

THE CONNECTED WORKER



Forward Thinking: Creating a Culture of Innovation and Implementing New Technologies

An interview with Mark Hutcherson, Director, Operations Excellence ConocoPhillips Global Production



What have been some of your key areas of focus over the past 18 months?

The focus is still very much on innovation, technology and data analytics. It's been a couple of years, so I'm a lot more heavily involved and informed on what we're doing across the company. My role is heavily focused on our operational excellence programme. It relates to assessing different BUs under operational excellence performance, in addition to other ambitions.

Presently, we're focusing heavily on incorporating the use of digital technologies, data analytics and innovative culture into our more traditional operational excellence programme.

We're also considering a lot of the connected worker platforms that are available, and completing proofs of concept for either the platform itself or adjusting our work processes, with the aim to improve the way we execute our daily field operations.

Alongside our focus on connected worker, digital twin is something that is gaining a lot of steam as of late. There are two main aspects to this concept. A lot of people think of digital twin as this 3D model that incorporates all of your facility information and isometrics, your P&IDs, equipment tag information etc. into a digital world, and then using that for job planning and scheduling.

Whilst we're pursuing some of that, we are also pursuing more modelling of the process, looking into some of the traditional integrated production modelling and equipment performance modelling. Those

aspects are being enhanced with some of these digital twin technologies, especially when you're incorporating sensors and other devices.

The Connected Worker is such a high priority area for companies right now. Where is CoP on your connected worker journey?

Currently, we're in the process of evaluating which partnerships we want to form. There are roughly a dozen vendors we've looked at that have connected worker platforms with a focus on data integration and visualisation tools so that your mobile devices can be used constructively to integrate work processes.

Our game plan this year is to narrow that down to a select few and pilot things in various business units, but we haven't formally announced any partnerships at this stage.

What is the primary driver behind the connected worker initiative?

There are a couple of key aspects that are driving the initiative. It's certainly compelled by a concern for safety, along with trying to reduce windshield time. But the largest aspect that we're focused on is the efficiency gains and productivity. We want to reduce having to put data in duplicate source systems, and increase the efficiency of some of those traditional copy and paste back-office tasks.

More generally, it also improves the decision-making ability, allowing a broader array of folks to be able to make judgements or decisions based on usable data.



With respect to digital twin, is this technology already used in some of your offshore sites?

Yes. Norway is fairly advanced in this space, where they have some very detailed models built of their platforms. They utilise a lot of the information that is built into their digital twin model to do a lot of their job planning onshore. This has allowed them to bring a lot of folks onshore that would traditionally be situated on the platform. For example, those involved in planning, scheduling, logistics and warehousing processes.

We're moving more and more in that direction, trying to have a higher percentage of support staff working off-facility to reduce cost.

How will these initiatives be affected by the further oil price drop?

The situation that we're in right now, getting hit on both the supply and demand side, is really going to test our resolve when it comes to some of the initiatives we've got going on in the company. The company has various IT projects and digital technology initiatives underway, and I definitely see that we will be forced to scale back, defer or reconsider how we execute some.

But as it relates to some of these projects that are closer to the wellhead, like connected worker platforms and digital twin, I do see those continuing to advance forward. That's the message that's been coming from the executive leadership. They recognise that improving in that area enables us to lower our cost of supply, to have a lower breakeven, and ultimately to be more competitive for the long-term.

The approach by which we go about it, such as the execution of some of these proofs of concept, will deviate because of the low-cost environment we're forced into. But there's going to be some necessary spend if we're going to

continue to make advancements, and leadership wants to continue the pace.

How is ConocoPhillips currently using machine learning and AI for equipment condition monitoring and predictive analytics?

Alaska is a great example, as it is testing out some of these capabilities. They have a lot of big machinery, such as rotating equipment, linked to sensors and have been successfully working with various third parties to become more advanced in detecting anomalies in this equipment. At this time, they have a couple of pilots, with a few moving past the pilot stage.

For us, this year entails nailing down exactly which way we want to go with some of these and figuring out how we want to scale them across our other business units. Whilst our other BUs also have monitoring initiatives, such as valve condition monitoring and other types of maintenance optimisation, Alaska is a good example of a place where we've got a couple in the works and are pushing the envelope on technology.

