



Real-Time SQC

A must-have tool to manage your
process

By Tom Chow, Service Engineer

Presentation Outline

- What is SQC ?
- What is PI-SQC ?
- What can PI-SQC do ?
- Live Demonstration
- Requirements
- Summary
- Q&A

What is SQC ?

- Statistical Quality Control is a proven mathematical theory
- It is developed by Walter A. Shewhart and further refined by William E. Deming

Walter A. Shewhart
(1891 - 1967)



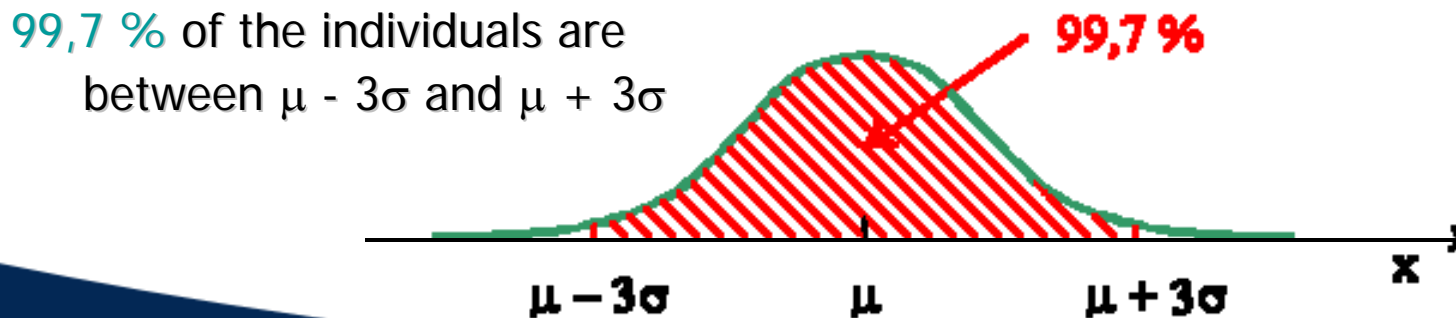
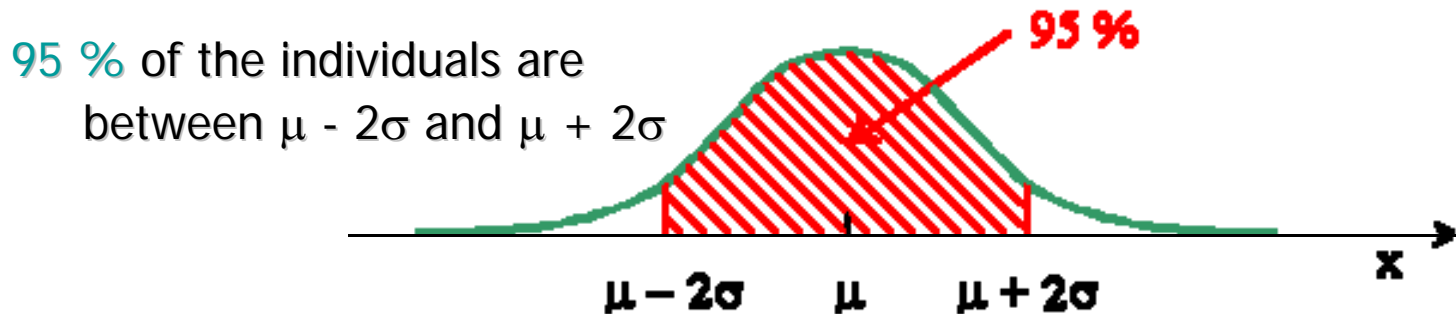
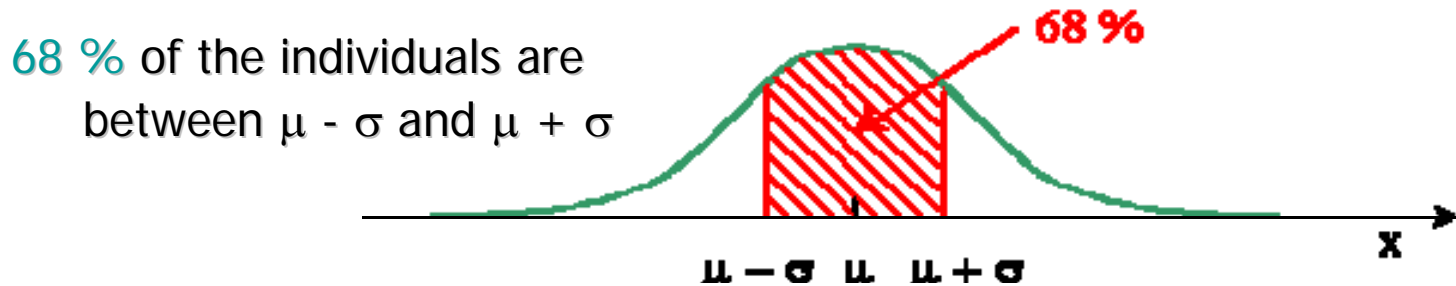
William E. Deming
(1900 - 1993)



