SEAGATE

Case Study

Accelerating Geophysical Data Transfer from Field to Processing

PXGEO unlocks a turnkey solution for data aggregation, transportation, and activation with Lyve™ Mobile.

As data becomes a more significant strategic resource for exploration and production enterprises, the success of the partnership between Lyve™ Mobile and PXGEO proves the value of deploying a cost-effective and effortlessly scalable physical data transfer solution that's built for mass-capacity storage at the edge and frictionless physical transfer to any cloud service.

Key Concepts

Improved Field Processing Time— Delivering valuable insights to ongoing operations

Reduced Customers' Time-to-Data— Cutting PXGEO's former data delivery time in half

Simplified Data Ingestion— Improving data access time with up to 1.3 GB/s throughput

Secured Delivery to the Processing Center— Protecting data as it moves from the field to central processing

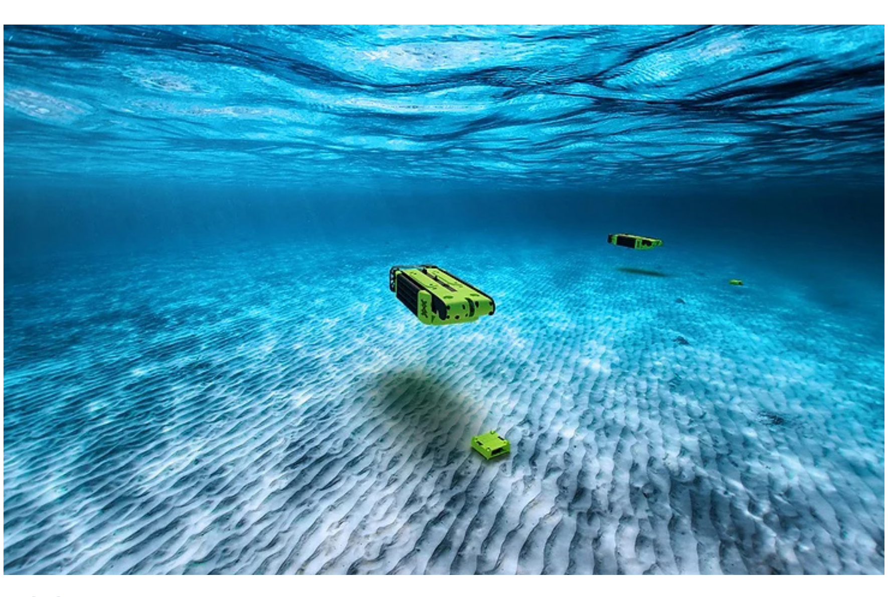
Introduction

For a company like PXGEO whose subsurface imaging solutions are used to discover recoverable hydrocarbon reserves and monitor existing reservoirs, the ability to quickly activate the data collected in the field gives them a competitive advantage. To ensure customers can reap actionable insights from that data, PXGEO looked to Lyve Mobile by Seagate to accelerate their data transfers from the field to central processing.

Their Story

Advancing Technology and Data-Intensive Workflows

PXGEO is an innovative marine geophysical service provider offering solutions that bring together the latest in seismic data acquisition techniques to collect superior quality data in challenging environments. Across applications, these advanced subsurface imaging solutions provide valuable insight for offshore carbon capture, utilization, and storage (CCUS) strategies.

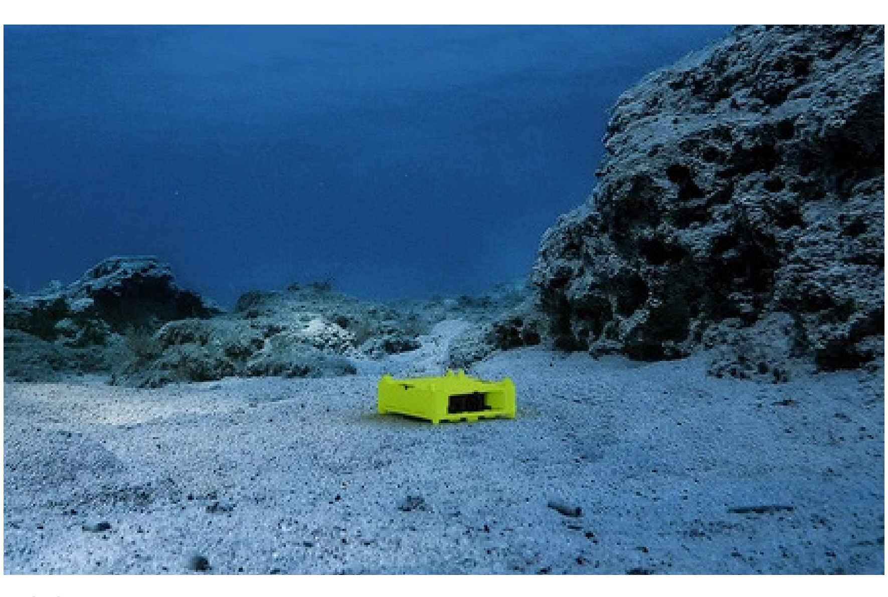


PXGEO's ocean bottom node survey

Their Goal

Accelerating Data Access and Delivery Times

At the heart of PXGEO's innovative subsurface imaging solutions are two technologies: ocean bottom node (OBN) and marine towed steamers (MTS). PXGEO also offers hybrid solutions that combine both methodologies to provide clients with fit-for-purpose data that optimizes subsurface imaging quality and acquisition economics.

