

W. Edwards Deming

Quality Culture Mini-Paper

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What follows is a brief look into the story behind and work of William Edwards Deming. Included are a brief summary of his life, his philosophies, and the impact of his efforts.

The Life of William Edwards Deming

Deming was born on October 14, 1900 in Sioux Falls, Iowa, but spent the majority of his youth in Powell, Wyoming. He was raised on a government granted section of farmland with one brother and two sisters (www.deming.org). The Deming family struggled just to survive.

Deming's parents believed in the importance of an education and stressed this to their children. His mother had studied music and his father, mathematics and law. His mother's love of music influenced Deming's interest in music and composition later in life. In 1917, Deming began his own education at University of Wyoming at Laramie. Four years later, he graduated with a degree in electrical engineering. Deming continued with his education, completing his master's degree in mathematics and physics from the University of Colorado, and his PhD in mathematical physics from Yale University (www.deming.org).

After receiving his PhD, Deming was offered a position with the Western Electric Company, but decided to pursue work at the Fixed Nitrogen Research Laboratory of the U.S. Department of Agriculture instead. It was there that Deming encountered statistics and probability and also met Walter Shewhart. Shewhart's ideas inspired Deming to apply his knowledge of statistics to management and Deming's theory of management was born (www.deming.org).

In 1939, Deming began work at the Bureau of the Census, while at the same time, teaching statistics courses at the USDA Graduate School and Stanford. Through his teaching, Deming discovered that "quality can be improved only if top management is part of the solution (www.deming.org)."

In the fall of 1950, Deming took his ideas for management's role in quality to Japan where his vision was well received. By December, the Japanese Union of Scientists and Engineers had created the Deming Prize, a prize given annually for "excellence in quality (www.deming.org)."

The next phase of Deming's life included work as a consultant in statistical surveys and as a member of the faculty at the New York University Graduate School of Business and Columbia University. In fact, Deming taught up until ten days before his death in 1993 (www.deming.org).

Throughout Deming's life he received numerous prestigious awards and wrote several books. Deming also composed many pieces of music, including a version of the Star Spangled Banner. Deming's humble upbringing was most likely responsible for his strong belief system. "Do your best, continually seek to improve that best, look out for the people you are responsible for, and recognize that everyone is in this together (www.deming.org)."

The Philosophies of Deming

Deming presented his ideas to 10,000 managers a year through his standard four-day seminar (www.deming.org). He saw quality as an entire philosophy of management, not as a specific process or set of procedures and guidelines. His ideas are most concisely captured in his "14 Points," which will be briefly reviewed here (Hartman, 19). The 14 Points are interdependent and overlapping, not simply a chronological sequence of steps (Voehl, 2). In fact, Deming never laid out a sequence of accomplishing these objectives. He wanted managers to understand the whole system and adopt a new way of thinking. This is the basis of his later "System of Profound Knowledge." The 14 Points are as follows:

- 1) Creating a Constancy of Purpose – Organizations must have established, focused goals of satisfying the customer. Business decisions should be based on the long-term focus of the organization, not on short-term performance measures.
- 2) Adopting the New Philosophy – Becoming a quality-driven organization requires everyone, starting with top management, to fully embrace a new way of thinking that involves seeking the greater good for everyone involved and implementing continuous improvement.
- 3) Ceasing Dependence on Mass Inspection – Quality should be designed into products and processes. Inspection adds nothing to the value of a product and consumes valuable resources. With a good process, statistical sampling using control charts will signal when a process is out of control.
- 4) Ending Price Tag Awards – The contracted price for a material or service tells only part of the story of its actual cost. Good single supplier relationships with built in trust will result in lower variation and a lower overall total cost of use.
- 5) Improve the Process Constantly – To remain competitive, a company must always seek to better its products, from design through production and customer support.
- 6) Institute Training and Retraining – Education and training for employees is an investment. All employees should understand concepts of probability and variation

- because everyone is an important link in producing quality. Training also fosters better relationships and more trust between managers and employees.
- 7) Institute Leadership – Managers are ultimately responsible for production of quality. They must see employees as assets and be facilitators to allow everyone the resources they need to do their jobs correctly. Managers must respond quickly to special variation in processes.
 - 8) Drive Out Fear – Open dialogue and two-way communication between managers and employees is essential to successful operation of a business. Fear causes grave inefficiencies in production and delayed action when processes go out of control. In service industries, customers must be free from fear of operational error.
 - 9) Break Down Department Barriers – Organizations are systems in which competition causes serious inefficiency. All members of an organization should realize that they share the common purpose of the organizational mission and values. Teams of people from different departments should cooperate to ensure goals are met.
 - 10) Eliminate Slogans and Targets – Slogans and sayings are hollow and do not provide the means to achieve quality. The focus should be on understanding the system and its inherent variation, not on catch phrases.
 - 11) Eliminate Numerical Quotas – Much like slogans, targets are useless without a means for achieving them. With a stable process, quotas are useless because the system should deliver consistent results. If the process is not stable, quotas are useless because there is no defined method to achieve them and results cannot be predicted.
 - 12) Remove Barriers to Pride – Workers inherently want to do a good job and have a right to be proud of their work. Performance reviews and merit systems cause competition and focus on short-term results. This is counterproductive to the long-term organizational focus that Deming's teachings are based on.
 - 13) Education and Retraining – Education allows employees to understand their jobs better, to understand process variation, and to become better at problem solving. Even in areas not directly job-related, education generally improves worker morale.
 - 14) Involve Everyone in Transformation – The responsibility for implementing a new system of quality rests with top management. They must commit to a new culture and constantly reinforce the previous 13 points in all business decisions. They must emphasize it to all employees in the company if change is to be made and processes are to be continuously improved. Involving all employees is critical because they are the ones who will actually make a product or perform a service, and only they can implement quality.

Deming's later work centered on developing and teaching his "Theory of Profound Knowledge." This basic tenet of this is that managers must know intimately the finest details of the system or process they are trying to control, and must continue to learn. It elaborates on the points, emphasizing the importance of understanding variation, scientific method, the inevitability of unknown elements of a system, and the reduction of complexity in systems (Delavigne, 54). He also taught the Shewhart cycle of "Plan, Do, Study, Act," which is an iterative problem solving process. This can be applied to consumer research, product improvement, and process improvement.

The Impact of Deming

The major impact of Deming's ideas was in the post-World War II economic and industrial recovery of Japan. Deming went to Japan in 1950 to teach the leading industrial companies in Japan his management methods and statistical techniques. Industry in the United States was prospering, due largely to an overabundance of resources and an accelerated market caused by the end of five years of wartime sacrifice. The U.S. did not take his ideas of quality improvement seriously because they were already the world economic leader. Japan's economy, on the other hand, had been crippled by the war. Japan's executives were ready to accept change. History has shown that the methods they implemented, largely due to Deming's direct influence, have made Japan a world leader in manufacturing of automobiles and electronics, among others. Today, he is revered in Japan as a major mover in its economic success (www.dharma-haven.org).

The major catalyst for Deming's ideas entering U.S. business was an NBC News white paper documentary aired in 1980 entitled, "If Japan Can, Why Can't We?" It documented Deming's teachings and the effect those teachings had on Japanese industry. The documentary was a wake-up call for manufacturers in the United States that Japan had moved to the lead in manufacturing. Since that time, his ideas have gradually become more accepted in U.S. business, and quality has been a major business focus of the past two decades (Voehl, 2). Deming's connection to Japanese business made his consultation services in high demand for U.S. businesses trying to compete with Japan (Rosander, 3).

References

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