Analytics Deep Dive:

Best Practice Metrics and Areas for Improvement

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Speaker Introduction

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Overview

- KPI Classic
  - The Traditional Standards
  - Brief Demo
- Analysis Paralysis
  - Going from Good to Great
- Real World Examples
  - Client A, Oil & Gas
  - Client B, Misc. Industrial
  - Client C, Specialty Chemicals
  - Client D, Basic Materials
- Q&A

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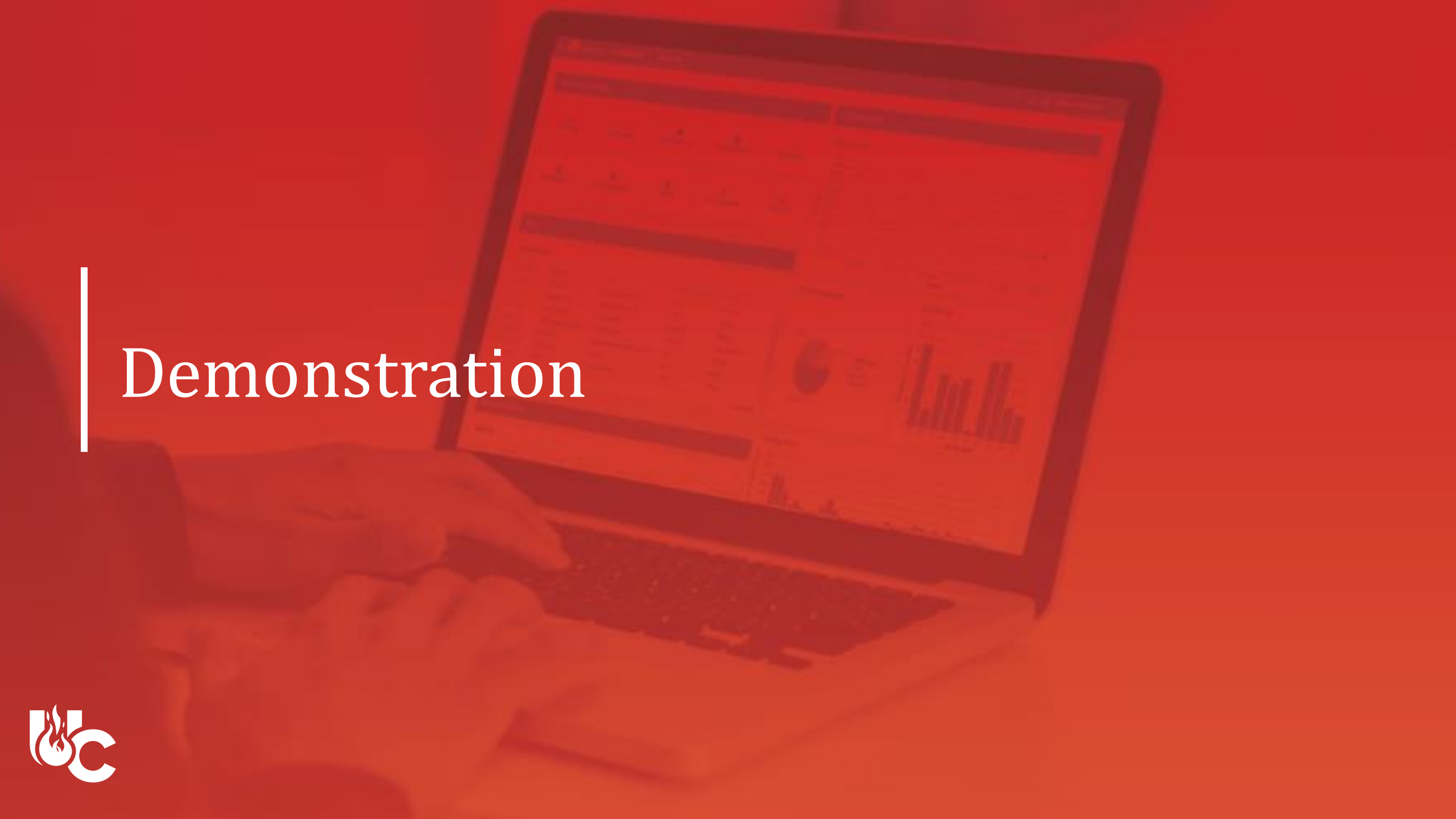
What do each of these metrics have in common?

