

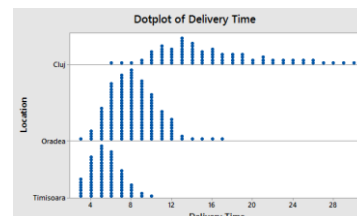
How MINITAB can help

MINITAB is a statistical software package developed at Pennsylvania State University and which became one of the most used worldwide. The software is intensively used for statistical applications such as SPC, MSA (typical for the automotive industry but not only for this) Six Sigma projects, Reliability (in maintenance) and graphical data interpretation.

MINITAB help us to:

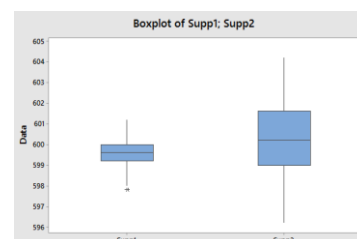
- **Explore data through graphical analysis;**

Histograms and Dot Plot (Graphics by dots) are used to show the frequency distributions. *Box - Plot* graph provides a simple comparison between distributions. *Run Chart* graph shows variations or trends over the time. *Pareto* diagram helps us to prioritize project activities.



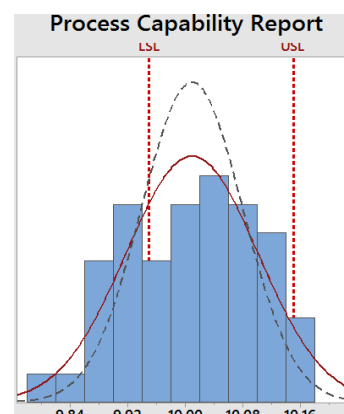
- **Manage statistical analysis;**

MINITAB can handle a wide range of statistical analysis such as ANOVA, basic descriptive and nonparametric statistics, correlation, regression and logistic regression and multivariate analysis and time series. These tools help us visualize the data and validate results.



- **Evaluate quality;**

MINITAB offers many methods to help us to evaluate quality in an objective and quantitative way. These methods include MSA - Measurement Systems Analysis (Gage R&R studies), control charts ((I-MR, Xbar-R, p-chart) and process capability (C_{pk} , P_{pk} , C_{mk})

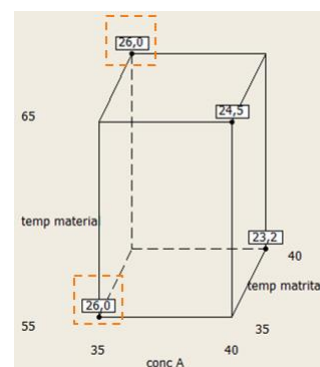


In this way, MINITAB helps in Statistical Process Control (SPC).

Control charts of MINITAB show statistics of the process. The statistics of process include averages of subgroup, individual observations, weighted statistics and number of defects. MINITAB control charts also show the centerline and control limits.

- **Design an experiment / DOE (Design of experiment)**

DOE helps to investigate the effects of input variables (factors) to an output variable (reply) in the same time. These experiments consist of a series of tests, where intentional changes are made to the input variables. Data are collected from each series. We can use DOE to identify the process conditions and components of the product which affect the quality and then setup the factors that optimize results.



MINITAB offers four types of models of factorial designs, response surface designs, mixture designs and Taguchi designs (also named Taguchi robust design). MINITAB can handle any data analysis or sight need by Six Sigma teams.

Many companies provide training to employees involved in processes (quality, engineering, maintenance, etc.) or in Six Sigma initiatives – either as introduction in MINITAB, Statistical techniques with MINITAB, SPC, MSA or Green Belt / Black Belt Six Sigma.