

# Lessons on Connected Worker from Chevron Phillips Chemical Company

Understanding how to handle  
challenges to better decide on  
the best path for the future.



**Interview with**  
**Ryan Tsamouris**  
Solutions Architect, Connected  
Worker Digital Transformation  
**Chevron Phillips Chemical Company**



Every year at **Chevron Phillips Chemical Company**, workers fill out an average of 75,000 safe work permits. Historically, the problem was that these paper-based forms were largely manual, metrics and data had to be collected by hand, and it was difficult to maintain standards across the company's global network of plants.

A few years ago, the company set about to change that. It launched a company-wide field app for electronic work permitting. But, the project path wasn't completely straightforward.

In this interview, **Ryan Tsamouris**, Solutions Architect, Connected Worker at **Chevron Phillips Chemical Company**, discusses the challenges and lessons learned during this connected worker field app project, what he wishes he'd known at the start of the project, and his advice to others embarking on a similar journey.

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**Diana Davis, Oil and Gas IQ:** Companies usually love to play up their successes. They're more reluctant to share when things don't go so well. At our upcoming Connected Worker event in Houston, you're going to be talking about a project that you worked on that didn't go so well. Why do you want to talk about a failure? Why not play up your accomplishments instead?

**Ryan Tsamouris, Chevron Phillips Chemical Company:** I don't like to use the word failure. It's important to understand how we handle challenges to better decide on the best path for the future. By sharing our lessons learned we can help others find success with their connected worker initiatives.

In the oil and gas industry, we need more adoption of field applications, wireless network expansions, IoT, and other connected worker technologies. The more that we adopt these things, the more that third parties will

build and support new products, and the faster we can advance as an industry. If we have companies that are taking on these large-scale projects, and they're finding success, then there will be more interest to invest.

This particular project is also a story of accomplishment because we were able to overcome these challenges and stabilize the product and the process. We also championed areas outside of our scope, such as funding for new mobile devices, private LTE, Wi-Fi surveys, and were able to get the support from our leadership to do the things we needed to do.

We want to share our lessons learned to promote more industry adoption and talk about how we can persevere through the common challenges.



**Diana Davis, Oil and Gas IQ:** Let's talk about what you were actually doing. You've described it as "a challenging effort to launch a company-wide field app for electronic work permit." Tell me more about what you were doing.

**Ryan Tsamouris, Chevron Phillips Chemical Company:** Our company – and the oil and gas industry in general – still does a lot of work on paper in the field. At Chevron Phillips we perform over 75,000 safe work permits every year. This is just one type of permit that we do in the field that requires communication and collaboration between the control room, operations, and maintenance.

If you include other types of permits, such as energy isolation and a whole list of others, the number is almost double that. Even just the base number of 75,000 is a lot. The challenge is to move all of that to an electronic form and standardize it.

The challenges of paper are well known. We weren't automating much. We weren't collecting much data and using it to drive innovation. We were collecting our metrics and analytics by hand. Imagine everybody filling out a spreadsheet and sending it up the chain, and then someone combines the spreadsheets. It can become a real mess.

Standardization is also a problem with paper-based processes. Our company has multiple facilities all over the world. Each site would do something in a different way. For instance, one site collects one piece of data and another site does not. There were standardization and consistency problems that we wanted to resolve.

Another part of it, too, was that this was a project that the company attempted to do multiple times before. The first few attempts couldn't get off the ground because the scale of work permitting is immense. That's when we decided to implement a more agile approach.

**Diana Davis, Oil and Gas IQ:** What were the specific challenges? You've mentioned a few already, but I imagine there were more along the way?

**Ryan Tsamouris, Chevron Phillips Chemical Company:** There were a few big challenges. The first was around how we managed the product development. We implemented the first Agile team in the company. That was a real challenge for us because it was a new way of working.

In an Agile team you have team members from all over the place: you have a product owner, a change manager, a data scientist, an integration person, and others. You have all these people from different backgrounds and training perspectives who are brought together into a pod, under different managers, and they have to implement a product. This is new for IT departments driven by siloed teams.

