Oil & Gas iQ

Oil and Gas IQ's Guide to the Connected Worker Technology Landscape

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5 Key Connected Worker Technologies

Connected Worker technology is a class of technology that brings together plant operators, maintenance teams, and other workers with the critical information and applications they need to do their jobs more efficiently and productively.

Digital work procedures, wearable technologies, remote operator assistance, video training resources and mobile apps are all examples of Connected Worker technologies.

This technology has been increasing in importance over the past few years as oil and gas companies contend with an aging and soon-to-retire workforce.

This has meant that oil and gas companies must capture the knowledge that these experienced employees have built up over decades of work; new recruits are harder to come by and tend to move jobs more often.

Connected Worker technology can digitize the accumulated tribal knowledge of outgoing workers and provide a way for companies to more effectively train and connect less experienced staff with the information they need to do their jobs.

The pandemic further fueled the interest in Connected Worker technology as the need for social distancing and remote operations meant that digital technology was essential to keep team cohesion and continuity of business operations.

The proponents of Connected Worker technology cite how it can improve everything from training through to asset management, quality and safety.

But, just what are the key technologies that go into supporting a Connected Worker Strategy?

#1: Digital Work Procedures

Ending soon are the days when frontline workers need to search through dozens of binders, equipment manuals, or had to track down the "guy in the back" with twenty years of experience. Oil and gas operators recognize the critical importance of giving workers access to the data, information, and resources that they need to execute their jobs effectively.

Digital work procedures are the electronic version of the oil-stained black binder with out-of-date paper versions of company policies and procedures.

Digital transformation has presented new opportunities to capture, organize, and distribute information about how work gets done. Modern digital work procedure platforms, for instance, can often incorporate videos with subject matter experts demonstrating a particular technique or showing how a piece of equipment is supposed to look (for instance, correct wiring). This gives new recruits easy-to-access information and accelerates the time to productivity as new workers can quickly find what they need to know to do their jobs effectively.

Digital Work Procedures are often at the heart of a Connected Worker strategy. A recent survey we conducted among our audience found that 6 in 10 respondents were looking at investing in a digital work procedures platform in the coming year.

#2: Mobility Applications

Once processes and procedures have been digitized, the key is making it easy for workers to access them, from wherever they may be working. That means devising some sort of mobility strategy that ensures adequate connectivity and bandwidth on the plant floor or in the field.

#3: Wearable Technology

A step forward for mobility is the advent of wearable technology. Industrial and other manufacturing workers often have to carry tools and equipment into the field or on the production line. Wearable technology, such as glasses, watches, and even clothing, can help to free up their hands while still giving them access to critical information and digital work instructions.

Glasses, for instance, can be worn that give a worker access to instruction manuals. They could also fulfill a safety purpose by alerting workers to environmental hazards such as machinery malfunctions or excessive temperatures.

Helmets can have built in communication devices meaning that on site workers can talk directly to subject matter experts located off site, while keeping their hands free for manual work.

Some wearable technology vendors and devices focus on safety. For instance, workers can wear a belt that minimize ergonomic risks when bending or lifting, or a tracking device that can alert them when they are entering a restricted area. Similarly, lone workers operating in remote locations can be monitored via wearables in order to ensure their safety.

#4: Augmented Reality/ Virtual Reality

Augmented reality uses computer-generated information, such as images or textual information, to overlay reality. This can help workers access further resources or identify how something has changed over time, such as when conducting repairs of a machine.

Virtual Reality can offer workers an immersive environment in which to learn. Not only can this quickly accelerate learning but it can also enable workers to experience more dangerous situations – such as working in confined spaces or at height – before they have to experience the situation in reality.

At pulp and paper manufacturer, Georgia-Pacific, for instance, new trainees can take 360-degree virtual tours of facilities, along with podcasts capturing knowledge and insights from long time employees and subject matter experts.

#5: Workflow Management

Workflow management software helps to automate and digitize key processes. This guides workers on what to do next, eliminate or reduce repetitive work, and free workers up for higher level, more creative, work.

