Keynote Speech: Gleaning Wisdom for the Future From the Legacy of Kaoru Ishikawa

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Thank you. This is my quality brother. Together we were called “quality babies” many years ago. This was a gift from Prof. Kondo when we were at a meeting, along with Osada-san, Iizuka-san, and myself. He said, “These men are too young to become members of the academy because they are babies,” and so we became quality babies because we are all one year apart in age.

Hello. It is my great pleasure to be here today to talk with you about my sensei. I never met Ishikawa-san, so I’m going to talk to you from a very different viewpoint.

The title I chose very carefully and I have to explain it, which is why I have a footnote for the title. This word is not a normal word in English. It is an old English word and it comes from a meaning to gather slowly and laboriously, bit by bit. The word reminds me of Miyamoto Musashi, who said, “Step by step, walk the thousand-mile road.”

The origin of this word comes from agriculture where the big combines would go through and gather all of the crops, but after they had done so there was waste left in the field so the widows and the people who did not have much money would go and they would “glean,” they would take the little pieces, because what was left over in waste was enough to feed them for a year.

We have heard much about our colleague Kaoru Ishikawa, and when we take a look at his life I think there is no better place to start than reviewing what was said at his death and then to take this as a stepping forward point.

This was the eulogy by Dr. Juran in 1989 as he looked back at what the life of Prof. Ishikawa had been for the world, and from what you’ve heard today, you can see many of the pieces of the greatness of that life.

What he said was, “There was so much to be learned by studying how Dr. Ishikawa managed to accomplish so much in a single lifetime. In my observation, he did so by applying his natural gifts in an exemplary way. He was dedicated to serving society rather than serving himself. His manner was modest, and this elicited the cooperation of others. He followed his own teachings by securing facts and subjecting them to rigorous analysis. He was completely sincere, and as a result was trusted completely.”

To me it would be a blessing if people could say such words about my life and how I spend my energy.

I've lived in Japan for some time and I feel like I have learned *hinshitsu* from Prof. Ishikawa. In Japanese, there are some words that are very close to each other, and as a result they create in your mind natural associations that people from the West do not understand.

If you are learning to play the game of chess in the West or Go in Japan, you don't learn out of a book, you learn by studying the masters and practicing the art. And so it's very interesting to me that the Japanese word "to learn" is so close to the Japanese word "to imitate."

People say imitation is bad, but I think when you have a baby and the baby learns to walk, we don't give them a book. The baby sees its mother and father walking and it thinks I want to do that and then they figure out how to get themselves up.

They don't go running, they want to in their mind, and as soon as they walk the first thing may try to do is run, I remember my grandchildren, but step by step, they walk, and then they master that art and soon they don't think about it. But then they get to be old like me and now step by step I walk but I can't make the thousand-mile road anymore, except in my head.

And so we have to learn and we have to re-learn. The walking I learned as a child came automatically; the walking I do as an adult is mental. It comes from a very different place.

I became a distance-learning student of Dr. Ishikawa. Hewlett-Packard had videos taken of him as he visited factories in the early 1980s and Dr. Kano was there also, I believe. And in these videos, it talked about his style in reviewing projects and talking to people and divisions about quality.

I was very touched when Dave had the audiotape and I could hear the voice again because I had forgotten the voice. I became very emotional when I heard it one more time because it reminded me how much I owe to that voice.

I joined Hewlett-Packard out of the Navy in early 1984. Kenzo Sasaoka of Yokogawa-Hewlett-Packard had just led Yokogawa-Hewlett-Packard to the Deming Prize. I had lived in Japan two years before that as a naval officer assigned to JMSDF, and so I had lived in Iwakuni, Edajima, Misawa, and Atsugi.

So my organization said, "We have an opportunity to study Japanese quality so you must learn." I was a reliability engineer. I didn't know anything about quality. They said, "You have to read the books."

They give me Dr. Deming's book, written terribly, I didn't like it. They give me Dr. Juran's book, so thick, I couldn't understand it. They give me Phil Crosby's book, so light, it didn't give me anything to eat. They give me the book Total Quality Control by

Dr. Feigenbaum, so boring, I fell asleep.

