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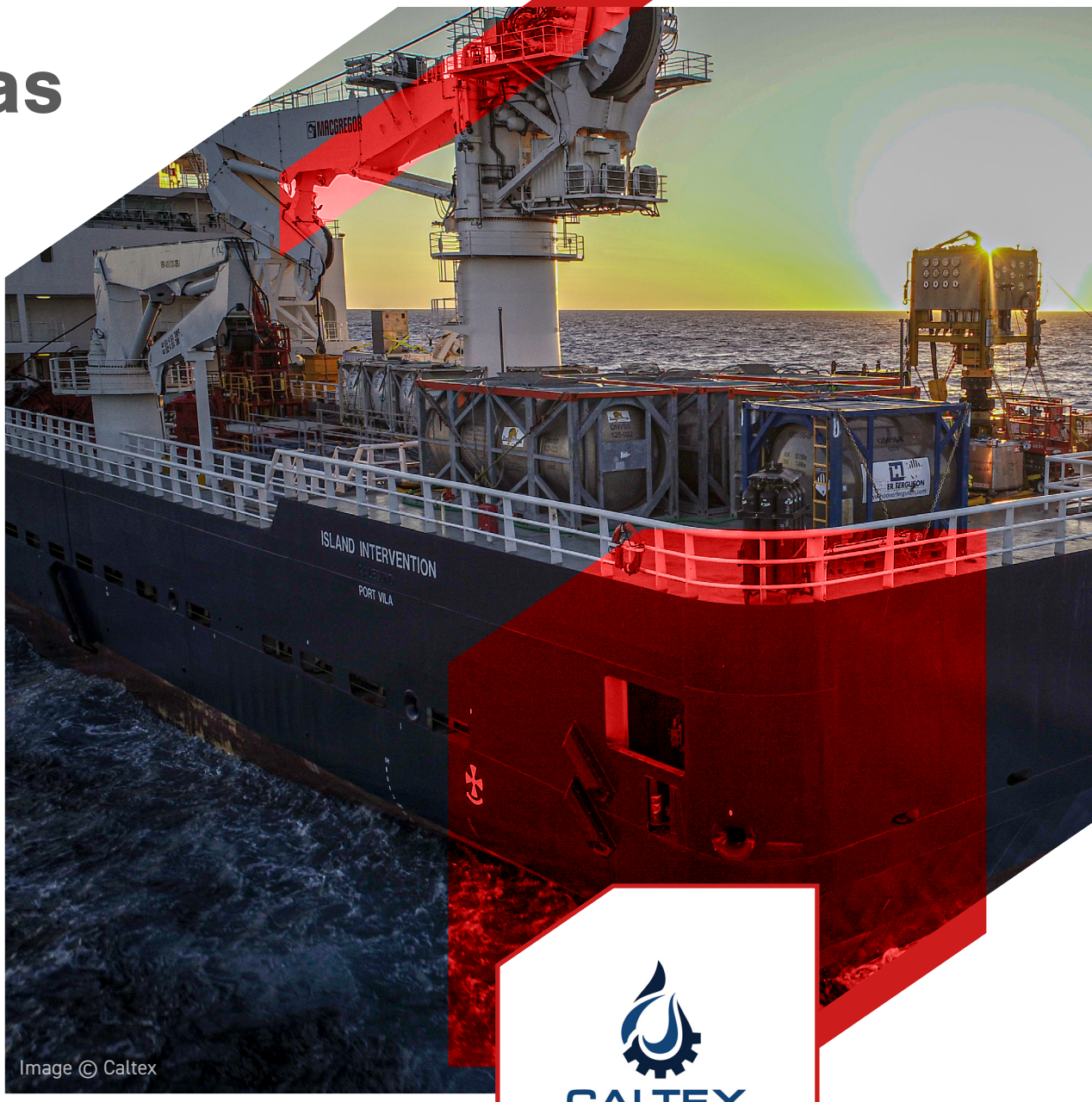

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CALTEX
OIL TOOLS

CASE STUDY

Leading an Industry Through Innovation

COMPANY BACKGROUND

Caltex Oil Tools is a product and services company with over 30 years of experience in the on-shore and off-shore oil and gas industry. Recently, however, the company underwent an ownership and leadership change that led to a strategic shift toward a focus on highly specialized engineering capabilities and solutions—specifically on equipment used between the water line and mud line in the deep-water space. A typical engagement might involve oil well 'production enhancement,' where specialized equipment is used to make a well more productive. This involves developing machinery that gives the field team access to the well bore to deliver chemical packages that increase oil production.