As the flow of data increases, artificial intelligence and machine learning can be integrated into workflow management technology in order to better support workers to make decisions at critical points in a process. Sophisticated algorithms can analyze incoming data from a variety of sources – equipment and asset monitoring via IIOT, production data, staff schedules, inventory tracking – to alert workers to possible disruptions and guide their actions.

CASE STUDY:
How High-tech Helmets and Huddle Boards Drive Efficiency at TotalEnergies

TotalEnergies' connected helmet allows workers to connect remotely to subject matter experts. An eye piece and video camera allow an on-site worker and remote assistant to communicate and view the same information in real time.

Noise cancelling headphones and an integrated microphone make it easy to talk, even in noisy environments.

It is a big improvement over the way things used to be done, explains Blake McFall, Maintenance Manager at the company's polypropene plant in LaPorte, Texas.

He says that before the introduction of the connected helmets, a mechanical issue would often result in a phone call to the technical group in Europe. Since there is a time difference, it would usually take a day for technical staff to get back to them.

The team would then need to locate and download various documents and schedule a meeting for later in the week. If that meeting didn't resolve the issue, a subject matter expert may need to get on a plane and come to the plant.

The helmet eliminated those process inefficiencies and enabled workers to troubleshoot machines quickly and with a higher degree of accuracy.

"You can connect the expert with the man in the field directly," explains McFall. "[They are] able to see. Able to hear."

Field workers can access visual information and documents about procedures and machine specifications eliminating the need to carry paper procedures into the field and keeping hands free for work. The helmet integrates with MS Teams so that workers may collaborate with others using a platform that everyone is already familiar with.

TotalEnergies has now rolled out the helmet globally with around 100 helmets in use at various facilities. He says that the company has used them for training purposes during Covid lockdown in Belgium, for rebooting a catalytic injection system at a refinery in France, and for inspections on barges in their upstream division.

At the LaPorte plant, McFall says that workers use the helmet regularly and it is especially useful during shutdowns and turnarounds.

The connected helmet is one example of how wearable technology is transforming operations in heavy industries such as oil and gas.

Wearable technology – which includes helmets, eyeglasses, watches, "smart fabrics" or other devices that workers can wear – helps keep workers safer, access information and support directly in the field, and conduct essential job functions more efficiently.

Industrial environments are becoming connected ecosystems where humans and machines are connected to the internet via sensors that can monitor the health of both person and machine.

Temperature and vibration data on a machine, for instance, could indicate an impending fault on a piece of equipment. Heart rate data on a person could indicate a level of fatigue that make it unsafe to continue in certain environments.

"Digital helps us bring that efficiency

to our current operations," says McFall. "Higher reliability of equipment means less time on little value-added items. That adds up to meeting an inspired workforce."

The other innovation that McFall has implemented at the LaPorte facility is the use of digital huddle boards, an extension of their Lean Manufacturing program.

He explains that when they first started rolling out Lean, they were physically sticking post-it notes on a board. When it came to tracking KPIs, an engineer would make the rounds every day and collect data.

But, explains McFall, the company realized that was not the most efficient process and wanted to digitize it.

The result was a digital huddle board, which was a tool to keep track of key performance metrics and visualize workflow.

The board was built in-house using Microsoft's Power BI and they implemented it on touch screens. The screens are connected to a camera so that people in the control room can see the same KPIs and tracking information as workers in the field.

"[Workers] can see exactly where we stand today as an organization," says McFall. "That was very empowering for them."

The digital huddle board concept started with one screen and has now expanded to nine at the LaPorte facility.

Key to the success of both installations was the fact that they were low-cost innovations that were easy to use and brought benefit to workers. McFall says decisions such as sticking with MS Teams for the helmet and using a touch screen for the huddle boards were key to ensuring that the frontline found the tools easy to use.

Connectivity was another challenge that they had to overcome in the implementation process. Some areas where workers had to operate did not have adequate connectivity to support the use of the helmets. McFall says that they had to "triage" and prioritize connectivity in areas with the highest impact first.