What is SQC ?

- A process is “in control” when it is stable, consistent, and repeatable.
- All processes have variations
 - Natural Variation
 - Caused Variation
- It finds irregular occurrences mathematically
- Quantify process capability and quality

What is SQC ?



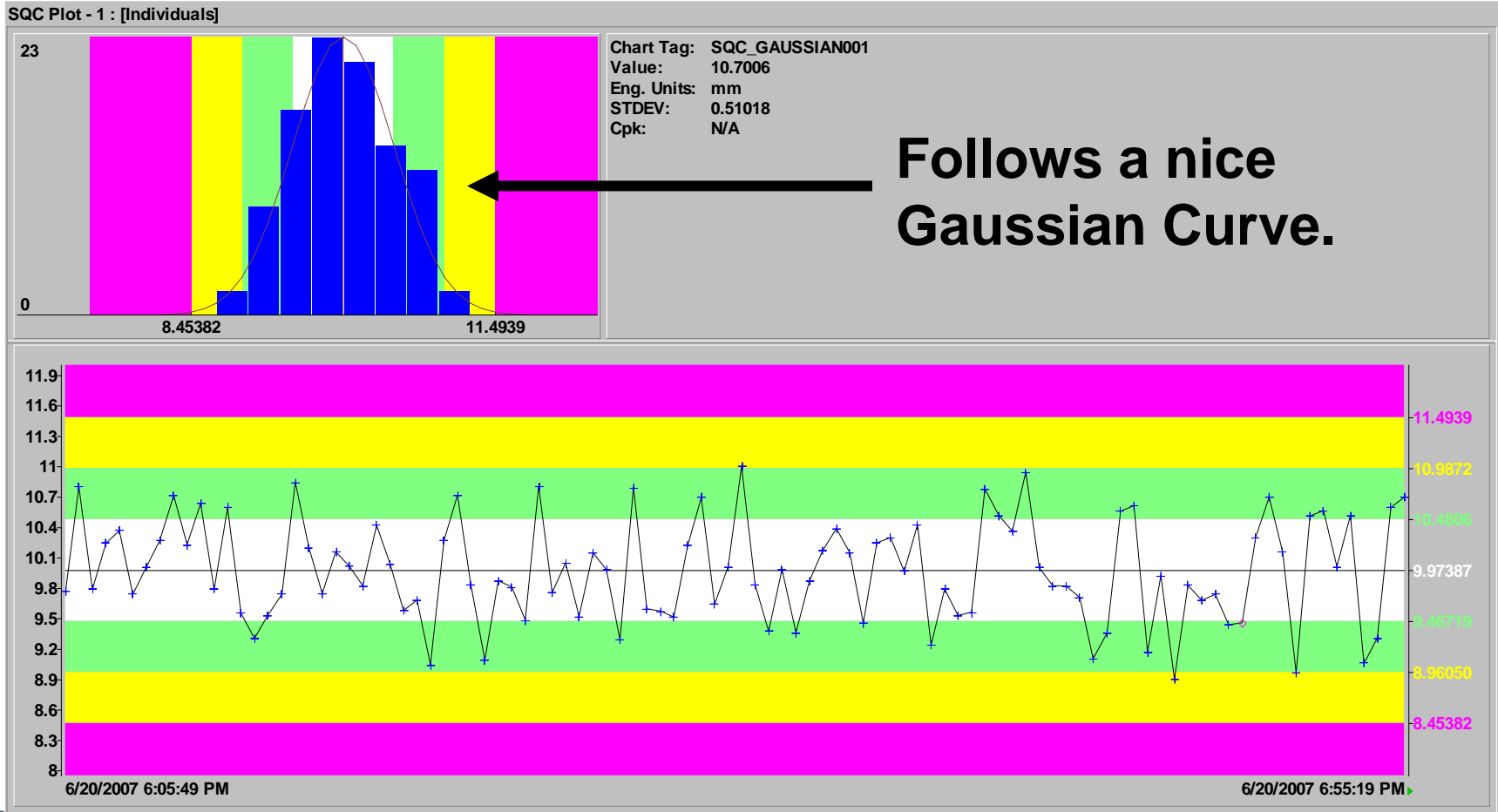
What is PI-SQC ?