"If I tell a customer that they've got full access to the manufacturing data for a product that we developed for them, that's going to blow their mind. That's going to set us apart from our competitors and it's going to give us some improvement in productivity and lower our costs and improve our quality."

- Chris Mancini-Managing Director, Caltex

CHALLENGE TO BE ADDRESSED

Digital transformation through an affordable PLM solution with the right attributes that could unify their data and grow the business while staying flexible enough to adjust to the inevitable changes of the industry.

SOLUTION

- Aras Innovator's Product Engineering application for parts, BOMs, documents, drawings, and change management
- Implemented Nexus (from Aras Gold Partner, vdR Group) that allows engineering to interact with ERP-related data natively in Aras

Future plans include:

- Using Aras Innovator to extend the digital thread and create and manage digital twin configurations across the key functional areas of manufacturing and maintenance, repair, and operations (MRO).
- In conjunction with the vdR Group, developing a portal for vendors and customers that would allow direct access to complete, up-to-date manufacturing data, operations and maintenance manuals, and quality documentation for their Caltex equipment

Since the Aras and Nexus implementation, Caltex customers achieved:

- Well production enhancement of 360%, as opposed to the industry standard of 100%
- An accelerated time to delivery--reducing the project timeline from 24 months to 4 months
- 65% reduction in cost due to the significantly shorter project timeline

MEETING CHANGES AND CHALLENGES

A key reason that Caltex leads their competition is the ability to quickly respond to the unique complexities and timelines of each engagement. Recently, they were tasked with 'killing' an oil well in an operationally remote part of the Gulf of Mexico. This required quickly fabricating and deploying equipment to pump in fluids with a very high specific gravity—20,000 standard cubic feet of helium in this case—to smother and kill the well in 7,200 feet of water. But this was just another job for Chris Mancini, Caltex's Managing Director, and his team. As Chris put it, their ability to generate solutions faster, more efficiently, and with better quality results is based on a "foundation where we're able to collect our data, keep track of it... [and] capture the value out of our information" with high integrity.

Chris' maverick view of the importance of business processes and data management are grounded in a common pattern he's observed in their industry. Too often, small innovative companies struggle to scale and react quickly to change—whether regulatory, supply chain, or nature. Chris attributes this to an industry-wide culture of viewing industrial technology and technique 'breakthroughs' as the key drivers of competitiveness, while overlooking the role of 'back office' processes, data management, and business intelligence.

A FOCUS ON DIGITAL TRANSFORMATION

While engineering innovation is a prerequisite in the oil and gas industry, Caltex has chosen to focus equally on the impact that digital transformation can have on the economics of solutions for the deep-water space. As a company with industry recognized engineering expertise, Chris and his team knew that improving engineering processes starts with product lifecycle management (PLM). Admittedly, they were jaded from previous experiences with legacy product data management (PDM) and PLM tools. Outdated technology, costly upgrades, and poor connectivity to other systems were par for the course. Caltex needed an affordable PLM solution with the right attributes that could unify their data and grow the business, while staying flexible enough to adjust to the invariable changes of the industry.


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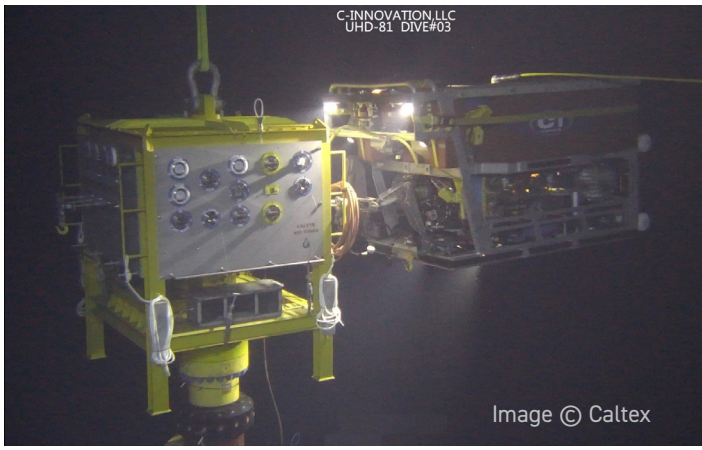
With these guiding principles, Caltex's PLM search led them to Aras. They were attracted to a platform-based approach that could support customization and application connectivity. According to Chris, the flexibility of the Aras Platform was a key differentiator. "Some of the advantages, in particular, for Aras is that we do have some open architecture here. We do have the flexibility to make some adjustments to the system to really tailor it to our needs without turning it into a multi-million-dollar upgrade process every time we want to upgrade the system software. I think there's a tremendous amount of value and flexibility in it, so it's like a blank slate in that regard."

