

The Data-Shack workshop: W4. Industrial analytics (2 days)

(Trust your data & control your processes) - **Bring your own data and business questions (“points of pain”) and we’ll teach you the analytics**

Prerequisite

Introductory analytics (2 days)

Preparation

At least 2 weeks prior to workshop date, the following are required:

- business “points of pain” to be addressed
- clean data to confirm applicability

Objectives

Using your own data, introduce delegates to:

- quality control charts, and how to use them to effectively monitor & control your processes to provide early feedback of potential problems
- methods to objectively assess process capability
- measurement system analysis (“MSA”) – can you trust your data?

Description

This two-day workshop will empower delegates to assess measurement systems, putting an end to debates around the validity of data.

Delegates will understand the effectiveness and productiveness of utilising quality control charts to monitor processes real-time, providing early warnings of potential problems.

Lastly, delegates will be able to objectively assess processes as to their capability in meeting specification requirements.

Outcome

Delegates will leave the workshop with a an excellent theoretical and practical understanding of Industrial Analytics Techniques and their immediate application back into their own operational environment.

Topics*

1. Statistical process control (“SPC”) & Quality control (“QC”) charts
 - 1.1. Control, specification & warning limits
 - 1.2. Runs tests
 - 1.3. Assigning causes & actions
 - 1.4. Operation Characteristic (OC) curves
 - 1.5. Working with sets
 - 1.6. QC charts for attribute data
 - 1.7. Specialised QC charts
 - 1.8. Charts for short production runs
2. Process capability analysis
 - 2.1. Capability vs. performance
 - 2.2. Process capability terminology
 - 2.3. Process capability graphs and analysis
 - 2.4. 6 σ process capability indices
3. Measurement system analysis (“MSA”)
 - 3.1. Why perform MSA?
 - 3.2. Continuous (“variable”) vs. discrete (“attribute”) MSA
 - 3.3. Essential elements of an MSA
 - 3.4. Components of variation
 - 3.5. MSA terminology
 - 3.6. Gauge R&R
 - 3.7. Guard bands
 - 3.8. Destructive vs. non-destructive MSA

* Note that the list of topics covered may vary slightly depending on the nature of the business questions to be answered, and the content of the supporting data supplied by the delegates

Timing

- 10:00 – 11:00 Session 1 (1 Hour)
 11:00 – 11:15 Break (15 min)
 11:15 – 12:15 Session 1 (1 Hour)
 12:15 – 12:45 Lunch (30 min)
 12:45 – 13:45 Session 1 (1 Hour)
 13:45 – 14:00 Break (15 min)
 14:00 – 15:00 Session 1 (1 Hour)