But they give me Introduction to QC by Dr. Ishikawa, and they give me the videotapes, so like students today I took the easy way and watched the videotapes and then read the book but I learned his style and this style that he taught me allowed me to learn how to imitate him and how to work with executives and how to work with the *Genba*: actual work place, the workers.

And I saw that if you want to be a quality professional in the world, you have to be able to work down and to work up and that there are two different *Genba*: actual work place. There was a question earlier about what happens in the future and part of this for quality professionals is we need to work in both worlds. This is something that Dr. Ishikawa could do and not many people can.

So my personal quality journey began and he became a role model to me, and many of his sayings have been in my head for many, many years. When I think back to the things he said, I reinterpret them for the future.

I was president of the American Society for Quality. Since 1993, we have done eight studies of the future looking out 20 years to understand what are the trends in society and what will be the impacts on quality, and so from this viewpoint I'm going to bring some of these ideas to the sayings of Dr. Ishikawa.

But first, I'd wish to set a little history. I look at all the things that were said this morning and the most important thing to me is that Prof. Ishikawa changed the thinking of industrial mankind in a way nobody else has. In 1911, Frederick Taylor wrote a book, Principles of Scientific Management. That was translated into Japanese in 1914 and an efficiency society was created. People studied this methodology for creating prosperity, and when we look at this, this was one of the steps on the journey to PDCA but the step was flawed because it treated people like interchangeable parts.

Frederick Taylor was addressing a problem, how do we actually make things better, and so he said what we have to do is create a situation where there is no waste in the workplace, and so if a person creates waste, change the person. I buy a pair of hands; I don't want your head. I don't like that idea. My head comes attached to my hands somehow, for you to I think, and so people were not supposed to think.

Even after World War II, when we come back to the reconstruction of Japan, what was happening? People made trips to America. Toyota made a trip to visit the Ford River Rouge Complex and they saw these things but they saw waste. There was a dissatisfaction.

But I look back at Toyota and I think it took 20 years to learn how to do this the right way. It did not happen overnight. Step-by-step, gleaning the pieces, putting them

together in a culture.

I want to share then some ideas that have come from Ishikawa-sensei. I have a quotation from him and then a commentary. He says that the greatest control is really self-control. This is my idea. “When one wishes to implement something which is new, the greatest enemy of that effort can be found within one’s own company and within oneself. Unless one can overcome this enemy, there can be no progress.”

He even quoted a very famous comic strip in America. There is a little animal, they are seeing an alligator coming to swallow the boat, and all of his friends are paddling as fast as they can in every different direction, and this animal, whose name was Pogo, looks and he says, “We have met the enemy and he is us.” So many times we are our own enemies.

“Take time and nurture these activities with deliberate speed.” This is another lesson I learned from Toyota. In 1963, Kiichiro Toyoda was part of a steering committee, a council, and they created a different view of management called “cross-functional management.” Mr. Hosotani wrote a book in Japanese as part of a research committee, which is where I learned of this, and the thing I see is until that point in time we had the wrong idea.

We thought quality could be deployed into functions because that’s how we learn. I learn as a chemical engineer; I go do chemical engineering work. I learn as an accountant; I go do accounting work. But the biggest problem is cooperation across the functions. Our friend from Juki also talked about the same thing and their learning process, and so at the same time Bridgestone, Komatsu, Juki were all learning the same lessons.

My comment on this is that the word needs to say “Yes!”, not to say “No!” It’s too easy to say, “This doesn’t work. That was Japan, this is America, and it can’t work here. That was Japan, this is England, it can’t work here.” It’s easy to find reasons why things don’t work; it’s much harder to make things actually work. So if we do not change, there can be no progress. However, we have to step by step walk that thousand-mile road.

Second, quality is a mindset, a mental habit or discipline. Prof. Ishikawa said “quality is a thought revolution in management; therefore, the thought processes of all employees must be changed.”