As Total seeks to find new ways to drive a value-driven culture, McFall says that they will continue to look for ways to empower their frontline through digital innovations.

"Digital helps us bring that efficiency to our current operations. Higher reliability of equipment means less time on little value-added items. That adds up to meeting an inspired workforce."

Blake McFall, Maintenance Manager, TotalEnergies

EVENT HIGHLIGHT:

The Buzz from Chicago's Leading Connected Worker Summit

Leaders from across the industrial sector, including Delek US, Eastmann Chemicals, BASF, and many more, recently gathered at Oil and Gas IQ's Connected Worker Summit to share case studies and best practices on what it takes to deploy connected worker platforms for measurable business benefits.

Here are 5 things we learned:

#1: User adoption is everything

You can deliver project that is on time and on budget, but, at the end of the day, the only metric that truly matters is whether your people adopt new tools and new ways of working. The end user should be engaged early and brought along on the journey.

#2: Resistance isn't futile, it's to be expected

Workers get used to operating within certain parameters and processes that have served them well in the past. The introduction of Connected Worker technology threatens the status quo. Resistance is to be expected; don't be surprised by it. Instead, expect it and plan for it.

"You really have to anticipate that this is a perfectly natural human reaction. That you're going to get from a subset of your population that don't want things to change, so you have to manage them through that," observed Al Lindseth, Principal of C150 Advisory Services. "You have to give them the reason for change. You have to identify those risks ahead of time and you have to have those mitigation plans in place."

#3: Connected Worker is not just an IT project

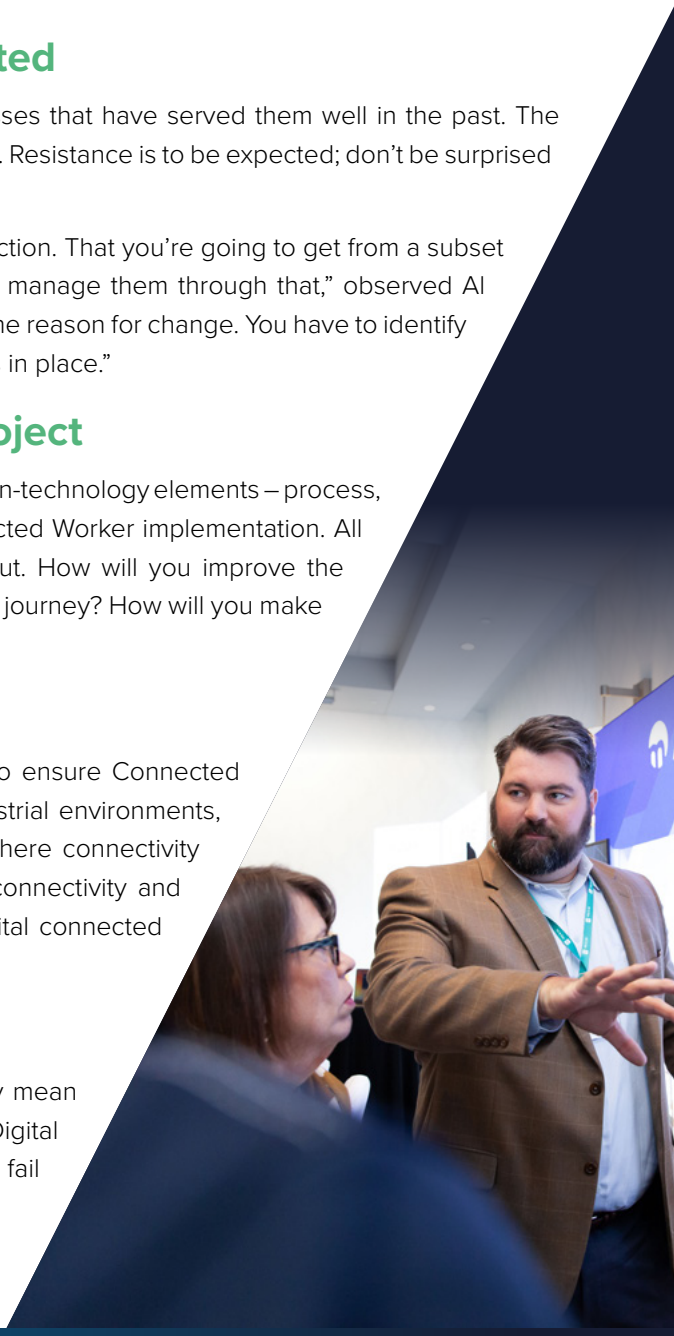
It can be easy to get distracted by cool new technology. However, the non-technology elements – process, culture, organizational readiness – arguably matter more to a Connected Worker implementation. All elements must be considered as part of a Connected Worker rollout. How will you improve the underlying processes? How will your workers be brought along on the journey? How will you make sure the business is ready for the change?