KPI - CLASSIC

- MTBF
- MTTF
- MTTR
- Wrench Time
- Unscheduled Downtime
- Planned vs. Actual Maintenance Time
- Resource Utilization*
- Maintenance Order Backlog*

Demonstration



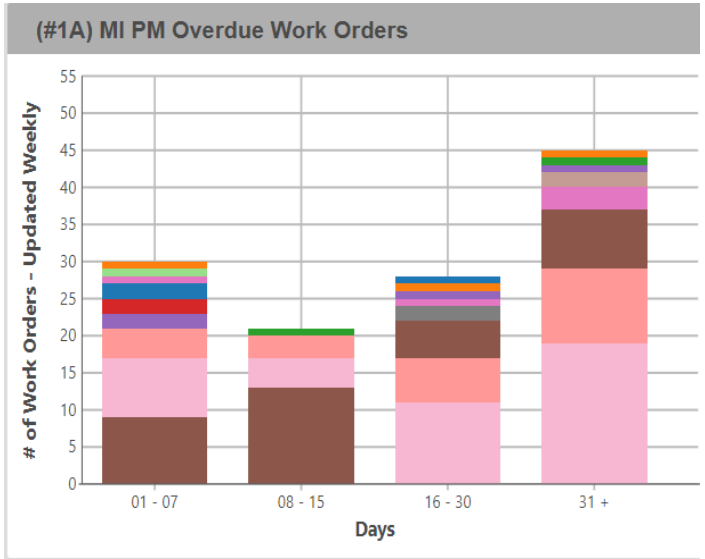
Client A, Oil & Gas

- Overdue Variance of Pressure Vessel Asset Integrity Inspections
  - In Traditional Cases, our Analytics system pulls directly from SAP
  - We build our reports directly from that data, using SAP fields as variables.
  - In Client A's case, we are using a direct link to their Meridium system, rather than SAP by itself.
  - Since we can pull from other systems, Analytics is a powerful centralized hub of info from multiple databases.

Client A, Pressure Vessel Inspection Variance

- This metric provides a chart showing count of Overdue Mechanical Integrity (MI) Preventive Maintenance work orders for [CLIENT SITE]
- ALL (MI and non-MI) overdue Preventive Maintenance work orders for New Sites and grouped into age buckets.
- Chart values include a calculation of overdue variance factor of 10% (0% for G&P) of the minimum frequency.

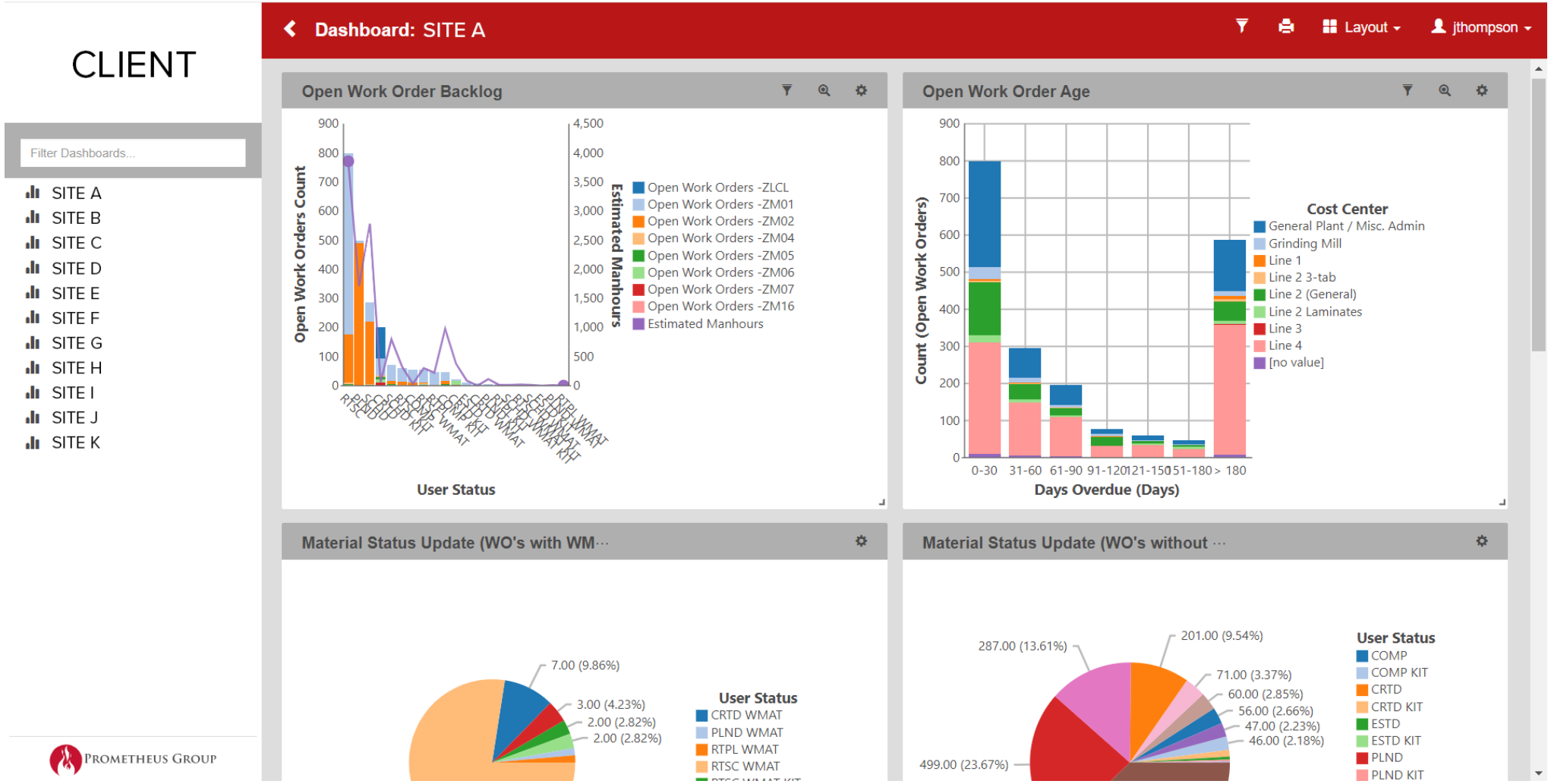
$$\boldsymbol{Overdue\ Variance} = \frac{Minimum\ Cycle\ of\ Maintenance\ Plan * Variance\ Factor}{100}$$



