Testimony for the United States House of Representatives
Science Committee

February 15, 2007

by

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(Slide #1) It is, indeed, a pleasure and an honor to have the opportunity to address the House Science Committee's Subcommittee for Science and Innovation. My comments today will focus on Lean Policy Deployment and the very necessary role that the NIST Manufacturing Extension Partnership plays in helping American companies deploy lean methods.

(Slide #2) I am here at the invitation of Representative Phil Gingrey of Georgia. I am Michael John Ryan, currently the President and CEO of TUG Technologies based in Marietta, Georgia. TUG manufactures ground support equipment for domestic and international airlines and the United States Armed Forces. If you look out the window the next time your plane stops at the gate, you'll likely see a TUG baggage tractor and beltloader. I have had the pleasure of working with NIST MEP's in 5 States across our country. After spending 38 years in Automotive and Industrial product companies, I have learned how to learn. Today, as a witness to the Subcommittee, I will share my thoughts from those experiences, specifically over the past 13 years. I am an American who believes that we can be globally competitive by deploying lean methods to our manufacturing base in this country. MEP has played an important supporting role to enhance American Productivity now for 18 years.

(Slide #3) Back in 1982 when I was Director of Quality for TRW, I spoke at a global conference in Brazil about the need to establish structure before improvements can be expected in any change process. After spending 11 years working for Ford Motor Company, I had learned that Henry Ford's successes were built on very structured methods.

(Slide #4) Since I was in Brazil at a global conference, I used the flag of Brazil to make my point. Their flag says "order and progress". Our approach to change too requires order before progress is possible.

(Slide #5) In 1991, the results of a U.S. government sponsored study on the productivity of Japan was published by Womack, Jones, and Roos in their book entitled "The Machine That Changed the World". Here is where they first described their findings at Toyota as "Lean Manufacturing". In this book they captured the reasons that Japanese productivity in the automotive industry was improving faster than in the USA. I had the opportunity to meet Jim Womack in 1995 at United Technologies, just before their next book **Lean Thinking** was published. In this new book they provided case studies showing how several American and European companies were deploying lean methods.

(Slide # 6) They describe 5 steps in a transformation as you see here (value, value stream, flow, pull, and perfection). But no where is it written; how to implement the "lean process".

(Slide #7) They do, however, list some actions that are important to consider. Here, I show you their action steps and also identify, from my experience, the responsibility for each action. Here is where the MEP is extremely important to the process of change.

(Slide #8) Here they continue to identify the steps. (pause) Here again I have identified the critical role MEP plays in these process steps.

(Slide #9) The basis of learning that Womack and Jones discovered is best depicted by the Toyota Production System as described here. We already understood the alignment of Man, Material, and Machine, but they helped us fit the other pieces of the puzzle together as shown here as a "Global Production System". How did we use this learning to deploy change?

(Slide #10) Here is an important quote from Albert Einstein that I have been referring to for many years. (pause) Can we learn to change our minds? Can we understand the differences we face? Can we be globally competitive? Can we stay at the same level of thinking we were at when we created significant problems? It is said that the definition of a fool is one who expect different results while doing the same things.

(Slide #11) In order to deploy a Lean Policy we have to have an implementation standard that optimizes the efforts of independent companies and is supported by an education process that understands the fundamental tools of a lean system. Back in 1994 I was Vice President Quality and Continuous Improvement at UT Automotive. I had the opportunity to work with United Technologies' other companies like Pratt and Whitney, Otis, Carrier, Hamilton Standard and Sikorsky. I have used this depiction of the deployment process ever since. The Leadership umbrella represents the role of company leaders to support and protect a 6 step sequential process to transform a company as it accepts the changes needed to become "world class". It is these 6 steps of transformation that need the supporting structure of the National MEP. We have tried to empower our employees through Quality Circles. We have taught SPC statistics to address TQM. But neither has worked. Why not? Because we must create product cells first, and then the sequence can follow. The MEP knows this! Most consultants do not.