#4: Foundational infrastructure is critical

It sounds basic, but too many organizations forget that they need to ensure Connected Worker apps will connect workers where they actually work. In industrial environments, that often means ensuring internet access in areas and locations where connectivity has traditionally been poor or non-existent. Make sure you've got connectivity and adequate bandwidth everywhere you expect workers to access digital connected worker platforms.

#5: It's all about agility

The pace of change and volatility in the business environment today mean that organizations must be ready to adapt to changing circumstance. Digital solutions must follow suit. Introduce apps quickly, test out new ideas, fail fast if you're going to fail, and move on.



INDUSTRY SPOTLIGHT:

Delivering Value in Oil and Gas with Connected Worker

Interview with Nine Energy Service's VP of Corporate Operations

It's easy to get excited about the potential of Connected Worker technology but much more difficult to fully realize the benefits. For every digital transformation success there are often multiple failures, especially when companies take a "technology first" approach. So how can you get more out of your Connected Worker technology?

Make sure you've got the right people on the bus and ensure they understand the 'why,' says **Sean Barnes, Vice President of Corporate Operations at Nine Energy Service**. *"To have insight into the project so that you can provide the right feedback is important; additionally, including the appropriate levels of the workforce in the feedback loop is key right from the start."*

In this interview, Barnes, who spoke at last year's Connected Worker in Oil and Gas summit, offers advice on engaging with your people and the role of leadership in establishing the right corporate culture.

Diana Davis, Oil and Gas IQ: What do you think works best when companies are getting started with a Connected Worker strategy?

Sean Barnes, Nine Energy Service: The best approach is threefold: focus on people, then processes, and, lastly, technology.

Unfortunately, many businesses believe that technology alone will solve their problems, without realizing the issues lie with people or processes. Technology alone will not fix those challenges. There is a step progression that must occur before any implementation begins.

Technology can be very powerful, but if you do not have the correct people and processes in place, it will be very challenging for any implementation to be successful.

Diana Davis, Oil and Gas IQ: Why is engaging workers so important in this process?

Sean Barnes, Nine Energy Service: Since 2017, I have led the Human Resources and IT teams, and in 2021 I acquired the Safety, Transportation, and ESG teams. Leading these teams has taught me the value of having the right people in the right positions. At the end of the day, it is the people that make things happen. The culture of a corporation is the people.

People can be challenging to understand at times. It is difficult to comprehend their motivators, to realize what drives them, and why they do the things they do. As leaders, the onus is on us to understand where their heads are at. You must have someone that can tie everything together so that everybody is in the right seat on the bus and able to move your initiatives forward. This applies to technology implementations as well as process improvement initiatives.

This can be very challenging because individuals are highly dynamic. They could have a good day. They could have a bad day. All these things tie into the overall success of the team.

It is important for leaders to understand the realms at which individuals operate, but also bear in mind their potential. If they are having a rough day, I can expect that I might not want to put them on a certain project until talking through what is going on.

When you look at the effectiveness of any business, it all comes down to the people and the culture. You can have every process perfect, but if you struggle with people and culture, your chances of success decrease significantly.

Diana Davis, Oil and Gas IQ: How do you engage people in the process of a Connected Worker strategy?

