XMR Chart

Presented by

The Performance Improvement Team

Overview

- Introduction to XmR Chart
- Examples and How to Identify Signals in Your Data
- Exercise

XmR Chart Introduction

- An XmR chart is a control chart that is used to determine if a process is stable. It creates a visual of how changes to your business process impact your work.
- The changes can be caused by system errors, personnel issues, implementing new processes, etc.
- XmR charts are most useful when there are more than 8 consecutive data points.

XmR Chart Introduction

- The **X indicates observation** and the **mR indicates moving range**.
- Moving range measures **variation changes** over time when data is collected as individual measurements. For example; looking at backlog on a monthly basis rather than annually.
- XmR charts can be used to track and monitor data on a daily, weekly, monthly or annual basis.

Upper and Lower Control Limits

- With the XmR tool we will calculate the central line, upper control limit and lower control limit of our data.
- The central line is the average value of the list of numbers or data points.
- The upper and lower control limits represent your process variation and 99.7% of all data points in your sample should fall within these lines.

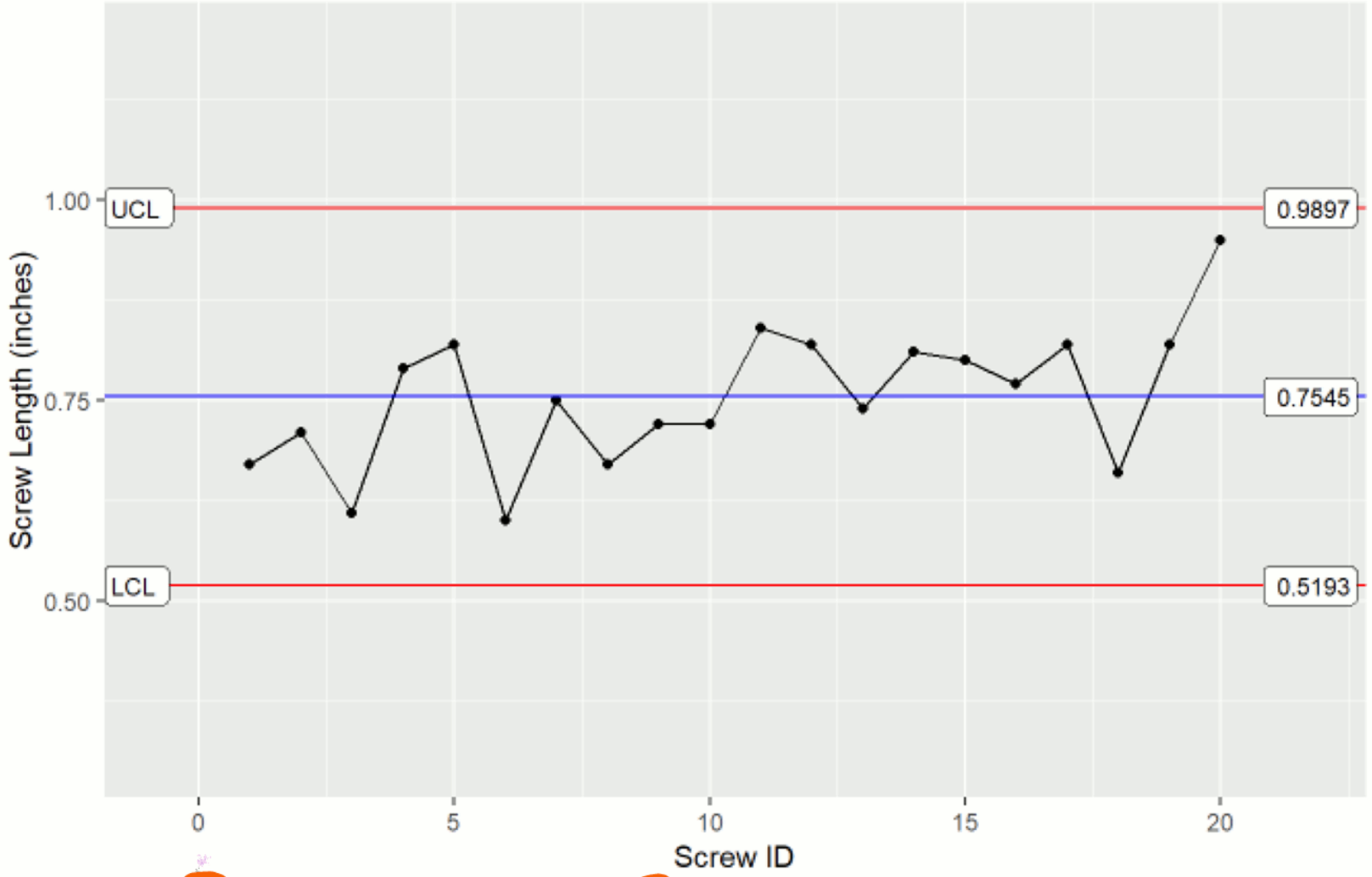
Upper and Lower Control Limits

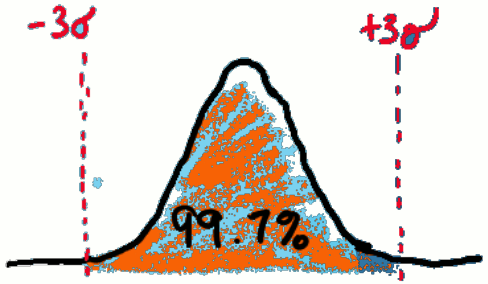
- These help to monitor your process and demonstrate whether your process is stable and consistent over time and help to identify when changes need to be made.
- Although your process may be stable it also needs to be acceptable. Example: Timeliness. Eligibility Sites need to maintain above 95% so if your data is stable but under 95% it’s not acceptable.

Process Measure

Process ID: 0.75 inch Nails ← Process Information

Product Line 1 | 2019-1-1 9:00-9:05am





← +3σ upper Control Limit

← Measured Process Center (mean)

← -3σ Lower Control Limit

Sequential Process Outputs

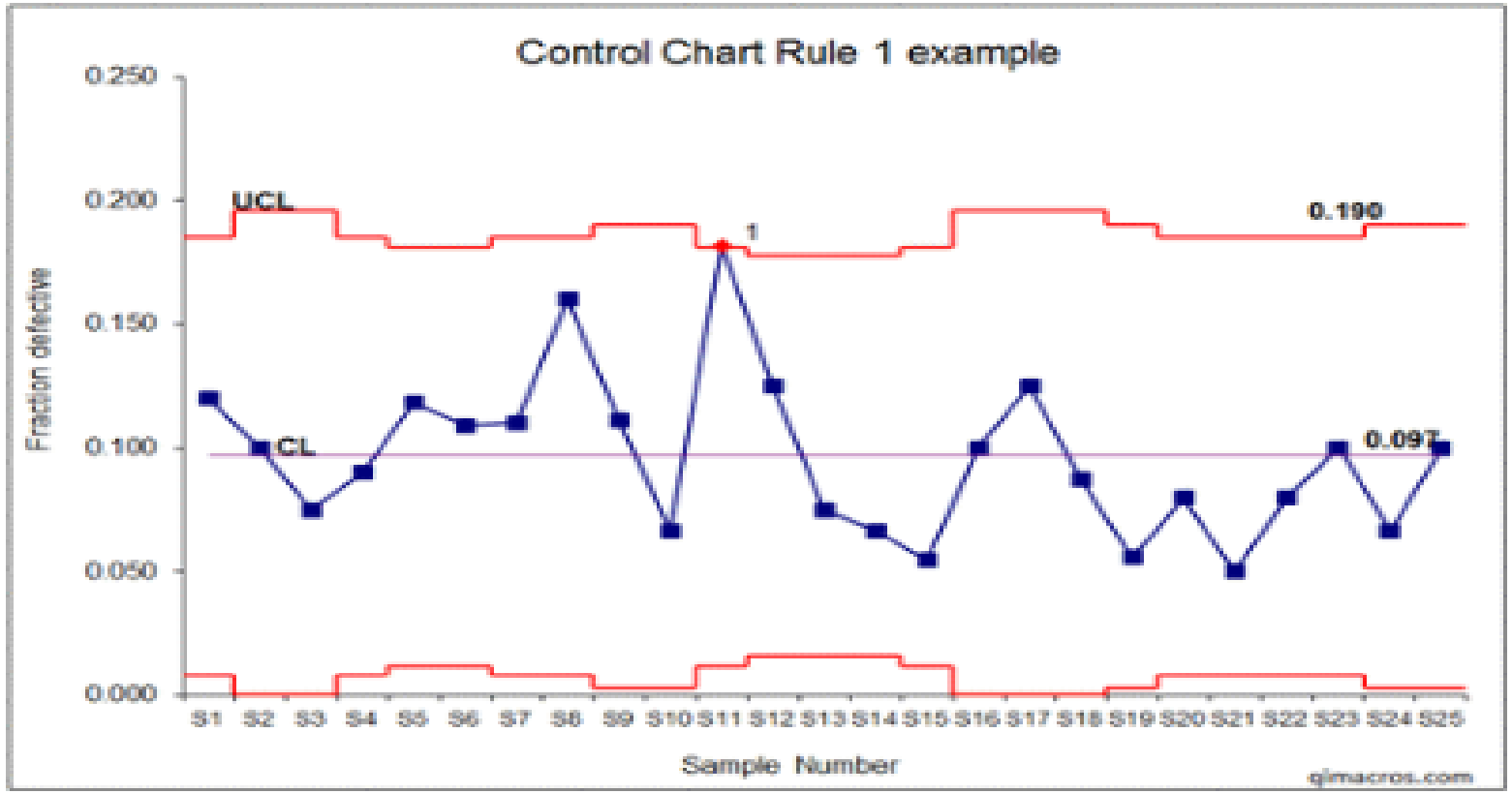
Questions

Looking for signals in the data

Western Electric Rules

Western Electric Rule 1:

One point above UCL or below LCL



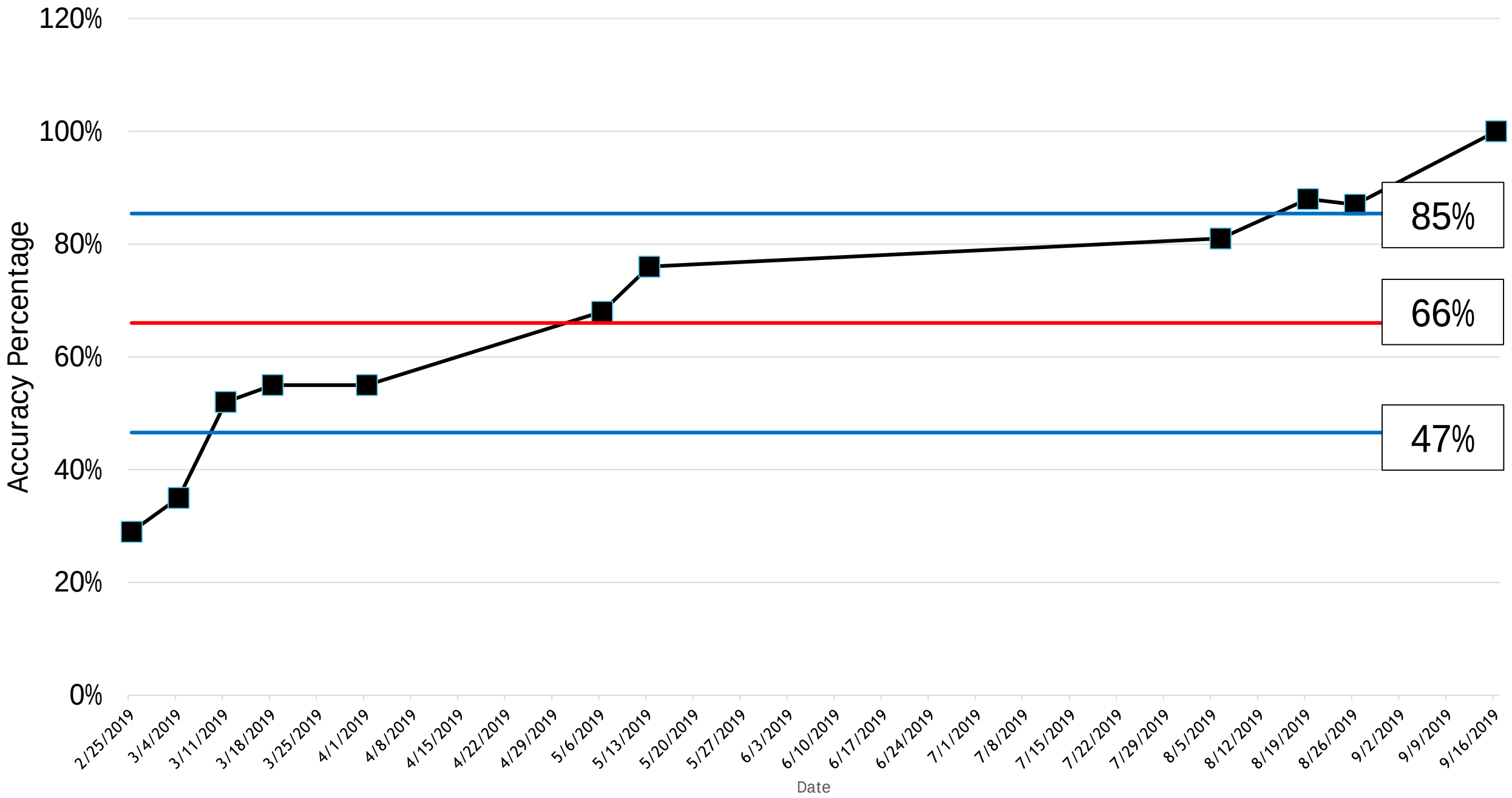
Western Electric Rules

Western Electric Rule 4

Eight points in a row above/below the center line

XmR Exercise

Eligibility Quality Assurance



Questions

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