IMPLEMENTATION

Caltex's initial implementation focused on Aras Innovator's Product Engineering application for parts, BOMs, documents, drawings and change management. As an existing Microsoft Dynamics 365 (D365) user, Caltex's next goal was to connect Aras to D365 so that critical ERP data, such as customer POs, sourcing information, and manufacturing data could help inform everything from engineering to MRO. However, Chris wanted more than just a point-to-point integration with Dynamics. Rather, he envisioned a connector service that could synchronize, normalize, and map data to and from Aras and other applications that Caltex might use as they grow. So, after researching various service-oriented connector services, Nexus, from Aras Gold Partner, vdR Group, was selected. Once implemented, Nexus had an immediate impact on operations by allowing engineering to interact with ERP-related data natively in Aras, creating a foundation to ensure Caltex can easily incorporate future data sources. The integration layer has been activated to support the Aras integration with D365—including the ability push parts and BOMs to D365 and establish federated links to return item master properties such as inventory levels, pricing, and units of measure.

Since the Aras and Nexus implementation, Caltex has continued to improve key metrics on recent projects—including a customer that achieved a well production enhancement of 360%, which sharply contrasts with the industry standard of 100%. Moreover, Caltex was able to accelerate the typical time to delivery by 84%, taking the project timeline from 24 months to 4 months. This corresponded with a 65% reduction in cost as compared to their competitor.

DIGITAL THREAD, DIGITAL TWIN, AND BEYOND



The stage has now been set to use Aras Innovator to extend the digital thread and create and manage digital twin configurations across the key functional areas of manufacturing and maintenance, repair, and overhaul.

Since Caltex not only engineers and sells equipment for products to their customers, but also builds and operates their own equipment, extending the use of Aras Innovator for MRO will be a major initiative in the future. According to Chris, "Some of these are very high-spec, well-controlled devices, and we have a requirement to maintain every nut and bolt that's been replaced or torqued, every seal, every inspection that's done. We need to have a record of that, and we need to be able to present that to regulators and to our customers as a matter of course."

In addition to adding MRO, another top priority for Caltex is developing, in conjunction with the vdR Group, a portal for their vendors and customers that would allow direct access to complete, up-to-date manufacturing data, operations and maintenance manuals, and quality documentation for their Caltex equipment. Says Chris, "We want to eliminate the paper transactions, paper data entry, and we want to have a convenient way for our vendors, for example, to deliver documentation to us, material certifications, quality documents, et cetera, into a portal that delivers right into Aras and links that digital thread back to that particular item that we've built and purchased and developed so that we can increase efficiency not only for us but also for our vendors and our customers." Using this portal, Caltex customers will be able to see into Caltex's MRO system, in order to audit and validate the condition of well control equipment. They also intend to provide industry regulators with a portal so that they can see the data and get access to the information they need. Chris continues, "That's part of the value added as well. If I tell a customer that they've got full access to the manufacturing data for a product that we developed for them, that's going to blow their mind. That's going to set us apart from our competitors and it's going to give us some improvement in productivity and lower our costs and improve our quality, so that's high on our list."

As Caltex continues to grow, their plans for the role Aras Innovator plays throughout their business expands as well. Together, Aras and the vdR Group are working with Caltex to ensure that they continue to lead the way in their industry by offering transformative solutions to their customers.

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Aras provides a resilient platform for digital industrial applications. Only Aras offers open, low-code technology that enables the rapid delivery of flexible, upgradeable solutions for the engineering, manufacturing, and maintenance of complex products. Aras' platform and product lifecycle management applications connect users in all disciplines and functions to critical product data and processes across the lifecycle and throughout the extended supply chain. Headquartered in Andover, MA with major offices throughout the world, Aras supports more than 350 global multinational customers and over 250,000 users. The Aras Innovator platform is freely downloadable. All applications are available at a single subscription rate, which includes all upgrades performed by Aras. Aras customers include Airbus, Audi, Denso, GE, GM, Honda, Kawasaki, Microsoft, and Nissan.

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