PARSABLE

CUSTOMER SUCCESS STORY

Scientific Drilling

EXECUTIVE SUMMARY

Challenge

Improve efficiency of disassembly, inspection and repair operations at Scientific Drilling's domestic drill motor repair facilities. Accurately track steps and document evidence during drill motor inspection for full cost recoupment. Reduce time to produce branded customer reports when pricing repair costs.

Result

Reduced inaccurate "non-conformance" reports by 95%

Paperless in all US repair facilities

Analysis completed 10-20x faster

10x reduction in repair cost variance

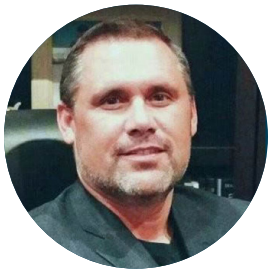
Activity time decreased from 30 days to 2 days

Rollout completed in eight weeks

Scientific Drilling International (Scientific Drilling) is a leading directional drilling services provider with headquarters in Houston, TX and nearly 40 locations across 26 countries. Scientific Drilling was founded in 1969, with the introduction of the world's first downhole electronic steering tool. This innovation enabled the industry to accurately orient downhole motors when drilling directional holes to aid in the exploration and recovery of natural resources including oil, gas or water.

Since that time company has grown into a leading provider of high accuracy wellbore navigation and directional drilling systems. Scientific Drilling supports a wide range of complex drilling projects for the Oil & Gas, Geothermal, and Mining industries as they plumb the Earth's depths for new reserves. The company's broad set of capabilities and strong reputation for customer service has helped it build an impressive list of clients that includes British Petroleum, Chevron, ExxonMobil, Occidental Petroleum, Royal Dutch Shell, Lukoil, and many others.

VISION
for



Rob McKee
Senior Vice President of
Manufacturing and Product Support

The Ultimate Partner in Wellbore Placement

Relying on its 40+ years successfully developing downhole sensor technologies, Scientific Drilling designs, builds, and deploys some of the world's most accurate systems. Scientific Drilling describes its technology development group as "innovative and aggressive," relying on state-of-the-art proprietary sensor technologies and analytical software for downhole measurement used to accurately model and predict torque/drag, bit hydraulics, pressure loss output, and high performance bottom hole assemblies to optimize drilling efficiency and accuracy.

Not satisfied as a premiere provider of directional drilling equipment and high value services, Scientific Drilling's long-term goal is to be the "ultimate partner in wellbore placement." To achieve this vision, over the past five years Scientific Drilling has doubled-down on their commitment to tool performance, strategic cost reduction, and process optimization to provide best-in-class technology and customer service.

Rob McKee, SVP of Manufacturing and Product Support, was tasked with driving the reliability component of these performance improvements. As a former reliability engineer for the International Space Station program at Johnson Space Center, Rob knew this would take a highly methodical approach. To get this done, his team would need focus their resources on optimizing specific areas of their operations by evaluating the key drivers of customer value, such as process controls, change management, and quality. Based on this, the team quickly recognized the need to integrate in-depth data analysis into their repair processes at Scientific Drilling's motor shops.

Up to that point, operations at Scientific Drilling's four domestic repair facilities – including procedures and data capture surrounding assembly, disassembly, and inspection – were still largely paper-based. This made it impossible to achieve the extremely high levels of strict process adherence, tight quality control, and fine-grained data collection – each one critical to reaching the team's objectives. When selecting a digital workflow management solution Scientific Drilling considered the following five critical success criteria.

What is a Wellbore?

A wellbore is a straight vertical shaft that "bores" into the ground to aid in the exploration and recovery of natural resources including oil, gas or water. It is the actual hole that forms the well. A wellbore can then be encased with materials — such as steel or cement — for stability, as well as to improve its operation and resource recovery.

SUCCESS CRITERIA

When selecting a digital workflow management solution Scientific Drilling considered the following five critical success criteria.