Sean Barnes, Nine Energy Service: It all comes back to getting the right people on the bus at the right time. When you start any sort of technology implementation - whether it is a connected workforce implementation or a rollout of other new technologies- the right people must be a part of the conversation from the start.

I've seen situations where business leaders will unilaterally decide what is best without including people at the mid-tiers in the corporation who truly understand what is going on. It is important to make sure that whenever you are engaging the workforce that you are going down to the appropriate levels in the corporation and including those people from the beginning.

However, before you even include those employees, it is crucial to make sure you understand how to communicate the 'why' behind looking at this new solution, where your head is at, and what the company trying to ultimately accomplish.

Once the right people are on board, it is critical that you listen to understand their feedback. If your people do not feel understood, they will not buy-in during each part of the implementation process. I have seen instances where business leaders do not listen or incorporate feedback from key players which can cause frustration, disarray, and ultimately a decrease profits/productivity.

The team must understand the why, they must be included, and they must be heard.

Diana Davis, Oil and Gas IQ: I wondered if you could give an example of how you would approach engagement? What's an example of something you would do?

Sean Barnes, Nine Energy Service: In the oil & gas industry, our business leaders are highly competitive. With that said, I like to partner with the more progressive and forward-thinking executives first, since they are more inclined to adopt technology at a more rapid rate.

Not all business leaders are ready for change, and some are more inclined to sit back until they have seen proven results. An example of demonstrating results would be during executive strategy sessions when those who have adopted new technology are able to share in-depth analytics and dashboards that tell a story of how the business is achieving success.

When this occurs, those that have not been as focused on adoption of technology and process improvement will want to get onboard. This creates an environment where the business is 'pulling' the technology instead of IT pushing on them. Then a true partnership between operations and technology begins to solidify.

Diana Davis, Oil and Gas IQ: Do you measure certain KPIs or metrics to make sure that you're on track with your technology projects or implementations?

Sean Barnes, Nine Energy Service: We measure certain metrics around user adoption. We do have a core application called EHS Insight that we use for audits, incident inspections, learning management, and a myriad of other things. In that application we can look at the data and see what the adoption looks like in each of the business units. From there, we can determine whether it makes sense for us to spend more time coaching them in how to use technology to the fullest. Alternatively, we can also go in and find out what could be preventing them from using it efficiently.

For us, it really comes down to looking at the adoption of the systems that users log into. This is a very basic and fundamental metric, but it seems to be a good indicator of whether we are moving in the right direction or not.

SOLUTION SPOTLIGHT:

Honeywell's Autonomous Worker Assistance

Manas Dutta General Manager, Honeywell Workforce Excellence Portfolio lead a workshop at our recent Connected Worker conference in Chicago entitled "Enabling Your Workforce to Perform Better using Connected Technologies Coupled with Autonomous Worker Assistance."

In this interview, Dutta discusses the rise of the Connected Worker, explains what autonomous worker assistance is, and explores why more manufacturers are turning to wearables on the shopfloor.

Diana Davis, IX Network: Tell me about the topic of the workshop you're leading. What is autonomous worker assistance and how is it beneficial?

Manas Dutta, Honeywell: Across the industrial sector, we see jobs are being transformed by fourth industrial revolution technologies. This is increasing the complexity of assets and requires the reskilling of the existing workforce.

The skills requirements are evolving and emerging, so there is a constant need to increase productivity where workers need better tools to do their jobs more efficiently and collaborate better using machine-to-machine, machine-to-human, and human- to-human engagement. Honeywell is addressing these needs using autonomous worker assistance solution.

So, what are the benefits? Firstly, it helps maintain business continuity in the face of high workforce churn. The new workforce needs to learn faster and achieve competency quickly for business continuity. We also need increased productivity in the current inflationary environment. Workers need better tools to do their jobs more efficiently and more collaboratively using new technologies.

Diana Davis, IX Network: How does Honeywell fit into the connected worker market? What do you offer to customers in manufacturing and other industrial environments to support this notion of the Connected Worker?

Manas Dutta, Honeywell: Our company is not only a technology provider, but we also operate our own plants.

