

**CUTTING OIL AND GAS
MAINTENANCE REWORKS
AND BACKLOGS USING
DIGITAL WORK INSTRUCTIONS**

White Paper | April, 2021

INTRODUCTION

Who doesn't enjoy a good movie, visiting a favorite destination a second time or getting another helping of a favorite meal?

Doing something a second time can often be a pleasant experience.

But not always.

Take oil and gas maintenance work orders. These redos, or reworks, are anything but pleasant. Instead, they're costly endeavors that:

- Throw off schedules
- Create backlogs
- Stop production
- Disrupt revenues
- Increase safety risks

Reworks are the bane of any oil and gas facility maintenance manager, whether they're working on a land rig, offshore platform, gas processing plant, pipeline compressor or pump station, tank farm, or refinery.

Reworks lead to backlogs as work orders start to pile up. These twin problems cause decision makers many sleepless nights searching for a solution.

Here's some welcome news: There is a way up, mid and downstream maintenance managers can:

- Reduce costly reworks
- Prevent troublesome backlogs
- Better adhere to schedules
- Standardize workflows
- Upskill frontline workers
- Preserve tribal knowledge
- Cut downtime
- Preserve revenue flows
- Bolster safety compliance

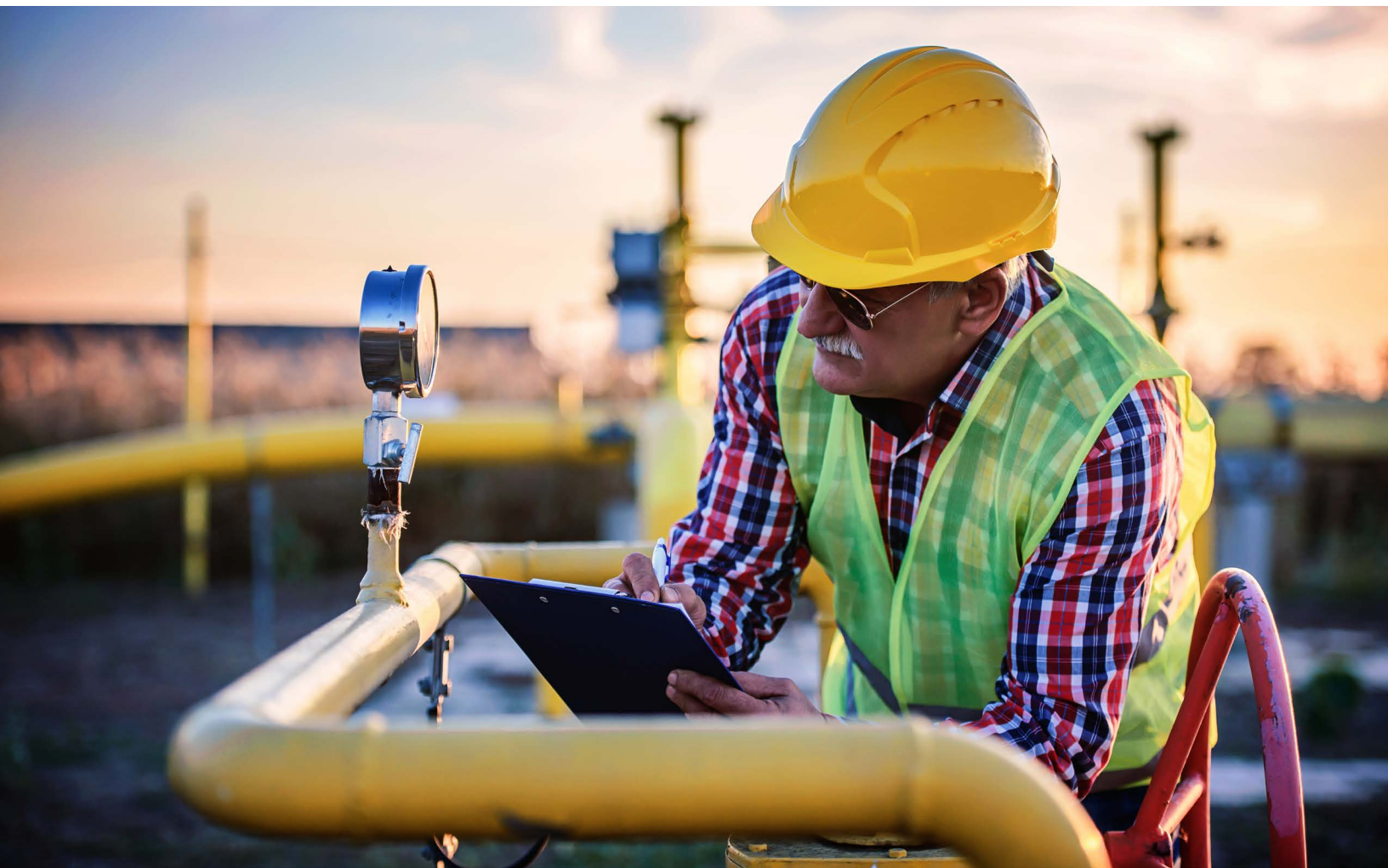
Let's first take a closer look at what leads to a rash of reworks and backlogs across the industry.