- PI-SQC is a software package
 - Client Component (PI-SQC addin in ProcessBook)
 - Server Component (RT PI-SQC plug-in for SMT)
- It retrieves data from the past and performs statistical calculations to determine data behavior

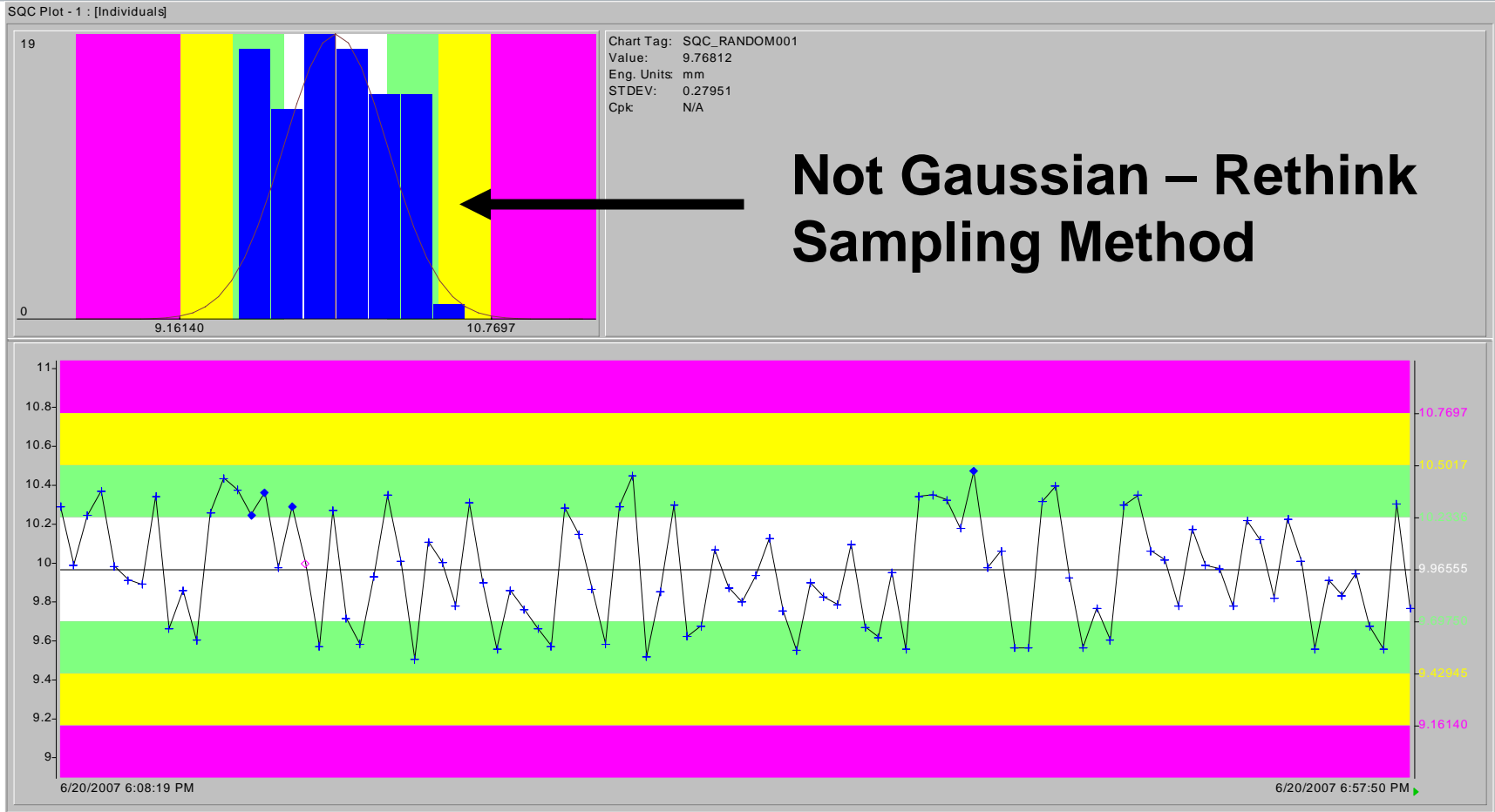
What can PI-SQC do ?