1. Digital workflows for standard assembly, disassembly, and repair procedures
2. Ability to remotely monitor quality workflows within drill motor shops
3. Simple and versatile tool for data collection during repair operations
4. 100% conformance to process standards during assembly, disassembly, and internal and external inspection
5. Measurable improvements in cost and reliability for an improved customer experience

the journey

Paperless operations at all domestic repair facilities

Scientific Drilling first worked with Parsable to transform its largest operation in Oklahoma City. The platform's intuitive user interface (UI) enabled the Scientific Drilling team to quickly and easily integrate standard work instructions and procedures for all processes related to drill motor assembly, disassembly, and repair into digital workflows on the platform. The team started by creating templates for each procedure, including detailed steps and instructions, as well as related content and documentation from the various paper manuals, guides and checklists. Templates were then combined into workflows based on the job that was being performed. With the dedication of Scientific Drilling and support from Parsable's Solution Consulting team, this first phase of the Parsable rollout was completed in just eight weeks.

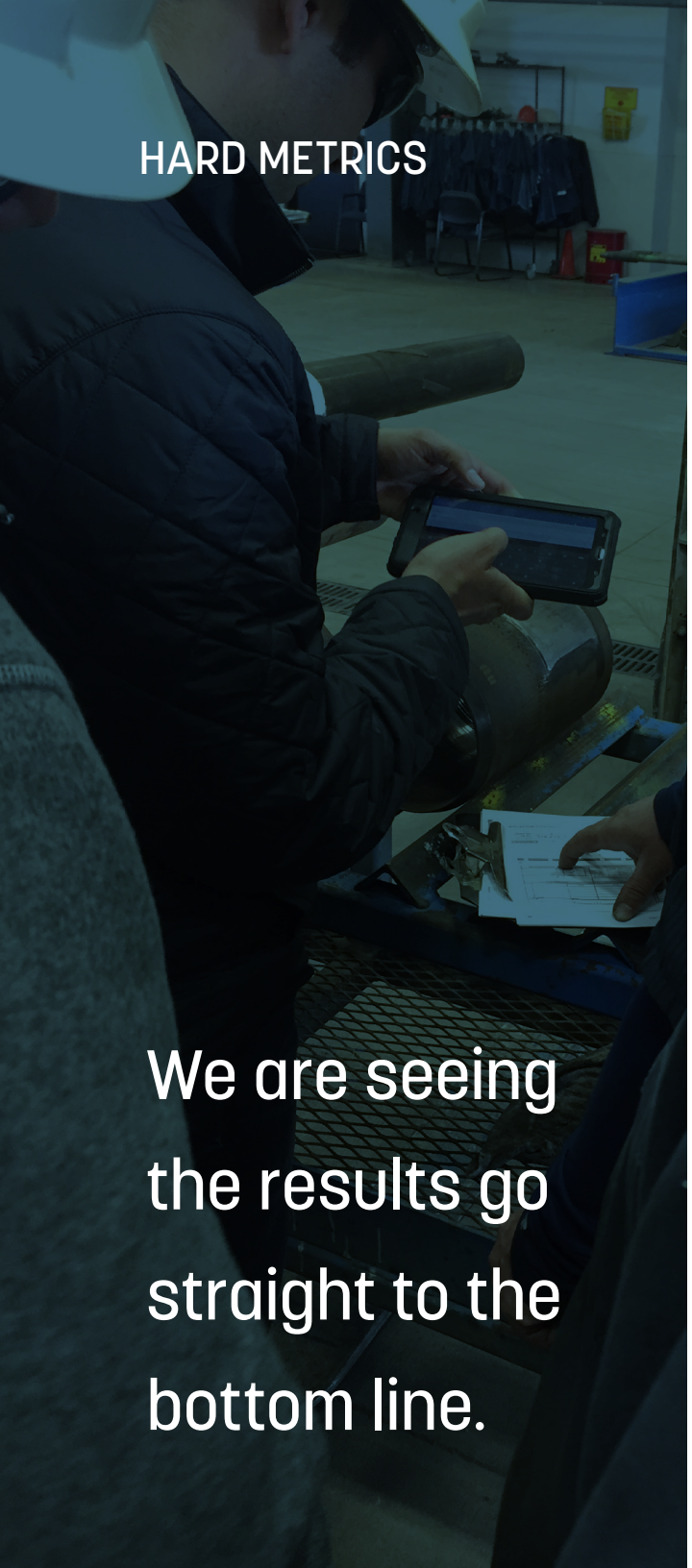
With some quick wins under their belt, Scientific Drilling's team moved on to phase 2 of the rollout – expanding Parsable to all domestic motor repair and maintenance facilities. During this phase, the team rolled out the new standardized workflows developed in Oklahoma City to its three additional US motor shops. With virtually no end-user training, Parsable's consumer-grade mobile app made broader rollout nearly painless. Along with accessing digital workflows with inline procedural content and executing work on the go, users could collaborate among repair technicians. This also meant that each step of drill motor assembly, disassembly, and inspection could be executed independently yet seamlessly from start to finish, ensuring precise servicing and minimizing the possibility of later downhole issues due to product assembly.

