

W. E. Deming & Japanese Manufacturing “Out of the Crisis” **Draft 08-15**

In the early 1950's, W. Edwards Deming, Walter Shewhart, (from Bell labs) and other American technical teams, were asked by General Douglas McArthur, to come to Japan to help rebuild that shattered economy. McArthur had a plan to get Japan back to an economically stable system as soon as possible, and he saw manufacturing as a key component. (This wasn't altruism, since if there were no jobs, then the populace might resort to violence, making the occupation by American troops more difficult). These technical teams, and Deming in particular, provided the ideas and techniques that motivated the Japanese to begin their manufacturing renaissance. Toyota and other Japanese manufacturers listened, learned, and acted. They instituted the practices recommended by Deming, infused with their own cultural traditions. The book *The Elegant Solution: Toyota's Formula for Mastering Innovation*, gives a 2007 update of the Japanese triumph in manufacturing. Their success is in very large measure due to the mind-set that Deming and the American teams put into place way back in the '50's. (My own take is that an important component of this mind shift is that the American teams emphasized *measuring* absolutely *everything*, since only by comparative measurements can improvement take place. The other Deming ideas are crucial, but I think measurement underlies most of them).

The result of this Japanese dedication to modern manufacturing and management practices is now painfully evident to us here in the U.S., with Toyota Motor Company's revenues exceeding the combined revenues of GM, Ford, DaimlerChrysler, and Volkswagon. Note that all of the Japanese success was achieved in spite of having no oil, iron, wood, and practically no other industrial resources. The Japanese success is a triumph of people oriented systems, process, and product. The lack of natural resources motivated the Japanese to place exceptional value on educated, trained, competent people, thus offsetting their lack of resources. Here is another crucial lesson for us here in the U.S., favored as we have been by abundant natural resources.

Deming's tried to spread his ideas of manufacturing and business renewal in America but found no audience. America and its leaders of that time (1950's and 1960's) were oblivious of any need for change since we had the only viable economy in the world and our goods dominated the globe. Those were the good times, until about 1968 or so when Toyota started importing their superior quality cars.

Acutely aware of the limitation of American Leadership, Deming published a book on the diseases of American management in 1986 called “Out of the Crisis”, This book described his vision of how America could still compete with Japanese organizations. Published in 1986, his prescriptions are still resisted by the managements I have observed, and, beyond my individual experience, is the realization by almost everyone that we are in deep deep trouble as a nation. We have lost industry after industry to foreign competition, our economy is on the decline, and our status as a leader of innovation is seriously compromised.

The auto industry is simply a more obvious loss, among many others.

The consequences of our failure in management are abundantly clear today as I revise these notes in August of 2008. Even the most cursory look at American production shows a loss of *millions* of manufacturing jobs, 100's of *billions* in trade deficits, a *trillion* dollars owed to foreign governments, and a general *malaise* about our future prospects. (Not to even mention the current debacle of the financial industry or the Iraq war).

Here are Deming's prescriptions for getting out of our current Crisis.

Deming's 14 Points Required to Climb Out of the Crisis

This list is from W.E. Deming, *Out of the Crisis* pgs 23-24.

1. "Create constancy of purpose toward improvement of product and service 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 the 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 cost."
6. "Institute training on the job."
7. "Institute leadership. The aim of supervision should be to help people and machines and gadgets to do a better job. Supervision of management is in need of overhaul, as well as supervision 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. Such exhortations only create adversarial relationships, as the bulk of the causes of low quality and low productivity belong to the system and thus lie beyond the power of the work force."
- 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 merit rating and of management by objective."
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."

Lean Thinking

Another contemporary viewpoint that uses Toyota as the model for an organization is the 1996 book by Womack and Jones (*Lean Thinking*). They come from a manufacturing background and their perspective is based on inter-continental analyses and visits to plants all over the world. I can't distill all of their advice except to list what they call the Lean Principles: (I have made a few comments and more discussion should follow as well)

Deming & Views on Management Crisis

- Value - what is it and who 'owns' it
- The Value Stream - tracing out the value add and the waste between creation and consumption
- Flow - getting rid of impediments to the smooth flow of the value stream. This also applies to our own perception of BPR (business process re-engineering)
- Pull- the customer asks for a product and the system responds, minimal WIP (work -in-process) (think Dell computers)
- Perfection - constantly improve, the best is not good enough.

The Elegant Solution

The latest book I have studied is one by a Toyota insider, Matthew May (*The Elegant Solution*) who is senior advisor to University of Toyota. Again summarizing the principles he emphasizes:

- The Art of Ingenuity - hone your craft skills at all levels
- The Pursuit of Perfection - forget numeric quotas and benchmarking, go for perfection since you are competing only with yourself
- The Rhythm of Fit - the difference between an invention and an innovation is the timing and its synchronicity with the intended audience.

Signs of the Times

Back in April 1, 2007, I read a New York Times article that pointed out the consequences of Western Management and Union Policies. The article was "The End of the Line As They Know It", April 1, 2007 (no, it was not an April fools joke). This article described the situation of auto workers from GM, Ford, and Chrysler. Along with the article was a table showing the workforce reductions. The article stated that 81,000 employees have taken or are considering buyouts

That was a year ago, today's newspapers document deeper crises.

References

May, Matthew (2007) *The Elegant Solution*

W. E. Deming (1986) *Out of the Crisis*