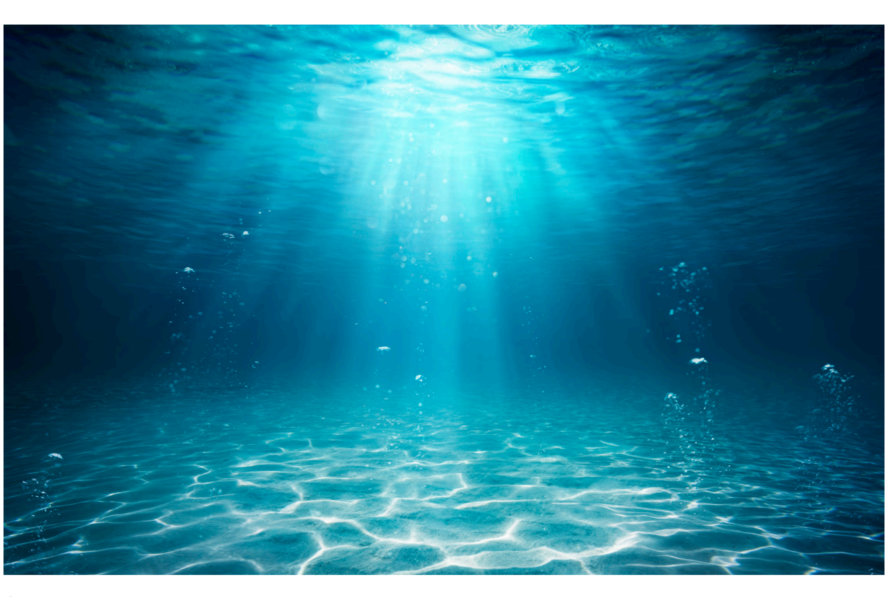


PXGEO's ccean bottom node survey.

Their Challenge

Difficulty Aggregating, Transporting, and Activating Mass Data

For years, PXGEO depended on magnetic tapes to store and transport the data the company's imaging techniques produce. Because those datasets have grown from terabytes to petabytes over the years—and can quadruple in size during processing and interpretation—PXGEO needed to reimagine the way their monthslong field projects aggregated, transported, and activated data.



Ocean bottom.

Their Solution

Seamless Data Management from the Field to the Cloud

To address these mass data management challenges, PXGEO needed a highly flexible and accessible solution. The approach would need to address scalable, affordable mass data acquisition in the field as well as accommodate physical transportation and processing at port… where data is offloaded, replicated, transferred to specialized processing partners, and delivered to the client. Although tapes represented a cheap option that came in a compact format, it was time to make a change.

PXGEO looked to the portable, rackable, and high-capacity edge storage solution from Seagate—Lyve Mobile—to meet their requirements. In total, PXGEO deployed 20 96TB Lyve Mobile Array hard drives to collect more than one petabyte of field data. Using Lyve Mobile Rackmount Receivers, which allow users to install up to two Lyve Mobile Arrays into a standard 19" data center rack (complete with redundant power and high-speed interfaces such as SAS, fiber channel, or iSCSI), PXGEO's Lyve Mobile deployment provided a digitized copy of all sensor data prior to secure delivery to the processing center (with up to 1.3 GB/s throughput).

As a result, Lyve Mobile enabled PXGEO to aggregate, store, process, and mobilize more data. For the geoscience field team members that must quality control and package the data prior to delivery, this meant they could quickly pass data to specialized partners, accelerating data access by three to four times. After the data was fully processed and interpreted, PXGEO used Seagate's Cloud Import service to quickly transfer it to a designated Amazon AWS S3 bucket for delivery, which meant their client received the final project data five weeks before the deadline.

Because PXGEO embarked on a massive workflow shift away from tapes and toward a digital-first workflow, it was able to modernize their entire process, solving data logistics challenges and significantly accelerating data delivery schedules.

After Lyve Mobile's first deployment in the field, Dan Kulykov, IT infrastructure and support manager at PXGEO, described the combined solution as "a game changer for seismic data acquisition workflows". Today, PXGEO's entire fleet deploys Lyve Mobile devices.

Lyve Mobile Array

Their Success

Bypassing Limitations of Traditional Infrastructure

PXGEO wanted to accelerate and digitize the data capture, transfer, and delivery to clients. By consolidating and transporting mass data sets with Lyve Mobile, PXGEO bypassed the limitations of traditional edge infrastructure, such as bandwidth issues and cybersecurity concerns, accelerating field data processing and significantly improving data access times.

Lyve Mobile

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>
> **Dan Kulykov**
> **IT Infrastructure & Support Manager, PXGEO**