With all work being executed within the Parsable mobile app, technicians and supervisors are now able to see the exact stage of service for each drill motor and communicate in real time with other technicians to coordinate work or get instant feedback, as well as notify the broader team when a job is complete – all without leaving the Parsable application. Supervisors, on the other hand, are now be able to digitally oversee motor repair workflows and ensure quality, both locally or remotely.

The final phase of the rollout involved integrating field operations data and adding Scientific Drilling's comprehensive reporting system, in order to deliver insights to both internal and external customers immediately after job completion. The final, and perhaps most important, objective was to parlay this previously unattainable level of visibility and data into real insights. By marrying up execution data collected in Parsable with the data in Scientific Drilling's existing systems, the team is now able to make knowledgeable decisions from the data. This gives Scientific Drilling a continuous source of actionable process and technology improvement, and enables the team to deliver an even more consistent, higher quality, and more reliable product.

"As a team, we have been impressed at the simplicity and versatility of the system. It sets the benchmark when it comes to time and ease of implementation."

- Rob McKee, Senior Vice President of Manufacturing and Product Support



The foundation for further analysis

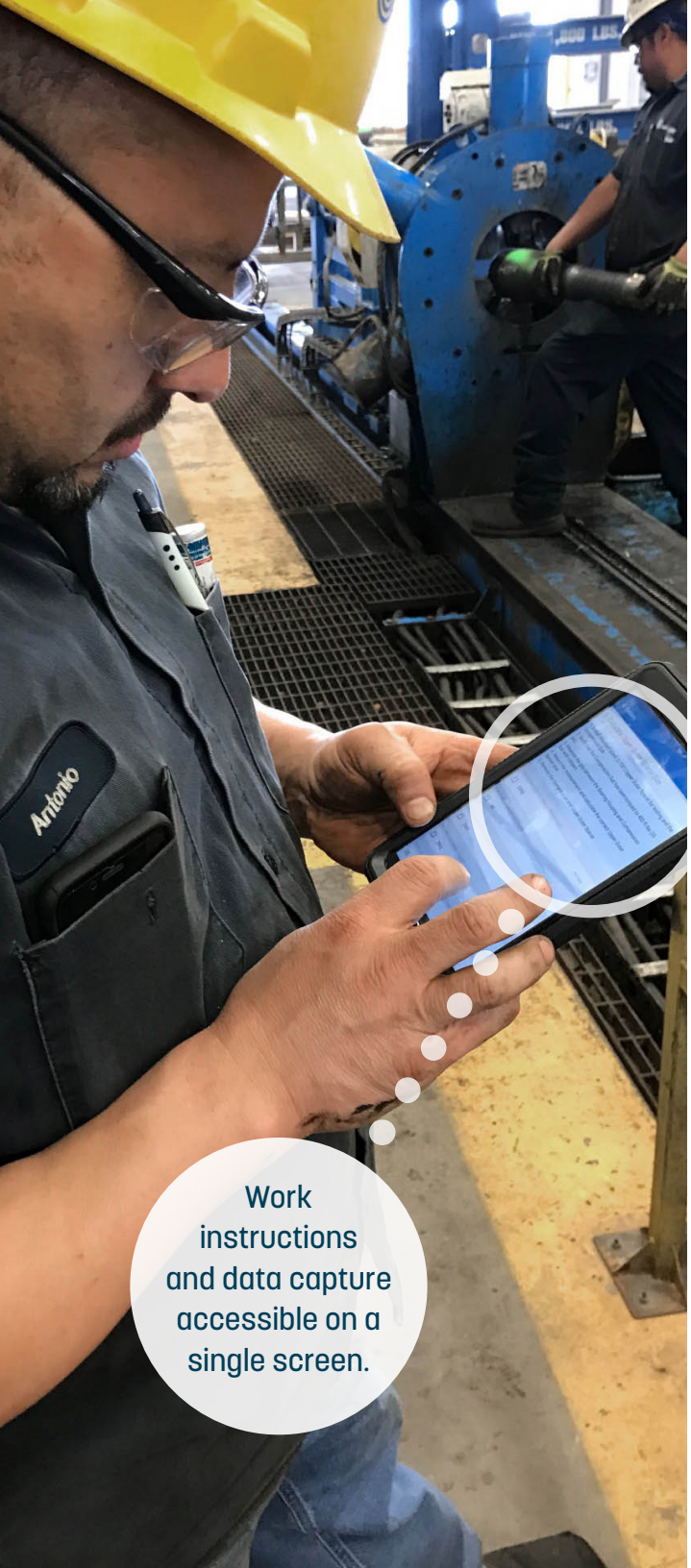
Since implementing Parsable at all four of its domestic drill motor repair facilities, Scientific Drilling has seen improvements across the board, from manufacturing operational excellence to cost reduction and tool performance. With the data captured in Parsable, Scientific Drilling can now perform analysis that was previously not possible — or at best required weeks or even months of hand-compiling data.