That gives us the perfect mix of domain knowledge and technology. We combine that expertise together to offer a comprehensive solution. Connected Worker shouldn't be just a bunch of technical point solution; it must be stitched together to provide a holistic solution.

We provide the solution using what we call a "ETPA framework".

That stands for Evaluate, Train, Predict and Assist.

What do we mean by Evaluate? It is important to measure the current state and understand the existing gaps from the future state. Then you can plan the progression properly.

The Evaluate phase does exactly that. We measure the current state and use that information to come up with a workforce development plan.

Next is Training. The way we acquire knowledge is changing fast. Today's workforce don't want to spend weeks in a classroom and

learn one particular topic. They are more into hands on and "just in time" learning. Providing the right training at the right time using technology is a very important part of Connected Worker for us.

The third piece is to Predict. Once the trained workforce are back into the field we help them with predictive insights and recommendations to plan their day-to-day job more effectively and efficiently.

Finally, comes the Assist stage. While workers are executing their jobs, we provide assistance through different mobility solutions to ensure they do the job right first time, every time.

Diana Davis, IX Network: Can you take me through some of the underlying technologies that come into this? You mentioned stitching things together to a comprehensive solution. What needs to be stitched together to get a good solution for the Connected Worker?

Manas Dutta, Honeywell: If we go back to our ETPA framework, we use an AI ML-based technology to analyze the data coming from the live system that captures what workforce are doing on the job and how are they handling different situations.

This AI ML will come up with insights and recommendations where the workforce is doing well and where they need help, assistance, coaching or training.

When we get to the training stage, one important aspect is to encourage "learning by doing" for higher retention.

However, it can be challenging to train in a live production environment because most industrial plants are running at optimum production. We create a digital replica of the plant using virtual reality immersive technology and allow users to learn through different 'what if' scenarios. This safe, simulated environment can expedite their learning.

When it comes to the Predict stage, AI ML, again, plays a major role. We look at the asset data, process data, and historical data to come up with health-related predictive insights, which the workforce can look into and plan out what needs immediate attention. Mobility solutions with wearable devices provide contextual information in the moment when workers need it the most when they are doing the job in the field. Those are the key technologies which are contributing to this solution.

Diana Davis, IX Network: Could you give me an example of how your clients are using technology like this?

Manas Dutta, Honeywell: We have quite a number of examples. One of the largest LNG plants in America, for instance, is using our virtual reality-based immersive field simulator to train their field operators. In the Middle East and Pacific regions many customers are also using this solution to train new hires to optimize the number of field workers needed specifically in offshore platform for operations and maintenance needs.

The AI ML-based competency assessment is being used by large petrochemical plants in the Middle East to address competency gaps and minimize production losses due to human errors.

Typically, 3 to 8% of production losses are caused by human errors. If we can identify competency gaps and plug them, that is a huge saving for our customers.

Mobility solutions with wearable technology is also becoming increasingly popular. Customers are using wearable technology for use cases like digitization of pen-and-paper-based field rounds, remote collaboration with experts to resolve issues faster, and safety measures to promote emergency evacuation in the case of a fire, gas leak or "man down" alert.

Diana Davis, IX Network: Are there any particular areas that you see as key areas of growth for the Connected Worker over the next 12 months?

Manas Duttas, Honeywell: We see that many Connected Worker implementations right now are mostly point solutions in the form of different mobility applications that are disjointed. This makes it hard to address the end-to-end workflow that field operators or field maintenance workers need.

The security of the solution is also a major concern because most of these Connected Worker solutions are cloud hosted.

Finally, connectivity is a major challenge in most of industrial manufacturing environments.

It important to look at a platform rather than a point solution, that offers easy and scalable integration within a plant's operational technology (OT) and information technology (IT) existing infrastructure.

Making sure that this solution is secure and can function in both offline and online modes is essential. This is the kind of solution that will drive the future of Connected Worker.

Diana Davis, IX Network: Wearable technology is an area of growing interest in industrial environments for everything from safety through to productivity. What are the wearable device options that are available and how do you recommend companies go about evaluating what might be best fit for the operations?