What are the bottom-line operational improvements?

It's still a little bit early. We're just coming out of the pilot stage, so it's not widespread. We're not seeing the full benefit yet as we haven't enabled this on all of our equipment, even on the North Slope of Alaska, let alone globally.

Directionally, we have seen some value adds. We have been alerted to conditions where we've stopped equipment ahead of a catastrophic failure, saving some very expensive pieces of equipment. We were also able to validate and predict some events that would have otherwise not been detected. So, there's definitely value being added there, probably in the order of millions of dollars already.

But we have the opportunity to multiply that by at least ten, if not a hundred. There's the potential to save tens if not hundreds of million dollars every year if we're able to fully and

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successfully adopt this across our business, as well as reduce maintenance activities and predict failures on equipment.

What are the challenges you've faced in trying to create a culture of innovation and support for this new way of working?

Over the last couple of years there have been a couple of messaging campaigns that have allowed the majority of the workforce to embrace this innovation culture. Of course, there are always going to be some outliers and some folks out there that don't find it comfortable to change their mind-set. Slowly over time, even the holdouts are beginning to change their minds, with company culture and peer pressure starting to take hold. Once your colleague to the left of you is doing it, and your colleague to the right is doing it, and they're not just going through the motions, but are true believers themselves, then that's where others will be converted. It just takes time, and that's currently playing out. To combat some of the challenges we've seen, and what really helps us to push it over the edge in our operations, is getting some of those quick wins early on by performing small trials in some of our larger initiatives, like our global connected worker programme.

The whole point of doing these smaller proofs of concept is that we can identify maybe two or three

key challenges that we hear directly from our operations staff, then put those into our goals for the year and test some things. We want to solve some of their problems before we try to boil the ocean.

We talk about a transformational change, but we also know that it's not going to happen overnight. It is in progress. Eventually, we want to get to the point where it is a transformation across our operations and our business, but these quick wins that we can have early on are really going to help us with that momentum, earning that buy-in from our operations staff and the company as a whole.

In the midst of the global pandemic, how has the company been responding? What does this mean for your workers in the field?

It's a really interesting situation. Obviously, it's a big challenge that came upon us abruptly. I have great admiration for our leaders, and all the frontline workers, to be able to make adjustments so quickly. Within the course of a couple of weeks, we've had

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to reduce our exposed manpower significantly and have contingency plans in place to mitigate higher levels of employee sickness, especially if it reaches some of our remote field ops.

Reducing to minimal manning is one of the most obvious things that has come about, not just because of the pandemic, but also, due to the oil price as well. Relocating our staff, especially those who would normally be on-site, has given us that impetus to reconsider our working habits. In Canada, for example, in some of our more remote operations. There are folks who rotate to site on a regular basis that are now working out of their house. The question is, if they're able to do that for the next couple of months, and do it successfully, is it possible that that position can be permanently relocated to a main office? Or, is there a possibility that they can work from home for a certain period of the time?

The pandemic has forced us to test and try new things, accelerating some of the concepts we've been wanting to prove up. It will also identify

those roles that don't work as effectively away from the field and allow us to understand which roles are more critical to have on site and which can be done remotely.

This pandemic also causes us to test our process and systems for remote access, like the video conferencing, for example. We can monitor how well that works and stress test when you've got this many people using it all the time while working remotely.

One of the key points that the oil and gas industry need to recognise is that although digital technology will help your bottom-line and can reduce costs, the majority of the wins will rely around adjusting your work processes and your operating model.

It's important to consider the way you work and be open-minded about doing things differently. Rather than simply relying on the technology itself or the tool, the key is to talk about how it's used and how we improve our work processes by enabling these digital technologies.

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July 27-29, 2020

Mark will be speaking at the upcoming Connected Worker ONLINE event

- free to attend for In House Industry professionals! He will be delivering a case study session titled 'The Connected Worker: Finding the Right Approach to Change'.

Join over 800 business leaders from chemicals, energy, life sciences, mining and more this July 27-29 and learn how companies are leveraging connected worker technology to improve operational efficiency, training, asset management, quality, and safety.

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