



# **GREATER OIL AND GAS SAFETY AND UPTIME USING DIGITAL OPERATOR ROUNDS AND MOBILE WORK ORDER MANAGEMENT**

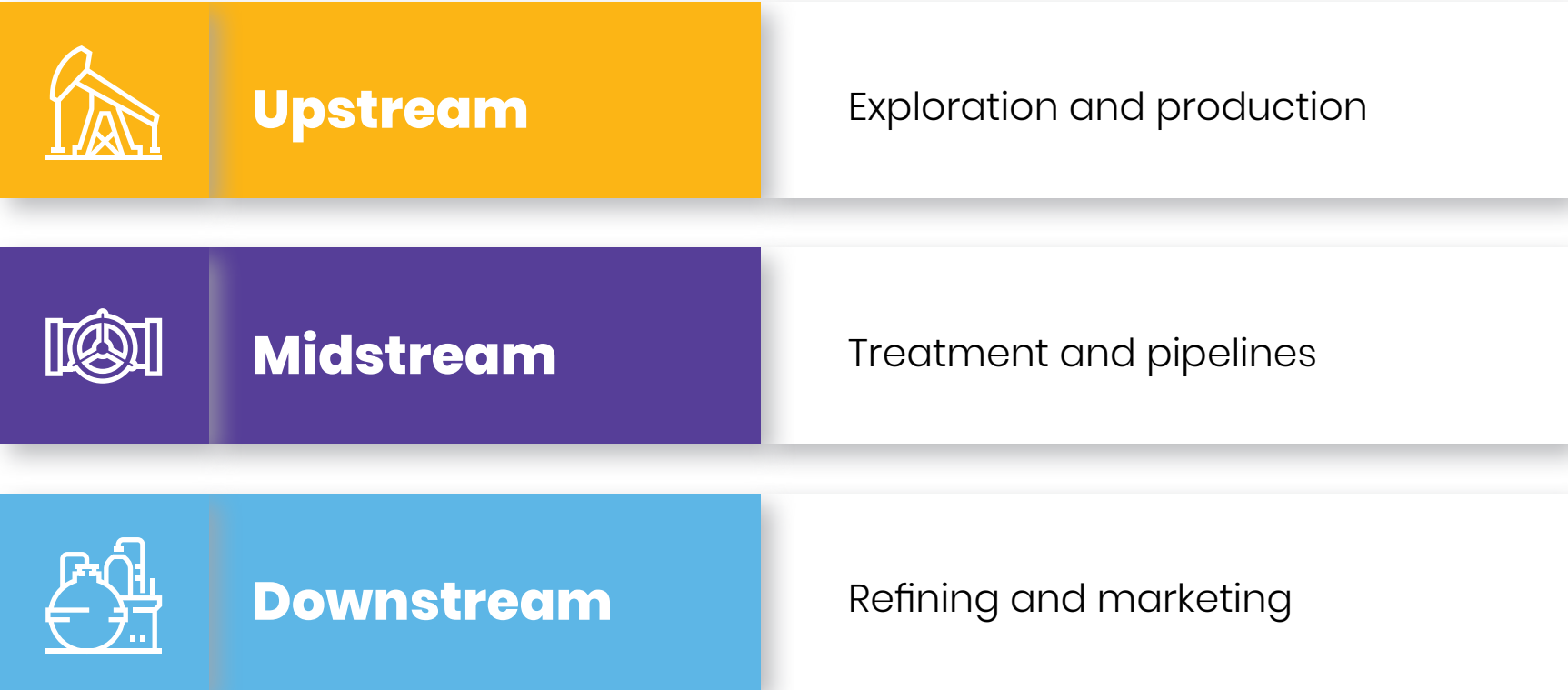
eBook | October 2021





Oil and gas isn't the [nation's largest industry](#) in terms of revenues, but there's almost no part of the U.S. economy that's untouched by the energy extraction, transportation and refining sector.

[Recent polls](#) point to Americans becoming [more open](#) to alternative fuels and clean energy. However, these surveys have shown that most people don't have a clear picture of just how big of an impact crude oil and natural gas have on their daily lives [besides providing energy](#) to light homes and power cars.



Life as we know it grinds to a halt without [refined crude oil and processed natural gas](#) and the products derived from them. That's why companies and plants spend so much time, money and effort on equipment and machinery maintenance.

Proper maintenance starts with knowing the current operating condition of every asset enterprise-wide. That's where daily [operator rounds](#) and [inspections](#) come in. If an inspection finds equipment issues or problems, a maintenance manager [creates a work order](#) to begin repairs.