Client B, Misc. Industrial

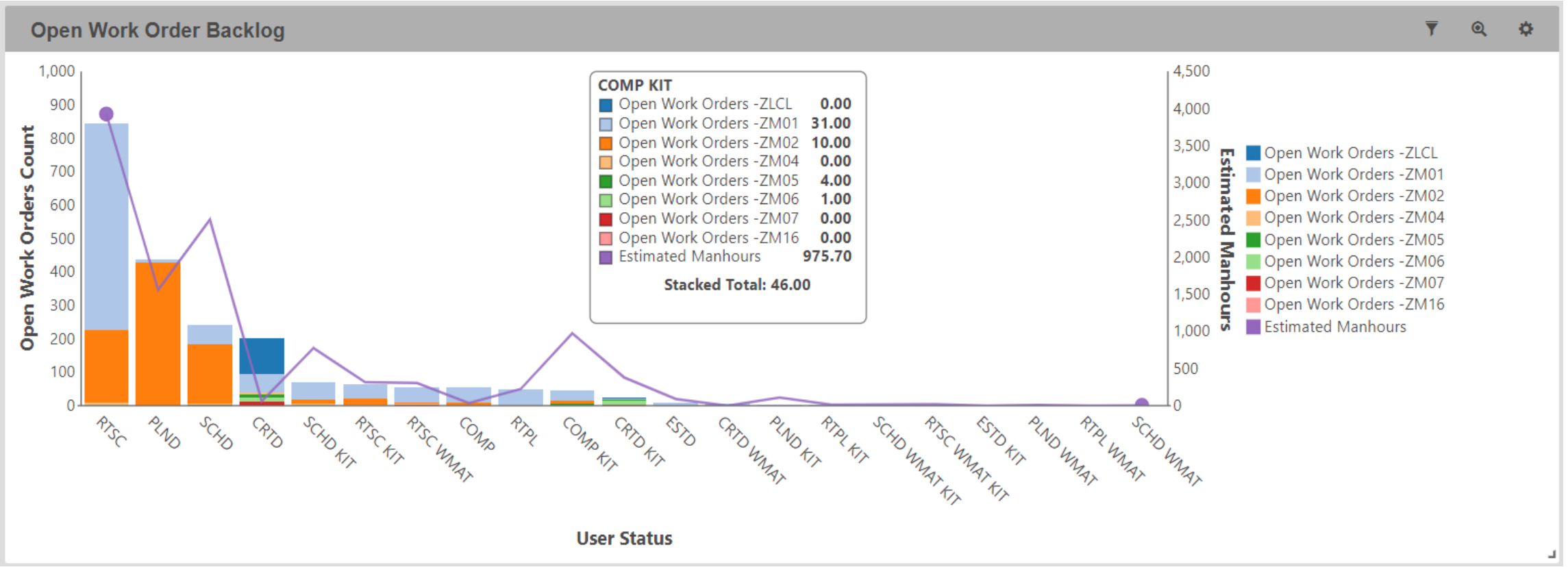
- Hierarchy Breakdown
- Ex. 1, Open Work Order Backlog
  - All sites are running the exact same calculations.
- Ex. 2, WMAT breakdown
  - Quickly get a realistic depiction of what's going on.