We also had to change how we think about implementing these solutions. In Agile development you don't spend an entire year building something and at the end of it say "here you go user, here's your version one product." Instead, you look at your first sprint, which can be within a few weeks and say "here's what we're doing." The user gets something in a very short amount of time. Then another few weeks, and another.

You work in these sprints, and you slowly build your product over time. That was a big shift for us and a big challenge to get used to. It's like we're making a sandwich for users, and the first thing they get to eat is plain bread. The fixings come next.

We also ran into numerous technical challenges with this project. We had mobile devices that weren't powerful enough to run our app. We had wireless networks that had dead zones in certain areas. We had vendor related challenges around their app and service. You add in the fact that our pilot site was in a remote location, and we had to deal with COVID and winter storms. Dealing with all those issues was a huge challenge in itself!



The final challenge was this was a lofty goal from the very beginning. Anyone who works in the industry knows that there are so many different scenarios for permitting: work permits, safe work permits, energy isolation, and so on. You have operations, maintenance, third party contractors, and people that come into the facility that have never been there before. So having a solution in place that can handle all the use cases is challenging.

It's wild how many different things you have to address, but we worked through all of them and I'm looking forward to sharing more details during the conference about what exactly we did to meet those challenges.

**Diana Davis, Oil and Gas IQ:** I find it interesting because it sounds simple: taking a paper form – a permit – and making it electronic. Looking back, what did you wish you had known at the start of the project?

**Ryan Tsamouris, Chevron Phillips Chemical Company:** It's one of those things that you just have to jump into. If we were to start the same project today, I'm very confident we would do well with it today. But that's only because we took those first steps in the beginning.

Looking back, I do think we could have spent more time with the vendors before we signed on that dotted line. We'd want to see their products running on our Wi-Fi network and their cloud platform. I'd want more hands-on demonstrations where you have the opportunity to hold the app in your hand and go out into the field to see what happens.

**Diana Davis, Oil and Gas IQ:** What advice would you give to other oil and gas professionals that are about to embark on a connected worker journey?

**Ryan Tsamouris, Chevron Phillips Chemical Company:** I think everyone is doing some form of connected worker today. We've been doing connected worker in the industry since Wi-Fi was installed at the facilities; it just didn't have a name. We called it mobility, or field services, or other names.

If someone is starting a new connected worker strategy, I would advise that they don't try to copy exactly what other companies are doing. A connected worker strategy has to come from within. You must decide what connected worker means for your organization. Does it mean field operations and maintenance? Does it mean you need to implement apps and get rid of paper? Does it mean you want a digital twin? Focus on what's relevant for you or where your gaps are.

I would also say that you have to redefine success. When we switched to Agile it was a big adjustment, but now our users and our business are very invested into these projects. Every two weeks we have multiple sprint reviews with all our Agile teams and we show them what we've done. The business becomes more invested into the process because they see the changes. They see the improvements over time.

Finally – and this is relevant to Agile teams – you really need to have a well-rounded team. I mentioned this earlier. You have a product owner that comes from the business that understands the things in the field. You have your technology aspect to it, such as your solu-

tions architect, data engineers, and data scientists.

One of the most important roles that we have found, however, is that of change manager. We call them OCMs; this person's sole job is to help build the value case. They're sending communication to stakeholders, building implementation timelines, maintaining the intranet pages for users, and creating release notes. Basically, they're managing all these things that a project team had to do on its own in the past. But in an agile scenario, you have a change manager that is focused on that pod on that team.

Your connected worker strategy needs this change manager. They need to sit right next to the product owner and all the technology folks so that they can see and communicate what is going on. I think that this is a really key role for success.

**Diana Davis, Oil and Gas IQ: What are you working on going forward? What's on the agenda this year?**

**Ryan Tsamouris, Chevron Phillips Chemical Company:** Digital twin is the big thing that we're focused on. It's the end goal, but there are a lot of foundational level things that we're working on right now to get there. Work permitting was one big aspect. Then you have things like standardizing all the asset management and migrating legacy apps that don't allow us to pull data or use modern platforms like Azure.

This year we have a several large-scale, company-wide projects that are looking to renew these apps and find better tools to do the things we need.

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