

Case study

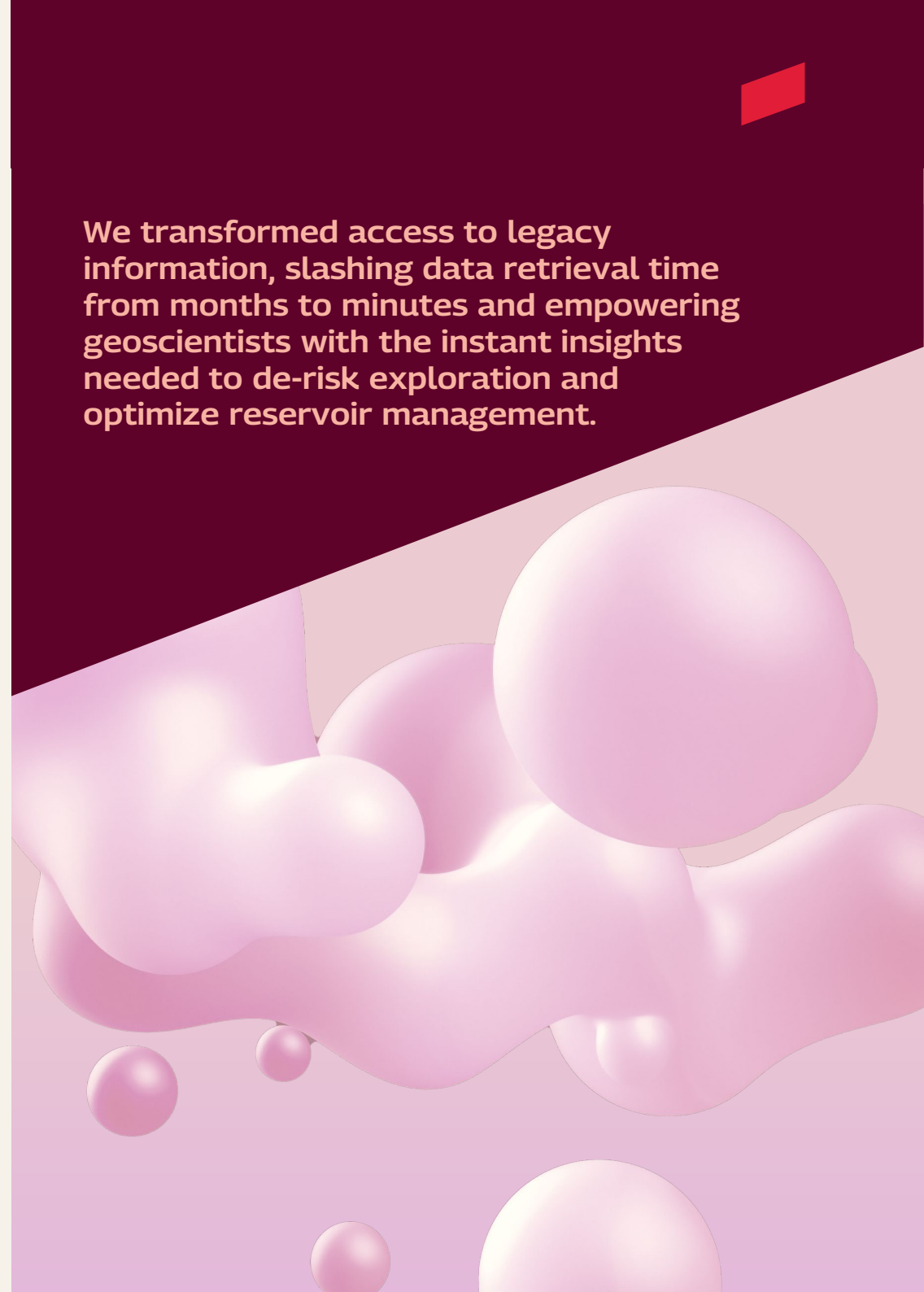
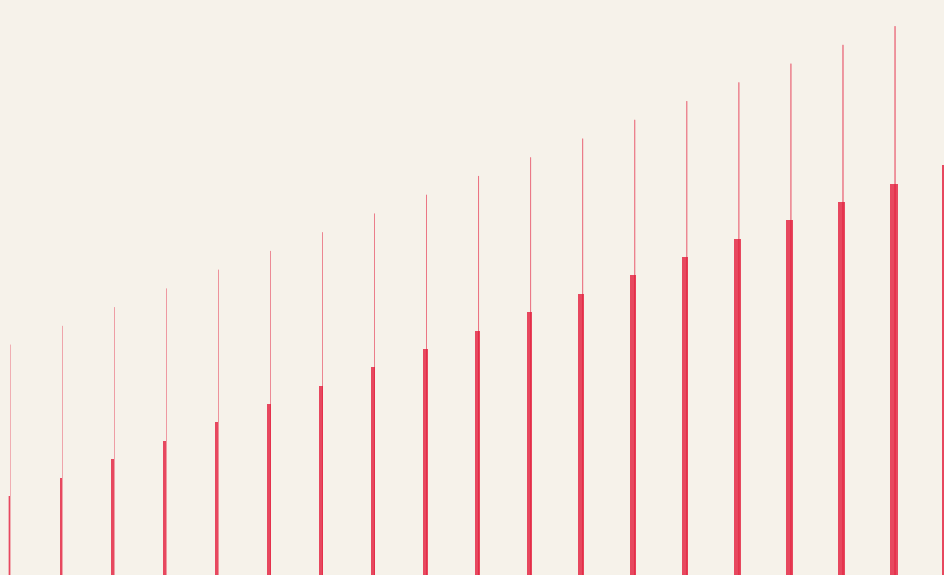
Integrated Energy Major Transitions to Multi-Cloud Access, Accelerates Data Access and Enhances Decision-Making