Client B, Hierarchy Breakdown



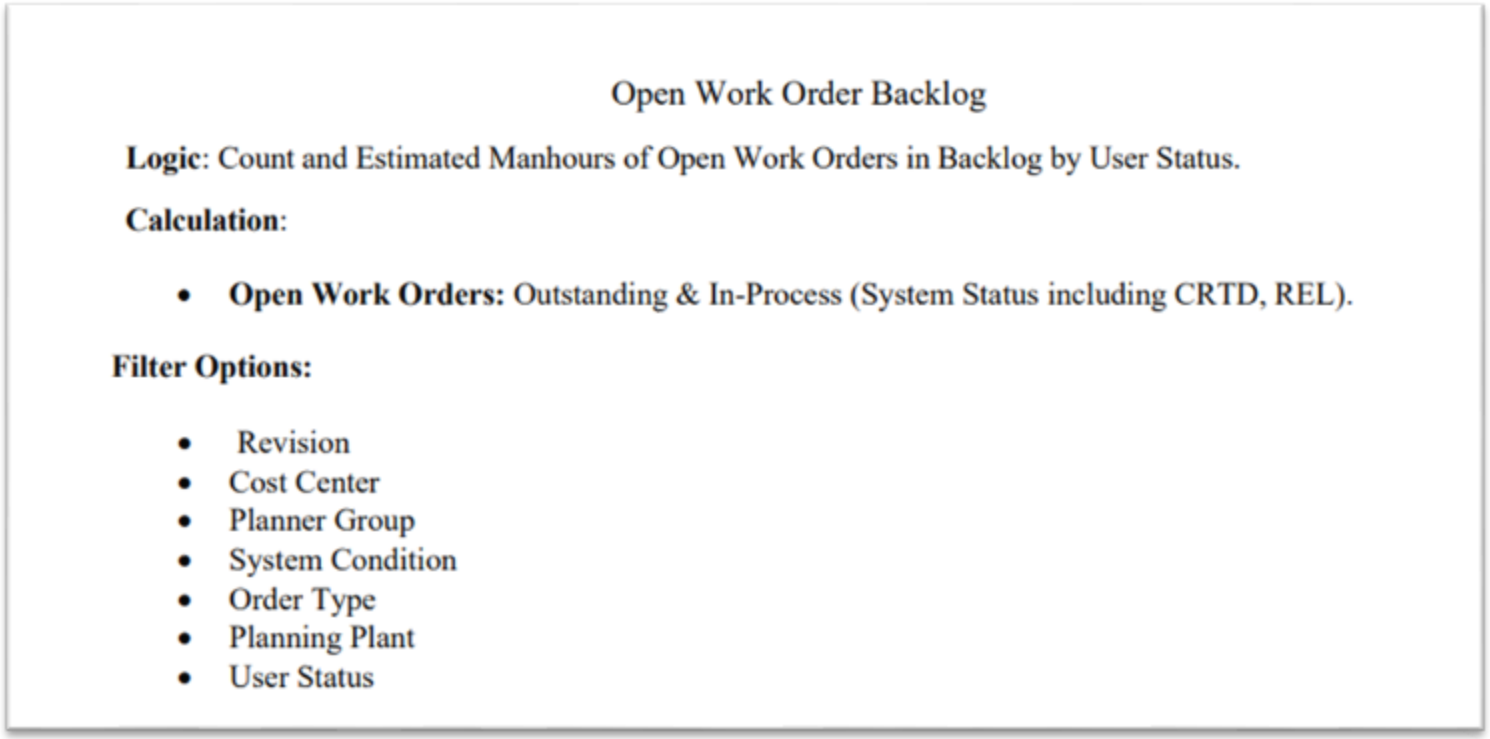
Client B, Open Work Order Backlog (pt. 1)

- Client B has chosen to showcase the estimated number of manhours in the backlog
  - Sorted by Order User Status and stacked by Order Type. Breaking up metrics by plant can present extra perspective.
- Charts are sorted by extra variables that can be filtered, instead of multiple locations per metric.



Client B, Open Work Order Backlog (pt. 2)

- Prometheus Analytics can provide explanation slides within each chart
  - There is a massive amount of value that can be pulled from the last chart, and with that can come with a massive amount of explanation.
  - Having a breakdown available for every metric increases both the availability and simplicity of information.
  - Standardization of KPI understanding leads to unified goals and improved decision-making.



Open Work Order Backlog

Logic: Count and Estimated Manhours of Open Work Orders in Backlog by User Status.

Calculation:

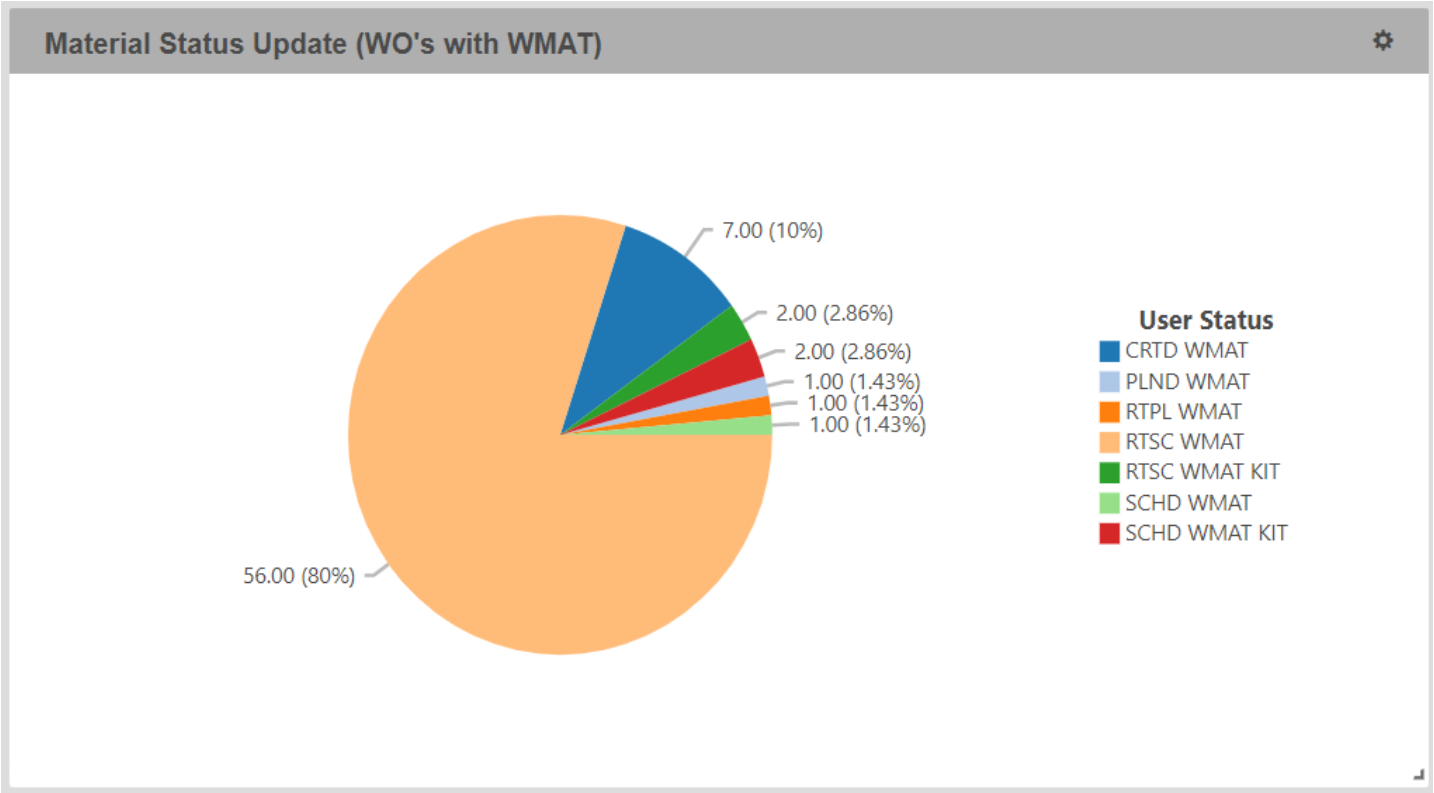
- **Open Work Orders:** Outstanding & In-Process (System Status including CRTD, REL).

Filter Options:

- Revision
- Cost Center
- Planner Group
- System Condition
- Order Type
- Planning Plant
- User Status

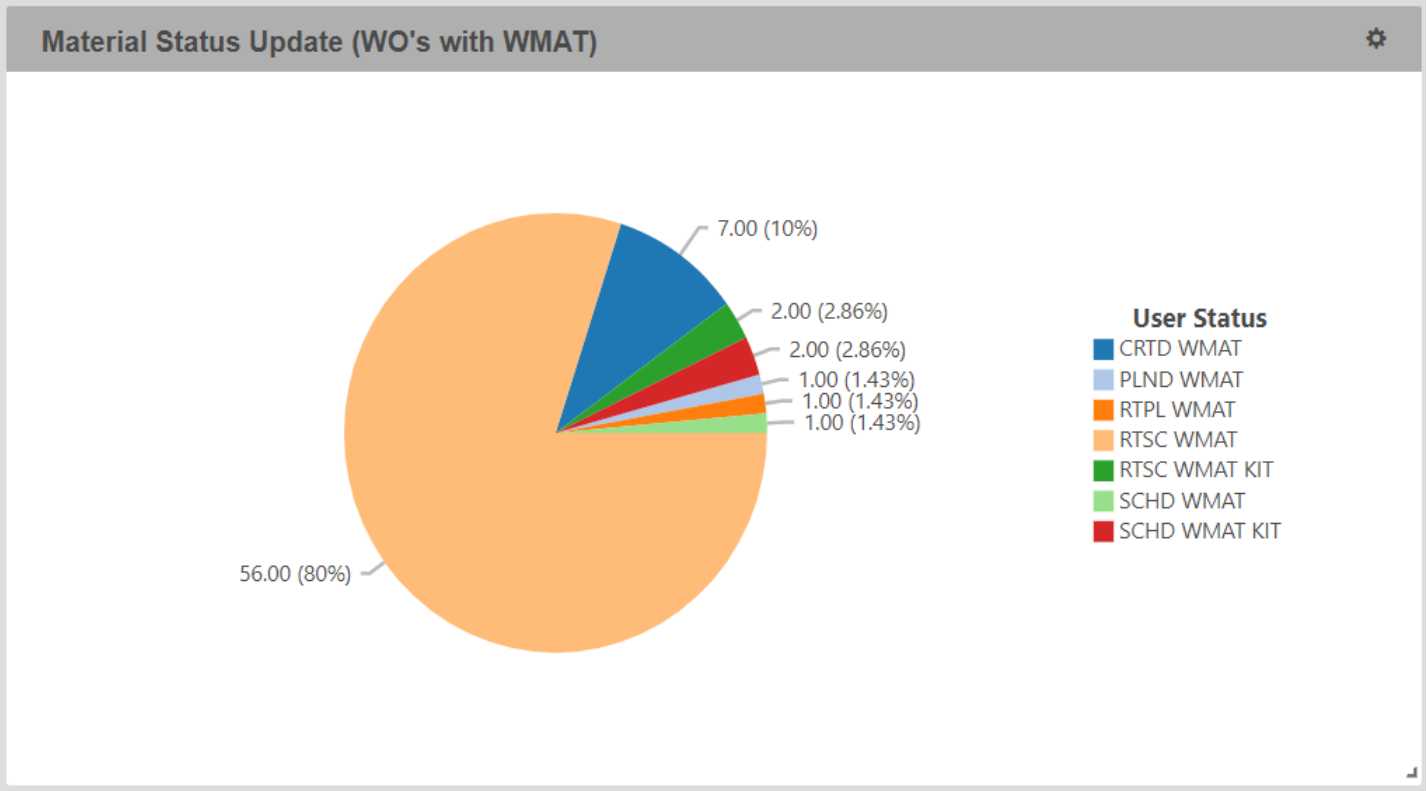
Client B, WMAT Breakdown (pt. 1)