Ask yourself a few quick questions:

- Are your operator rounds and work order management processes up to the challenge?
- Are you still using paper-based systems for these important tasks?
- Are you getting full visibility into the current operational status of your critical equipment?
- Are you able to respond in real time to correct potential risks before they become downtime-causing problems?

If the answer to any of these questions is yes, keep reading to discover how to digitally transform your operator rounds and work orders using a connected worker strategy.

**U.S. OIL AND GAS GROSS OUTPUT 2000-19**  
*(billions of dollars)*

2000 = **\$143.0**  
2005 = **\$249.3**  
2010 = **\$304.7**  
2015 = **\$269.7**  
2019 = **\$375.2**

Source: *Statista*

**PROJECTED GLOBAL ENERGY DEMAND TO 2045**  
*(millions of barrels of oil equivalent per day equivalent)*

2019 = **289**  
2030 = **329**  
2045 = **361**

Sources: *AA Energy; OPEC*

**BY THE NUMBERS**

**Top U.S. Oil and Gas Companies**  
**Based on 2020 Revenues**  
*(billions of dollars)*

ExxonMobil - **\$181.5**

Chevron - **\$94.7**

Marathon Petroleum - **\$88.9**

Phillips 66 - **\$65.5**

Valero Energy - **\$60.1**

Source: *Fortune*



# Shifting Priorities Mean Greater Equipment Stress and Strain

The U.S. oil and gas industry remains one of the largest manufacturing sectors in the country, despite taking a hit during the 2020 coronavirus pandemic. Oil and gas employs nearly 1 million workers and its products account for 4% of the U.S. economy. Domestic crude oil refiners exported \$88.4 billion while oil and gas producers sent \$85.5 billion overseas in 2020, making them the top two U.S. industrial sectors in exports. Oil and gas upstream, midstream and downstream organizations purchased over \$527 billion in goods and services in 2020, which was down from the previous year, but still substantial compared to other industries.

The industry is dealing with evolving demands and concerns over the effects of carbon emissions on global climate change. Part of this is due to more stringent environmental policies, particularly towards fracking. Many governments are taking steps to curb its use. Oil and gas companies are placing more emphasis on being flexible and adapting to new markets, such as renewable and clean energy.

Upstream, midstream and downstream plants and facilities are asking more every day from their equipment. This places more strain and stress on them, raising two important questions:

- Are these machines getting proper and timely maintenance?
- Will they be online and producing when they're most needed?

American oil and gas facilities serve a critical and irreplaceable role in our economy. That's why state and local governments deemed them essential businesses during the early days of the pandemic. The economy falters without these businesses and the products they make.

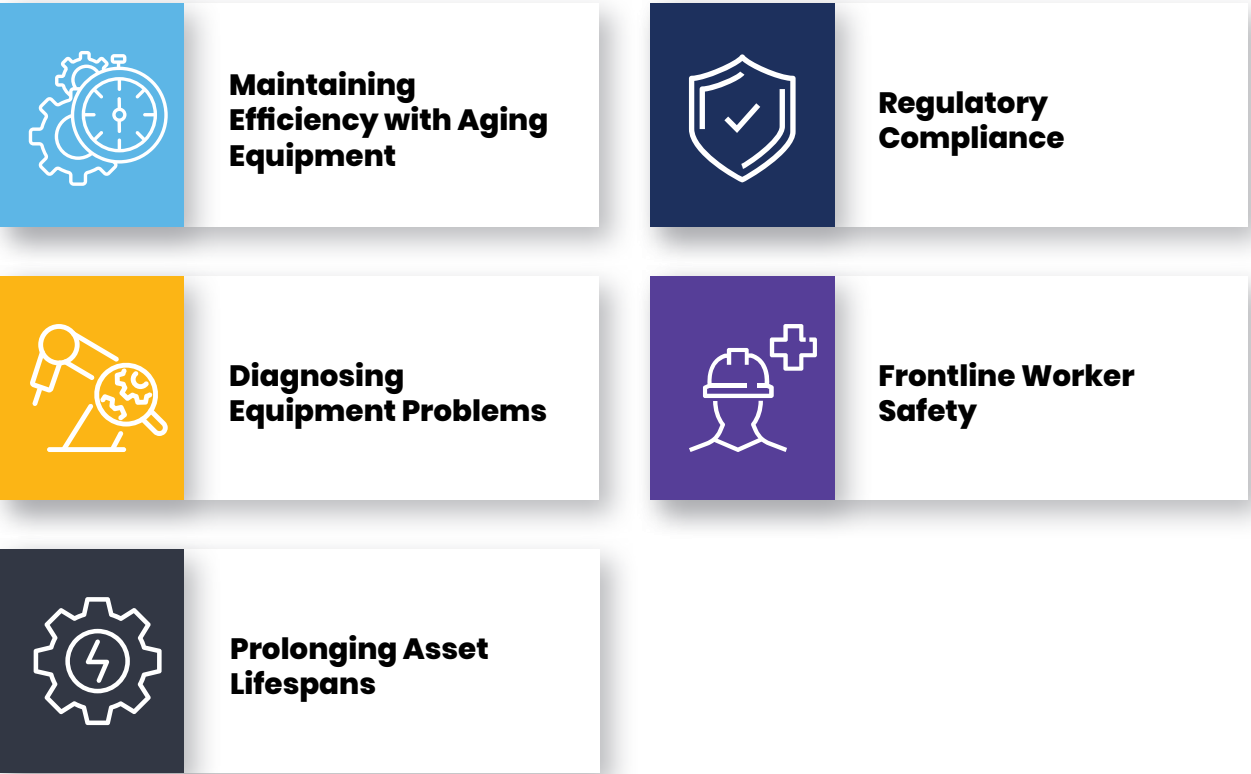
## IS THAT A FACT?

