



The Digitalization of Permitting: Safety, Compliance and Productivity

Maintenance is evolving. Is your permitting system keeping pace with your goals?

The floodgates of Industry 4.0 have opened – and with these advances come new opportunities, challenges, and requirements in every aspect of enterprise maintenance – including permitting.

With its smart, connected products and platforms, Industry 4.0 is redefining business models and re-engineering the possibilities of asset management. In fact, IOT solutions alone are already a multi-trillion dollar industry, on track to have nearly 40 billion connected devices in 2019 and it's a similar story for the Industrial Internet of Things. Gartner predicts that three technology trends will have the most influence transforming industries in the next five years: Intelligence, Digitalization, and “Mesh” (essentially, connectivity and integration).

To keep pace, organizations need to streamline their processes, reduce redundant effort, and leverage automated, intelligent systems to optimize their Maintenance and Operations functions and derive the most value from technicians and assets alike.

While organizational leadership recognizes the advantages of digitizing their permitting processes, they have legitimate concerns about implementation, safety, scalability, and integration. Updating what for many has been a paper process for the last several decades presents both cultural and technological issues – but the right solutions provide hard ROI.

Bringing Permitting into the 21st Century

While other areas of enterprise maintenance have made great strides adopting digital and mobile technologies, permitting has remained relatively unchanged since the 1980s-1990s —to the detriment of the maintenance strategy and the business' overall operational effectiveness.

In the last decades, there has been a surge of investment in Planning and Scheduling as organizations began to recognize the value of implementing connected Planning and Scheduling solutions. Digitized, optimized, and streamlined Planning and Scheduling contributes to increased wrench time, as well as

decreased unplanned downtime. Doc Palmer, a renowned Planning and Scheduling expert, estimates that many organizations can achieve an average 57% wrench time improvement by implementing “a proper planning and scheduling system.”

More and more, companies are recognizing that maintenance and operations are interconnected processes, and that no elements should be isolated or overlooked. Each area needs to be lean, intelligent and integrated with the others to avoid excessive costs, lost time incidents, and unscheduled outages/downtime.

Though they have been reaping the benefits of digitized, integrated Planning and Scheduling solutions, many are just now recognizing the potential financial, regulatory, and personnel return on investment possible with modernized permitting tools and processes.

The Costs and Dangers of Paper Permitting

To answer this, organizational leaders first must ask if they can afford to continue with paper permitting.

The problems with paper permitting processes are numerous and can have significant impacts on productivity, safety, reputation, and ultimately, profitability. In today's competitive global markets, organizations can no longer tolerate the risks of rigid, outdated paper processes that create inefficiencies and limit communication and visibility – to the danger of employees and at risk of failing to meet compliance regulations.

Checkbox Mentality

The danger of paper permitting is that it can create a “check box mentality” whereby employees aren't paying full attention and thinking critically as they rush through a repetitive, unchanging process that may appear somewhat pointless. In many cases, the approvals/validation process is arbitrary, subjective and may not be strictly enforced.

This, in tandem with the repetitive nature of paper permits, can create the perception that permitting is “busy work” without real consequences. This can lead to Supervisors or Lead Operators missing critical details or making errors that put maintenance technicians – and the organization – at risk.

Subjective and Inconsistent

Paper permitting is only as good as the person conducting the walkdown. As a result, permit to work processes, job safety analyses, risk assessments and conflict management are subject to human error and inconsistency. Inevitably, as different people conduct the same permitting process, the results will differ widely based on experience, skill, attention to detail, distractions, attitudes, and more.

Additionally, many elements of paper permitting rely on “tribal knowledge”: undocumented information passed between employees often without a solid understanding of the reasoning behind it. This degrades

the paper process further, as the information is spread haphazardly from employee to employee, is open to interpretation, and cannot be verified or corrected.

Inefficient and Duplicate Efforts

Many organizations are familiar with the long lines at permit huts and the lost time executing work. Not only is paper permitting itself slow and inefficient, it requires many efforts be repeated when they could otherwise be reused. For instance, preparing permitting for annual turnarounds can result in weeks of work preparing the same permitting tasks that were done the year prior.

Then, there are the less obvious areas where permitting takes unnecessarily long. Paper permitting inevitably leads to a high volume of (often redundant) written procedures, which take time to create, review, and follow. The end result is paperwork for paperwork's sake and a work environment that is neither safer, nor more productive.

Information Silos

Too often, Maintenance and Operations work in separate systems with little to no visibility or communication between the two departments. It is both dangerous and ineffective for these two teams to work in isolation from each other. By stifling communication between the two departments, paper permitting leads to delays, errors, frustration, and a lack of accountability. Not to mention the damage to morale when both departments "point fingers" at one another; the focus becomes on shifting blame because the procedures and tools in place are inadequate.

Safety Hazards, Decreased Productivity, and Compliance Issues

In summation, all the issues above create safety hazards that put workers in harm's way and jeopardize the organization's ability to meet compliance and regulatory requirements. They furthermore decrease the productivity of employees and assets, with time-wasting redundant tasks, the risk of lost time incidents, and delayed maintenance or extended downtime.