THE OIL AND GAS WORKFORCE IS RAPIDLY AGING

The U.S. Bureau of Labor Statistics (BLS) forecasts that by 2022 more than [a quarter of the U.S. labor force](#) will be age 55 or older. That number was just 20% a decade earlier. The oil and gas industry, meanwhile, has already surpassed the BLS forecast. According to a mid-2010s research study from the Society for Human Resource Management (SHRM), [27% of oil and gas workers](#) are 55 or older. That number has likely trended even higher since the survey's release.

SHRM study respondents also said they found it “difficult or extremely difficult to retain nonexempt older workers compared with other industries.”

What does this mean for oil and gas companies? The industry will be facing a lot of retirements in the coming years along with the potential for experienced, skilled workers leaving labor jobs for something less strenuous.



AS SKILLED WORKERS LEAVE, THE INDUSTRY LOSES TRIBAL KNOWLEDGE

Maintenance technicians gain a great deal of experience and know-how over their careers. They become intimately familiar with the equipment and the processes that go on inside an oil and gas facility.

Little of this accumulated knowledge, however, is documented in any form. Rather, it's stored in the workers' heads. That's convenient for the technician to access on the job, but nearly impossible to pass along when that worker walks out the front gate for the last time.

Newly hired technicians naturally lack this built-up reservoir of knowledge and experience. They're expected to learn on the job, which, of course, means they'll make mistakes and errors.

Oil and gas maintenance managers are going to be seeing more of this situation as older technicians retire in the coming years. Ultimately:

- There will be fewer longtime hands around to handle complex repairs
- Managers will have to increasingly depend on less-experienced workers

That will lead to:

- More mistakes
- More work order reworks
- Higher maintenance backlogs



DIGITAL WORK INSTRUCTIONS: PASS ALONG TRIBAL KNOWLEDGE AND IMPROVE MAINTENANCE PERFORMANCE

A mobile-first, digital work instructions solution can solve these challenges with ease. It empowers you to quickly and easily digitize paper-based job instructions and safety procedures and transmit them to field maintenance technicians as they are conducting a work order.

