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My Views on Six Sigma In Contrast with TQM

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Honorary Chairperson, Asian Network for Quality (ANQ)**

Profile of Dr. Noriaki KANO

Credentials:

- Professor Emeritus, Tokyo University of Science, - Doctor of Engineering (University of Tokyo),
- Board Director, Komatsu Ltd., -Corporate Auditor, Sekisui Chemical Ltd.

Engagements:

- Honorary Chairperson, Asian Network for Quality (ANQ), -Member, Deming Prize Committee,
- Academician, International Academy for Quality (IAQ), -Fellow, American Society for Quality (ASQ),
- Board Member, Japanese Union of Scientists and Engineers (JUSE) ,
- Board Member, Agency for Overseas Technical Scholarship (AOTS),
- Chair Professor, Honorary Doctor, Chungyuan Christian University (Taiwan) ,
- Advisory Professor, Tongji University(Shanghai, China) ,
- 2000-2002 President, Japanese Society for Quality Control (JSQC)
- 2004-2007 Chairman, Deming Application Prize Committee

Publications:

- Over 300 papers books including "Attractive Quality"(Kano Method / Kano Model)", "Guide to TQM in Service Industries" (in English) and "Way to Breakthrough and Creation" (in Japanese).

Honors:

- 2006 E. L. Grant Medal by American Society for Quality (ASQ)
- 2002 E. Jack Lancaster Medal by American Society for Quality (ASQ)
- 1997 Deming Prize for Individuals by Deming Prize Committee (JUSE)
- 1997 Deming Lecturer by American Statistical Association (ASA) and many others.

Work Experiences:

- Lecturer and Associate Professor, The University of Electro-Communications
- Professor, Tokyo University of Sciences

Education:

- Completed Undergraduate, Master and Doctoral Courses, Engineering School, The University of Tokyo

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ASQ WCQI, Milwaukee, 2006
Six Sigma Forum Networking Session,
“The Impact of Six Sigma on the Quality
Movement, for Better or Worse”

May 1st, 2006

Dr. Noriaki Kano
Kano Quality Research Office

1) It has been several years now since the advent of Six Sigma. What are the major contributions that Six Sigma has made to improve quality?

Two Categories of Strategies for Decision Making

- Category A:

Decision Making → effective

ex. Personnel Promotion, Purchasing,
Mergers and acquisitions

- Category J:

Decision Making + Company-wide Efforts

→ effective

ex. World Class Company

Synergy after Mergers and acquisitions

Six Sigma Has Provided Something Freshness to Quality World

- Quality Journey needs endless group- and company- wide exertions by the leadership and commitment of Top Management.

K. Ishikawa: “TQM is a Chinese Medicine.”

People is apt to get bored with this.

Six Sigma has been received as **Western Medicine** to be useful for drastically and quickly reducing loss for organizational problems based on “Category A” decision making.

- SS has been useful for making such companies which like something new introduce quality activities with various **new acronyms** such as DMAIC, Black Belt, Green Belt, DPMO etc.

Impact to Japanese Companies

- Less significant but some confusion due to no clear interpretation what is uniqueness of Six Sigma

***2) How has Six Sigma impeded
(impacted?) quality?
(or the quality movement?)***

SS Consultants has made people misunderstood about TQM without clarifying:

- **what and how SS has inherited from TQM**
- **what is essentially uniqueness of SS.**

It seems to me that SS has fallen from the sky by a parachute.

A corporate director of a very famous Japanese company says,
“We implement Six Sigma because Six Sigma owns DMAIC while TQM in Japan does not do so.”

A quality manager of a huge company in Asia says,
“The core method of Six Sigma is DMAIC which was originated in U.S..”

When and Where Did DMAIC Come From?

Problem Solving QC Story

(which used to be called simply as “QC Story”)

Current
Framework

$$y = f(A_1, A_2, A_3, \dots, A_p, X_{p+1}, \dots)$$

Theme ⇒ Symptom ⇒ Factors ⇒ Causes ⇒ Countermeasures
⇒ Effects ⇒ Standards ⇒ Lessons Learned

Step 1. Set up **the theme**

Step 2. Grasp the current status and focus the **symptom** to be solved

Step 3. **List up all the possible factors for the symptom** and then analyze the symptom to find **its causes** **Ishikawa**

Step 4. Prepare **the countermeasure** to eliminate the causes

Step 5. Implement **the countermeasure**

Step 6. Confirm **the effects** of the countermeasure

Step 7. Fix the effects by **standardizing** the process

Step 8. Evaluate the problem solving activities and clarify **the lessons learned** for future plan

DMAIC looks very similar with *PS-QC Story*

PS-QC Story

- 1. Theme*
- 2. Grasp Status Quo*
- 3. Analysis*
- 4. Countermeasure*
- 5. Confirm Effect*
- 6. Standardize*
- 7. Evaluate the Activities*