(Slide #12) Here I am sharing my own experiences with the application of MEP capabilities. I've listed the companies I have worked for over the past 13 years and then I am showing the 5 different state supported MEP organizations where I have had an affiliation. Back in 2000, I was a board member of MMTC, a Michigan MEP. In 2003, I was President and CEO for the Bobcat Company, a division of Ingersoll Rand. The North Dakota MEP was engaged in our transformation there. In 2005, Bobcat Company joined a WMEP consortium with Harley Davidson, Oshkosh Truck and Trane to develop a supplier assessment tool. This coordination between OEM's and their supply base can be uniquely filled by the MEP. To the right I am showing the times I have also used the expertise of Shingijutsu. This is a teaching organization, based in Japan, that is made up of former students of Taichi Ohno. Ohno san is the "father" of the Toyota Production System. These teachers, called Sensei in Japanese, provide the ultimate level of expertise to refine the application of a lean system. In fact, this week we are conducting kaizen at TUG's Marietta and Kennesaw facilities in Georgia, supported by Shingijutsu. Without the support of MEP, we would not have a high enough level of understanding to deploy the change processes required.

(Slide #13) So, what are the benefits from these activities. I have listed several for you here from my own experiences. Significant improvement in revenue growth of 86% and operating income of 128% are examples. Large reductions in warranty expenses and improved customer satisfaction. Improved inventory turns; from 5 to 25 and from 2 to 16 in two examples. Operating income improvements of 400, 500, and 550 basis points over a two-year period at 3 different companies.

(Slide # 14) Reduced customer lead times. Flawless product launches, continuous kaizen, and an expanded use of employee intellectual capital were achieved. Through the Georgia Tech MEP in the past 4 months we have trained 79 staff associates in VSM, Office kaizen, and Lean methods at TUG Technologies.

(Slide #15) So, now, think of a process. Consider that it has at least three versions. First; what you think it is.

(Slide #16) Second; what it actually is.

(Slide #17) And then third; what it should be.

(Slide #18) Consider a moment that Henry Ford at the Rouge Complex near Detroit delivered a car to a customer in just 4 days from raw material to finished car. That was in 1914. Most people don't know that he wrote a book "Today and Tomorrow" in 1936 that describes his lean process from some 22 years earlier. Taichi Ohno, indeed, developed the Toyota Production System from his studies of Henry Ford. One other important point; Toyota never had to change "bad habits" since, after the war they could start from the basics in 1947. The challenge in America still today is that we have to change people from their habits of the past to the global challenges in our future.

(Slide #19) People do make the difference! In Japan they have the JUSE body focused on people. It may be subtle, but they talk about scientists and engineers while we look at science and technology. Sometimes we seem too focused on issues and material things. MEP provides NIST with an opportunity to focus on the people. We must get more globally competitive.

(Slide #20) A quote from Jack Welch of General Electric, who challenges us all to go for the Quantum Leap. Do we accept his challenge? Can we do it by reducing MEP funding? I don't think so!

(Slide #21) (pause) The worker on the left is talking to the engineer. We need to help the worker here, so he can understand and also be empowered. Today he is not.

(Slide #22) (pause) The salesmen are on the left. The two employees on the right are wearing safety glasses, so they must be production workers. They need a different set of tools, not just better pails, but the right tools so they can avoid their dilemma in the first place.

(Slide #23) In summary, MEP has been a strong contributor to the need in our country to stimulate change. They have been, and need to continue as a catalyst for change. They provide a country wide network. Our government must continue to support enterprise. Small and medium sized companies need this kind of help; even more. We must remember that the market is global and other countries are getting better too. MEP provides education; not training. Not all good ideas originate in America.

Our Congress has a responsibility to provide solutions, not just observe. I have found the MEP 5 times, in 5 states. They are the solution. We should expand, not retract our support for the MEP budget needs. MEP is that synergy. If the 2007 budget is reduced from $109M to $47M, not only are past efforts of the MEP compromised, but it would show that the leadership umbrella I referred to earlier has been closed by our own Congress. Your constituents need your support. Your challenges as our Representatives to this Congress are to find synergies that allow Americans to prosper in a global market.

MEP is synergy!!!!!!!!