Manas Duttas, Honeywell: When we look at industrial frontline workers they already carry too many tools in the field for their day-to-day jobs. Not only is that inconvenient, but it can pose safety concerns when they have to carry yet another handheld mobile device with them.

Wearable mobile technology, as a result, is becoming very popular in industries across all segments. It makes access to information easier through voice-driven commands, and it also helps to keep the hands free for the job they are doing.

There is no one-size-fits-all solution. It is important to first identify the challenges that frontline workers of a particular plant are facing. Understand the business process and then pick a few use cases to pilot the solution first.

At the beginning it is important to assess - Who are we trying to connect? What are they doing today? How error prone are their actions? What are the consequences of errors? What information do they need to do the job right, first time?

In the pilot phase, it is also very important to identify a few end users who can play the role of a change champion in the organization.

Establish the value of the solution with a smaller scale pilot before scaling up. We help the adoption process by providing support to our clients to overcome the common challenges that come during the change management process. Our motto is to help our customers make every worker the best worker.

See the Innovative Connected Worker technology vendors you can meet at our Global Connected Worker Event Series!

Whether you're just beginning your Connected Worker strategy or wanting to take your implementation to the next level, come and meet the leading solution providers in this space to explore the art of the possible. The following is a list of exhibitors that will be in attendance at our global series of events in 2023.

Platinum Sponsor:

Website: www.otterbox.com

Technology keeps workers linked to colleagues, systems and tasks. When it takes a hit, processes unravel, productivity stalls and, in some instances, disaster ensues. That's why OtterBox and industry leading partners have joined forces to create a suite of complete, no-compromise solutions for hazardous work environments. Certified for extra-challenging jobs, these ultra-tough cases and accessories eliminate error and expand the capabilities of your connected workforce.

Gold Sponsors

Website: www.honeywell.com

Honeywell Process Solutions (www.process.honeywell.com) is a pioneer in automation control, instrumentation and services for the oil and gas; refining; energy; pulp and paper; industrial power generation; chemicals and petrochemicals; biofuels; life sciences; and metals, minerals and mining industries. It is also a leader in providing software solutions and instrumentation that help manufacturers find value and competitive advantage in through Honeywell Connected Plant, Honeywell's Industrial Internet of Things (IIoT) solution. Process Solutions is part of Honeywell's Performance Materials and Technologies strategic business group, which also includes Honeywell UOP (uop.honeywell.com), a leading international supplier and licensor of process technology, catalysts, adsorbents, equipment, and consulting services to the petroleum refining, petrochemical, and gas processing industries.

Website: www.kyndryl.com

Kyndryl works at the core of businesses that move the world. With more than 90,000 skilled professionals serving customers in over 100 countries, we design, build, manage and modernize the mission-critical technology systems that the world depends on every day. We are committed to the health and continuous improvement of the vital systems at the heart of the digital economy. With our partners and thousands of customers, we co-create solutions to help enterprises reach their peak digital performance. Our world has never been more alive with opportunities. Together, we can seize them. To learn more, visit www.kyndryl.com.

Silver Sponsor

Website: www.l2l.com

L2L connects and empowers frontline workers in less time and at lower cost. The software has 4 modules that increase plant efficiency and throughput:

- L2L Dispatch is a revolutionary connected worker solution that unifies all departments and enables frontline workers to identify, prioritize and solve problems at the root cause.
- L2L Maintenance leverages this unified view to align maintenance and production schedules in a way that dramatically increases operational efficiency.
- L2L Production visualizes production performance to highlight bottlenecks and resource constraints that are limiting throughput and quality.
- L2L Connect simplifies machine and legacy software connectivity to provide better data faster.

