

QUALITY IMPROVEMENT USING 7 QC TOOLS

INTRODUCTION

“The term “7 tools for QC” is named after the 7 tools of the famous warrior, Benkei. Benkei owned 7 weapons, which he used to win all his battles. Similarly, from my own experience, you will find that you will be able to solve 95% of the problems around you if you wisely use the 7 tools of QC.”

- ISHIKAWA KAORU, Professor Emeritus, University of Tokyo

Dealing with quality problems can be similar to being lost. You don't know where you are. In quality improvement process, problem solvers need to know where they stand, what the problem really is, and what the cause of the problem is before any solutions can be proposed. Problem solving should follow a logical, systematic method. This will place emphasis on locating and eliminating the root or real cause of the problem. Other, less systematic attempts at problem solving run the risk of attempting to eliminate the symptoms associated with the problem rather than eliminating the problem at its cause. Organized problem-solving efforts utilize a variety of quality tools for problem analysis. The 7 QC Tools are scientific management tools, which are basic and easy to understand. They form the fundamental & critical foundation for all problem solving and quality control activities.

MAJOR ADVANTAGES:

Different from traditional method of teaching 7 QC Tools, this program capitalizes on the utilization of common computer spreadsheet software to accelerate all those meticulous calculations, graphing and searching of statistical tables activities. By doing so, it quickly bring participant's knowledge/skills to speed and allow more time to focus on *interpreting* the results, *recognizing* the fundamental workings of the tools, and *establishing action plans* for the improvement of quality. Apart from lectures and practice sessions, this program also includes computer simulations to help reinforce participant's understanding of the QC Tools functions in Problem Solving cycles. This training program provides the essential skills for those who involved in problem solving and quality control activities

NOTE: Value-add MS Excel working templates will be given to participants after completion of this course. With this valuable tool, participants can immediately put to use all the 7 QC tools in their workplace.

COURSE CONTENTS:

1). Introduction :

- Importance of using data/facts for problem solving.
- What are the 7 QC Tools?
- 7 QC Tools used in PDCA problem solving cycle
- Systematic Problem Solving process

2). Understanding Data & Basic Statistics

- Good data Vs Appropriate data
- Types of data, Variations, Central Tendency & Dispersion
- Descriptive Statistics

3). 7QC Tools & Its applications

Tool1 : Check Sheet for data collection

- Various types of check sheets
- Choosing suitable type of check sheet

Tool 2: Pareto Diagram to prioritize problem

- How to prioritize what problem to work (80/20 rule)
- How to construct Pareto Diagram.

Tool 3: Histogram to analyze distribution of data

- Characteristics of histogram
- How to construct a histogram.
- How to interpret what the data is telling you.

Tool 4: Graphs for presentation & monitoring progress

- Type of graphs, why use different graphs for different purposes?
- Flowchart & its purpose

Tool 5: Cause & Effect (Fishbone) Diagram to identify possible root causes

- Characteristics and application of Cause & Effect diagram
- How to construct a fishbone diagram. The Do's & Don't's.

Tool 6: Scatter Diagram to study the relationship between different parameters.

- Characteristics and application of Scatter Diagram
- How to construct a scatter diagram.
- How to interpret scatter diagrams.

Tool 7: Introduction to Control Charts (for process monitoring).

- Different types of control charts
- Special & Common causes in control chart.
- How to construct basic control charts.

4). Case Studies

- Making a quality improvement decision.
- Using PDCA approach to problem solving.
- Quality Team improvement (QCC) Activities:
 - Brainstorming
 - Questioning techniques
 - Stratification method
 - Team Presentation using quality improvement storyboard

5). MS Excel Exercises

- Accelerated method of constructing all the 7QC tools using MS Excel.
- Interpretation of what the data/tools reveals.
- Stratifications and making decisions based on interpretation of data.

Special note: Computer spreadsheet program will be utilized throughout the course to demonstrate the power of the tools used and to significantly reduce the time required for tedious calculations and graphing activities. Participant with prior knowledge of basic computer spreadsheet (e.g. MS Excel: using formula, edit graphs, printing, etc) will help complement the accelerated learning objectives of this course. MS Excel working templates will also be provided to equip participants to immediately use the 7 QC tools in their workplace.

COURSE OBJECTIVES :

At the end of the course, participants will ..

- Understand the usage and recognize the power in each of the 7 QC Tools
- Learn how to construct the tools (manually and fast paced by using MS Excel software)
- Learn how to interpret and make accurate business decisions using the correct tools
- Learn how to solve problems effectively using a systematic & scientific process
- Experience the Quality Control Circle (QCC) way of presenting an improvement business project to a targeted audience.
- Experience the team dynamics in solving problems.
- Be able to use the MS Excel working templates to solve problem back in their workplace.

WHO SHOULD ATTEND:

- Executives, Engineers, Supervisors, Technicians, QCC Facilitators
- Team (Project/SGA/QCC/WIT) Leaders & Members
- 7QC Tools is a foundational course for all Six Sigma learners & practitioners.

ADMINISTRATIVE DETAILS

Duration : 2 days

Time : 9.00am – 5.00pm

Venue : In-house or public training program

Note: Computers (or laptop preloaded with MS Excel) should be made available for participants to take advantage of the accelerated hands-on learning and the tools provided in this course.

ABOUT THE TRAINER :

Nelson Kok is a graduate from the Universiti Sains Malaysia, and holds a Master in Business Administration (MBA) and a B.Sc (Hons) degree in Physics. He has more than 24 years of work experiences, of which 17 years are in Training & Development related field, working with both multinational companies such as AT&T Consumer Products Pte Ltd, Corner Peripherals Sdn Bhd, Read-Rite (M) Sdn Bhd, and local companies such as Globetronics Technology Berhad, Amquest Sdn Bhd and GGN Solutions.

He now served as an associate consultant and a freelance corporate trainer to several training providers in Malaysia, China, Singapore & Sudan Africa. He has conducted many training programs for both multinational and local companies. He also served as a lecturer for several higher learning institutes such as Open University Malaysia (OUM), Society of Business Practitioners, UK (SBP), International Centre for Quality, Sudan. Throughout his career, he was a certified trainer for many management, quality and productivity programs such as *Performance Management System (PMS)*, *Managerial Decisions & Business Modeling*, *Managerial Statistics*, *Effective Leadership Skills*, *Train-The-Trainer*, *Total Quality Management (TQM)*, *Statistical Process Control (SPC)*, *Quality Control Circles (QCC)*, *Quality Improvements using 7QC Tools*, *7 Steps Problem Solving*, *5S Good Housekeeping*, *QIT*, *MRPII*, *ERP*, *Team Building Program*, *Effective Meetings Workshop*, *Effective Supervisory Skills*, *Communication and Leadership Skills*, *Problem Solving & Decision Making*, *Effective Time Management*, *Motivation At Work*, *Frontline Leadership Program*, and *7 Habits of Highly Effective People*. He has also conducted many quality audits and was directly involved in company's ISO 9001 and Quality Management Excellence Award (QMEA) certifications. Nelson's area of specialization is in helping organizations to achieve higher effectiveness and productivity using proven Management, Quality and IT tools and techniques.