



How EPAM Created an Actionable Data Delivery & Analytics Platform for IHS Markit®

EXECUTIVE SUMMARY

IHS Markit is a leading global provider of information, analytics and data solutions. The company's energy customers, especially in the oil and gas industry, are constantly looking for quicker and more efficient ways to extract and leverage actionable insights from large volumes of data to help improve decision making.

IHS Markit chose EPAM—an expert in cloud advisory, data application modernization and software engineering—to build an actionable data delivery and analytics platform on Amazon Web Services (AWS). Together, IHS Markit and EPAM created a cloud-based data solution that enabled its customers to make more informed decisions using fewer resources.

CUSTOMER CHALLENGE

IHS Markit continually sources, enhances and curates major oil, gas and energy data to provide its customers with rich insights. Those customers required a platform that could deliver immediate, robust data with responsive analytics to help them make critical business decisions—for example, where to shift resources, how to prioritize wells and acreage and to predict financial performance.

To meet customer demands, IHS Markit needed to update its current data platform into a cloud-based data and analytics solution that could provide steady-state analytics and disruption forecasts in as close to real time as possible. The new platform also required more efficient dashboards that could handle higher volumes of data than its existing solution.

WHY AWS

IHS Markit selected AWS as its cloud provider because it supports the latest generation of GPU-accelerated machines and offers Amazon Elastic Container Service (Amazon ECS) for GPU-backed containers. In addition, AWS features the low-latency shared storage Amazon FSx for Lustre and Amazon Simple Storage Service (Amazon S3) IHS Markit required for the data and analytics delivery platform to perform most efficiently.

