





SAP PM Assessment Structure and Value Proposition



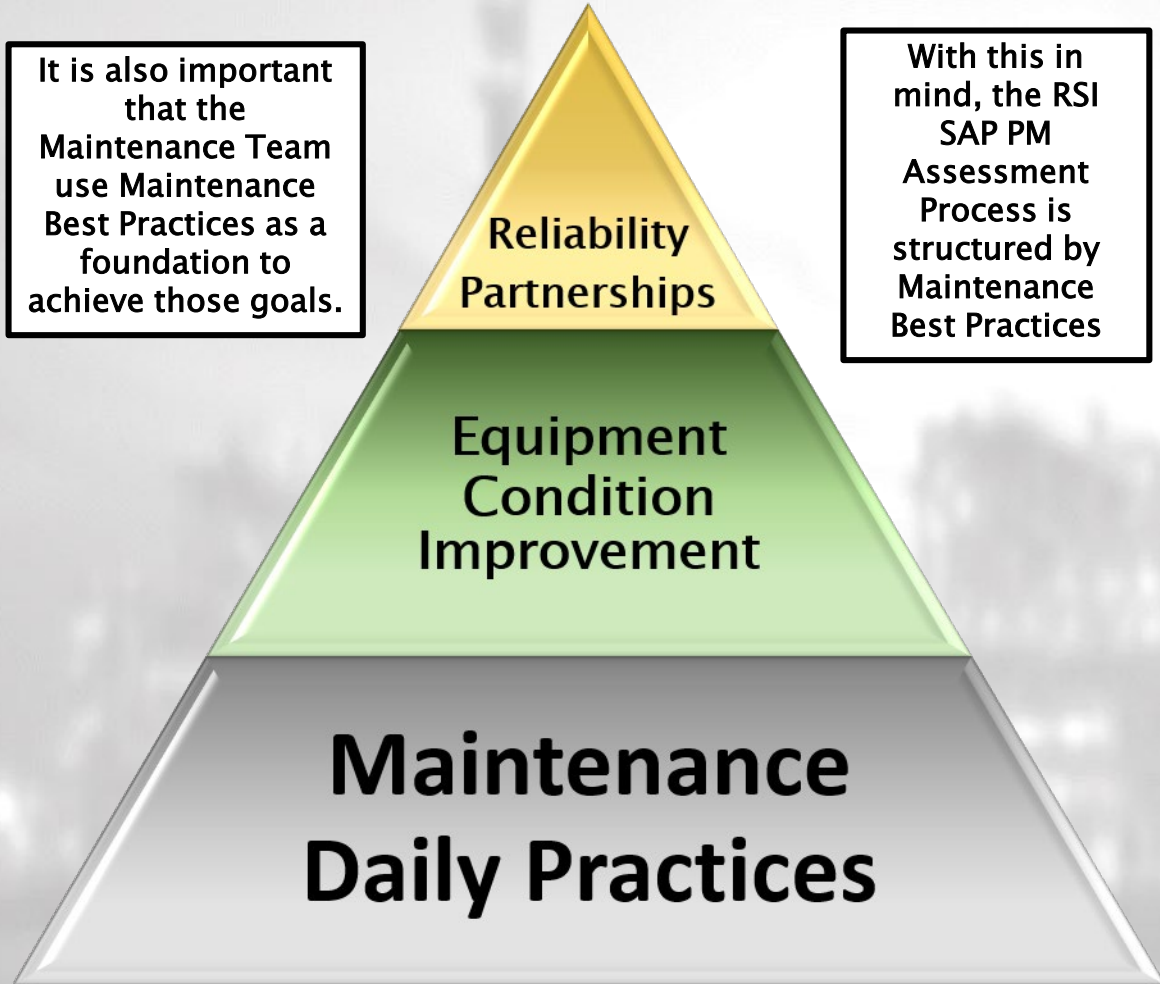
Maintenance Support of Production Goals

It is imperative that the Maintenance Organization fully support the Plant and Production Goals

Value		Plant Measurable Target	Maintenance Measurable Target - KPI	KPI Methodology
Safety		<.6 Recordable Incident Rate	< .9 Recordable Incident Rate	Safety Incident Reporting
Environmental		Zero Recordable Excursions	Zero Recordable Excursions	Environmental Reporting
Availability		91% Overall Equipment Effectiveness	3% Unplanned Equipment Downtime	Production Tracking OEE Reporting
			3% Planned Equipment Downtime	Production Tracking OEE Reporting
Quality		2.4% Percent Off-Quality	< 2% Rework / 60% Preventive / Corrective Maintenance Spending	Notification with Rework Status / MCI8 Order Type Breakdown by Order Type
Efficiency		95% Customer Delivery	85% Corrective Schedule Adherence	SAP PM Notification Required Finish Date vs. Notification Completion Date
			98% Preventive / Predictive Schedule Adherence	SAP PM Maintenance Plan Planned Date vs. Actual Order Completion Date
Cost Management		On Budget	On Budget	Spending Plan vs. Spending Actual by Month



