Figure 11.10a. PROCESS IMPROVEMENT STRATEGIES: Deming's Philosophy

The obituary of W. Edwards Deming is reprinted in this Figure 11.10a as an introduction to a person who has had a substantial influence on the quality movement. For further information, see the book: Deming, W. E.: *Out of the Crisis.* Massachusetts Institute of Technology Center for Advanced Engineering Study, Cambridge, Mass., 1986. A short sequence on Dr. Deming also appears in *Against All Odds: Inside Statistics*, Program 18, *The Sample Mean and Control Charts.*

EM9360: The Globe and Mail, December 21, 1993, page C6

OBITUARY / *W. Edwards Deming*

Quality expert helped Japan rebuild

BY JOHN HOLUSHA
New York Times Service

W. Edwards Deming, an expert on quality in manufacturing who helped Japan rebuild its shattered industries after the Second World War and urged U.S. corporations to treat their workers as associates rather than adversaries, died early yesterday at his home in Washington. He was 93.

Although he was ill with cancer in recent years, he continued to work, conducting the last of his four-day seminars on quality management in the Los Angeles area from Dec. 7 through Dec. 10.

His theories were based on the premise that most product defects resulted from management shortcomings rather than careless workers, and that inspection after the fact was inferior to designing processes that would produce better quality.

He argued that enlisting the efforts of willing workers to do things properly the first time and giving them the right tools were the real secrets of improving quality – not teams of inspectors.

He was an obscure statistician in the United States in 1950 when he was asked by some Japanese industrial leaders, based on his wartime research, to deliver a series of lectures on his quality-control principles.

He and his message were eagerly embraced by the Japanese, who believed that, without many natural resources or a colonial empire, they would prosper only if they could sell products on world markets.

His success in Japan made him the leader of a generation of specialists on product durability and reliability who were then sought by U.S. companies trying to catch up to Asian competitors. But his renown in the United States never matched the success he achieved in Japan.

After the application of his methods brought enormous commercial success to some Japanese companies, the Japanese created a Deming Prize for companies that made striking advances in quality.

William Edwards Deming was born on Oct. 14, 1900, in Sioux City, Iowa, and studied engineering at the University of Wyoming in Laramie. He later earned a master's degree in mathematics and physics from the University of Colorado and was awarded a doctorate in physics from Yale University in 1928.

He used the later years of his long career to try to reform U.S. management, for considerable fees, sometimes as much as $100,000 a year from a single client.

He delighted in telling corporate chieftains who asked him to help solve a company's problems that they were a significant part of the problem.

Although the core of his method to improve quality was the use of statistics to detect flaws in production processes, he developed a broader management philosophy that emphasized empowering workers and using co-operative approaches to solving problems.

He denounced management procedures such as production quotas, performance ratings and individual bonuses, saying they were inherently unfair and detrimental to quality. He said customers would get better products and services when workers were encouraged to use their minds as well as their hands on the job.

His blunt approach offended many executives, who turned elsewhere for advice. Yet some companies, including Ford Motor Co. and Xerox Corp., sent hundreds of their top level managers to his lectures and seminars.

One of the first large U.S. corporations to seek his assistance was Ford, whose officials brought him to their headquarters in Dearborn, Mich., in 1981, when the company's sales were faltering and it was losing hundreds of millions of dollars.

Executives were expecting a slick presentation on tricks to improve quality. Mr. Deming, instead, insisted on questioning the company's culture and management philosophy. Eighty-five per cent of quality problems, he told them, are the result of management errors.

After Ford acted upon his philosophy and its success became obvious, demand for his services grew. He kept his client list short and refused to have anything to do with companies not willing to make top executives available to him.

Among the companies that turned to Mr. Deming and his disciples were Dow Chemical, Procter & Gamble, American Telephone & Telegraph and The New York Times.

Unlike other quality experts, such as Joseph Juran and Philip Crosby, Mr. Deming never built a formal organization. He continued to work as a solo practitioner out of an office in the basement of his modest home in Washington.

His first wife, Agnes, died many years ago. His second wife, Lola, died in 1986. He leaves two daughters, five grandchildren and three great-grandchildren.

The article EM9360 reprinted above in this Figure 11.10a is also used in Statistical Highlight #96.