Overall, this has resulted in significant improvements across the company. One example is the accuracy of product pricing. By reducing the variation between estimated vs. actual motor repair costs from double-digits to less than 2%, Scientific Drilling can now price their equipment according to actual costs and customer usage.

Since the initial implementation of Parsable one year ago, Scientific Drilling has further expanded its analytical capabilities and are now working on evaluating the longevity and lifetime of parts based on drilling conditions and actual customer run data. This means that they can quickly evaluate tool failures using run conditions and tool specifications to best determine the root cause, and understand if there were quality and assembly issues through verification of Parsable collected data. Having this data available and at their fingertips has enabled the company to quickly reduce outstanding “non-conformance” reports by ~95%, while achieving much better cost recovery for tools which are operated outside their design parameters.

Another example is the ability to compare repair costs across different geographic areas in order to continuously improve operational efficiency. Analysis that used to take days can be done immediately upon repair using data collected within the Parsable system. With detailed operations data for every repair, the team monitors the primary cost drivers and looks for cost, quality, and performance optimization across the fleet. Being able to identify precise improvement recommendations has enabled Scientific Drilling to react more quickly and decisively than ever before.

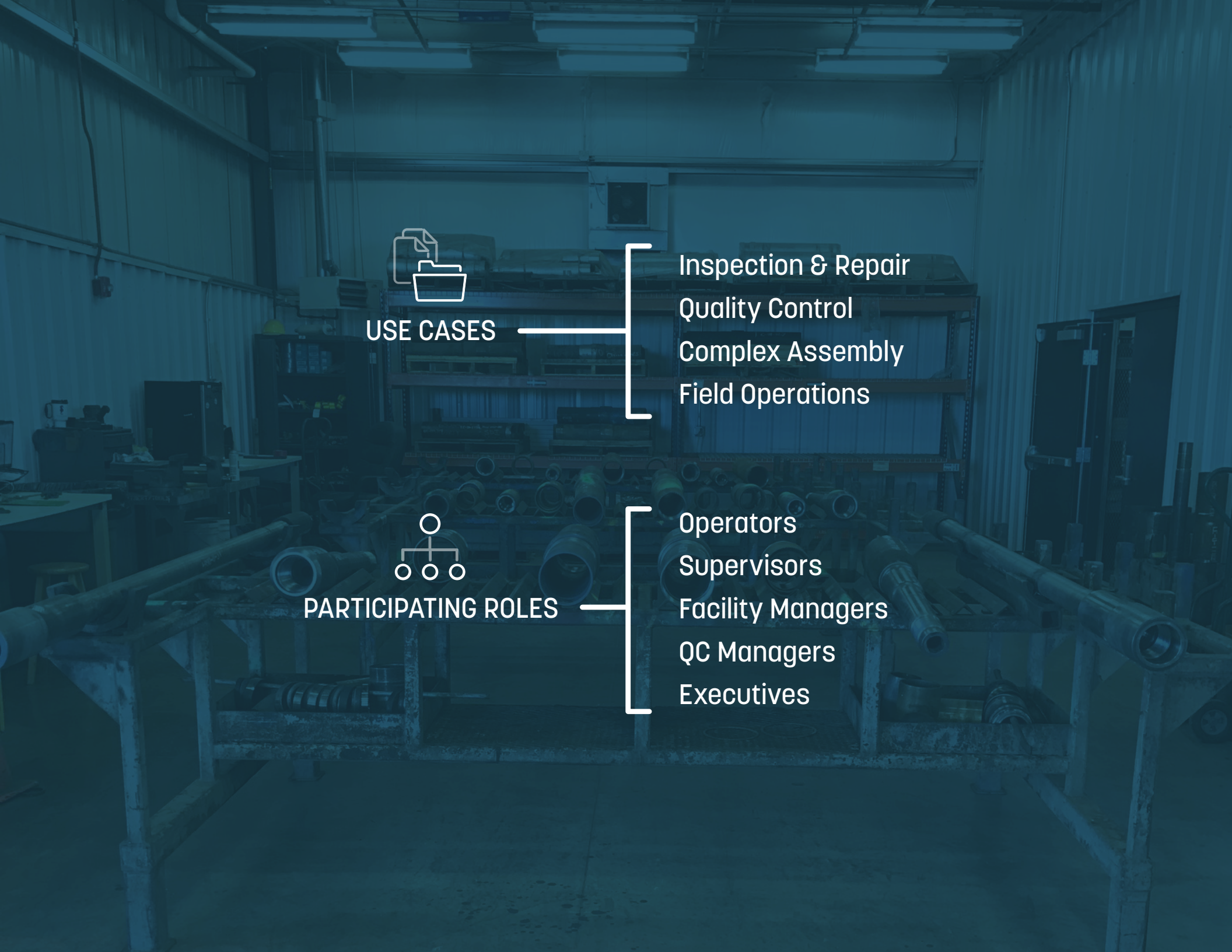
With the data captured in Parsable, Scientific Drilling can now do analysis in 10–20x less time



Powered by Parsable

As a result of the ingenuity and hard work of Rob's team — as well as paperless motor repair operations powered by Parsable — Scientific Drilling has unlocked new analytical capabilities, which represent a growing competitive advantage and a significant improvement to the bottom line. This means that the company can profitably offer a much higher level of customer service for its wellbore drilling motors than other providers, while maintaining highly-competitive pricing.

