save \$283,000 a year in reduced scrap, rework and nonvalue-added activity caused by the hood issue and vehicle-warranty work. Additionally, customer satisfaction with the Mustang gets a boost.

“Consumer Driven 6-Sigma lets us separately identify each of the elements, as well as the interaction of the elements, to achieve a result that addresses the entire issue,” notes Stock. “That leads to better processes, better products and greater customer satisfaction.”

ASQ's 11th Annual ISO 9000 Summit - "Optimize Your QMS for Business Results"

March 22-23, 2004 - San Francisco, California

A number of case-study presentations will review the transition and the function of quality systems relative to auditing; the process approach; and the construction, automotive, aerospace, medical device, law enforcement & agriculture industries. You'll leave knowing the most current best practices for applications including Baldrige, Lean Manufacturing, Six Sigma, Lean Sigma, ISO 14000, ISO/TS 16949:2002, AS 9100A, ISO 13485, and the new AG 9000. Information is available at: www.asq.org/ed/conferences/iso/index.html

Be sure to attend **Session M10**, presented by ASQ Vancouver Section member **Mark Silvester**, B.B.A., C.Q.E, C.I.W., President, Ockham Systems Consulting Inc. Mark is a previous presenter at our section meetings; his last presentation examined software solutions for quality system challenges. During the summit, Mark will present ***Implementing and Integrating Web and Intranet Technologies with your QMS.***

The session will provide attendees with the tools needed to effectively analyze their requirements and migrate an existing QMS over to a web/intranet based one. The session will focus on standard Internet technologies and how they can be used to simplify compliance and administration of the QMS of a company.

Learning Objectives:

- Benefits of implementing or transitioning to a web based QMS
- Considerations when transitioning or implementing an ISO 9000 QMS to an intranet
- Technologies, resources and expertise required
- Various approaches to implementing or transitioning to a web based QMS: In house or outsourced? Components or Full suite? Gradual migration or radical transformation?
- What to look for and what to avoid when implementing software based ISO QMS.



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ISO 9001:2000 Quality Management

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INTERNAL AUDITOR — \$795	Vancouver - February 4 – 5, 2004 2 day
INTERNAL AUDITOR — \$950	Vancouver - March 3 – 5, 2004 3 day — RAB Accredited
LEAD AUDITOR — \$1,695	Vancouver - March 15 – 19, 2004 (RAB and IATCA Accredited) April 26 – 30, 2004
PROCESS AUDITING — \$425	Vancouver - May 27, 2004

ISO 14001 Environmental Management

ESSENTIALS — \$895	Vancouver - March 8 – 9, 2004
INTERNAL AUDITOR — \$895	Vancouver - March 10 – 11, 2004
LEAD AUDITOR — \$1,995	Vancouver - February 9 – 13, 2004 (RAB Accredited)

OHSAS 18001 Occupational Health & Safety Management

ESSENTIALS — \$895	Vancouver - March 22 – 23, 2004
INTERNAL AUDITOR — \$895	Vancouver - March 24 – 25, 2004
LEAD AUDITOR — \$1,995	Vancouver - May 3 – 7, 2004

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GMP Notebook

- by *Efrem H. Zaret, PhD, Pharmaceutical Formulation & Quality, 09/24/03,*
www.pharmaquality.com

A GMP Report Card from FDA

Agency officer tells pharma to clean up their labs! Industry's dirty laundry was hung for all to see at the 27th International Good Manufacturing Practices Conference this past March in Atlanta. Phillip S. Campbell, compliance officer at FDA's Atlanta District Office, said the agency was very busy during fiscal year 2002, conducting 2,304 domestic and 281 foreign inspections. These inspections resulted in 1,011 domestic 483s and 185 foreign 483s being issued. Overall, FDA issued 1,200 Warning Letters—a number on the rise—and 160 of those were issued by CDER.

Topping the list of domestic 483 observations were deficient laboratory controls. Cleaning and cleaning validation accounted for 6% of the observations. Of the 26 Warning Letters issued between February and September 2002, quality, production or laboratory system deficiencies were cited in every letter. Quality was cited in 20 of the 26 letters; production deficiencies were mentioned in 18 of the 26; and lab problems were found in 17. A combination of all three deficiencies was found in 10 of the letters.

A review of 48 drug GMP Warning Letters, issued nationally from October 4, 2001 to October 30, 2002, included letters issued

to firms of various sizes. The most-cited GMP violation was validation.

Campbell stressed that FDA acknowledges all firms have some areas more problematic than others. "The agency wants inspection to determine whether a firm has systems in place to detect and investigate problems, implement corrective actions and train employees on new procedures," he said. "A good GMP compliance program looks at trends and problems and requires vigilance and commitment to yield success."

Going Forward

The new GMP Initiative for Human and Animal Drugs, Biologics and Vaccines will be implemented during a two-year period. The objective is to identify high-risk pharmaceutical manufacturing sites, including sterile and prescription drug manufacturers and new registrants not previously inspected by FDA. During fiscal year 2003, ORA intends to inspect 55% of high-risk human drug sites, placing emphasis on identifying problem areas, the severity of risk, the likelihood of a failure and how the lack of quality can harm the user.

Douglas Ellsworth, director of FDA's New Jersey District, said that the pharmaceutical industry should identify critical control points, critical processes and monitor points during routine inspection.



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 Quality Assurance & Training Consultants

Thank you to Helix for supplying the paper for our monthly newsletters, and also for sponsoring the rental of the monthly board meeting room.

WERE YOU UNABLE TO ATTEND LAST MONTH'S MEETING?

We are building a Program Archive of the monthly presentations that members can access from www.asq.bc.ca.

The following are now available from Programs/ProgramArchive.html:

*Jan 2004, **Evolution of Document Control**, Jon Morris, Principal JDQ Systems Inc.*

*Dec 2003, **Q-Base**, Dave King, President of Q-BASE Canada*

*Dec 2003, **ASQ Feigenbaum Medal**, Dan Zrymiak, Chair, Feigenbaum Medal Committee*

*June 2003, **Architects of Trust: Building Trust in the Workplace**, Ann Brown, A&R Brown Business Group Inc.*

Previous presentations from 1999 are also archived. We hope you find this service useful.