A Lean Journey – Meeting the great masters

It was the day after my birthday, August 13, 1979, when I happened to read the financial pages of the New York Times. One headline strangely, almost mystically, appealed to me. It said, "Productivity had declined in America." I am not sure why this interested me, for I didn't really know what productivity truly meant, but it was the beginning of an amazing journey.

Almost immediately, I went to the Greenwich, Connecticut Public library to study this word productivity and why it was so important. Productivity is really the only true measure of the success of the company and the country. Productivity is output, goods and services, divided by input, normally labor hours. Increasing national productivity can raise living standards by bringing more real income to improve people's ability to purchase goods and services, improve education and contribute to social and environmental wellbeing. Productivity growth is also the key measure for a business, reflecting the increase of value added services and products.

Productivity quickly went from a cursory interest to an obsession and I opened a new company and started a new newsletter, both called Productivity. From my library visits, I discovered that Japan was leading the world in productivity growth. But, initially I could not find out why. I did not know what Japan was doing differently.

It was like going back to college for I voraciously read everything I could on the subject of productivity and Japan. Luckily, I attracted Jeff Scanlon to be the first editor of the newsletter. Together, from our research, we discovered Quality Control Circles (QCC) and found Wayne Ryker, a former manager at Lockheed, who noticed the superiority of the quality of parts coming from Japan. Wayne convinced the U.S. Navy to pay for his trip to Japan to find out what the Japanese were doing. Along with Don Dewar, another manager at Lockheed, they visited JUSE (Union of Japanese Scientists and Engineers), meet with Professor Kaoru Ishikawa creator of QCC and negotiated the rights to have the Japanese material on QCC translated into English. They set up circle activities at Lockheed to improve the quality of their products. From their success, they both went out and set up highly successful consulting firms to teach QCC to other American companies.

It was around September 2000, when I attended a conference sponsored by Industry Week Magazine in New York City where I met Joji Arai, manager of the Japan Productivity Center, in Washington DC. I asked Joji if he would help me set up a study mission to visit Japanese manufacturers, he graciously said yes.

Six months later, through my newsletter, we attracted 19 senior executives to go to Japan on a two-week study mission. It was a tremendous gamble on our part for we had no idea what we would see. But, miraculously, we discovered and were probably the first publication in America to write about the Toyota Production System and other techniques that the Japanese were using to improve their productivity.

Prior to going to Japan, I visited an Oldsmobile plant in Tarrytown, NY, and saw a worker putting only brake fluid into each automobile – the job was deadly. I asked the guide about it and he said, "You think this is bad; we had one man who only put a tire on a hook to go to the line; he did this for 43 years, retired and died two weeks later."

On the trip, we visited Toyota and saw a worker put the windshield wipers on the car and also do a dozen other tasks. We began to see a powerful difference in the way the human being is used that reflected on Japan's productivity growth.

That Oldsmobile plant made 1000 cars a day and had 1000 parts of every kind sitting on the factory floor and railroad cars sitting outside the plant with around another four days of parts. Also, at that time, I bought a new Buick and had to wait 13 weeks to get it from the factory.

A key measure, the heart of Toyota's success, was the 95/5 rule. Manufacturing is adding value, that is what the customer pays for. But, Taiichi Ohno, Toyota's VP of manufacturing found that 95% of the manufacturing time was adding wastes and only 5% was adding value. When he discovered this, he began an all out war to reduce that waste.

I was most impressed with Dr. Ryuji Fukuda, VP of manufacturing at Sumitomo Electric, who gave a brilliant lecture on "On-Error Training (OET.)" Whenever a worker discovered a problem while working on the factory floor, he/she stopped working, gathered others on their team together to discover the root cause of the problem and was empowered to solve it.

There were five rules to follow:

1. **Himself** Rule – the person who first detects the problem takes leadership for finding the root cause of the problem.
2. **Quickly** Rule – the problem must be dealt with immediately and not put on a list or in a report for action at another time.
3. **Actually** Rule – if possible play back or recreate the process that occurred before the defect.
4. **Support** Rule – the person who detects the problem has primary responsibility for solving it, but other workers are encouraged to help solve the problem.

5. **Don't speak** Rule – the supervisor or manager must keep quiet and give the person who discovered the problem and co-workers a chance to first solve the problem.

After the lecture, I invited Dr. Fukuda to come to America to keynote our first Productivity conference and also agreed to publish his book Managerial Engineering in English. It took me two years to publish the book, but it was well worth it for Managerial Engineering is truly a great book, sold over 35,000 copies and introduced the West to many of the successful techniques from Japan, including: purposes of standardization, cause-and-effect diagram with the addition of cards (CEDAC), Zero Defect production system, stockless production, basic steps for setup time reduction, and others.