Level 1 –Daily Maintenance Practices

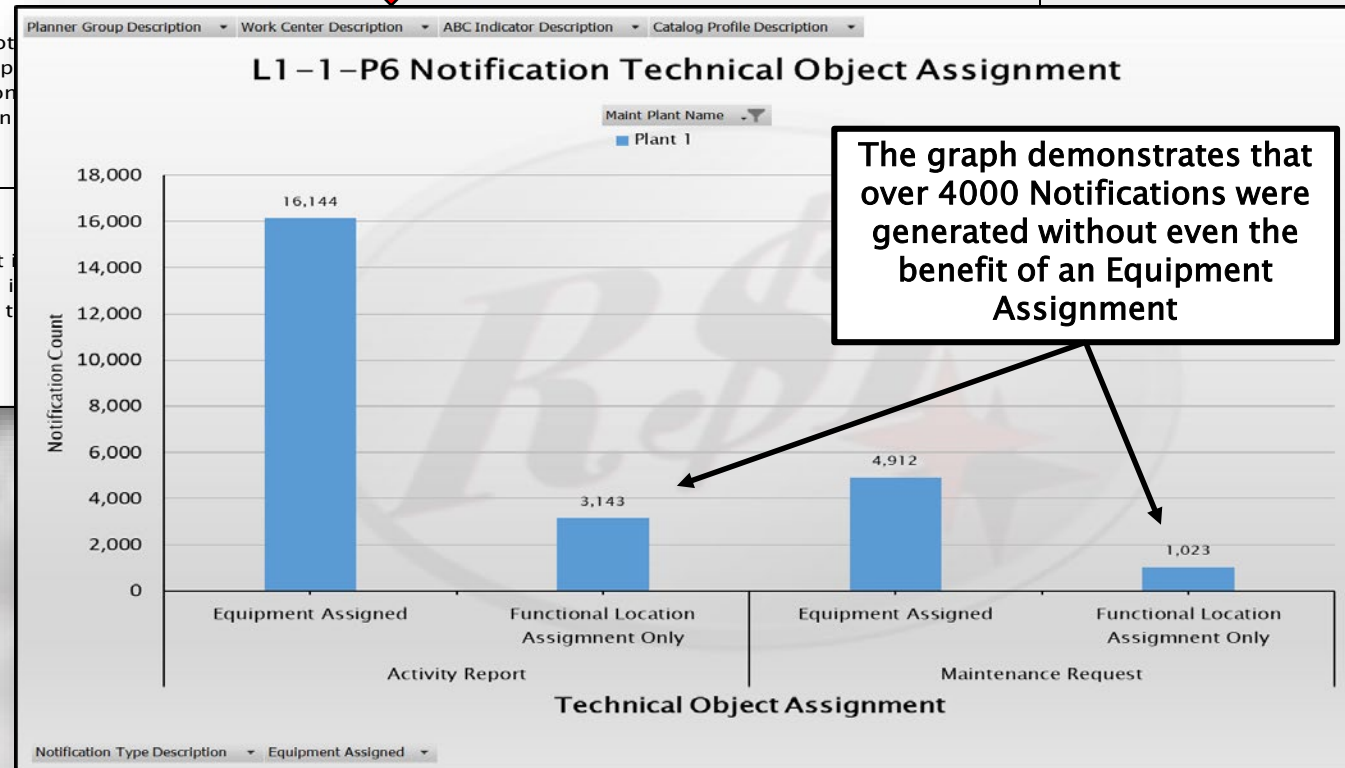


- 1 – Work Identification**
 - Effectively Documenting Equipment Reliability Issues
- 2 – Order Control**
 - Prudent Approval of the Value Adding Work
- 3 – Order Planning**
 - Complete Order Task and Resource Planning
- 4 – Order Scheduling**
 - Order Scheduling to best suit all Stakeholders
- 5 – Order Execution**
 - Delivering Quality Services and Capturing Variances
- 6 – Order Review and Costing**
 - Evaluation of Performance, Opportunity, and Cost
- A – Preventive Maintenance Process**
 - Cyclical Application of Preventive Maintenance
- B – MRO Parts and Services Management**
 - Timely Availability of MRO Materials and Services



