

Seismic Services Market – Global Industry Size, Share, Trends, Opportunity, and Forecast Segmented By Service (Data Acquisition, Data Processing and Interpretation), By Technology (2D imaging, 3D imaging, and 4D imaging), By Location of Deployment (Onshore, Offshore), By Application (Construction, Oil & Gas, Mining, Others), By Region, Competition 2018-2028

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Abstracts

Global Seismic Services Market was valued at USD 28.56 Billion in 2022 and is anticipated to project robust growth in the forecast period with a CAGR of 4.5% through 2028. The Global Seismic Services Market refers to the international industry that provides a range of services related to seismic data acquisition, processing, interpretation, and analysis for the exploration and characterization of subsurface geological formations, particularly in the context of the oil and gas industry. Seismic services involve the use of advanced technologies to generate and collect seismic data, which is then used to gain insights into the Earth's subsurface structures and identify potential hydrocarbon reserves, geothermal reservoirs, mineral deposits, and other subsurface resources. Seismic services play a critical role in various stages of exploration and production activities, helping energy companies and other stakeholders make informed decisions about drilling locations, reservoir characteristics, and extraction methods. The data obtained from seismic surveys allows geoscientists and engineers to create detailed geological and geophysical models, ultimately reducing exploration risk and enhancing resource recovery. seismic Data Acquisition: This involves deploying seismic sources (such as explosives or vibrosis trucks) and geophone arrays to generate and record seismic waves that travel through the Earth's

subsurface. The data collected provide valuable information about subsurface rock layers, fluid content, and structural features.

Seismic Data Processing: Once acquired, raw seismic data undergoes processing to enhance its quality, remove noise, and create accurate images of subsurface structures. Advanced computational algorithms are used to transform the recorded signals into interpretable seismic images.

Seismic Data Interpretation: Geoscientists and geophysicists analyze the processed seismic data to interpret subsurface geological features, stratigraphy, faults, and potential reservoirs. This step involves integrating geological knowledge with seismic information to make informed decisions about resource exploration and extraction.

Reservoir Characterization: Seismic data provides critical information about the characteristics of reservoirs, including porosity, permeability, fluid saturation, and rock properties. This helps in estimating reservoir volume, understanding fluid dynamics, and optimizing extraction strategies.

Exploration and Production Planning: The insights gained from seismic services guide exploration and production planning, enabling energy companies to identify optimal drilling locations, well trajectories, and reservoir management strategies.

Risk Mitigation: Seismic services contribute to reducing exploration risk by providing a detailed understanding of subsurface structures and potential geological challenges. This minimizes the likelihood of drilling dry or unproductive wells.

Resource Assessment: Seismic data aids in estimating the size, volume, and potential yield of subsurface resources, whether they are hydrocarbons, minerals, or geothermal.

Key Market Drivers

The growing exploration and production operations in the oil and gas sector driving the market for seismic services. The requirement for precise data for exploration and production activities, as well as the expanding energy demand, particularly from developing economies. During the projected period, the introduction of new technologies, such as 4D and 5D seismic services, is anticipated to promote market growth.

Seismic survey is a non-intrusive information-gathering technique used in geophysical

surveys to estimate geo characteristics. Oil and gas companies use seismic surveys to examine new hydrocarbon fields, which helps to forecast the growth of the seismic services market. Using a vibroseis truck, seismic testing is conducted. The truck is equipped with a plate that produces an acoustic sound signal that is reflected off the earth's surface. In small vans, geophones are used to record the reflected sound. Additionally, seismic services are mostly employed in the mining and oil & gas industries for exploration purposes.