- Below represents the state of the all WOs missing parts, organized by where they are within the workflow.
- Automatically contextualize your work to get a realistic view of where you stand.



Client B, WMAT Breakdown (pt. 2)

- 80% of all orders with the WMAT status are held up by a lack of material readiness, and nothing else.
- That's equal to 56% of the ENTIRE BACKLOG inhibited solely by difficulties in the Material Kitting and Inventory Processes.
- Adequate context drives systematic improvement.

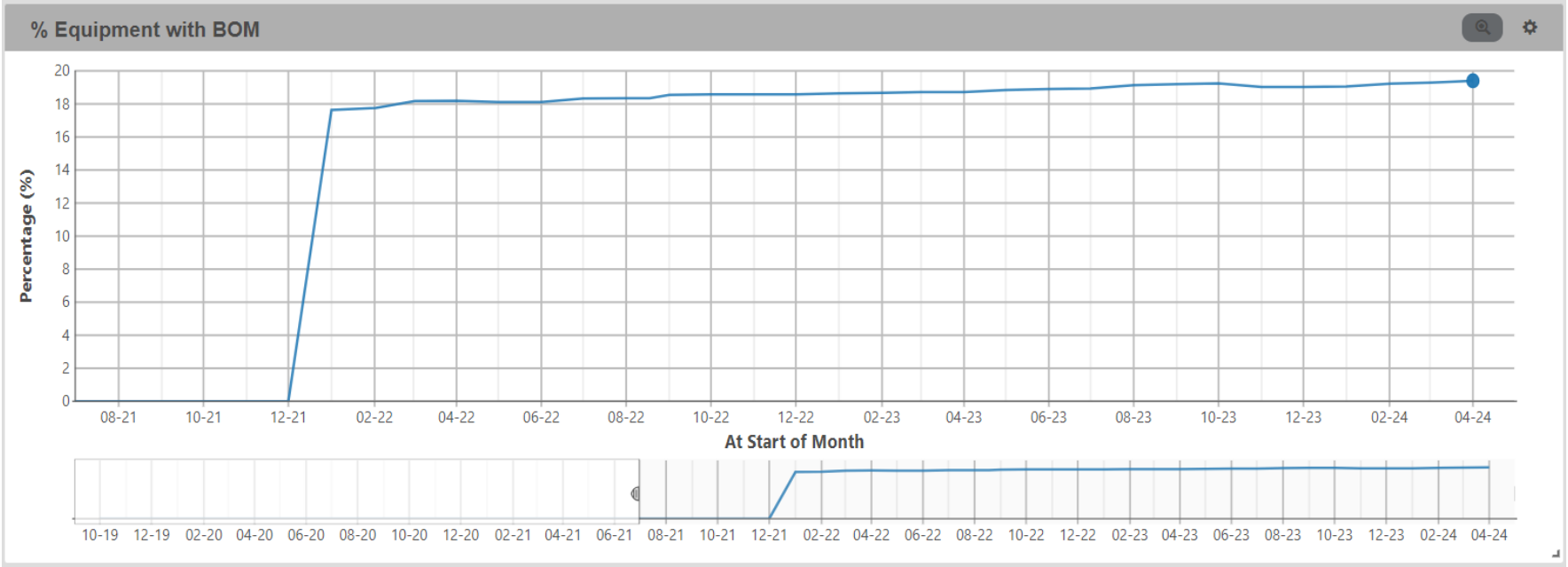


Client C, Specialty Chemicals

- Ex. 1, Percentage of Equipment with BOMs
- Ex. 2, Number of Parts Added to BOMS
- Ex. 3, Notification Methodologies