We were finding the reasons for Japan's productivity success and decided to do it again six months later.

Jack Warren, former president of Omark Industries, participated on the second trip. During the first week, Jack was not impressed at all on what we were seeing and kept repeating, "Omark is better." I was very embarrassed until Tuesday of the second week when we visited Nippondenso, and met Mr. Ota, the plant manager producing starting motors for Toyota vehicles. Mr. Ota showed us how they could change stamping dies in just a few seconds. He introduced us to Kanban, which allows Toyota and their suppliers to carry a minimum amount of inventory.

Mr. Ota taught our group mixed modeling, a technique that allows you to manufacture many different kinds of products on the same manufacturing line. Jack and the others were absolutely astonished. While Mr. Ota was speaking my Japanese guide told me we had to leave to catch our train back to Tokyo. Mr. Ota, said, "No, you can't leave until you understand this." So we stayed.

At the end, Mr. Ota gave me a sheet of paper with the words, "The Study of the Toyota Production System from an Engineering Viewpoint" by Shigeo Shingo from Japan Management Association (JMA). I called JMA, ordered a few copies of the book, and we read the book on the airplane coming back – Jack and I ordered 500 copies. I offered the book to my subscribers and Jack gave a copy to every engineer and manager at Omark. Each manager and engineer knew Value Analysis/Engineering and they knew how to read books together in study groups.

Within a year, Omark had reduced their inventory by 90% and became the best JIT company in America. Ironically, Winton Blount, owner of Blount International Inc., heard about Omark's success, called the prime owner of Omark's stockJohn Gray and bought the company. Now the funny part of the story is one of the first things Blount did was to get rid of Jack Warne, the person who had increased the value of the company.

In 1982, I went to Japan to meet with Dr. Fukuda and noticed that both Shigeo Shingo and Taiichi Ohno were speaking at the hotel. I went over to meet Mr. Shingo. He was in a wheelchair. I introduced myself. He looked up for a few seconds didn't recognize me and looked away. Then suddenly he says, “Bodek-san.” I asked Mr. Shingo to come to America but he said, “I am in a wheelchair.” Fortunately for me, soon thereafter he was able to walk and I brought him to America around a dozen times in the next eight years.

On one visit to America, I brought Dr. Shingo to a Dresser Industry plant. With a group of engineers, we walked over to a punch press operation. We watched a worker pick up a piece of metal lying on the floor on the left side of the press and place it onto the bed then into the punch press; he put his hands on the two buttons to allow the press to come down to form the metal into a product; he then reached in to the press, pulled out the formed product and placed it on the right side of the press. . Dr. Shingo asked the engineers, "What percentage of the time is value adding?” Shingo always carried with him a stopwatch. One engineer said, “100%,” as the worker never stopped. Another engineer said only 75%, while the third said 50%. Shingo laughed and said, “Only 15% of the time is value adding; only when the blade presses against the metal is value added, the balance of the time is waste.” He asked, “What can you do to improve the value adding ratio?’’ Immediately, one engineer said, “We could put a leveler, a device that would keep the raw metal at the level of the bed.” Another engineer said, “We could put a spring inside the press which would move the formed metal forward once the operation was over.” The third engineer said, “We could put a table on the right to make it easier to put the completed product.” These responses made Dr. Shingo very happy. The great lesson for me was to see the power of asking people the right question. Yes, improvement comes when you challenge people.

Afterwards, we walked over to another punch press with a much larger group of people and Shingo asked, “How long does it take you to do a changeover?” They said, “Two hours.” Shingo said, “Let us see if we can do it in under 10 minutes.” Everyone looked shocked. He then spent the next hour teaching them what to do to speed up the changeover. Then he said, “How long will it take you to make those changes?” They said, “They needed around three hours.” He come back and watched them do a changeover. Miraculously, they did it in 12 minutes, from two hours to 12 minutes, but Shingo did not look happy and said to them. “I asked you to do it in under 10 minutes,” and laughed. It is amazing what a small amount of knowledge and trust can do.

We were in Las Vegas and Dr. Shingo was going to keynote an APICS conference with around 3000 people in the audience. I had three bananas for Dr. Shingo to use in his lecture but was hungry and ate one of the bananas. I then introduced him. He said, “I don’t know what to do for my initial story was calculated on three bananas but Norman ate one.” He then said, “When you

buy bananas you only want to eat the inside but you also have to pay for the skin. The skin is a waste." It is the same when you buy automobiles. Why do you have to pay for the waste in the manufacturing process?" He then taught us about the Toyota's seven wastes and got us to think about how to reduce those wastes.

In the next article, I will tell about meeting Taiichi Ohno and other masters.

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