



SSRI Partnership Conference: six corporations collaborate in pursuit of Six Sigma Quality

The Six Sigma Research Institute (SSRI) held its first Partnership Conference at the Galvin Center March 31 and April 1, 1992. Thirteen representatives attended from the SSRI

partner companies — Asea Brown Boveri, Digital Equipment Corporation, Eastman Kodak, IBM, and Texas Instruments.

The objectives of this two-day meeting were to define the next "vision" for SSRI; extend the current goals and strategies; define the standardized approach for technology transfer; and promote greater synergism between the participating companies and the Institute.

In his opening address, Mikel Harry, director of SSRI, presented these objectives and stressed the need for a full sense of ownership and participation by each of the companies to make this consortium a functional reality. He reviewed the partnership obligations, which include funding, technical review support, training and implementation, and ongoing support of the structured authoring process. A review of SSRI current goals was discussed, which include:

- Develop and implement processes for publishing Best in Class methods and tools, as well as new breakthrough technologies.
- Develop a means to provide for short-cycle technology transfer.
- Provide a vehicle for developing statistical experts within each business unit to support the implementation of the key methods and tools.
- Secure and solidify external partnerships to support and extend the initiative.

After the opening remarks, each participating company representative presented an introduction to his/her company (annual sales figures, numbers of employees, chief market interests, etc.), and a prepared statement of what Six Sigma means to his or

her company. Presentations also included respective expectations of this alliance, and what strengths and unique contributions each brings to the table. Mikel reviewed the needs of all the participating companies in an effort to find common underlying themes and interests. The expectations of all partners concentrated on the following:

- "How-to" tools with step-by-step instructions for planning, organizing, and executing
- Software tools
- Training of in-house statistically oriented technology experts (black belts)
- Design focus for products, processes, and software
- Applications consulting with an emphasis on statistical process control and design of experiments
- Project management applications

Following remarks from Bill Wiggenhorn about the history of quality improvements at Motorola, the representatives were divided into mixed groups to consider their individual company's methods of technology transfer. The discussions focused on the common elements involved in the selection and training of "black belts" (statistically trained technology experts) within their companies, and the transfer of Motorola University/SSRI courses and products to the partners.

The fruitful results of these discussions were a solid indication that the representatives function well as mixed-company teams, and put common consortium interests first without jeopardizing the private interests and concerns of their individual companies.

SSRI plans to regularly hold similar partnership conferences to continue the free exchange of ideas and needs between partner companies.



Attendees at the conference included: (from left to right, from bottom) Henry Allford, Richard J. Ashford, Richard Karm, Jack Prince, Jim Luck, Kathryn Linder, Carlton Coppersmith, Betty Crofton, Mikel Harry, Dick Gall, Susan Anderson Khlof, Peter Kowal, Donald Allen, Paul Braut, Susan Hooper, William O'Hara, Connie Araps, Ken Hansen, Doug Baker, Al Gross, Jim Griffin, Duncan Roales, and Beige Stewart.



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A Message from
Mikel J. Harry, Ph.D.
Director, Six Sigma
Research Institute

New technology brings new problems ... and new solutions

New technology brings new problems. The role of the Six Sigma Research Institute is to search out those problems, devise theories and tools to attack them, and figure out ways to quickly transfer those tools to the people who will use them.

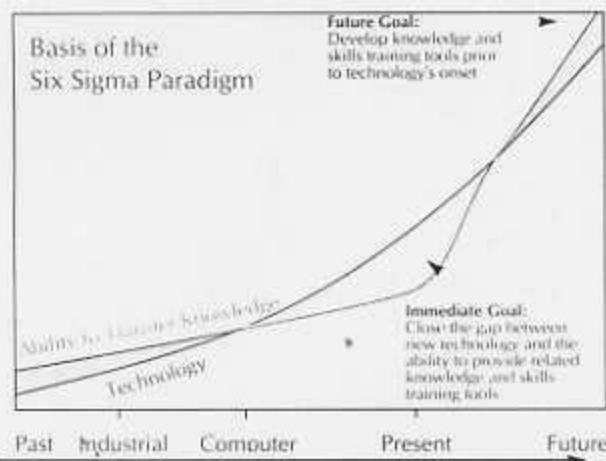
Total Customer Satisfaction, our overriding goal, is dependent on our ability to consistently deliver premier quality products and services. In our industry, quality products are dependent on our ability to control variation in our manufacturing processes.