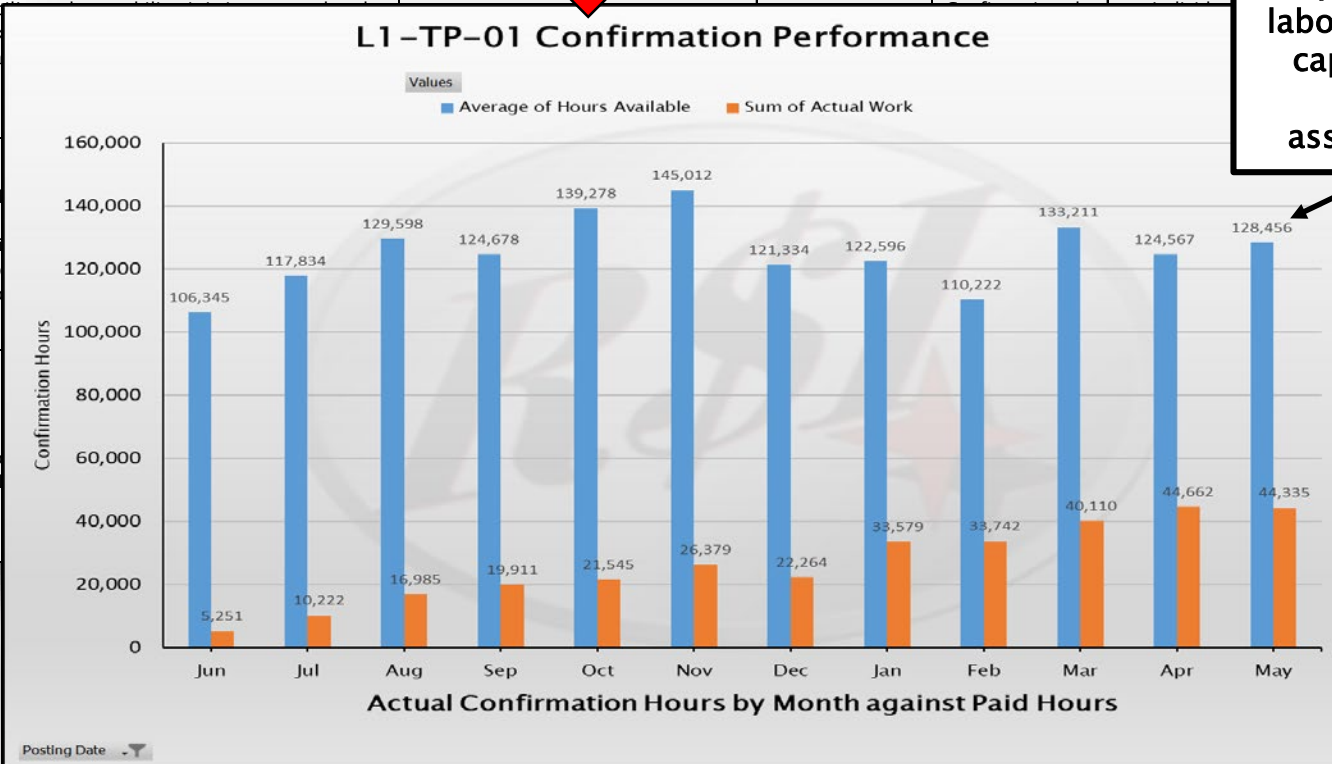
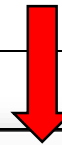
Example - Level 1 - Work Identification

Level	Task	Code	Assessment Point Title	Assessment Point Value Proposition	Assessment Point Target
L1 - Maintenance Daily Practices	1 - Work Identification	L1-1-P6	Notification Technical Object Assignment	Correct Equipment Assignment serves two purposes. First, Correct Equipment assignment directs the Notification and Order to the appropriate Planner Group and Work Center Backlogs for effective work segregation. Secondly, correct Equipment Assignment links the appropriate Failure Coding and Reliability History, not only to the correct Equipment, but also to the correct Equipment Type.	Notifications assigned to the correct Equipment so that the Reliability History is captured.
L1 - Maintenance Daily Practices	1 - Work Identification	L1-1-P7	Notification Symptom Capture	The Not multiple Notification in	Notification line (40 equipment item.
L1 - Maintenance Daily Practices	1 - Work Identification	L1-1-P8	Production Impact Indicator	The most capture i History t	Field System allow tions ple to This ling field, ities are statuses,



