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## In the Beginning, There Were Deming and Juran

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If ever there were a Dream Team on quality in the workplace, it would be made up of W. Edwards Deming and Joseph Juran.

# In the Beginning, There Were Deming and Juran

Phil Landesberg



As we look back over the state of quality management and theory, we'd be remiss if we didn't focus on two of this century's most notable and respected contributors: W. Edwards Deming and Joseph Juran. For over 50 years, both helped to improve quality in public and private institutions, in the service and health-care industries, and in manufacturing, education, and government. While Deming died in 1993 and Juran retired from teaching and lecturing in 1994, there is still much that we can learn from their work.

## Similar journeys

Deming and Juran's amazing lives paralleled each other in many ways. As youths, both experienced hard times. However, they both overcame their humble beginnings, graduated from college, and embarked on their careers. Both Juran and Deming started off by working at Western Electric's Hawthorne plant in Chicago, where they were influenced by the work of Walter Shewhart, a pioneer in statistical method.

When World War II began, both men were active in the federal government's wartime efforts. Employing his mathematician and statistician skills, Deming joined the Census Bureau and taught statistical methods to engineers and managers. Juran made marks by helping redesign critical supply processes in the Lend-Lease Administration.

After the war, Deming and Juran's work attained worldwide recognition, and both received an invitation to work in Japan from the Union of Japanese Scientists and Engineers. Deming taught Japanese engineers and top management statistical methods and how to view production as a system that included suppliers and consumers. Juran delivered lectures in Japan about managing for quality. The teachings of Deming and Juran were greatly appreciated by the Japanese: both men were presented medals by the Emperor of Japan as high awards for their assistance.

Back on the home front, these pioneers' careers continued on parallel courses. Both developed

## Deming at a Glance

### Basic philosophy:

Continual improvement through lifelong learning.

### System of Profound Knowledge

Deming advocated a new approach to management.

- 1) Appreciation for a system.
- 2) Knowledge about variation.
- 3) Theory of knowledge.
- 4) Psychology.

### The Fourteen Points:

Most known for these points, Deming describes them as a way to transform American industry:

- 1) Create constancy of purpose for improvement of product and service.
- 2) Adopt the new philosophy.
- 3) Cease dependence on mass inspection.
- 4) End the practice of awarding business on price tag alone.
- 5) Improve constantly and forever the system of production and service.
- 6) Institute training on the job.
- 7) Institute leadership.
- 8) Drive out fear.
- 9) Break down barriers between staff areas.
- 10) Eliminate slogans, exhortations, and targets for the workforce.
- 11) a. Eliminate numerical quotas for the workforce.  
b. Eliminate numerical goals for people in management.
- 12) Remove barriers to pride of workmanship.
- 13) Encourage education and self-improvement for everyone.
- 14) Take action to accomplish the transformation.

decade-long consulting practices, taught at New York University, lectured, wrote, and provided insight into their work in a series of

well-received videotapes. Both founded institutes to help others continue to learn from their work.

### Different paths

Deming provided a new and comprehensive theory for managing organizations and human enterprises. His description of production as a system of interrelationships between consumer research, design (and redesign), suppliers, materials, production, assembly, inspection, distribution, and consumers is an integral contribution. Deming believed that a system must have an aim, and that for an organization to be managed effectively (as a system), the aim must be clear to everyone.

Juran provided an analytical approach to managing for quality. He provided advice on quality planning, quality control, and quality improvement, and he advocated specific management practices to encourage and foster improvements in product and service. While Deming described a systematic view of the organization, Juran prescribed how to manage quality functions (a collection of such activities as market research, product design, product development, production, inspection, and sales).

Deming was a philosopher who desired to provide a new way to view the world. Juran was a practitioner who desired to teach people better management practices. Because of their different approaches, Deming's work tends to appeal to theoretical-minded individuals, whereas Juran's tends to appeal to the practical-minded.

### Asking better questions

The works of Deming and Juran

are of enduring value. Their insights help us question our own prevailing assumptions. Since assumptions and hypotheses help shape the questions we ask, applying their insights can help us ask better questions.