**World-class best practice maintenance costs range from 1.8% to 2.0% of plant replacement value. Inefficient maintenance departments see maintenance costs top 5% of the asset replacement value (AVR). That difference represents \$30,000 more a year in maintenance costs for every \$1 million of AVR.**

Source: [ReliabilityWeb](#)



TOP OPERATIONAL PROBLEMS AT OIL AND GAS PLANTS AND FACILITIES

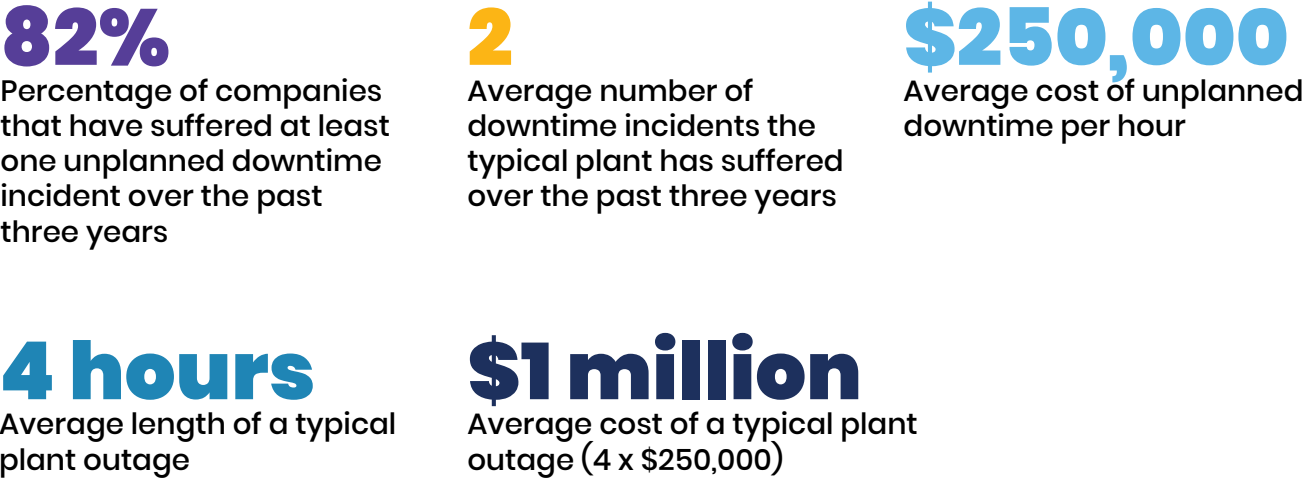


Every oil and gas site should be certain their machinery works as intended and runs when needed. How can that be done?

Operator Rounds – A Crucial First Step In the Maintenance Process

More than two out of every three industrial plants recently surveyed revealed they had no idea when their equipment was due for routine maintenance or important upgrades. It’s no surprise then that 82% of all plants have suffered at least one unplanned shutdown in the last three years.

