

IoT in the Oil and Gas Industry

The oil and gas industry is one of the earliest adopters of IoT. The typical onshore well costs between \$5 million and \$9 million to build and offshore investment ranges into the billions. To help oil and gas organizations quickly and securely deliver meaningful results from IoT, Arcadia Data provides an easy-to-use analytics product. Arcadia Enterprise can provide analytics on historical and streaming data to provide use case value.

Solution Highlights

- Real-time event alerts and dashboarding.
- No software development skills required.
- The only business intelligence tool designed for the data lake.

Use Cases

- Preventative maintenance to reduce downtime.
- Directional drilling and horizontal drilling optimization.
- Safety and regulatory compliance.

Oil and Gas: Unleash the Full Potential of Big Data and Streaming Analytics

Arcadia Enterprise helps companies reduce their level of effort, minimize downtime, and ensure safety and regulatory compliance.

Is there an untapped resource lying dormant in your data lake? Are you able to exploit real-time streaming data and trigger alerts? How do you manage your oil and gas assets today? Massive amounts of data are created every second that could be used for analysis concerning the physical properties of a well from surface to final depth. Until today there were two problems with exploiting this data: the size was enormous and the real-time aspects were unreachable to business users (thousands of data points per second).

With recent advances in streaming technology, affordable storage, and cloud computing, Arcadia Data is bringing the focus of real-time analytics to the oil and gas business community. Why? Legacy platforms require technical talent, complex infrastructure, and a collection of software systems to make it possible. Arcadia Enterprise enables the business user to build real-time streaming and data-at-rest applications. What used to take weeks or months now takes only hours or days. Arcadia Enterprise does not require programming knowledge and provides a drag-and-drop web interface. This means you can focus on the use case and not all the technical trappings to optimize the management of your oil and gas assets:

- **Critical Event Management.** Businesses can take action to mitigate potential issues before they become critical or disrupt production.
- **Preventative Maintenance.** Companies are able to develop a preventative maintenance program based on both streaming and historical analytics.
- **Horizontal Drilling.** Rotary steerable systems increase the exposable section to the reservoir by drilling at an angle where vertical access is not possible.
- **Safety and Regulatory Compliance.** Companies can use streaming and real-time data analytics to curtail risks due to spills, leakage, and other hazardous conditions.

Benefits of Arcadia Data

About Arcadia Data

Arcadia Data provides the first native visual analytics software that runs within modern data platforms for optimal scale, performance, and security. Its flagship product, Arcadia Enterprise, lets you analyze big data without moving it to deliver self-service BI, real-time insights, and advanced analytics.

Key Features

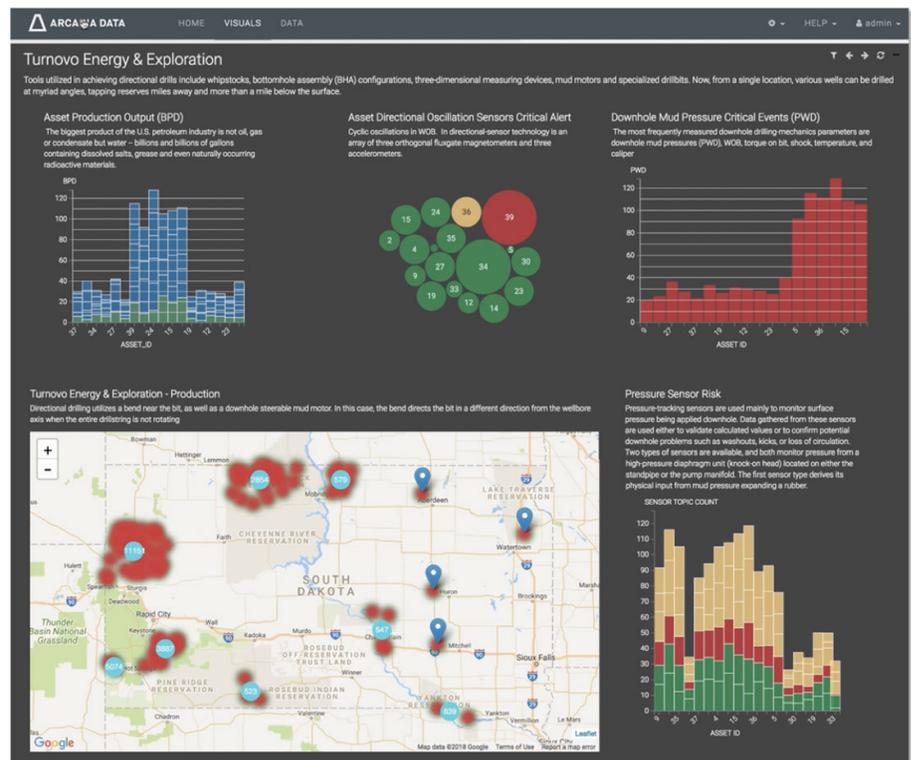
- Show real-time and historical data in one application.
- Analyze all types of data in place without moving it.
- Allow business users to do this in a self-service fashion.

Critical Event Management

Exploration and production assets can be spread out across land and sea. Companies also deploy a great deal of equipment and componentry. As a result, they face a multitude of possible incidents. This requires logistics, personnel, and equipment being deployed to repair and maintain the rig. Through the use of Arcadia Enterprise and real-time streaming, applications can be used to position assets intelligently where they are needed most.

Preventative Maintenance

Unscheduled downtime can translate into energy shortages and higher prices for consumers. Most of the time a combination of events cause well assets to shut down or worse. Poor ad hoc maintenance increases the possibility of equipment or human failure. The results can be very costly as well as cause accidents and increase liability and worker's compensation remedies. By using Arcadia Enterprise with historical and streaming data, maintenance can be scheduled and controlled via accounting procedures and forecasting.



Horizontal Drilling

The direction of the drill bit can be monitored and controlled through the use of drilling sensors, global positioning systems, and real-time technologies.

Summary

Considering the huge volumes of data from many sources in the oil and gas industry, using big data technologies for both real-time streaming data and historical data gives companies a competitive advantage. Arcadia Enterprise is an ideal analytics and BI platform for oil and gas companies' big data and IoT analytics environments.

This technology can improve well production by 20 times compared to a vertical implementation. A variety of sensors are involved, including flow-in/out tracking, pressure tracking, drill-monitor, gas detection, and pit-monitoring. Arcadia Enterprise enables business people to build sensor monitoring multi-variate solutions for directional drilling.

Safety and Regulatory Compliance

According to BDO, regulatory compliance ranks as the number one risk factor to exploration and production companies' 10K filings. Fracking and directional drilling also have the scrutiny of federal, state, and local governments due to environmental and safety concerns. With these relatively new techniques, companies find it difficult to keep up with new regulations. Leverage Arcadia Enterprise to build the last mile data fabric to assist with reducing this uncertainty.

About Arcadia Data

Arcadia Data provides the first native visual analytics software that runs within modern data platforms for the scale, flexibility, performance, and security users need to glean meaningful and real-time business insights and design data-centric applications in the era of big data and IoT. Its flagship product, Arcadia Enterprise, is purpose-built to analyze big data without moving it to deliver self-service BI, real-time insights, and advanced analytics for use cases like cybersecurity, connected devices, and customer intelligence. Arcadia Enterprise is deployed by some of the world's leading brands, including Procter & Gamble, HPE, Royal Bank of Canada, Kaiser Permanente, and Neustar. To learn more, follow @ArcadiaData or visit www.arcadiadata.com.