DMAIC

- ⇒ **Define**
- ⇒ **Measure**
- ⇒ **Analyze**
- ⇒ **Improve**
- ⇒ **Control**

History Of Problem Solving QC Story

Birth of PS-QC Story

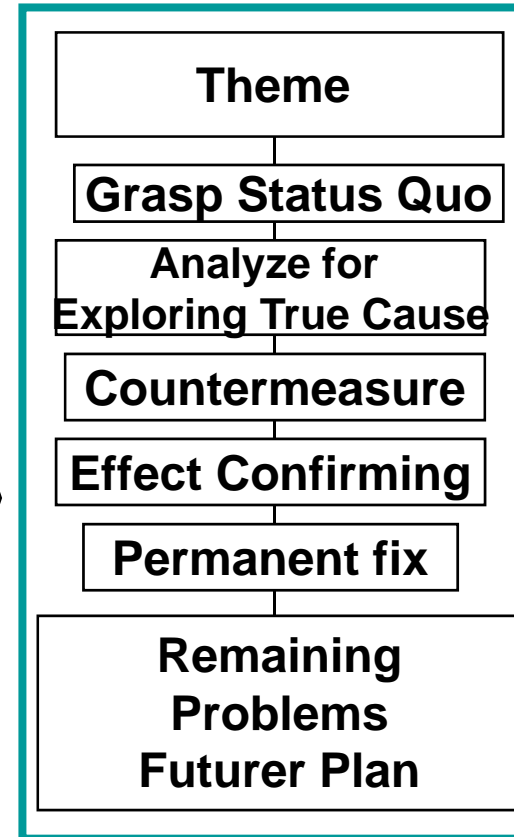


J. M. Juran(1955c)

“QC Story for QC Circles”
Quality Control Sec,
Production
Engineering Dept,
Awazu Plant,
Komatsu (1964)



**“QC Story for
Management”**
**Ikezawa,
T.(1970)**



Transfer of PS-QC Story To U.S.

**First English Book
Referring to QC Story**
Kume H.(eds) (1985)



Transfer to FPL,
Kano, N. (1986)

A letter from Ms. Kazuko Nishizaki

Subject: RE: QC story

Date: Mon, 9 May 2005 19:48:16 +0900

From: "Nishizaki, Kazuko" \$\$\$\$\$\$\$\$\$\$

To: "Noriaki Kano" <kano_n@ms.kagu.tus.ac.jp>

Dear Dr. Kano

Thank you for your interest in the original six sigma evolution process across the U.S. Motorola in 1988 and thereafter.

Speaking about the high light of early phase of Motorola six sigma, I am pleased to mention the true contributors at Motorola who made six sigma known to the world.

In 1988, I was working at the TQC Promotion Office of Japan Motorola and was engaged in promoting company-wide TQC activities. The same year U.S. Motorola won the very first Malcolm Baldrige National Quality Award. The corporate vice president, Richard Beautow, vice president, Bill Smith visited us and explained to us about the MBNQ award and six sigma initiatives. By then the six steps of Six sigma were established with the concept of "Defects for opportunities".

The director of the TQC promotion office, Mr. Kamei realized the TQC and six sigma can harmonize very easily and Nippon Motorola TQC team can work with U.S. Quality professionals hand in hand. Therefore we invited Mr. Buetow, Mr. Smith, Mr. Ponsedeleon from the government sector, Mr. Simpson from the Corporation quality office who were all VP of Motorola Corporation to the Company-wide QC Circle Conference held at Tokyo. They were very much pleased to see all levels of the employees who participate in the quality improvement activities through the small groups(QC circles). **The following year of 1989, the quality office of the corporation asked me to send the English version of QC problem solving steps. I mainly used the QC circle book published by JUSE. Motorola promoted the TCS (Total Customer Satisfaction) team activities by adapting to some degree the QC problem solving steps and incorporating those steps with six sigma theory. I was appreciated by the quality office for my contribution to the introduction of QC story to the six sigma and world-wide TCS team activities.**

As the result of the above mentioned process, the first Motorola six sigma was completely theorized by the Motorola executives mentioned above who truly bore the birth of six sigma at the company and gave the magnificent impact to the current six sigma drive being practiced all over the world today.

Sincerely yours,

Kazuko

Copyright, N.Kano, May, 2006

**I keenly wish
that
Six Sigma Experts
Will Clarify
When, Where and How
DMAIC
Came From?**

***4) Additional questions
proposed by the panelists:***

We wish to American Academicians to clarify:

- what the uniqueness of SS is**
- whether the name of SS is acceptable as an academic term**

It seems to me that SS is initiated by consultants but few academicians.

My Views on SS

My Views: SS is a kind of Roadmap or Promotional Way for TQM

- Promotion method with Qualification system
such as Black Belt and Green Belt
is very interesting**
- SS is not Original but very Innovative**

Lessons Confirmed/Learned

- We should be modest not to forget the respect to the predecessors**
- We should clarify what is the newness of a newly proposed method. This is the very important role of quality academicians.**
- We always need to innovate TQM not only in principles, methodologies and techniques but also the other aspect including promotional way**

Thank you!

**Arigato-Ohkini-XieXie-Dosha-Kamshahamnida -
Bayarlalaa-MahaloNui-Gamsahamnida-Terimakasih-
Salamat -CamOn -ArKun-KobKunKrub-KhawpJai-
ChezuBa-Dhanyavaad- Nandri-Dhanyabaad-Stutiya-
Shukria-Mamnoon-SepasGozaram-Motshakeram-
Toda-Shukran-AsanteSana-NaGode-
TeshekkurEderim-Efharisto-Grazie -Grazzi- Gracias-
-Obrigado-Merci-Danke-DankU-Tak-Kitos -Dankie-
Jinkua-**

**Go Raibh Maith Agat-Spasibo-KoeSoeNoem-
Blagodaram-Multumesc**

Then, Thank You Again!(as of 08/10)