I have spent my life in quality as a coach for executives. At Hewlett-Packard I worked for the CEO, John Young, I was his speechwriter. I was recruited out of there to work for Rod Canion, the founder of Compaq Computer. The chairman of the board fired me because he said I polluted the CEOs mind with process, because we had to

change the business model fast and I said, “let’s do it by facts, not shooting from the hip.” We took six months to change the model and in two years the company had doubled in size because of the decisions we made, but none of us who made those decisions was still there. You take too long.

Xerox, the day I was fired from Compaq, hired me as the chief quality officer because they don’t take that view. At Xerox, my good friend who has just passed away, Yotaro Kobayashi, I learned very much from him and he was a coach to CEOs, is another one of these models I see, and he taught David Kearns how to actually use quality to turn Xerox totally around.

And so these ideas, these thought processes, have to be changed. Quality control will not progress unless top management’s policy is well defined, not only setting a goal.

This is the problem. What is policy in America? It’s “blah, blah, blah.” “We will be the best company in the world because we are wonderful.” “I’m American, we must be great.”Anyway, what is policy in Japan? “We have this problem, we have this target, we have an end, we have a means, we have a schedule, we have responsible people, we are going to work together and make it happen.”

So many times “Japanglish” has hurt the communication between Japan and the rest of the world. Very famously in Toyota, “just-in-time,” many people mean “I’m going to produce it now; the part must come now,” but that means you live in a deterministic world and there is no chance for probability. That doesn’t work so then people say, “Toyota is wrong. That doesn’t work.” No, they didn’t understand. Toyota means “just on time” and there is a very big difference in practice but the English word leads them the wrong way.

“Standardization enables delegation of authority, allowing top management and executives to have time to think about future plans and policy, which is their most important duty.” In America, executives say, “We don’t like standardization.” Kume-san talked about do we see executives in the rest of the world actively engaged in ISO and standardization? No. And why? Because they say, “We don’t want to be standard. We want to be special,” and they don’t understand the value of standardization and what it means other than being able to have market access.

Last year, I spoke at the International Quality Conference in Tokyo, and I had an opportunity to speak with executives. What I saw was that managing inclusive quality requires this thought evolution. It requires a change in mindset. I’m reminded again, many people say, “Toyota has a wasteful work; therefore, all of our workers must go and get rid of waste,” and management sits back.

But there are three words for waste: impossible, irregular, and waste. And when we think about it, all can occur any place in an organization. But the danger is if I have muri occurring in an executive decision, I buy the wrong company, I invest money the wrong way, I buy an IT system that I think feels good but we didn't investigate, then what do I do? I create irregular, the organization no longer flows, everybody has to do something unnatural. And then what happens in the workplace? We created waste because all of the workers say, "Another job from management, what do I do?" and the workers can do nothing because it was a wrong policy.

And so we have to think differently when we expand our thinking from what Dr. Ishikawa told us. How do we look at this? I think there are two *Genba*: actual work place for office workers and laborersand fortop managers. They don't follow the same rules and they don't have the same needs.

Reality should cause us to think differently. Prof. Ishikawa said, "You should break free from the craftsman's spirit and start adopting scientific thinking and systems."

Today, many managements don't use scientific thinking. The chairman of Nokia Corporation, Jorma Ollila, said just last year, "We did nothing wrong. I don't know why we failed," but he didn't apply scientific thinking. I know what they did wrong, but he doesn't. That's a condemnation against executive management not being able to use scientific data to make good decisions.

Prof. Ishikawa also said, "Quality begins with a control chart and ends with a control chart." I think back to the time that Shewhart created the control chart. He created it because he had to create some sort of consistency in discrete manufactured products. The same problem Toyota has at its suppliers. He created the control chart because he had such bad measurement error, and so he had to average the samples together to figure out what was the true measure.

But today, we don't need that chart very much. We have good measurement systems. We are not worrying about the millimeter; we are worried about the nanometer. It's a very different type of measurement problem, and so we have to think how we use those tools in the environment that we are looking at for the future rather than just the one we had in the past.