Example - Level 1 - Order Execution

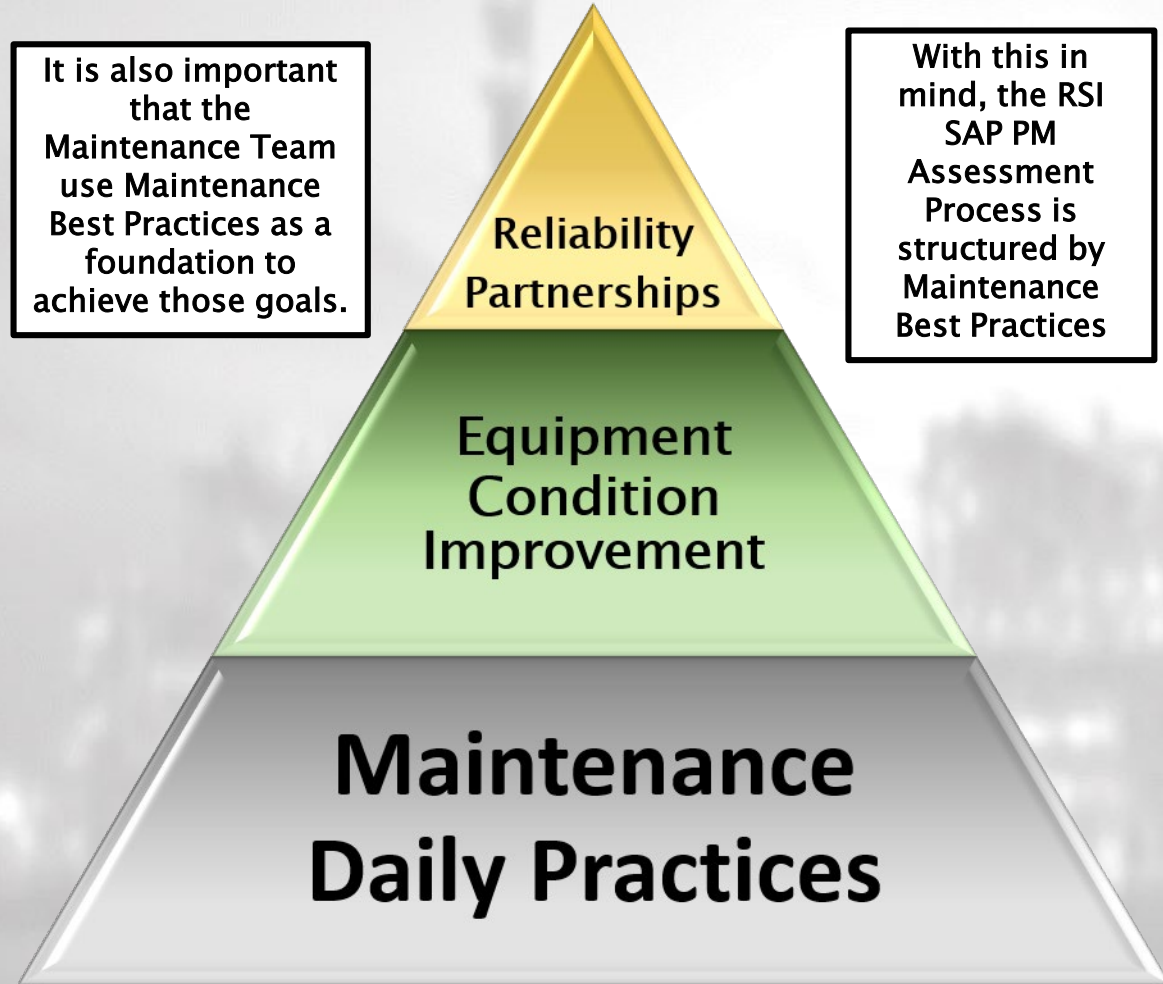
Level	Task	Code	Assessment Point Title	Assessment Point Value Proposition	Assessment Point Target	Configuration / Observation Check	Graph 1	Graph 2	Report
L1 - Maintenance Daily Practices	5 - Order Execution	L1-5-P1	Confirmation Performance	It is important that all Order Labor Participation be tracked and reported - Best Practices will typically state that being able to assign 60% of a Craftsman's work day to meaningful reliability effort is very good. The hours that are confirmed become the denominator of nearly every Maintenance Performance Metric. Confirmations are to be done by each Technician working on the Order at the end of every work shift.	60-70% of Paid Maintenance Technician Hours assigned to Order Confirmations.	Requires Technician Paid Hours by Week	Confirmation Hours vs Paid Maintenance Hours		
L1 - Maintenance Daily Practices	5 - Order Execution	L1-5-P2	Confirmations by Role / User	The best practice is that every technician do their own confirmation every day. - For accountability people that do the work Supervisors and Planners a					
L1 - Maintenance Daily Practices	5 - Order Execution	L1-5-P3	Confirmation Feedback	Important information can and Supervisor and be Confirmation Feedback Field that allows display Craftsman's comments o					
L1 - Maintenance Daily Practices	5 - Order Execution	L1-5-P4	Reason for Variance	The Reason Codes should variance in Planned vs. A Orders where					



The graph demonstrates that even though there is an improvement only 34% of the labor hours are captured on order assignments