Overview

A leading US integrated energy company was hindered by critical exploration and production (E&P) data stored in physical warehouses, resulting in months-long retrieval times and delayed analysis which ultimately leads to delayed revenues and increased uncertainty in subsurface evaluation. We implemented an end-to-end digitization solution, using AI-powered metadata extraction and a multi-cloud platform to create a centralized, searchable digital archive. This transformed access to legacy information, slashing data retrieval time from months to minutes and empowering geoscientists with the instant insights needed to de-risk exploration and optimize reservoir management.

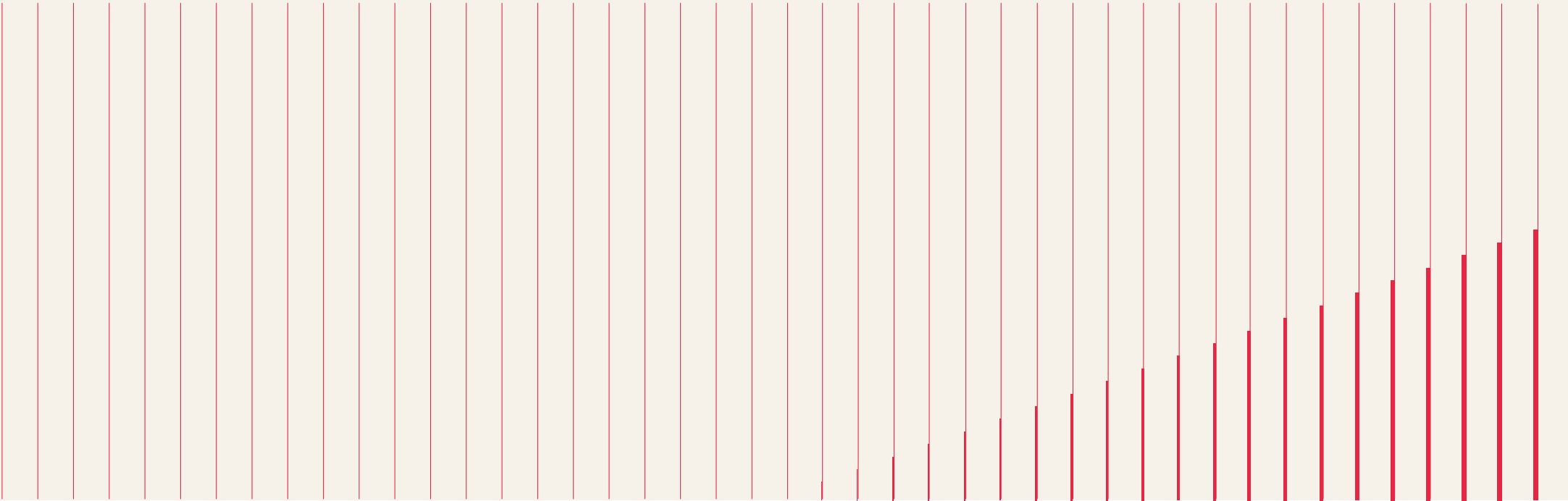
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Client Background and Challenges

Our client, one of the world's largest US integrated energy companies, operates across the full energy spectrum in over 180 countries. However, their competitive edge was constrained by decades of invaluable petro-technical data—well logs, seismic cubes, maps, reports, etc.—being physically stored in disparate warehouses, often unknown to geoscientists, geologists, petrophysicists, and interpreters in general. Locating and retrieving a single piece of data was a manual process that often took months, severely delaying critical analysis for re-assessing reservoirs and planning new drilling activities, while the physical storage incurred substantial ongoing costs. The company required a partner with deep domain expertise in the energy sector and a proven track record in large-scale data modernization. They chose Tech Mahindra for our comprehensive approach to transforming physical archives into intelligent, accessible digital assets.