(*continued overleaf*)

EM9361: The Globe and Mail, December 28, 1993, page B10

DEMING AND QUALITY: 14 steps to success

W. Edwards Deming, who died this month at 93, was the pioneer of the quality movement that has swept global business over the past 40 years. His first converts were the Japanese, who built their post-war economic revival on his ideas. Mr. Deming's approach is summed up in his much-quoted "14 points to successful management";

1. Create constancy of purpose for continual improvement of products and services.

2. Adopt the new philosophy created in Japan. Don't accept poor workmanship and poor service.

3. Cease dependence on mass inspection. Don't spend money on inspecting products coming off the assembly line but instead spend money improving the process.

4. End the awarding of lowest-tender contracts, which generally deliver poor quality. Instead, require measures of quality and get the best price through a single supplier in a long-term contract.

5. Improve constantly and forever every process for planning, production and service.

6. Institute modern methods of training. Train workers formally and the right way, rather than by word of mouth.

7. Adopt and institute leadership. Managers shouldn't tell people what to do but be there to help them do a better job.

8. Drive out fear with effective two-way communication. For better quality and productivity, employees should not be afraid to ask questions.

9. Break down barriers between departments and staff areas. Too often, employees compete with each other rather than work for the common good.

10. Eliminate slogans and exhortations. They never work. Let people put up their own slogans.

11. Eliminate quotas and numerical targets. Substitute aid and helpful leadership.

12. Remove barriers to pride of workmanship, including annual appraisals and management by objectives. People want to do a good job.

13. Encourage education and self-improvement for everyone, including management.

14. Define top management's permanent commitment to ever-improving quality and productivity, and its obligation to implement all these principles.

More detailed wording of the 14 points and other information is:

W. EDWARDS DEMING
A THEORY FOR MANAGEMENT

TRANSFORMATION THROUGH APPLICATION OF THE FOURTEEN POINTS

1. Create constancy of purpose toward improvement of products and services, with the aim to become competitive and to stay in business, and to provide jobs.

2. Adopt the new philosophy. We are in a new economic age. Western management must awaken to the challenge, must learn their responsibilities, and take on leadership for change.

3. Cease dependence on inspection to achieve quality. Eliminate the need for inspection on a mass basis by building quality into the product in the first place.

4. End the practice of awarding business on the basis of price tag. Instead, minimize total cost. Move toward a single supplier for any one item on a long-term relationship of loyalty and trust.

5. Improve constantly and forever the system of production and service to improve quality and productivity, and thus constantly decrease costs.

6. Institute training on the job.

7. Institute leadership (see point 12). The aim of leadership should be to help people and machines and gadgets do a better job. Leadership of management is in need of overhaul, as well as leadership of production workers.

8. Drive out fear so that everyone may work effectively for the company.

9. Break down barriers between departments. People in research, design, sales, and production must work as a team to foresee problems of production and in use that may be encountered with the product or service.

10. Eliminate slogans, exhortations and targets for the work force asking for zero defects and new levels of productivity.

11a. Eliminate work standards (quotas) on the factory floor. Substitute leadership.

11b. Eliminate management by objective. Eliminate management by numbers, numerical goals. Substitute leadership.

12a. Remove barriers that rob the hourly worker of his right to pride of workmanship. The responsibility of supervisors must be changed from sheer numbers to quality.

12b. Remove barriers that rob people in management and in engineering of their right to pride of workmanship. This means, *inter alia*, abolishment of the annual or merit rating and of management by objective, management by the numbers.

13. Institute a vigorous program of education and self-improvement.

14. Put everybody in the company to work to accomplish the transformation. The transformation is everybody's job.

DISEASES THAT STAND IN THE WAY OF THE TRANSFORMATION

1. Lack of constancy of purpose to plan product and service that will have a market and keep the company in business, and provide jobs.

2. Emphasis on short-term profits, short-term thinkimg (just the opposite of constancy of purpose to stay in business), fed by fear of unfriendly takeover, and by push from bankers and owners for dividends.

3. Personal review system, or evaluation of performance, merit rating, annual review, or annual appraisal, by whatever name, for people in management, the effects of which are devestating. Management by objectives, on a go, no-go basis, without a method for accomplishment of the objectives, is the same thing by another name. Management by fear would still be better.

4. Mobility of management job hopping.

5. Use of visible figures only for management, with little or no consideration of figures that are unknown or unknowable.

6. Excessive medical costs.

7. Excessive costs of liability, fuelled by lawyers that work on contingency fees.