A full-featured digital work instructions solution enables you to:



**Cut down on
errors**



**Enhance
safety**



**Reduce
reworks**



**Bolster
equipment
reliability**



**Decrease
backlogs**



Raise uptime



**Improve
productivity**

With a digital work instructions app on their phones or tablets, your veteran maintenance staff members and supervisors can digitally:

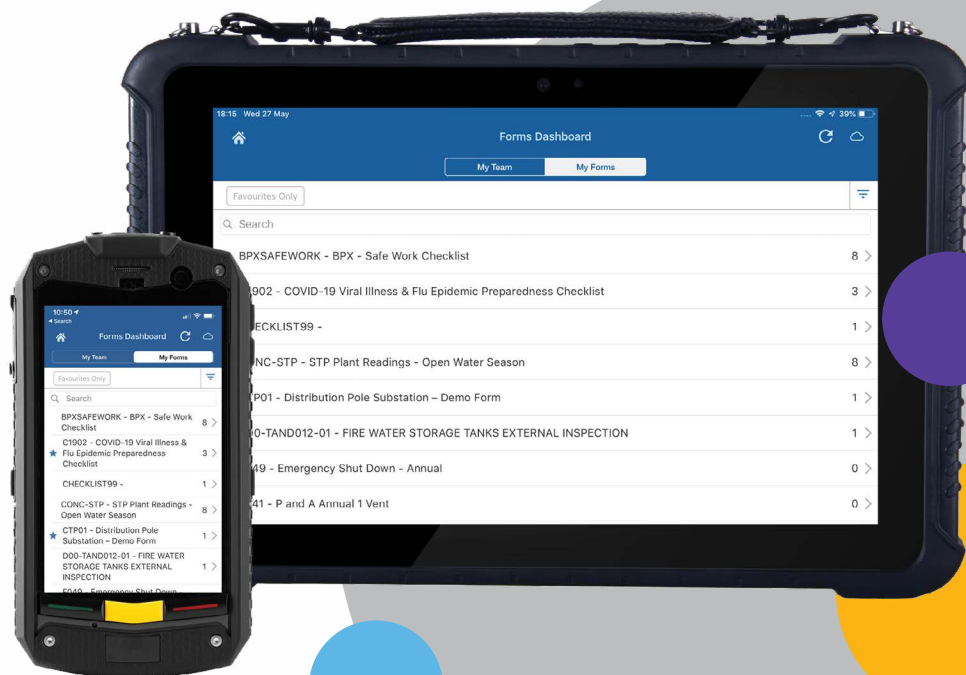
- Mentor a new hire or less-experienced technician
- Give instructions
- Provide feedback
- Answer questions
- Transfer tribal knowledge
- Reduce training time and costs

These solutions have a clear advantage over traditional paper work instructions, manuals, binders and standard operating procedures (SOP). A technician has to carry each of these to the worksite. Paper forms are also static; they don't change nor can they respond to changing circumstances.

The right digital work instructions solution, in contrast, provides responsive and up-to-the-minute materials. It permits real-time conversations and a back-and-forth exchange, giving both mentor and mentee the chance to interact instantaneously in a way not possible with a binder or clipboard. This can take place no matter the distance separating the participants.

Digital work instructions solutions use the versatility and power of modern, consumer-grade electronics to connect workers no matter their location. This includes:

- Smartphones
- Smart glasses
- Tablets
- Desktop apps



COMPLETE TASKS RIGHT THE FIRST TIME, REDUCING REWORKS

These solutions let veteran technicians and less-experienced workers:

- Attach images
- Send videos and visual aids
- Conduct two-way conference calls
- Submit/receive feedback and suggestions

Problems Solved



For example, let's say a rookie technician is having difficulty repairing a troublesome valve or pump in the field, far from the office. He can consult with a supervisor or veteran via his digital work instructions solution and a Wi-Fi connection.

Using a pair of smart glasses, the rookie can visually show the veteran back at the office where the problem is. The veteran technician can see exactly what the new hire is looking at in real time, just as if the two were standing together in front of the valve or pump, when in reality they may be miles apart.

The veteran asks the rookie to take a picture of the equipment, note the problem and send it to him via email.

The veteran technician immediately recognizes the situation giving the rookie trouble. He's been on several similar repairs over the years. In fact, he's repaired this very piece of equipment more than once.