Level 2 – Equipment Condition Improvement

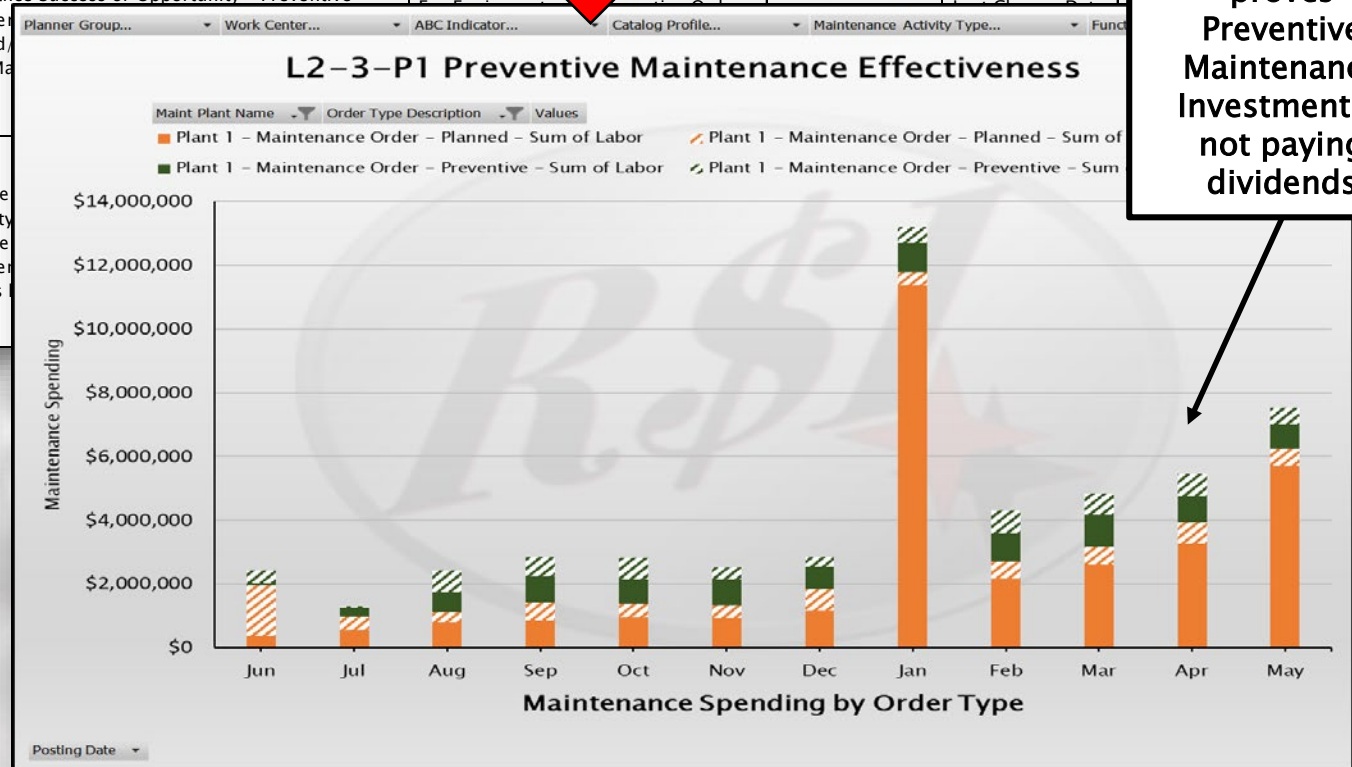


- 1 – Using Equipment History to Improve
 - Equipment Type History to drive collective improvement
- 2 – Failure Mode Analysis
 - Utilizing Failure Coding to Analyze and Prevent Failures
- 3 – Preventive Maintenance Growth
 - Proactively Applying Equipment Type Failure learnings
- 4 – Equipment Condition Monitoring
 - Continuous Measurement of Equipment Health
- 5 – Predictive Maintenance
 - Applying Equipment Health Driven Proactive Maintenance
- 6 – Craft Skills Improvement
 - Reliability History to drive skills enhancement



Example – Level 2 – Preventive Maintenance Growth

Level	Task	Code	Assessment Point Title	Assessment Point Value Proposition	Assessment Point Target	Configuration / Observation Check	Graph 1	Graph 2	Report
L2 – Equipment Condition Improvement	3 – Preventive Maintenance Growth	L2-3-P1	Preventive Maintenance Effectiveness	The basic principle of Equipment Reliability is investing in Preventive Maintenance will reduce Corrective Maintenance needs over time. – There is strategy that states, if you want to know what is going on follow the money. Money is the metric that everyone has as a common metric. In this graph, if one sees the Preventive Maintenance spending rise, the Corrective Maintenance spending decrease, and the overall spending decrease, that is a metric everyone can agree is trending in the right direction.	The Success of a Preventive Work Order is no corrective Orders are needed for that particular Maintenance Plan Cycle.	Need multiple years of MCI8 report data	Preventive Order / Corrective Order Ratio by Equipment Type	Spending by Order Type by Year	
L2 – Equipment Condition Improvement	3 – Preventive Maintenance Growth	L2-3-P2	Maintenance Plan Optimization	Preventive Maintenance Cycle Length should be adjusted to reflect Preventive Maintenance Success or Opportunity – Preventive Maintenance improvement and adjust the tasks and mandated cycle. When Ma			Measure Maintenance Plan		
L2 – Equipment Condition Improvement	3 – Preventive Maintenance Growth	L2-3-P3	Task List Optimization	Task List detail should be Success or Opportunity processes are to take the task timings when the Maintenance Task Lists					