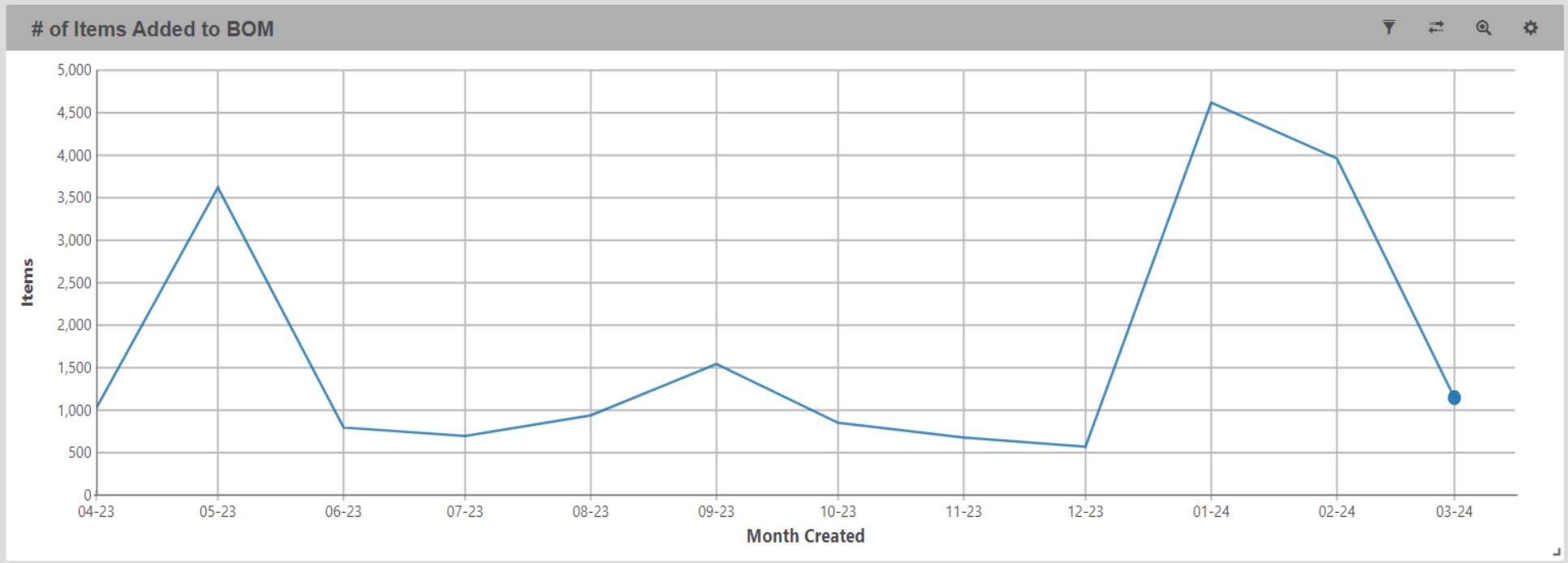
Client C, Percentage of Equipment with BOMs

- The ability to quickly navigate date ranges removes the need to permanently rebuild charts and trends in order to meet temporary needs.
- POC for new tools and process changes, such as O2BOM, is simplified with a flexible analytics tool and a little creativity.



