Optimize Oil and Gas Operations with Smartlogic Semaphore

The Opportunity

Oil and gas organizations around the world face a number of competing challenges; from rapidly changing economic climates and regulation, to environmental issues to stakeholder expectations, they need a solution that improves the availability, quality and utilization of enterprise information.

From a study by Booz, Allen, Hamilton - "Oil and gas companies are using the latest ideas, such as mobility, cloud computing, and knowledge management, and wrapping them around their current processes to make everything work better." These technologies, particularly knowledge management, are far from perfect.

For every company in the oil and gas sector, the biggest imperative is Know the Well:

- Know precisely where each well is located
- Know the leasing and royalty arrangements for each well
- Know and understand the implications of local agreements
- Know the make and model of all equipment at each well
- Know the repair and maintenance history

This information is maintained in multiple systems - location information is housed geographic information systems, identifiers are in ERP systems and contracts, agreements and royalty information in centralized document management systems. Engineering schematics are in engineering and design systems, maintenance history in maintenance systems and safety procedures in yet another location.

In addition to the disparate nature of enterprise information, the language and vocabulary is varied across departments, groups and teams. The diversity of location and language make it difficult to efficiently maintain and service the wells leaving the organization open to safety breaches or regulatory exposure.

The Result

One oil and gas company used the power of Semaphore's Semantic AI capabilities to increase operational efficiency and decrease regulatory exposure.

By harmonizing business vocabularies across the enterprise and analyzing and describing all information assets consistently, they reduced the number of maintenance incidents caused by out of date or missing information, improved the ability to comply with regulatory requirements and leveraged complete information to ensure revenues, royalties and agreements are in place.

How They Did It

They began by creating a model using Semaphore Knowledge Model Management (KMM) that contained the subjects, topics and concepts relevant to the business and the relationships between them.

While some organizations choose to create their business vocabulary from scratch, others, like this organization, start with industry standard models like the Professional Petroleum Data Management (PPDM) data model; Semaphore supports both processes.

They built out the model and extracted the details of actual wells and equipment from their systems of

record. The details are incorporated into the business model to result in a comprehensive, accurate and well-defined list of well sites, equipment, maintenance, royalty agreements, locations, etc.

The model is published and used by Semaphore Classification and Language Services (CLS) to enrich each information asset with precise and complete metadata and extract pertinent entities, facts and relationships. The model and metadata are used to drive targeted and relevant search and facilitate regulatory reporting and compliance.

The metadata automatically created by CLS is key to identifying, removing and archiving duplicate and out of date versions. The fact extraction results are integrated into workflow systems such as TIBCO, to automate business processes within the enterprise.

Semaphore provides a collection of web services and libraries that integrate with commonly used search technologies to provide an enhanced search and navigation experience for the user.

Semantic search results expand beyond simple keyword search to return highly targeted information suitable for the context of the query. The ability to display all these results in topic maps, topic pages and related content links, provide knowledge workers with a full range of tools to leverage and utilize all information within the enterprise.

Find out how global energy organizations around the world are using Semaphore to improve operations and reduce the risk of regulatory exposure contact us at:

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