Nevertheless, Scientific Drilling believes it has only scratched the surface of the potential capabilities now available to the team. In the spirit of "aggressive innovation" that has been the company's hall-mark since its inception, the Scientific Drilling team hopes to very soon be able to optimize run parameters and expand the operating envelope for all of it's products across the entire business.


USE CASES
Inspection & Repair
Quality Control
Complex Assembly
Field Operations
PARTICIPATING ROLES
Operators
Supervisors
Facility Managers
QC Managers
Executives

About Parsable

Parsable helps the world's largest industrial firms get jobs done right — every time. Parsable provides a Connected Worker platform so employees can collaboratively execute their work using mobile devices in paperless, modern, and digital work instructions. Each step and action is measured and employees can raise issues and provide feedback so that every process is quickly analyzed and improved. With Parsable, Connected Worker teams know what they need to do and how to do it.

Parsable's customers include Schlumberger, Scientific Drilling, TechnipFMC, Zume and other category leaders in energy, industrial manufacturing, and consumer packaged goods. Founded by veterans of Google, Microsoft, SAP, Oracle, and YouTube, Parsable is headquartered in San Francisco with offices in Austin, Vancouver and Dublin.

For more information on how Parsable can help you transform your operations into a real-time, digital, Industry 4.0 company, please call us at 1-888-681-2119 or by contacting us via www.parsable.com/contact.

San Francisco HQ
115 Sansome Street
San Francisco, CA 94104
+1-888-681-2119

Austin
11801 Domain Blvd
Austin, TX 78758

Vancouver
1040 Hamilton Street
Vancouver, BC, V6B 2R9

Dublin
Block B, Maynooth Business Campus, Straffan Road
Moneycooly, Maynooth, Co. Kildare, Ireland

PARSABLE

www.parsable.com

CS003 102918