

WHITEPAPER

# The Importance of Data Visibility in Planning and Scheduling in Maximo



PROMETHEUS GROUP



## The Importance of Data Visibility in Planning and Scheduling in Maximo

Poor data quality can have an immense impact on productivity, costs, and workflow efficiency. A key factor in a team's ability to improve data integrity and accuracy centers around its planning and scheduling processes. If a team is not placing benchmarks to measure the success or failure of their maintenance strategy, the health and reliability of assets will decline overtime. Work orders will become more corrective rather than preventative, leading to potential setbacks in production.

The increases in productivity a team can realize by strategically crafting and monitoring the planning and scheduling process to maximize wrench time can be dramatic.

Gaining insight into data, like wrench time or downtime, requires visibility and consistent measurement; applying insights to each iterative process of a plant's maintenance strategy creates a continuous feedback loop and can lead to massive improvements in a schedule or plan. Without it, your team won't know whether the maintenance strategy is working.

Data visualization takes data you collect from specific, measurable Key Performance Indicators (KPIs) and allows a team to easily locate (or visualize) patterns from a set of processes. The data you want exists somewhere within Maximo, but too often the effort required to locate and include it in a form where it can be used by

**For example:** "A typical industry ratio of planner to technicians is 1:20 to 1:30.



In other words, an experienced planner in a stable, non-reactive maintenance environment should be able to plan work for 20 to 30 technicians.



These 20 technicians work at a typical industry average wrench time of 30% for a 10-hour day.

That means over the course of a week, they can liquidate:

$$\begin{aligned} & \text{✂ 20 Techs} \times \text{🕒 10 Hours} \times \text{📅 5 Days} \times \text{30\%} \\ & = \text{300 productive hours of maintenance work.} \end{aligned}$$



We take 2 technicians and make one a planner and one a scheduler. That leaves us with 18 technicians, but after a transition period, we will achieve the typical 45% wrench time across their 10-hour days.

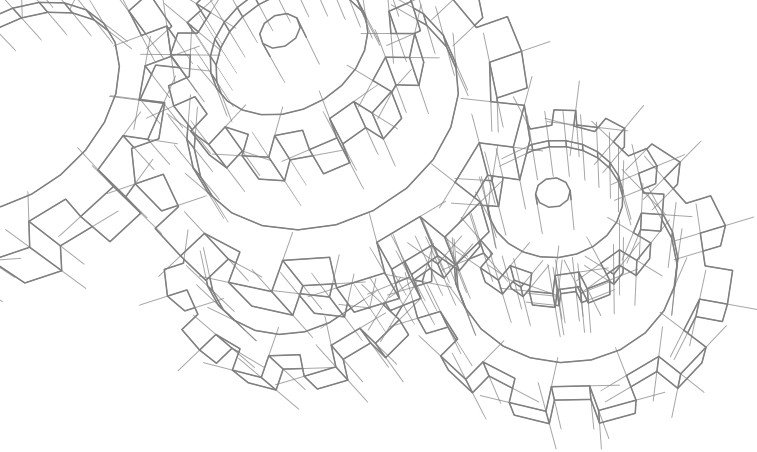
That means that we now liquidate:

$$\begin{aligned} & \text{✂ 18 Techs} \times \text{🕒 10 Hours} \times \text{📅 5 Days} \times \text{45\%} \\ & = \text{405 productive maintenance hours per week.} \end{aligned}$$

Even though we reduced our number of technicians we have gained 105 productive hours in a single week.

**That's a 35% productivity gain!** That's the beauty of maintenance planning and scheduling. You achieve that same 35% increase in productivity without recruiting any additional staff."<sup>1</sup>

<sup>1</sup> <https://www.roadtoreliability.com/sell-planning-scheduling-productivity-improvement/>



planners and schedulers is incredibly time intensive. The best way to achieve full data visibility is to utilize a solution that was purpose-built to capture the necessary data components required to measure planning and scheduling performance with your Maximo system.

Planning and scheduling best practices rely on stakeholders having access to the data needed to assess the success, or failure, of their planning and scheduling strategy. For example, tracking scheduling compliance can tell a team what percentage of the work that was scheduled was completed within a certain period of time (usually on a weekly basis). With this data, planners and schedulers can determine what barriers may be impacting their maintenance team's ability to complete work orders on time.

Full data visibility isn't required to calculate a team's scheduling compliance percentage. You can gather all the information and perform the calculation manually.

However, understanding how to improve the percentage requires a level of deeper insight. Increasing a team's schedule compliance ratio requires assessing the root cause of why a ratio might be low, including analysis of historical trends and the results of previous strategies.