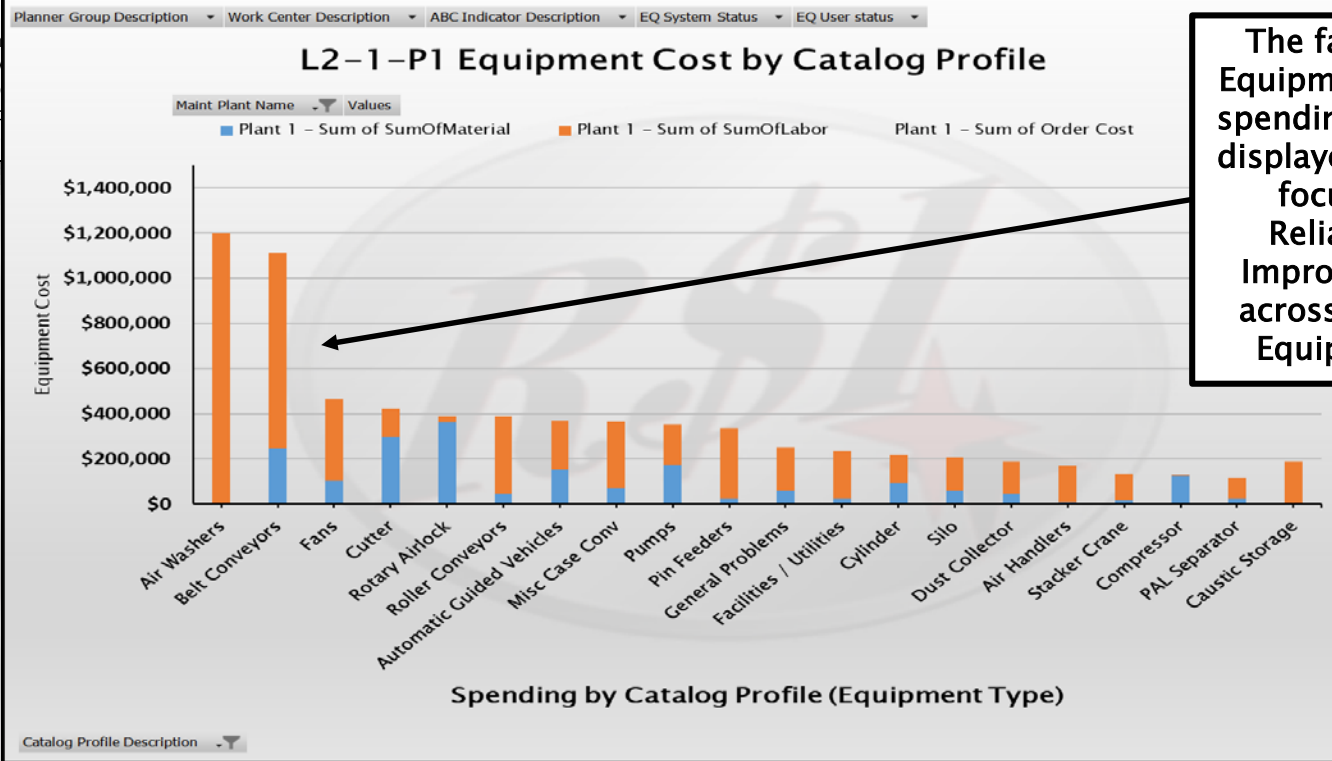
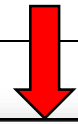


Corrective Order Costs increasing proves Preventive Maintenance Investment is not paying dividends



Example - Level 2 - Using Equipment History

Level	Task	Code	Assessment Point Title	Assessment Point Value Proposition	Assessment Point Target	Configuration / Observation Check	Graph 1	Graph 2	Report
L2 - Equipment Condition Improvement	1 - Using Equipment History To Improve	L2-1-P1	Equipment Type	Equipment Reliability Step Change Improvement happens collectively by Equipment Type. Improvement of an Equipment of a specific type should result in improvement of all the Equipment of that Equipment Type. Catalog Profiles provide the Equipment Type classification that is important to segregate Equipment Type Specific Issues and Opportunities. Catalog Profiles are the tool to configure Failure Coding.	Equipment Master Records with appropriate Technical Object Type and corresponding Catalog Profile by Technical Object Type	Review Technical Object Types for Definitions and Catalog Profiles for Definitions	Equipment Maintenance Cost by Equipment Type and Catalog Profile		
L2 - Equipment Condition Improvement	1 - Using Equipment History To Improve	L2-1-P2	Tracking Equipment Downtime	Mean Time Between Failure (MTBF) and Mean Time to Repair (MTTR) are classic Equipment Condition metrics - While Production Downtime is typically the heavy hitter, Equipment Downtime is also an important metric to measure. While all Production Downtime, it is important to have some predictive MTBF to have some predictive Downtime as a Lost Time Record			Notifications with		