Today, the statistical tools that we use to control that variation are very different from the tools we used 30 years ago. Changes in



Motorola and its partners in the Six Sigma Research Institute—IBM, DEC, Kodak, Texas Instruments, and Asea Brown Boveri—have united to bring about changes in the technology education process. Through our shared resources and technologies, we are devising ways to bring about a seamless union of learning and working. Together, we are working to embed technology education into the workplace.

Through the continuing development of educational tools and programs, such as the instructional design shell, the black box simulator, and the black belt certification process, we intend to empower our respective employees to take greater responsibility in



hardware and process engineering technology have forced these tool changes. As technology continues to evolve and product cycles continue to decrease, there will be less and less time to devise and implement process control strategies and tools. This means that we need to become more predictive in our abilities to control variation.

For example, we know that automation and computers will become a more integral part of controlling manufacturing processes. Today's manual methods of statistical process control will become more computer intensive; focus will shift away from the mechanics of control charts to the interpretation of computer program outputs. This means that the skill requirements of individuals working in manufacturing areas will change.

Today's methods and tools for transferring technical knowledge and skills to the workplace are not keeping pace with the information explosion around us. This has created a gap between new technology and our ability to implement and use it effectively.

developing their own training. In doing so, our companies will gain the ability to rapidly utilize new technologies because our employees will possess the knowledge and skills necessary to support them.

To keep pace with the technological evolution, the focus of the Institute must be divided. While we challenge current practices and propose new ways of doing things, we must also focus on the future, to anticipate technological changes and begin today, to create tools for tomorrow's problems before they occur.

As Motorola moves to and beyond its quality goal of Six Sigma, the Six Sigma Research Institute will focus on developing the strategies, the tactics, and the tools needed to get us there.

Dr. Harry is a senior member of the technical staff, and an associate member of both Motorola's Science Advisory Board (SABA) and the Government Electronics Group's Scientific and Technical Society.

Perspective

Six Sigma Research Institute ensures Motorola's competitive edge

I recently had an opportunity to meet with a diverse group of corporate leaders from Europe and North America. As our session concluded, we agreed that we share six terms whose further definition and implementation will help us survive the whitewater electronics and telecommunications environment of the 1990s and beyond. They are:



- Quality
- Total cycle time reduction
- Time to market
- Total cost reduction
- Global competitiveness
- Customer services

This issue of *Opportunities* is devoted to the consortium of companies who are also dedicated to defining and implementing the above terms, the Six Sigma Research Institute. Their uniqueness lies in each partner's commonality in the need to continuously improve quality, produce robust products and services while reducing costs and cycle time.

In addition, this organization is committed to continuing the energetic quest into new markets as well as to exchanging and leveraging technological and statistical breakthroughs via education and research.

Even more importantly, the Six Sigma Research Institute is committed to a worldwide rollout and institutionalization of its research results in five multi-national companies. The institute's staff, from industry and academia, are bound by the desire to address competitive and technology-driven challenges and then wisely utilize the output.

How do these developments affect the big picture for Motorola? The creation and support of the Six Sigma Research Institute is positioning and preparing our company to not only meet the apparent challenges that lie ahead, but it is also providing a resource to ready us for the now unknown factors that we will certainly face in the future. We salute their efforts.

A. William Wiggerburn
President, Motorola University
and Corporate Vice President
of Training and Education

What is the Six Sigma Research Institute?

In late 1986, Motorola announced the achievement of Total Customer Satisfaction as the corporation's fundamental objective. To support this goal, five interrelated key initiatives were defined. Of these initiatives, achievement of Six Sigma Quality is paramount.

The Six Sigma thrust provides distinct advantages in this continuing quest for Total Customer Satisfaction. This must be achieved in the presence of increasing global competition and rapid technological change. These two factors emphasize the continuing need for a single foundation to unite the many aspects of product and service quality into an integrated strategic thrust.

When Motorola engineers contacted the major engineering schools in the U.S. to obtain the tools and methods needed to achieve Six Sigma Quality, it was learned that predefined tools to reach this level of quality did not exist. So Motorola created the Six Sigma Research Institute in May of 1990 to create these means for achieving the corporation's quality goals. Since strategic training



forms the cornerstone of Motorola's quality efforts, the Six Sigma Research Institute is affiliated with Motorola University.

The Six Sigma Research Institute's mission is to research and develop the theoretical framework and supporting tools necessary to accelerate the achievement of Six Sigma Quality, and to facilitate the subsequent transfer of such knowledge to Motorola's technical and managerial communities.