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GSPC Mitigates Risk and Optimizes Business Performance by laying out strong foundation of E&P Corporate Database through Corporate Database Managed Service (GSPC-CDMS) Project

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Summary

GSPC has been going through an intense period of domestic exploration and development activity. Given the fast pace of these projects in a resource-constrained and competitive market, the company wanted to apply new technologies, improve existing processes, and find innovative ways to work more efficiently. It was also crucial to ensure that key decisions were based on validated data and information in order to effectively manage risk and optimize performance.

After careful evaluation of various vendor solutions, GSPC decided to partner with SIS to establish a corporate database for its E&P operations using the complete ProSource information management platform.

Keywords: *GSPC – Gujarat State Petroleum Corporation, CDMS – Corporate Database Managed Service E&P – Exploration and Production, SIS – Schlumberger Information Solutions, GIS - Geographic information system*

Introduction

By the mid-1990s, Gujarat State Petroleum Corporation (GSPC) was actively involved in E&P operations as an important player in the Indian Exploration and Production industry. GSPC has more than 60 different onshore and offshore licenses—mostly in the exploration acreages—stretching across India and abroad. Technical data generated to date from E&P operations—independently or in partnership with other consortium members—had been managed in-house, in an inconsistent, ad hoc manner. It was clearly a time for more efficient processes and improved data security to protect project investments, along with scalability to support the company's exponential growth target.

GSPC realized that the following enhancements were needed:

- corporate database to store increasing volumes of data received from operations (drilling, seismic acquisition and processing, production) and the G&G community (interpretations)
- high-value data backup procedures (for tapes and other media) with more visibility to users
- high-value interpretations recorded, labeled, and stored for future reference
- a way to enforce standards
- secure levels of access and data security to guard against alterations

Why CDMS?

The project targets information sources (field offices known as assets, basins, forward bases, laboratories and interpretation centers) and utilizes the "own, populate, use" model to manage data quality. In short, the CDMS project brings a paradigm shift from personalized local databases in individual personal computers to a truly integrated companywide corporate database. The ultimate goal is to improve the quality and speed of business decisions through more efficient team collaboration. This is enabled by the availability of reliable multidisciplinary (seismic, wireline, well completion, drilling, and production) technical data. The CDMS project is expected to create substantial value for the organization.

Establish corporate E&P database

The project was implemented in a phased approach, which included distinct steps. These are

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Project Phase:

- Tape Transcription
- H/w and S/W installation
- Database creation
- Data Modeling
- Loading Pilot data
- QC Workflow with Domain Expert
- Training and User Acceptance Tests
- Project Management Service

Service Delivery Phase

- Deliver against Monthly KPIs
- Legacy Data Loading
- QC with GSPC domain Expert
- Loading Current Data
- Data Delivery as Requested
- Solution Support

Workflows

Domain-specific workflows were designed for Seismic, Log, Well, and Results data. Domain-specific policies and procedures, as well as quality criteria were defined. A secure, Web-enabled, GIS domain-specific access workflow was created.

Data storage

All E&P data were consolidated in a secure, centralized corporate database. This provided a single repository to search, while eliminating data duplication and increasing data quality.

By the project's end, approximately 10 terabytes of information were consolidated and cataloged, including 3,000 magnetic tapes of prestack and poststack seismic data; 15,000 well log traces; and 100+ wells' worth of G&G, drilling, reservoir, and production data, along with related documents.

Resources

A data management organization was put in place to implement the workflows and promote data ownership. Approximately 20 end users were trained on specific data management workflows.

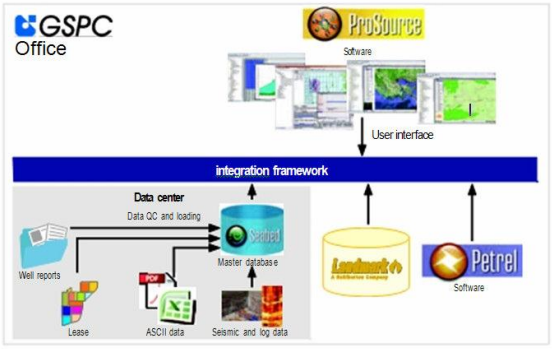
Integration

The new system was seamlessly integrated with GSPC operations and is now part of the daily workflow. The system also enabled integration with software, such as GeoFrame* and Petrel applications.

Solution

Implement ProSource* E&P corporate information management platform to centralize data and provide scalability; Include the following components:

- Seabed* advanced E&P datastore system
- ProSource Enterprise for general, well, and spatial data management
- ProSource Seismic for seismic trace data management
- ProSource Logs for field log curves data management
- ProSource Results for OpenWorks® / SeisWorks® results and seismic interpretation data management
- ProSource Petrel* plug-in for Petrel results data capture and restoration
- Troika Magma for seismic tape QC and seismic data transcription



Schematic of the GSPC integrated solution, showing how the ProSource corporate information management platform links to the organization's data via a single user interface.

Conclusions

Five months turnkey project was delivered to layout the foundation of E&P corporate database and establishing corporate policies and procedures of data management. Subsequently priority legacy data is loaded to corporate database and secured them with proper authentication and entitlement process. We also implemented solution so that data flows smoothly from operations to corporate database for the ongoing operations.

Value to GSPC

- The data available in a corporate data store have been validated by someone responsible for ensuring that only data of a known quality and in a stable state is entered into the system which has been in use for interpretation projects.
- The data is stored in an open and known data model. This allows for easy access for reporting purposes and reduces the issues around transfers to multiple different software possibly of different versions.
- As the majority of the data is concentrated in the Corporate repository and is of known quality, the amount of time required to actually find a given data item, and confirm that it is of usable quality is drastically reduced.
- The data in a corporate store has been entitled in many different ways depending on the business requirements. For example members of a given asset may only be able to see their own data, while only members of the well data management team may be allowed to update well data.
- Given that the corporate data store is an enterprise wide entity it is well protected against hardware failure or major disaster giving a good backup to the E&P data.
- The definition and maintenance of a set of standard policies and procedures detailing everything from data loading workflows to who is ultimately responsible for a given data type is maintained for correct operations of the corporate data store.

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