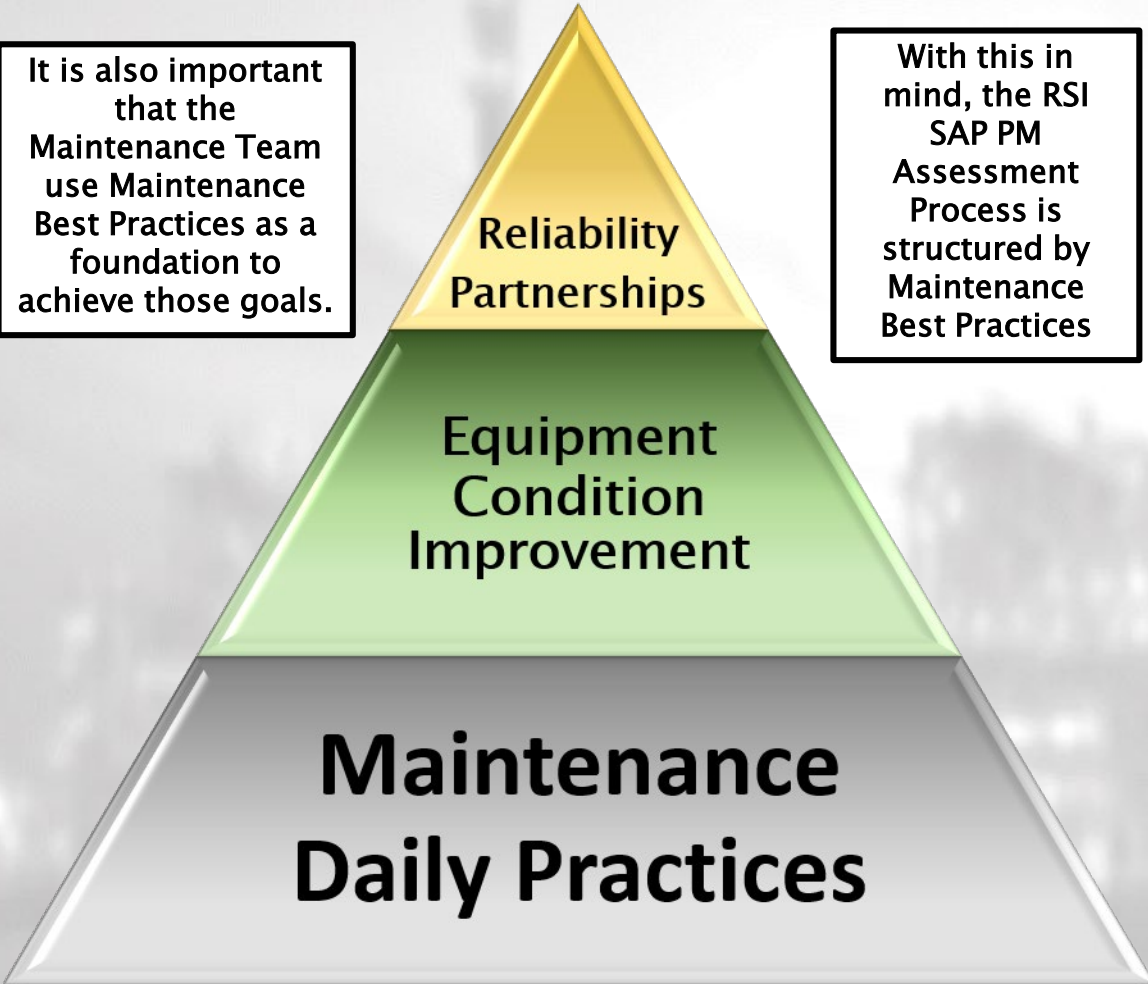


The fact that Equipment Type spending can be displayed allows focus on Reliability Improvement across all like Equipment!



Equipment Reliability Partnerships

It is also important that the Maintenance Team use Maintenance Best Practices as a foundation to achieve those goals.



With this in mind, the RSI SAP PM Assessment Process is structured by Maintenance Best Practices