Missing even just one critical lock-out, for example, can put an employee at risk of serious injury or death and can result in fees and penalties from regulatory bodies.

Elements of a Sustainable Digital Permitting Solution

In the era of Industry 4.0, organizations benefit from high return on investment when they implement digital permitting solutions that can be integrated with a larger asset management platform that ensures end-to-end visibility across both Maintenance and Operations divisions.

Intelligence and Automation

Far more than just an editable form, viable digital permitting solutions have built-in intelligence that understand the bigger picture. Building on the collective knowledge of not only your team, but also the recognized industry standard best practices and regulations, digitized permitting means the end of guesswork, human error, and inconsistency.

By connecting the Maintenance and Operations workflows, a digital permitting solution can automate and streamline many time-consuming and repetitive tasks, from tag printing to isolation point validation, through to generating permit requests and issuing permits directly to maintenance technicians. A digitized permitting solution can even dynamically help maintenance technicians identify hazards and assess risks based on similar work executed in the past.

An intelligent, connected system offloads much of the manual, repetitive work from employees, ensuring that it is automatically completed in a timely and consistent manner, with a comprehensive historical record.

Templating and Time Savings

The majority of an organization's shutdowns or turnarounds are copies from previous years. Despite this, in paper systems, preparing annual isolation schemes can take multiple employees several weeks.

Digital permitting leverages the work that has already been done with smart templates that are ready to execute in the following years. The integrated templates bridge the gap between permitting and planning and scheduling, reducing the required effort significantly. Customers have saved 800+ hours in preparing annual isolation schemes for shutdowns – equating to thousands of dollars in time. In another scenario, creating permitting templates enabled the customer to shorten the planning and scheduling process. They increased time on tools from 30% to 50%, decreasing the cost per hour of work and contributing to a net savings of \$1.8M USD.

Processes and Compliance

An effective solution helps organizations meet regulations and follow their procedures, without allowing the documentation to become overcomplicated. It should aim to “trim the fat” without “cutting corners”. Digitized permitting reduces the number of duplicates, conflicting, or redundant procedures. It reduces the time employees spend on documentation, training, and unnecessary work steps, which increases productivity.

Some businesses have reduced their procedural documents from 5,000+ pages to less than 100 pages. They are able to keep all the critical materials while dispensing with the unnecessary ones and standardizing their processes across work sites.

Increased Safety

Digitizing and incorporating risk assessments (RAs) and job safety analyses (JSAs) into your safe work system ensures consistency and standardization, so that no important controls are overlooked, or information is misplaced due to outdated versions or lost documents.

Safety is something that is never “done” – organizations should always strive for continuous improvement in this area, which is why RAs and JSAs should be considered “living” repositories.

As such, a sustainable digitized permitting solution is based on an industry leading hazard identification risk assessment database (HIRA), that provides a comprehensive starting point for the organization. It then builds on the collective knowledge and unique requirements of the business by allowing health and safety experts to edit, add, and remove controls as needed.

Additionally, the responsive system also examines similar jobs executed in the past and automatically associates the appropriate hazards and controls based on the information your health and safety experts have put in the template.

Conflict Management

On paper, the only way to identify conflicts is if the operator identifies them himself or herself. It's all too easy for operators to miss any number of hazards or conflicts. It also demands an amount of diligence and intensive effort that realistically, no person can maintain perfectly and consistently in perpetuity. As a precaution, this often results in unnecessary blanket isolations so that employees feel they have “covered all the bases”.

An integrated and intelligent permitting solution has built-in rules take the element of human error out of the equation, automatically identifying when conflicts will occur. Permit Owners can quickly add, change and remove, conflict rules in an easy-to-use matrix to configure the system to your unique specifications.

Integrated and Connected Platform

While you may be looking for a standalone permitting or safe work solution, the option to explore a fully integrated platform – whether at the time of adopting a permitting solution or in the future – is key.

A platform solution that touches all the integral parts of the business ensures consistency, real-time information transfer, and visibility by connecting mobile, planning and scheduling, permitting, approvals, and other ERP systems into a singular asset management experience.

Permitting is one critical piece of a much larger asset and work management strategy. Integration is vital to transparency and communication between Maintenance and Operations teams, and that transparency and communication is the key to decreasing lost time incidents and increasing wrench time.

ePAS: Higher Productivity, Immediate ROI

Prometheus Group's ePAS solution transforms your existing paper-based and digital permitting systems into a powerful, Integrated Safe System Of Work (ISSOW). The result: work that is streamlined, recorded, risk assessed, and audited while providing unprecedented visibility to the whole business.

Crucially, the ePAS solution can be scaled and integrated as part of an end-to-end asset and work management platform, with best-in-class mobile and planning and scheduling solutions for full visibility across your organization.

About Prometheus Group

Prometheus Group is a leading global provider of comprehensive and intuitive enterprise asset management software solutions that work within ERP systems and span the full work management life cycle for both maintenance and operations.

Built with industry leading solutions for SAP and Maximo, the Prometheus platform is an end-to-end, scalable environment that streamlines and integrates all elements of the maintenance and operations cycles, including planning and scheduling, permitting and integrated safe system of work, and mobile.