UNPLANNED DOWNTIME COMES WITH A TREMENDOUS COST

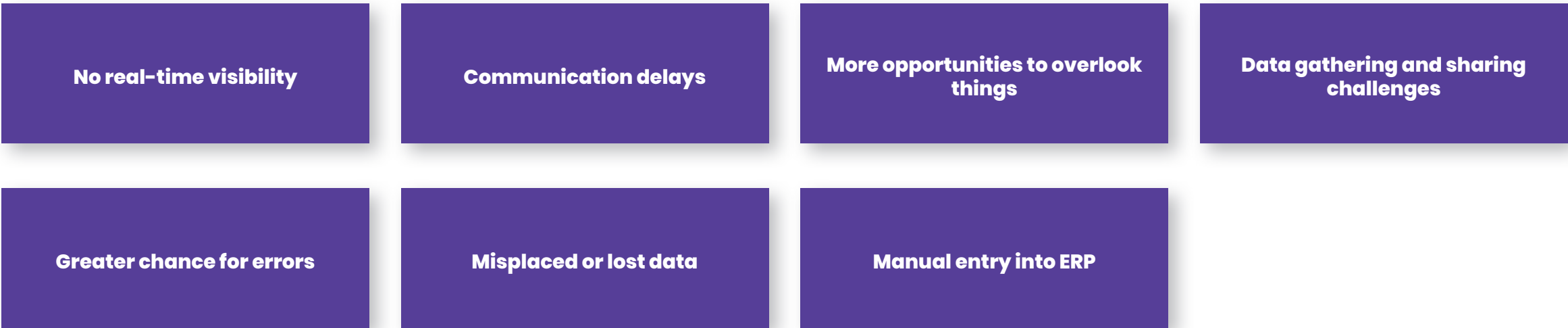


Source: [Aberdeen Research](#)

Let’s examine ways organizations can improve their inspection process to find and mitigate operational risks.

Oil and gas facilities, like those in other industries, perform daily inspections, often called [operator rounds](#). Managers use these inspections to identify equipment issues and help them prioritize repairs. Far too many organizations today still use paper forms during these important inspections. Paper poses many problems.

**PAPER-BASED OPERATOR ROUNDS PROBLEMS**



Paper-based operator rounds, inspections and checklists bring problems that erase many of the task’s benefits. These issues render the inspections ineffective at best, useless at worst. They also lead to:

- Increased expenses
- Lost production
- Revenue disruptions
- Customer service problems
- Potential fines and penalties

An operator round inspection needs to be thorough to be effective. A static paper checklist just can’t achieve this. It’s not easy to alter a paper checklist or form to reflect changing business or operational needs. Furthermore, an inspector may skip checklist items or leave them uncompleted. This happens when a technician:

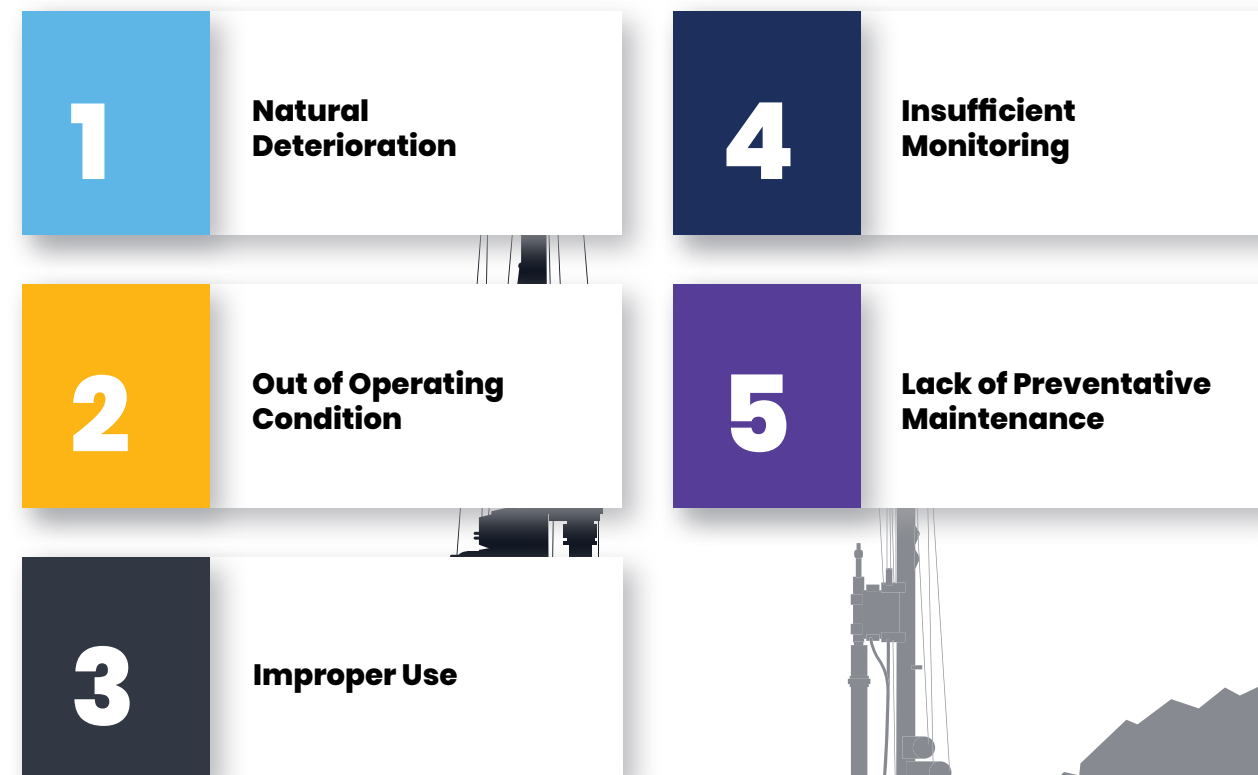
- Rushes the round
- Is called away
- Overlooks something