Better questions are those that provide a deeper understanding of management problems and enable us to take more effective actions for planning, initiating, and studying changes for improvement, and then acting on what we observe after the changes have been initiated. This

## Juran at a Glance

### Basic philosophy:

Quality is fitness for use.

### The Quality Trilogy:

Juran developed this to assist management in the implementation of strategic quality planning. Components:

- 1) Quality improvement.
- 2) Quality planning.
- 3) Quality control.

### Ten steps of the quality improvement process:

- 1) Build awareness of the need and opportunity for improvement.
- 2) Set goals for improvement.
- 3) Organize to reach the goals.
- 4) Provide training throughout the organization.
- 5) Carry out projects to solve problems.
- 6) Report progress.
- 7) Give recognition.
- 8) Communicate results.
- 9) Keep score.
- 10) Maintain momentum by making annual improvement part of the regular systems and processes of the company.

process of planning, doing, studying, and acting on what we observe comprises the Plan-Do-Study-Act (PDSA) cycle for learning and improvement taught by Deming.

Deming and Juran also:

- Observed that, *to succeed, quality management efforts need the long-term commitment and involvement of top management.*
- *Rejected reliance on mere slogans to motivate workers*, agreeing that problems in organizational performance were largely due to the system of work, not the operators.
- *Were concerned that prevailing practices (such as incentive pay) were based on faulty or outmoded premises.*
- *Placed great importance on planning*, as decisions made “upstream” effect the final results.
- *Understood process variation*, and noted that common and special

causes require different improvement strategies. Their insight on these points can help us learn by asking better questions as we move through each phase of the PDSA cycle:

**Plan.** When we plan a change to address a problem or improve performance, common questions include “What happened? Who did it?” and “How long will it take to fix the problem?” Some better questions: “What are possible system causes of the problem? What (specifically) are we trying to accomplish?” and “How will we know that a change is an improvement?”

**Do.** When we take action for improvement, a common question is, “What is the return on investment?” The better question would be: “How are suppliers and customers effected by the change?”

**Study.** When we study the results of changes for improvement, a common practice is to observe day-to-day or month-to-month (such as point-to-point) differences and ask, “What happened?” The better question is: “Does the data indicate a change has taken place?”

**Act.** Often, when we are satisfied with the initial results of a change (or have simply moved on to another problem), we do not ask further questions about it. After studying data collected after initiating the change, we need to ask, “What actions should we take next?” Depending on what we learn from analyzing the data, we can then ask, “What can we do to maintain or extend the benefits of the change?” or “What other change can we try based on what we learned?”

## The choice is ours

As we enter a new millennium, we can continue to benefit from the work of Deming and Juran as we learn and apply their theories and hypotheses to meet today’s management challenges. Their writings, videotapes, and events, sponsored by both the W. Edwards Deming Institute, located in Potomac, Maryland, and the Juran Institute, located in Wilton, Connecticut, provide excellent learning opportunities.



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### Deming resources

Check out the **Deming Video Library** for videotapes on his work. The Video Library can be purchased or rented from CC-M Productions, 800-453-6280.

Most noted books include:

**Out of the Crisis** (MIT, 1986) addresses problems associated with prevailing management practices and offers a means to improve organizational performance.

**The New Economics** (MIT, 1995) describes Deming’s System of Profound Knowledge, consisting of four interrelated parts (appreciation for a system, understanding variation, theory of knowledge, and understanding psychology), which can be applied to transform the prevailing style of management.

### Juran resources

Try the “Juran on Quality Improvement” video series, which can be purchased from the Juran Institute, 800-338-7726.

Juran’s books include:

**Juran’s Quality Handbook** (McGraw-Hill, 1999)

**Managerial Breakthrough** (McGraw-Hill, 1995)

**Juran on Quality by Design** (Free Press, 1992)

Juran’s writings provide guidance on how managers, employees, and quality professionals can organize quality planning, control, and improvement activities. Additional material may be obtained from the Juran Quality Leadership Center at his alma mater, the University of Minnesota.