- It alerts us of instability in process
- It compliments the existing process control (PID) and quantifies it
- It estimates proportion of product that is within specification
- Not necessary to measure everything, just samples
- It tells us both when we should act, and when we should NOT take action.

Normal Distribution (Gaussian)

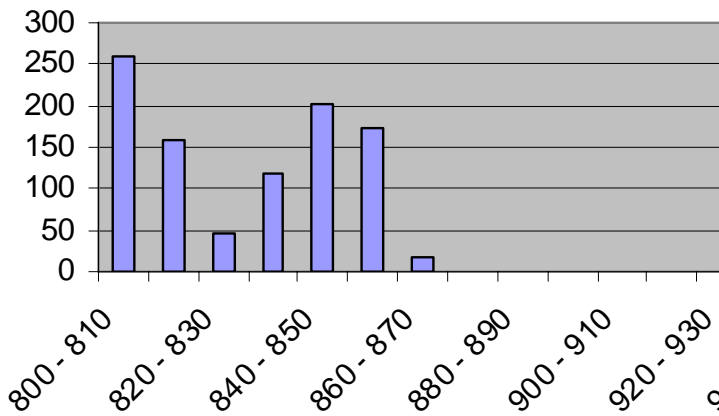


Random Distribution



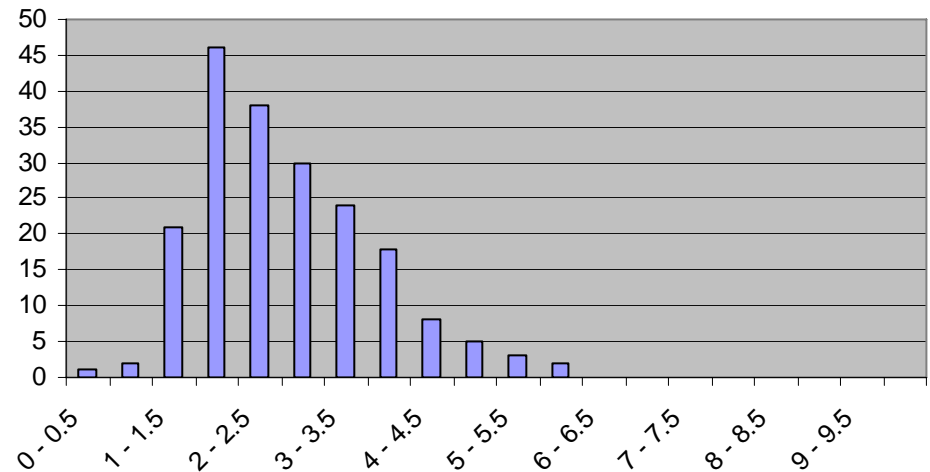
Making Data Go Gaussian

Raw data - if looks Gaussian, only by coincidence



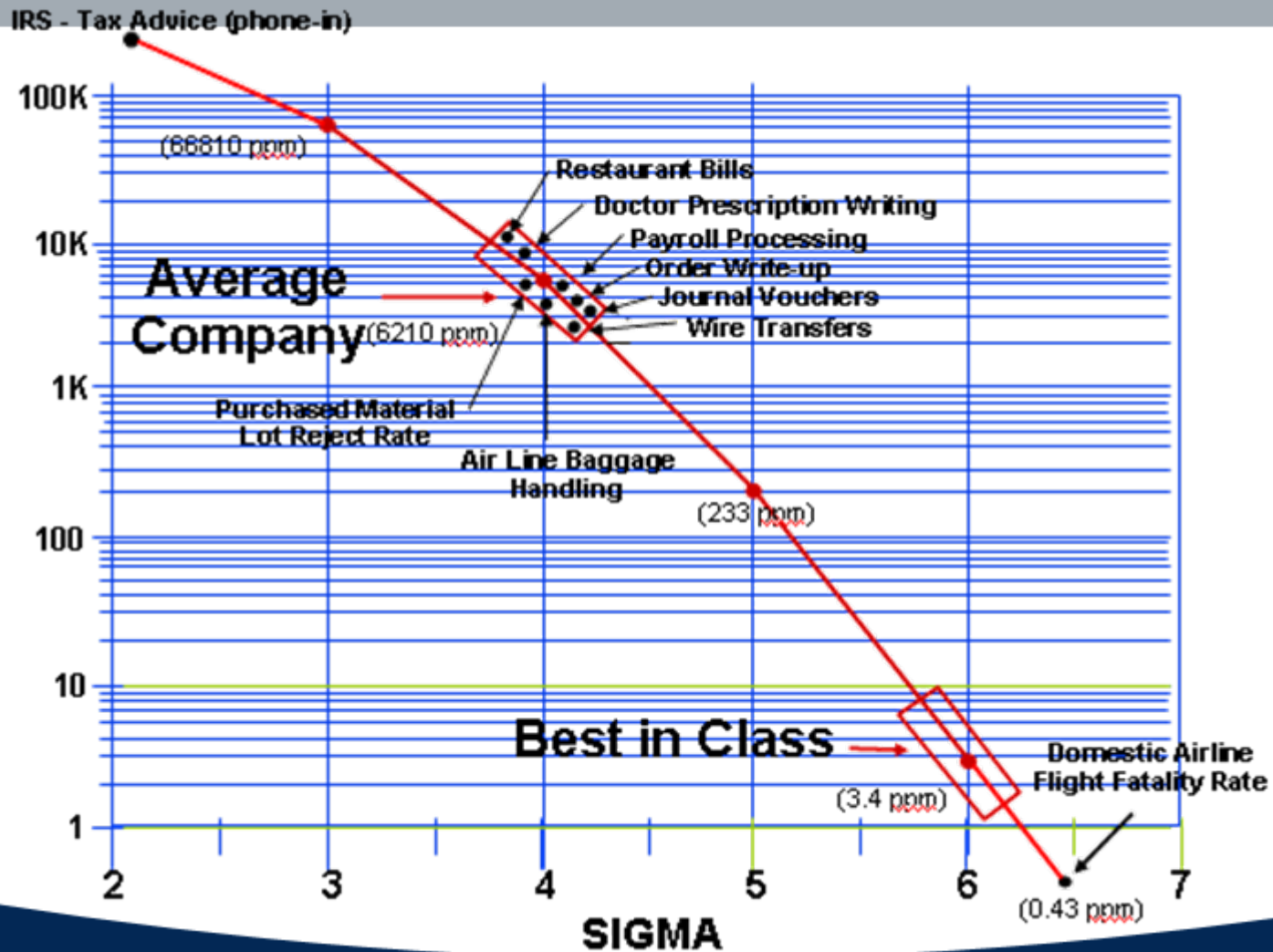
temperature where
temperature.

Range Samples of 5 (rather Gaussian)



Apply the range function to raw
min and max of each g
with "range" function m

What can PI-SQC do ?



Live Demonstration

PI-SQC Client
RT PI-SQC Server
AlarmView

Requirements

- PI Software Licenses
 - PI-SQC
 - RT PI-SQC (Enterprise Server Pro)
 - AlarmView
- Windows (2003, XP)
- PI ProcessBook
- System Management Tools (SMT)

Summary

- PI-SQC monitors and quantifies process control using
 - PI-SQC (Client)
 - RT PI-SQC (Server)
- They are easy to use, achieve great results if use together
- AlarmView makes information more actionable
- Save \$\$\$ by better characterizing your process control

Q&A Session

Any Questions ?

End of Presentation

Thank you for your time