The vet quickly locates an instructional video on his desktop and sends it to the new hire in the field to watch on his mobile device. While the new hire is viewing the video, the veteran:

- Pulls up an old SOP
- Updates it in Digital Work Instructions
- Makes several annotations on the photo
- Sends them back to the new hire

The veteran does all of this without ever getting up from his desk.

The two engage in a conversation as the rookie reviews the material and successfully completes the repair.

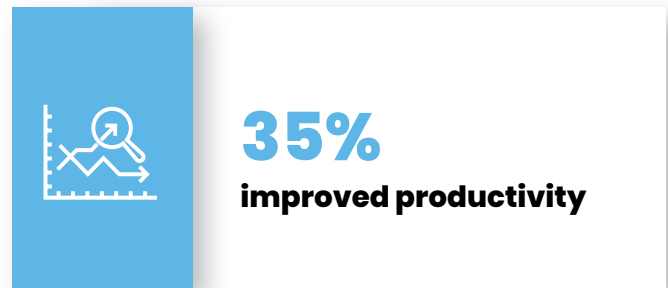
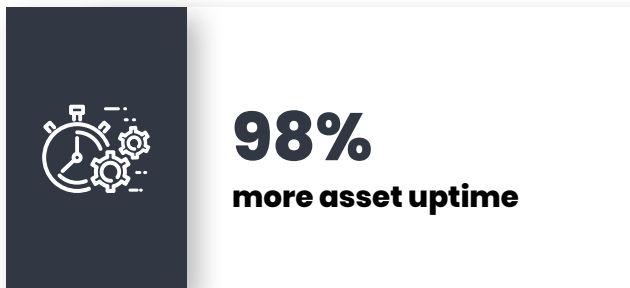
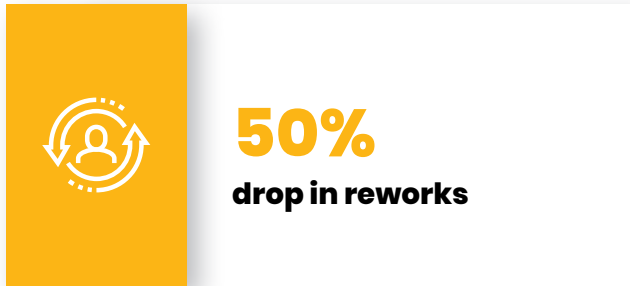
Under the old system, either the new hire would have had to:

- Stop work
- Return to the office
- Get on a computer
- Search for the SOP
- Look for the veteran to ask some questions
- Return to the job site
- Conduct the repair
- Hope it was properly done

That might have meant hours of downtime for the valve or pump. Instead, the work order doesn't have to be interrupted and can be completed correctly the first time and faster than before. The result is:

- Greater productivity
- Less downtime
- No rework
- No backlog
- No safety incident

Digital Work Instructions Benefits



Based on customers' best experiences.

LEARN MORE TODAY

If you're:

- Facing a rash of coming technician retirements
- Worried about losing valuable tribal knowledge
- Concerned about rising reworks, backlogs, downtime and safety incidents

Innovapptive's Digital Work Instructions can solve your maintenance work order problems. Schedule a [free demo](#) today or call us at **844-464-6668**.

About Innovapptive

Innovapptive is a digital transformation pioneer offering the only Connected Worker Platform that digitalizes the last mile of frontline workers into SAP. Our solutions integrate SAP and GIS operational data with work instructions, SOPs and checklists, connecting the entire industrial workforce, machines, workflows and executives to minimize plant outages and maximize margins. Innovapptive is transforming the experience of the industrial worker by engineering a platform that fuels innovation and collaboration to turn downtime into revenues, risks into safety and inefficiencies into growth. Founded in 2012 by ex-IBM leaders Sundeep Ravande and Hari Kamineni, Innovapptive is headquartered in Houston with offices in Australia, the Netherlands and India.



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