Prof. Ishikawa said, "Understand *genjitsu* (reality) and *genbutsu* (real things)." We have to become real. We cannot just have a mental model that is not grounded in the reality of this world. That is as true in the *Genba*: actual work place, everyday duties, as it is in the executive management.

And so I see his control charts used as data, the measures were integrated, but I see another strength actually in Toyota. Sasaki-san had the International Academy for

Quality at the Nagoya plant last year and we talked about quality. And one of my observations is that the Toyota daily management system is using takt time, speed, time as the measure, but time is a great measure in *nichijo kanri*(daily work) management systems.

Why? Because if you improve quality you improve speed. As you improve speed, you reduce costs, and the Toyota management system is based on cost management and quality management. And the speed system at the workplace level gives you exactly what you need, but that does not always translate to the executive management.

We don't always need speed as the primary measure there. We have to think about those other two management systems there. And so we see that we cannot just do things with financial measurement systems or just with market systems or just with *Genba*: actual work placesystems. We have to have a much better way of merging our performance measures.

Several people have talked about this. Prof. Ishikawa said, "Quality begins with education and ends with education." "Quality must be built into each process." My observation is the education quality begins with teaching that child to walk. It's not the same education I need to learn how to walk again.

And so education changes. It's not the same thing. We don't go back to the education process that Dr. Ishikawa was talking about in the 1980s. We have to reformulate it based on our new understandings and the challenges of today. And that initial education we have must focus on the basics, yes, but I do not care if my executive does not know how to create a Pareto chart or a fishbone diagram. I do care that he knows how to make a good decision. I do care that he knows how to interpret the competition. I do care that he understands the customer experience.

So as we start taking a look we have to think differently about this education and how do we get this whole system of management to change. Ishikawa said, "TQC will certainly be successful if everyone, starting from the president, from operators to salespeople, cooperates. The top management should not scold when facts are reported."

Dr. Ishikawa was a scientist, a chemical engineer. He did not like waste in anything. I think this is very clear. And he did not like waste in his students. I have a little story. Noriaki is driving me around Tokyo and he is showing me how his car can teach him in a way much kinder than Prof. Ishikawa. He said, "I'm not going to turn here even though the computer tells me I should. Listen to how the computer tells me." He then says, "The computer comes back and says, 'You missed your turn, please make the next right turn and you'll get back to your route.'" And he said, "If this had been Dr.

Ishikawa, he would've said '*Dame*![†] *Dame*!'" Some of you have heard this before, I think.

But I think if Prof. Ishikawa was looking down on us today, which I believe he is, he would not be saying "*Dame*! *Dame*!" He would be saying, "Well done." He would be saying, "Thank you for remembering some of the things that I did, for the experiences we've shared in life together in all the different ways."

So typically what we start seeing is a bonsai tree and if I replant it, I have to go through a very dedicated process carefully rebinding the roots to move it to a new place. It requires some coordination. We call that *nemawashi*[††] and *nemawashi* is a very careful process. He actively engaged teams and said, "Develop self-initiative (*jishusei*[†††]) and reflect upon the facts (*hansei*[††††])."

I looked at Dr. Kano in his book, his chapter, and he has observed, "The intention of Ishikawa was to educate each student to display his or her abilities fully for the further development of society." He didn't say just the workers. He didn't say just the middle managers or just the executives. So when we learn quality for ourselves, it is our responsibility to conduct our actions with quality for the benefit of mankind.

Dr. Ishikawa, in his book, *What is Total Quality Control?*(The Japanese Way), he said that "QC and QC circle activities be spread everywhere in the world, that quality all over the world be improved, that costs be lowered, that productivity be increased, that raw materials and energy be saved, at peoples all over the world be happy, and that the world prosper and be peaceful."

This requires inclusive action and the cooperation of people to create the good life for society. So quality for humanity is really the global social imperative.

In closing, I want to say thank you very much to you for listening, and more importantly, thank you very much, Ishikawa-sensei.

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† *Dame*! means No!

†† *Nemawashi* is to lay the groundwork or manipulate things behind the scenes.

††† *Jishusei* means autonomy or independence.

†††† *Hansei* means reflection.