Decision makers need the completed checklist quickly to figure out what action to take. Paper-based operator rounds are static objects, however. The information remains unseen and unknown until the technician completes the form and turns it in or manually uploads data into an enterprise resource planning (ERP) system, such as SAP.

### TOP 5 CAUSES OF EQUIPMENT BREAKDOWNS



Source: [Lean Manufacturing, Tap Root](#)

### TOP OSHA SAFETY VIOLATIONS

#### NAICS Code 211: Oil and Gas Extraction



Source: [Occupational Health and Safety Administration](#)

If an oil and gas facility maintenance manager can't alter paper forms and share information quickly, risks dramatically increase. These risks include equipment failures and safety incidents. A machine may have already broken down or a worker injured by the time critical data gets to decision-makers.

If your oil and gas site still conducts paper-based operator rounds, you're likely suffering some of the problems and drawbacks described here. Here's some good news: There's a way to improve thoroughness, accuracy and speed. Operators and technicians can use this method to:

- Better identify problems
- Overlook fewer issues
- Get critical data into decision makers' hands for timely, meaningful action

More on that to come.

Let's first take a closer look at what happens when a manager issues a work order to repair a problem reported during an inspection. Like [operator rounds](#), it's an area ripe for improvement.



## Work Orders – Where the Wrench Meets the Bolt

No maintenance repairs occur without a work order in a well-run oil and gas facility. However, a manager or supervisor issuing a work order doesn't ensure a smooth [work order process](#).

As with operator rounds, too many plants use a paper-based [work order system](#). As with operator rounds, paper causes work order problems, too. Some of the problems are identical.