FAST FACTS

Client: IHS Markit

Location: London, England

TECH STACK

Serverless Computing on AWS

Python

Snowflake

OmniSci DB

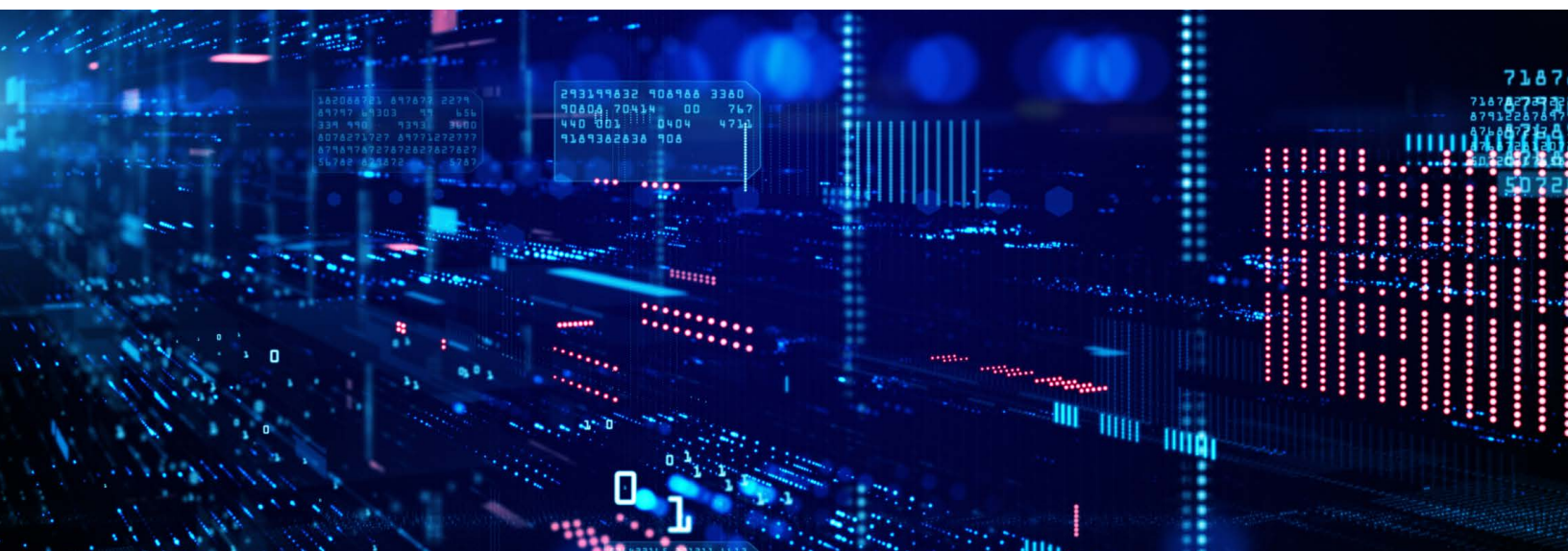
Omnisci Immerse

HEAR FROM THE CUSTOMER

“Partnering with EPAM was a gamechanger for us. We were able to take our accelerated analytics strategy to market, from concept to reality, in seven months. EPAM is an expert in what they do, and their ability to understand our needs and put together a team with the right skill sets to not only finish the job, but also deliver, exceeded our expectations. They have helped us build a foundation for our future and I look forward to a continued partnership for other mission-critical projects to come.”

ALI SANGSTER

VP Analytics Strategy
IHS Markit





How EPAM Created an Actionable Data Delivery & Analytics Platform for IHS Markit

PARTNER SOLUTION

EPAM approached the data and analytics solution in two phases. In phase one, EPAM worked with IHS Markit to reimagine its energy information pipeline so that it could support large data sets and enable cross-functional team insights. By leveraging the data warehousing capabilities of Snowflake and the GPU-accelerated analytics of OmniSci, EPAM helped deliver a next-gen data analysis and integrated analytics product, as well as a future-ready mega-data integration environment. This data and analytics platform was designed to support 100 concurrent users (active queries). Query response time has improved, with hot-load response times of most queries occurring in under 100 milliseconds. The first phase of the solution has:

- Transformed complex and difficult-to-maintain economic calculations, such as capital expenditure and break-evens, into cloud-based phases with configurable parameters. These extract, transform, and load (ETL) steps and the monolithic code were migrated toward serverless microservices with AWS Lambda and AWS Fargate. Each new phase of the pipeline was orchestrated and sequenced with AWS Step Functions.
- Enabled large external files, like gridded structural maps and configurations, to be stored in Amazon S3 buckets for cross-container usage.
- Orchestrated OmniSci GPU database containers through Amazon ECS to display analytics on millions of data sets with server-side rendering. These containers were connected to shared data files via Amazon FSx for Lustre to provide high performance for queries not stored in memory.
- Provided a highly visual, responsive and innovative product design.
- Integrated multiple data sources from various oil and gas-specific structured and unstructured data types.

EPAM also performed analysis and architecture design to scale descriptive and predictive analytics product prototypes up to enterprise-level commercial products during this phase of the project.

Phase two of the project is scheduled to go live in late 2021. In this phase, a new module for customers that predicts existing and future well production will be added along with front-end design and increased data sources on the pipeline. In addition, both batch and real-time prediction services will be added with Amazon Sagemaker.

ABOUT IHS MARKIT

IHS Markit (NYSE: INFO) is a world leader in critical information, analytics and solutions for the major industries and markets that drive economies worldwide. The company delivers next-generation information, analytics and solutions to customers in business, finance and government, improving their operational efficiency and providing deep insights that lead to well-informed, confident decisions. IHS Markit has more than 50,000 business and government customers, including 80% of the Fortune Global 500 and the world's leading financial institutions. Headquartered in London, IHS Markit is committed to sustainable, profitable growth.

ABOUT EPAM

Since 1993, EPAM Systems, Inc. (NYSE: EPAM) has leveraged its software engineering expertise to become a leading global product development, digital platform engineering, and top digital and product design agency. As an AWS Advanced Consulting Partner, EPAM works with its global customers to design, migrate, build and support sophisticated cloud applications on AWS with increased flexibility, scalability and reliability.