Exhibitors

Website: www.huvrdata.com

HUVRdata is the next generation Inspection Data Management Software Platform. Purpose-built in the cloud, the mobile-connected and vendor-agnostic HUVR IDMS enables the aggregation, analysis and automation of visual and quantitative inspection data from any device, sensor, robot, or field technician. The largest energy producers and the most specialized inspection service providers have realized immediate ROI using HUVR to plan inspections, manage work, ingest data, assess findings and generate analytical reports – from any workflow and in concert with any existing systems of record. Industrial asset owners finally have a simple and easy way to visualize infrastructure health, ensuring compliance, reliability and operational excellence.

Website: www.indeavor.com

Indeavor's solution offers clients end-to-end, cloud-based employee scheduling and absence management optimization. By integrating with your human capital management, learning management, and enterprise resource planning systems, you can leverage a robust platform with real-time employee data. Relieve your supervisors of manual tasks and the constant mental fatigue brought upon by scheduling changes by automating the entire process, connecting the data existing corporate systems, and ensuring you always have the right qualified employee in each position.

Website: innovapptive.com

Innovapptive unifies the industrial frontline worker, back-office and assets on a single platform, available in both on- and off-line mode. With our patented, no-code/low-code technology, and an integrated suite of highly reconfigurable apps for maintenance, operations and supply chain, we bridge the "last mile" disconnect between physical actions and a digital system of record like SAP. At Innovapptive, we take immense pride in helping large enterprises transform how industrial worwk gets done - better, faster, cheaper and safer.

Website: thejoyfactory.com

The Joy Factory specializes in tablet cases and accessories for the mobile workforce in Oil & Gas. Our aXtion Extreme case series was designed with one fundamental principle; Keep the user effective but safe! These hazardous location tablet cases for Apple and Microsoft are an economic alternative to Industrial Personal Computer (IPC) solutions. Without sacrificing safety and quality we've designed industrial tablet/phone cases that protect connected workers from extreme hazardous environments (C1D2, C2D2, C2D3, ATEX, Zone 2) while in the field. Our trusted specialized cases are industrial-grade, certified and ready to deploy throughout your organization.

Website: www.nanoprecise.io

Nanoprecise Sci Corp is an automated AI-based predictive maintenance solution provider that facilitates early detection of even small changes in machine operations well before they impact production or cause downtime. Nanoprecise specializes in the implementation of Artificial Intelligence and Industrial IoT technology for predictive asset maintenance and condition monitoring. The AI-based solution offers real-time predictive information about the genuine health and performance of industrial assets. Nanoprecise is headquartered in Edmonton, Canada, and works with companies across various sectors to help drive their Industry 4.0 journey.

Website: www.proceedix.com

Proceedix, a Symphony Industrial AI platform, develops a Software-as-a-Service based Connected Worker platform to manage enterprise procedures, work instructions, and checklists in an easy way, while making remote execution paperless and mobile. We change the way operators in manufacturing execute work: anytime, anywhere, on smartphones, tablets, and smart glasses. With offices in the US and Belgium, Proceedix helps companies in the manufacturing and life sciences industries to guide and connect operators with accurate and up-to-date digital procedures that improve quality, traceability, and shared knowledge.

Website: www.Resco.net

For over 20 years, Resco.net has transformed the way our clients and partners do business through industry-leading enterprise mobile solutions. Resco enables companies to use and collect vital data in the field and digitize paper-based processes through state-of-the-art technology. Their fully customizable and 100% offline solutions are helping over 200,000 users and are utilized by 2500+ corporate customers all around the world.

About the Connected Worker Summit Series

Oil and Gas IQ's Connected Worker Summit series is where the world's leading Connected Worker experts gather globally to share use cases and showcase trailblazing technologies that will transform your operations.

Our programs have been designed to help you understand how to leverage connected worker technologies to improve operational efficiency, training, asset management, quality and safety.

Our programs have beenin intensive workshop sessions, focused learning tracks, discussion groups and interactive panel discussions on a 3-day program that will offer inspirational ideas and solutions for wherever you are in your transformation journey. Do not miss out on this opportunity to come away with an action plan to build a data-driven, connected workforce that will drive continuous improvement across your enterprise.

THE CONNECTED WORKER

March 28-30, 2023

Houston, TX

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3-5 October, 2023

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November 14-16, 2023

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