### PAPER-BASED WORK ORDER MANAGEMENT PROBLEMS

No real-time visibility

Poor resource allocation

Change management

Slow response times

Lack of tracking capability

Data gathering and sharing

Not well-suited for emergencies

Communication delays

Manual entry into ERP

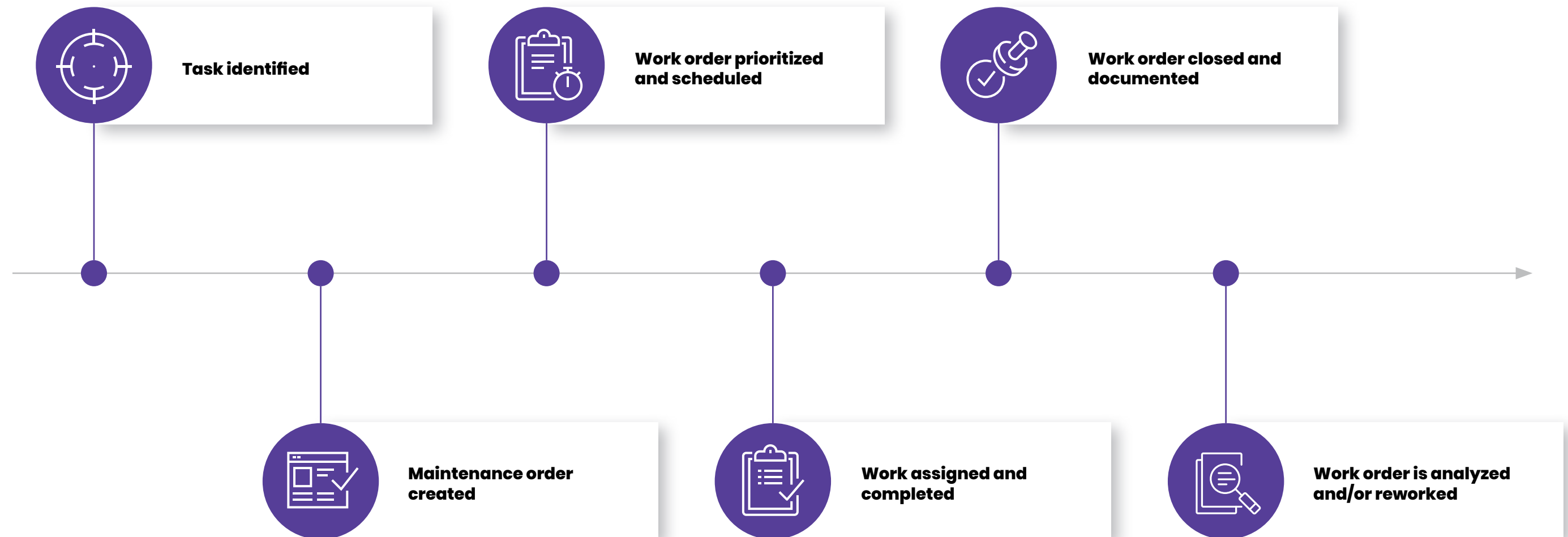


Paper work orders make the maintenance process harder rather than easier. They:

- Slow down actual work
- Keep decision makers in the dark once issued
- Add more non-value-added tasks

These problems become abundantly clear during an emergency. That's when time, speed and clear communications are essential.

### TYPICAL OIL AND GAS MAINTENANCE WORK ORDER PROCESS





When equipment goes offline, maintenance managers jump into action to get it repaired and restore production. No matter how competent the manager or staff, a paper-based work order process hinders efficiency and productivity. A manager or supervisor:

- Has no way to track work progress in real time
- Can't accurately gauge wrench time or productivity
- Has greater difficulty allocating labor and materials

A paper-based process means frontline workers must constantly carry a bulky binder or clipboard with them wherever they go. They also must manually enter work order data into the back-office ERP once work is completed.

Both the manager and the technician have to contend with unstructured data and the confusion it causes. This adds needless complexity to the process and slows down repairs.

Ultimately, paper-based [work order processes](#) lead to less effective reactive maintenance programs instead of preventive or predictive ones. Reactive or run-to-fail maintenance practices result in:

- Greater risks for equipment failure
- More safety incidents
- Additional revenue-draining downtime
- Worse customer service

If you're using a paper-based [work order management process](#) and are suffering a lack of results, there's a better way to:

- Identify equipment problems
- Issue work orders
- Allocate resources
- Track progress







# Taking Work Order Management and Operator Rounds Digital

These challenges are why [Innovapptive](#) built two connected worker applications to address operator rounds and work order management issues.

[Mobile Operator Rounds](#) help oil and gas companies organize, conduct, share and review daily equipment and safety inspections. [Mobile Work Order Management](#) lets decision-makers create, issue, track and complete work orders for a problem found during an operator round.

Working in tandem, these apps give maintenance managers, supervisors and frontline workers greater flexibility and agility. They can accomplish important tasks faster, better, safer and cheaper than traditional manual processes.

## MOBILE OPERATOR ROUNDS AND MOBILE WORK ORDER MANAGEMENT BUSINESS DRIVERS

	<b>Reduce Downtime</b>		<b>Eliminate Paperwork</b>
	<b>Extend and Improve Asset Life and Reliability</b>		<b>Decrease Operational Costs</b>