### Challenges of Poor Data Visibility for the Planner

The planner is a central figure in a proactive maintenance environment. The planner's job is to improve maintenance productivity and quality through planning. Their duties require the coordination of workers, material, access to assets, and much more. The goal is to anticipate and remediate any potential delays. Doing so requires defining the work and ensuring that all required materials are available.

Poor data visibility leads to two main challenges directly:

- Time is wasted in manual data extraction and in creating unnecessary job plans.
- An inability to see the "big picture" makes improving job plans and the planning process very difficult.

Planners have a high level of craft knowledge and their specialized skillset gives them the ability to create job plans that are both thorough and strategic.

However, planners must look at the results of their planning to ensure that they are fully allocating resources throughout the week; the quality of the plan directly impacts the quality of the schedule. Knowing how well current plans are working is an essential step in improving the planning process.

#### CHECKLIST

- ☐ Did the job plan contain all the necessary information, such as:
  - ☐ built tasks?
  - ☐ attached documents?
  - ☐ safety measures?
- ☐ Was the time allotted:
  - ☐ too much?
  - ☐ not enough?
  - ☐ just right?
- ☐ Were required materials and tools available when needed?

Improving your planning process requires understanding the importance of knowing what to track.

Planners may have to investigate the records of each individual work order to find critical information needed to plan out each work order for each craft or crew.

A planner's time is valuable. Lacking data visibility means they must spend more time searching for information. This lessens the amount of time available to



planners to focus on high-value tasks, such as walking down jobs. Planners produce better plans when they have inspected the asset and taken note of any special conditions due to its environment, operation, and more.

Poor data visibility can also extend the amount of time it takes to create a job plan; it varies enormously from job to job and from one organization to another. It may be possible to use an already created job plan, or to modify an existing one, rather than creating one from scratch. Having access to past plans can make it easier for planners to allocate resources toward preventative maintenance tasks without having to re-create all aspects of the work order.

Jim Martin served as Project Manager, Maintenance Improvement, for DTE Energy when the organization

implemented a new Planning & Scheduling solution to help remedy a lack of visibility, ineffective resourcing, and other challenges. DTE Energy has more than 10,000 employees and operates six power plants as well as other facilities.

Jim notes that more insight into their data, combined with the other improvements the new tool offered, led directly to an increase in efficiency.

***“It used to take two to three minutes to edit one work order,” he says. “Now, we can edit hundreds of them in just a couple of quick clicks.” Jim estimates that the team has gained back about 35% of their time.***

## **Data Visibility Challenges for the Planner and Scheduler**

Conflicting priorities can present challenges to both planners and schedulers when determining how to best allocate resources for the week. Delaying preventive maintenance may be the right solution when serious reactive maintenance must be done but assessing criticality and risk can provide the data or insights needed to address potential safety issues with assets further down the road.

Cornell University, a Prometheus customer, realized dramatic improvements to data visibility after implementing a system to capture data insights to apply to its facilities maintenance management strategy.

Their facilities manager points out that “We did not have the ability to show our true capacity. “Now we have

the evidence in front of us to show when we are over capacity and under-resourced. We’re using what we call ‘The Moneyball Approach.’ That is, we’re using stats and data to get the right people working on the right jobs and scheduling for the strengths of our workforce.”

They also pointed out, “We’re able to look at people as individuals and play to their skills, especially if they’re across different crafts.” **Greater data visibility has paid off for Cornell. The time required to create a schedule dropped by 80 to 90%.** What typically took weeks could now be accomplished in less than a few hours. Best practice scheduling processes must take conflicting priorities into account. While work prioritization is critical, it may leave some stakeholders feeling like maintenance simply doesn’t care about their issues and work requests. Full visibility into maintenance data helps organizations overcome both challenges.



*The improvement in data visibility and processes has also led to an increase in craft productivity. Cornell's facilities manager saw a 78% reduction in the time needed to complete jobs.*

## The Advantages of Data Visibility

Having good visibility into data helps to increase overall efficiency and can identify opportunities for improvement.



**Increased Efficiency:** Wrench time has been proven to increase when planners and schedulers have better access to information.

They also experience increased efficiency when less time is spent locating crucial data or manually analyzing work order and completion data.



**Tool and Material Use:** Insight into tool and material use will show any potential work delays due to lack of document accessibility

for job orders or missing materials. This information can be extracted out of Maximo if the right data is collected to support it. Having all this information displayed in a holistic view will help to highlight where the job planning process is breaking down in terms of materials.