1 – Maintenance and Operations Integration

- Production Partner SAP PM Participation



2 – TPM – Operator Performed Maintenance

- Equipment Visual Equipment Inspections and Minor Maintenance



3 – Equipment Reliability Engineering Design

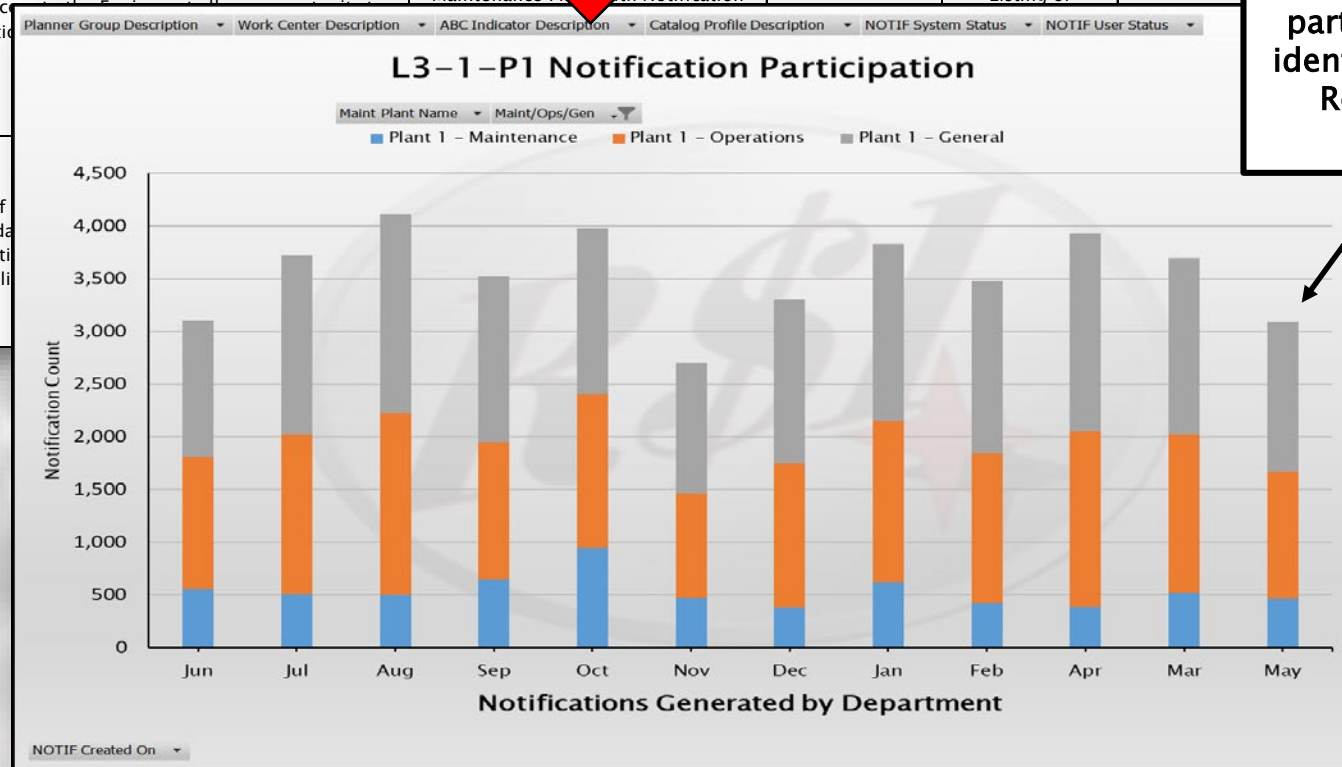
- Utilization of Plant Equipment Histories to better design new Equipment Installations



Example – Level 3 – Reliability Partnerships

Level	Task	Code	Assessment Point Title	Assessment Point Value Proposition	Assessment Point Target	Configuration / Observation Check	Graph 1	Graph 2	Report
L3 – Reliability Partnerships	1 – Maintenance / Operations Integration	L3-1-P1	Notification Participation	Production typically has greater visibility to Equipment Issues and can provide an owner's perspective. – Notifications are the first capture of Reliability Issues. They are best captured by the person who first experienced the issue, so that hearsay is not the problem of record. Everyone who has a stake in the Equipment running properly should participate in SAP PM, both entry and reporting.	A significant percentage of Corrective Notifications created by the Production Team	Once a Notification Created by Listing is obtained, the Department and Role should be assigned to each Username.	Displays the Notifications created by Month / Role / Department / Individual		
L3 – Reliability Partnerships	2 – TPM – Operator Maintenance	L3-2-P2	Operator Performed Maintenance	Productions constant acc apply low level inspecti	Maintenance Pla with Notification		Listing of		
L3 – Reliability Partnerships	3 – Designing in Reliability	L3-3-P3	Reliability Focused Equipment Design	A significant portion of application. If reliability da Equipment design, selecti reliabi					

Notification creation is balanced across the organization which demonstrates a partnership in identification of Reliability Issues.



RSI SAP PM Assessment Process Scalability

- **Selection of Assessment Points include**
 - Selection of Performance Points to be included based on
 - Pyramid Levels, SAP Focus Areas, Customer Preference
 - This process does create a scalable effort
 - Data Dump
 - Access Database Processing
 - Performance Point Graphs and Reports
- **The Assessment Window is Typically**
 - Current Master Data and Configuration Information
 - Past 12 Months of Transactional Data
- **Selection of Maintenance Plants included in the Assessment**
 - Selection of Maintenance Plants:
 - The Data Dump has no scalable benefit. The selection of data only adds more Maintenance Plants. Same effort is typically required.
 - The Presentation of Multiple Plant graphs, there is no scalable benefit of effort.
 - When each Plant requires separate reporting and graphs, there is a added cost for development of the separate Plant Channels and separate Performance Graph Analysis. Typically a reliable process is to first view the system as a whole, then develop separate Plant graphs as needed.