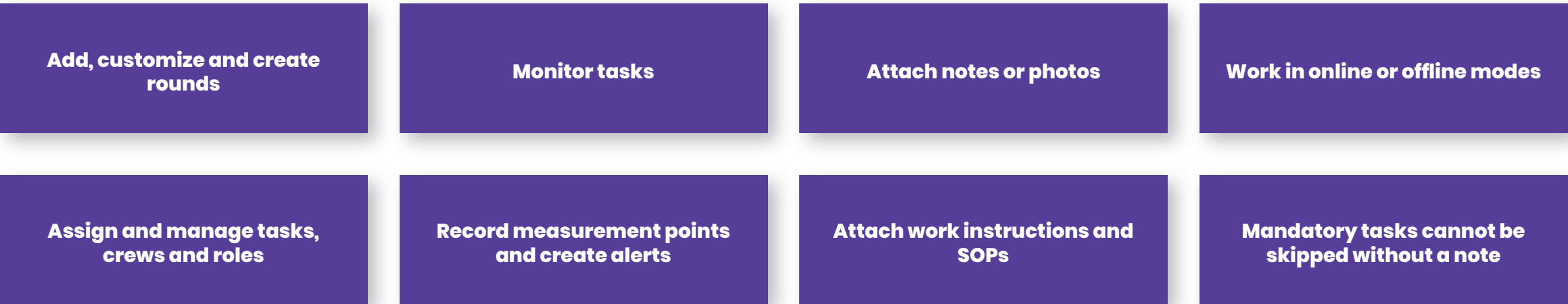
### How do these solutions work?

[Mobile Operator Rounds](#) replace error-prone paper checklists with an efficient electronic process using mobile devices (smartphones, tablets, barcode scanners, etc.). Technicians access [digital forms](#) on their devices to conduct inspections. Managers can quickly and easily change and customize dynamic digital forms on the fly — unlike paper checklists — to better meet situational needs.





**MOBILE OPERATOR ROUNDS FUNCTIONALITIES**



Technicians scan equipment barcodes and complete digital forms. They check customized data fields that document present operational status and safety conditions. The inspector can't advance to the next piece of equipment or location until completing all fields for the current step.

The apps immediately and automatically upload collected data electronically into the back-office system. Decision-makers can view inspection data in real time via mobile device or desktop app and communicate with the technician during the round.

**MOBILE OPERATOR ROUNDS BENEFITS**



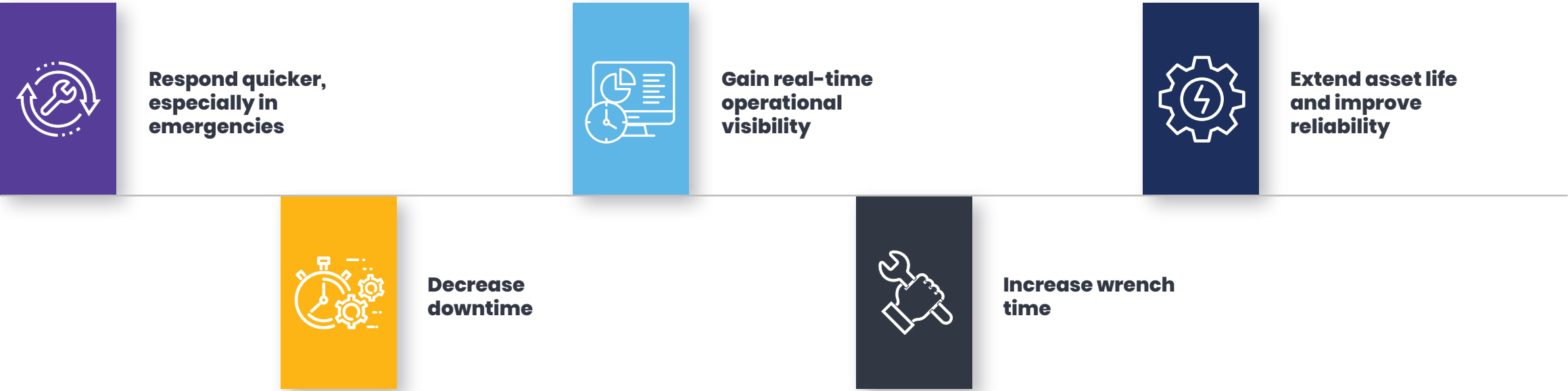
[Mobile Work Order Management](#) also utilizes mobile handheld devices. The app functions in real time, giving decision-makers instant visibility into their facility’s operational status and into where work orders stand.

**MOBILE WORK ORDER MANAGEMENT FUNCTIONALITIES**



Managers and supervisors can create, edit, assign and monitor a maintenance work order at any time from anywhere. This greatly speeds the work order management process and is especially useful in a maintenance emergency when seconds count. They can address problems quicker, cut downtime and extend asset lifespan.

**MOBILE WORK ORDER MANAGEMENT BENEFITS**



# INCREASE UPTIME AND BOOST SAFETY

Five crucial areas where Innovapptive's Digital Mobile Operator Rounds and Mobile Work Order Management can make a significant impact include:

**Reduce preventable failures** – Monitoring equipment health on a regular basis helps spot potential issues and mitigate risks before they worsen into downtime-causing problems.