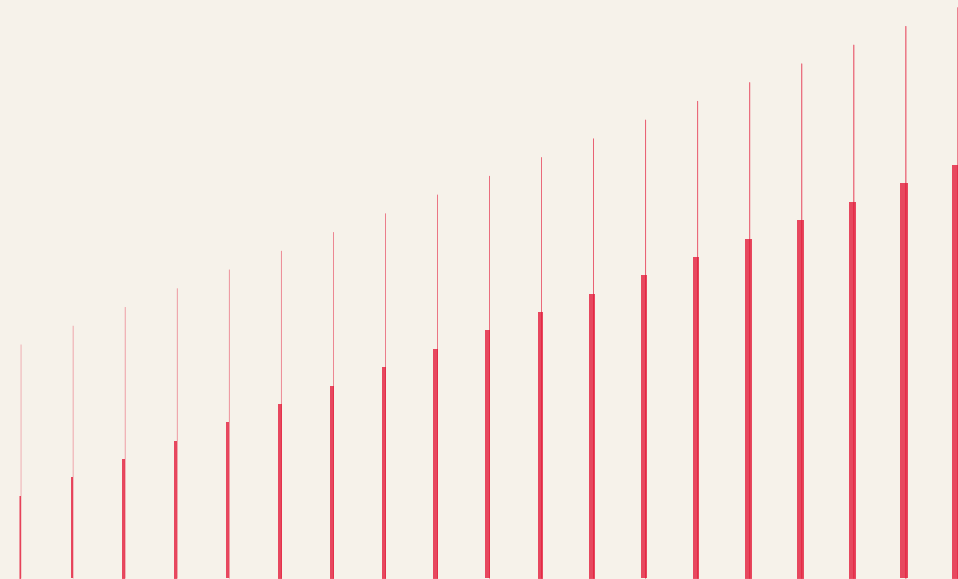


Our Approach and Solution

We delivered a holistic solution designed to unlock value from the client's legacy data by converting physical liabilities into digital assets. This included:

- Identification of all physical data from the warehouse and transfer to the scanning center
- Initial data selection based in business rules designed by the client in combination with their business areas and Tech Mahindra to define which documents will be digitized and which ones discarded. This reduced the time and cost of digitization dramatically and was done with a strict quality control by petro-technical engineers
- Collection and conversion of all physical documents into electronic form
- Data quality checks (QC) and indexing for improving search ability
- Extraction of key metadata/attribute, such as survey name, vendor name, shot point, ranges from the EBCDIC header of SEG Y files, and indexing it based on the availability and weightage of each attribute
- Advanced processing of documents to make them workstation-ready, such as depth-registered logs, spatially positioned seismic data, and georeferenced maps
- Data storage done in a multi-cloud backup and recovery framework for direct access to digital sub surface data

Our approach ensured that the solution directly aligned with the objective of making historical data accessible and actionable.



Business and Community Impact

The solution delivered transformative results across the client's upstream operations, directly addressing their core challenges with quantifiable impact.

- **Dramatically Accelerated Data Access**

Retrieval time for workstation-ready data was reduced from months to minutes, resulting in a time-to-value reduction of over 90%. This allows project teams to operate with unprecedented agility.

- **Enhanced Decision-Making**

With instant access to a comprehensive digital archive, geoscientists can now analyze a broad range of historical parameters simultaneously with new data, enabling them to and improve the accuracy of reservoir models.

- **Significant Operational Cost Reduction**

By digitizing the archive, the project is on track to associated with physical document storage, retrieval, and management.

- **Unlocked Hidden Value**

The powerful search capabilities have made previously "lost" or forgotten data discoverable, providing new geological insights that support more hydrocarbon reserves incorporation, better planning and de-risk operational activities.



About **Tech Mahindra**

Tech Mahindra (NSE: TECHM) offers technology consulting and digital solutions to global enterprises across industries, enabling transformative scale at unparalleled speed. With 152,000+ professionals across 90+ countries helping 1100+ clients, Tech Mahindra provides a full spectrum of services including consulting, information technology, enterprise applications, business process services, engineering services, network services, customer experience & design, AI & analytics, and cloud & infrastructure services. It is the first Indian company in the world to have been awarded the Sustainable Markets Initiative's Terra Carta Seal, which recognizes global companies that are actively leading the charge to create a climate and nature-positive future. Tech Mahindra is part of the Mahindra Group, founded in 1945, one of the largest and most admired multinational federation of companies. For more information on how TechM can partner with you to meet your Scale at Speed™ imperatives, please visit <https://www.techmahindra.com/>.



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