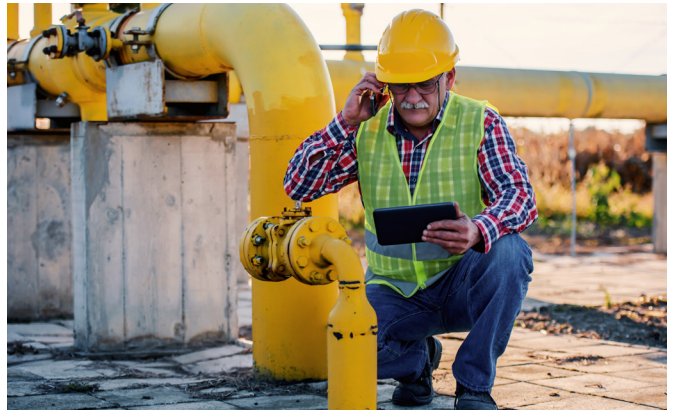
**Cost Analysis and Budgeting:** Simply cutting the maintenance budget will typically result in a swelling backlog and may lead to increased failure rates.

Full visibility into your planning and scheduling data gives you powerful insight into analyzing the current costs of maintenance and finding areas to improve. For example, if you can see the data, you can easily compare job plans in terms of cost, while evaluating their effectiveness. Team will yield benefits when they find situations where costs can be reduced without sacrificing work quality.



**Identify Bad Actors:** A clear look at your data will let you easily identify which assets are performing well and which

are not. Manually extracting data from Maximo to analyze asset performance is a laborious process for many organizations and can deplete the amount of time planners and schedulers have allotted toward building out schedules. Having access to KPIs such as



materials costs, downtime, and work orders charged against, allow for more time for Planners to create risk assessments and prioritize assets.



**Improve Overall Data Quality:** When maintenance organizations finally achieve data visibility, management is often surprised by just how much junk data is present in their system.

*"I would have to say that people aren't just surprised when they see it for the first time. In fact, the most common reaction I've heard is 'there must be something wrong with the tool. Look at all this inaccurate data it's pulling up,' They soon realize that this inaccurate data is within their Maximo system, not the tool that's showing it to them. I've seen plenty of situations where customers have resources still listed as supervisors which are no longer supervisors, listings for craftspeople that are no longer with the company, and work orders still hanging around after years, gathering dust. You never know just how much bad data is in your system until you utilize a tool that brings it to light."*

- Richard Almendarez, Professional Services Director of Maximo



**Improve Decision Making:** Planners, schedulers, supervisors, and craftspeople can all make better decisions when they have access to high-quality information. Ideally, the solution you're using to supplement Maximo won't just reveal the data but highlight all the connections between data points as well.

## Choosing a Tool to Promote Data Visibility

Base Maximo doesn't provide a true planning and scheduling solution except through the process of updating scheduling dates on Work Orders and assigning through Assignment Manager. While that can be used to increase the efficiency of scheduling, it's not intended to be a thorough solution for the challenges of maintenance. Hence, it will not give you a holistic view of your organization's work planning/workflow efficiency.

Microsoft Excel is one of the first tools people turn to when trying to schedule work orders. While Excel is very flexible, it wasn't designed for the needs of maintenance. You can export from Maximo into Excel, but once exported, your data is no longer current and modifying data in Excel still requires a manual update of those corresponding records in Maximo. Exporting data out of Maximo also runs the risk of losing valuable data or crucial information, compromising data integrity. Planners and schedulers will have to spend time copying and pasting vital data. Not only is this tedious, time-consuming, and costly, it can lead to situations where critical work orders slip through the cracks.

If you're after data visibility, then it's important to make sure that whatever solution you choose has the following characteristics:



**Integrated with Maximo:** A planning and scheduling tool that is not fully integrated with Maximo may make data retrieval difficult. A planner or scheduler would be required to extract the data out of Maximo and then input it into a planning and scheduling solution. This may compromise the productivity level of your planners and schedulers.

A good solution for planning and scheduling that also provides data visibility must fully and seamlessly integrate with your Maximo system so it can continue to serve as a single source of truth.



**Easy to Understand and Use:** A product offering a simple and intuitive user interface will have higher rates of user adoption than one that doesn't. A user-friendly interface is necessary when we're discussing the importance of data visibility. It isn't just a question of making the data visible but making it easy to understand and use for stakeholders.



**Configurable:** Some tools require you to change your processes to match those of the tool. A good solution should work with your processes and help you improve them, not force you to work a particular way that may not suit your industry or organization.



**Powerful:** Your data sets are big, even if they don't quite meet the official definition of Big Data. You need a powerful solution to handle all that data without negatively impacting Maximo performance. How likely will your schedulers be to access needed data on a regular basis if they knew it would impact system performance? It's much better to have a solution that can handle large data sets without affecting the performance of your Maximo system.

The right solution in place will not only improve your planning and scheduling processes but allow you to see your data and leverage it to push improvements even further.

*For more information on how Prometheus Group can increase the capabilities of your Maximo system, contact us.*

**CONTACT US**