**Decrease downtime** – Downtime represents money not being made, especially in the chemical sector, where equipment is needed to perform mission-critical tasks. The more responsive and proactive a maintenance department, the less downtime a plant suffers.

**Improve productivity** – Get more technician wrench time and boost productivity by eliminating time-consuming paperwork.

**Cut costs** – Maintenance accounts for a significant part of a chemical plant's annual budget. A mobile work order management tool can deliver major long-term cost savings by enabling more proactive rather than reactive maintenance, extending asset lifespans.

**Increase safety** – Mobile Operator Rounds and Mobile Work Order Management provide a way to identify potential safety hazards during the daily inspection, assess risk and take timely action before any harm occurs. This reduces the number of incidents, boosts compliance and increases uptime.



## WHAT RESULTS CAN I SEE USING DIGITAL OPERATOR ROUNDS?

### Cut preventable failures

<55%

Reduced equipment and asset breakdowns

### Decrease maintenance costs

<40%

Eliminate paper, spreadsheets and operational inefficiencies

### Reduce asset downtime

<40%

Business continuity without interruption

*Based on customers' best experiences.*



WHAT RESULTS CAN I SEE USING MOBILE WORK ORDER MANAGEMENT?

Greater Asset Uptime

>98%

Eliminate Preventable Failures

Reduce Backlogs

50%

Simplify work planning and execution

Increase Wrench Time

20%

Gain productivity by eliminating paperwork

Cut Reworks

20%

Get project done right the first time

Reduce Safety Incidents

40%

Standardize work and prevent accidents



Based on customers' best experiences.



# Who Can Use Digital Operator Rounds and Mobile Work Order Management?

Mobile Operator Rounds and Mobile Work Order Management offer flexibility, agility and versatility. The solutions deliver numerous uses and benefits for every level of the utility decision-making hierarchy.

## C-suite executives

Make quicker, more informed decisions based on facts. Identify cost-savings opportunities. Prolong asset lifespans. Reduce wasteful duplication of effort and resources.

## Senior managers and directors

Respond quickly to trends or problems. Simplify approval processes. Develop a repository of accurate performance data to identify waste and lower operational costs. Receive consistent, easy-to-decipher and relevant data customizable to business needs.

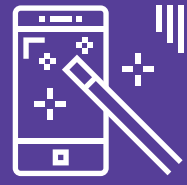
## Managers and field technicians

Get rid of paper-based processes. Fix problems right the first time. Reduce errors due to incomplete information. Eliminate silos, bottlenecks and roadblocks.



# What Sets Innovapptive Apart

Several key features differentiate Innovapptive's Mobile Operator Rounds and Mobile Work Order Management from other similar apps now on the market.



**Customization** – Innovapptive's solutions rely on the proprietary, patented RACE™ (Rapid Application Configuration Engine) platform that enables no-code/low-code customization. Configure applications for site, role, user and geographies. Quickly respond and adapt to changes, better align the apps to your unique business requirements.



**Integration with ERP systems** – Innovapptive's solutions seamlessly integrate with ERP systems, such as SAP and IBM Maximo. Managers and frontline workers gain quick access to key data and support.



**User interface/user experience** – Innovapptive's solutions are intuitive and easy to use with a minimum of training required to be productive. Satisfaction leads to high user adoption rates, resulting in a positive return on investment.



**Enterprise-grade security** – Encrypted, stateless, single sign-on with consumer-grade experiences such as Face ID and Touch ID keep your data safe and out of the wrong hands.



**Online/offline modes** – Utilities often operate assets in areas with poor or no Wi-Fi infrastructure. Innovapptive's solutions have online/offline modes, allowing frontline workers and managers to be productive even when there's no Wi-Fi signal. Take advantage of rapid synchronization after restoring a connection.



# Learn More about Mobile Operator Rounds and Mobile Work Order Management

Our [Mobile Operator Rounds](#) app delivers a streamlined data collection process and gives technicians and decision-makers greater agility and flexibility to share critical operational information in real time. The solution digitizes paper forms, boosts collaboration, reduces downtime and mitigates safety risks.

[Mobile Work Order Management](#) improves the work order process. Managers and supervisors can better allocate maintenance resources, send out notifications, track progress, improve wrench time, and more. Repairs get done right the first time, reducing reworks, cutting downtime and stopping revenue disruptions.

Schedule a [free demo](#) today or call us at **844-464-6668**.



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Produced in the United States of America October 2021

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