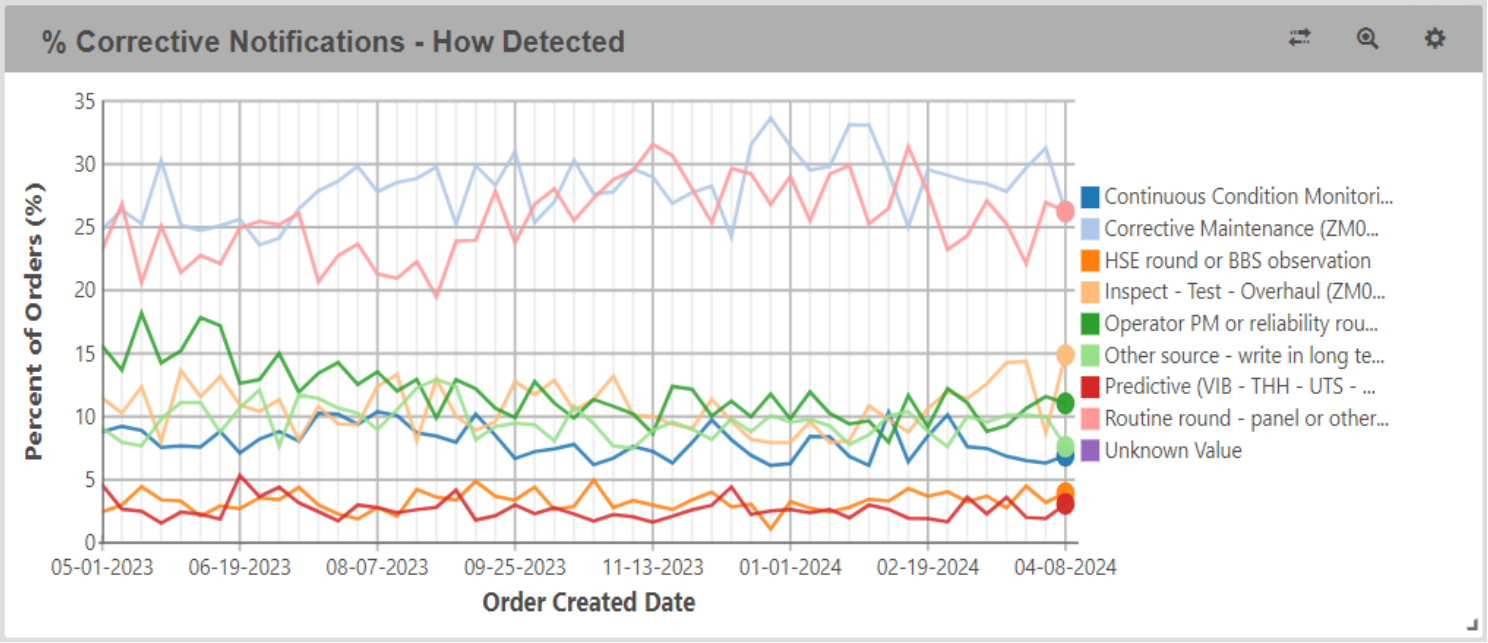
Client C, Number of Parts Added to BOMs

- The information gained from one initiative quickly leads to tracking the adherence of processes – both old and new.



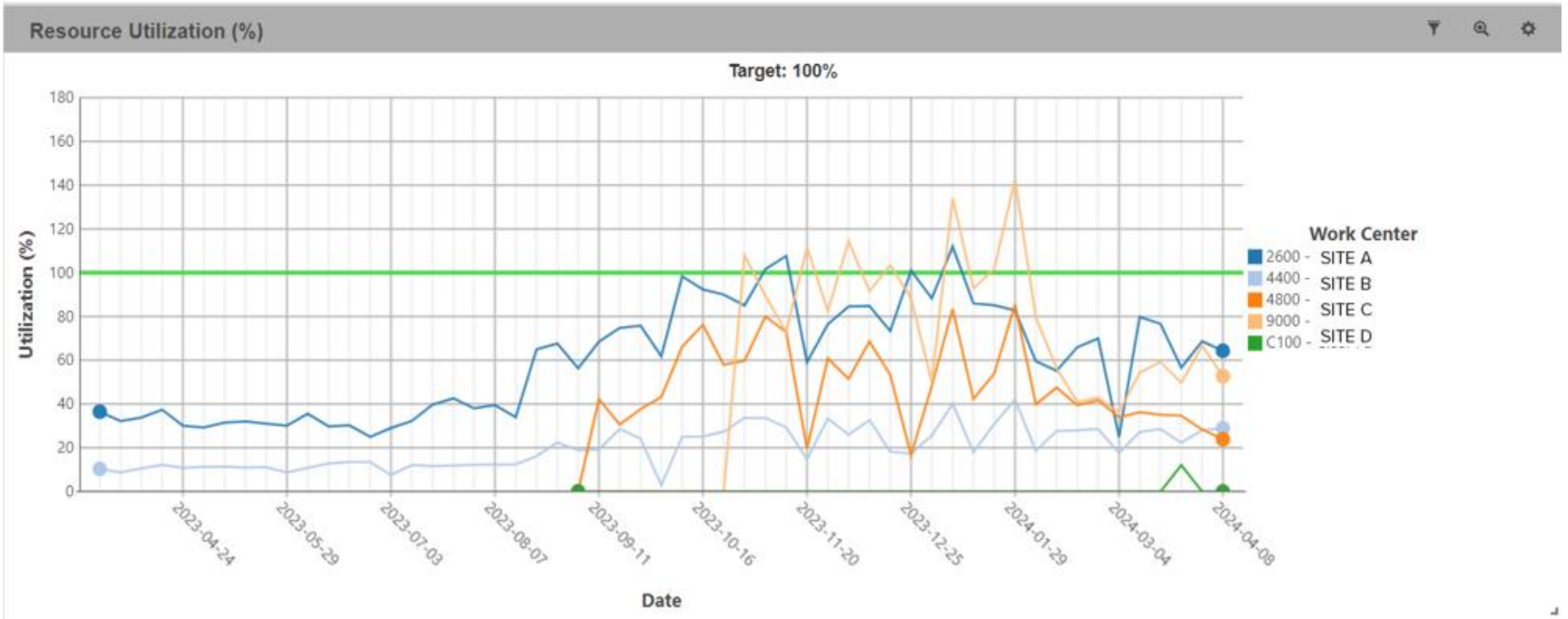
Client C, Notification Methodologies

- Alternatively, reconsidering how we view commonly tracked data creates opportunities to visualize the effectiveness of those processes.
  - How consistent are the outcomes of your own processes and initiatives?
  - What are you doing to track that today?
  - Are the other sites in your organization tracking the same things in the same ways?



Client D, Basic Materials

- Ex. 1, Resource Utilization – Interpretation is Everything.



Thank You!

Questions?

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