Increasing Hydrocarbons Exploration to Spur Market Opportunities for Market

Seismic Services are looking for hydrocarbon resources underground, including oil and natural gas, due to the rising need for oil and gas. Planning the field development and production of a reservoir's oil or gas, as well as developing a reliable estimate of the volume of oil and gas already present, are the most important aspects of the process. To find natural resources to meet the growing need for energy and consumer products, one economically viable option is Seismic survey. To address the rising need for oil and gas, the government and commercial organisations are heavily dividing their funds for finding undiscovered hydrocarbon sources, opening up new market potential. For instance, on October 13, 2021, Russian Joint Stock Company Rosgeologia (RosGeo) and Asian Energy Services (AESL) signed a memorandum of understanding (MoU) that focuses on long-term cooperation in seismic and geophysical surveys in India and other nations.

Increasing Adoption of New Software to Aid Market Growth

The oil and gas sector has started implementing digital technology with an emphasis on enhancing health and safety, production potential, reservoir resource understanding, and oil field operational efficiency. Additionally, a lot of businesses are using business and digital technologies sparingly to improve their performance, which will probably support the market's expansion. The development of new geophysical techniques, along with the capacity to process and analyze data quickly and enable decision-making and action in real-time, has caused a shift in major actors' priorities towards a future powered by sustainable energy sources. For instance, CGG introduced GeoSoftware 11.0 on June 8, 2021, a new edition of its comprehensive reservoir characterization and petrophysical interpretation software. A new Hampson Russell application called WellGen, which enables deep learning marine linkage of geological and geophysical interpretations, is one of the machine learning capabilities that are leveraged by the software solution, due to these new technologies Asia-Pacific Seismic Services Market will grow in the future.

Key Market Challenges

Volatility in Crude Oil and Opposition to Mining by Local Community Hinders Market Growth

The seismic services market is expanding primarily due to the oil and gas industry. However, the business is constrained by the fluctuating prices of crude oil on the global market because the production, demand, and supply of oil and gases are highly reliant on these prices. Oil prices can fluctuate significantly, with a price of about USD 115 per barrel in 2014 and USD 19 in 2020, which most likely happened as a result of changed policies and an increase in the supply of oil and gas. Many oil and gas firms' operations and services are impacted by this aspect, which promotes the use of services.

The demand for oil and gas fossil fuels will also decline due to paradigm breakthroughs in clean energy technology and renewable energy sources. In Asia-Pacific many countries have established their net-zero goals and reduced reliance on oil, which limits the market's expansion.

Key Market Trends

Progressive Demand for Geophysical Technologies from Petroleum Industries Drive Market Growth

The demand for fossil fuels increased due to exponential economic growth and increasing urbanization. Many private entities and governmental organizations use seismic services to determine the characteristics of the geological subsurface. It measures the difference between rock types and physical discontinuities without drilling or tunnelling. For instance, as of October 2022, PXGEO awarded 3D towed streamer project in Asia Pacific. PXGEO has been awarded a project in Asia Pacific region to acquire 3D seismic data for TGS (Energy Data & Intelligence company). The seismic vessel PXGEO 2 will mobilize in December 2022 and the project last for approximately three months.

Offshore Segment to Witness Significant Growth

During the forecast period, a sizable part of the seismic service market is anticipated to come from the offshore sector. Due to various favourable factors, including as reliable and constant sources, suitable coupling circumstances at sources and receivers, and

the uniformity of water as the medium, offshore seismic data typically has substantially greater quality than onshore data.

Additionally, Asia-Pacific has seen a significant increase in offshore oil and gas rig activity. The number of operating offshore drilling rigs in the Asia-Pacific area increased from prior years to 82 as of June 2022. Furthermore, as various nations concentrate on increasing their domestic oil and gas output, offshore oil and gas activities in the region are projected to increase in the years to come.

Additionally, the Chinese national oil giant China National Offshore Oil Corporation (CNOOC) intends to build a deepwater oilfield complex in the upcoming years and hopes to double its exploration effort and proved reserves by 2025. Early in 2022, CNOOC Ltd intended to collect around 17,000 sq km of 3D seismic data while drilling 227 offshore exploration wells and 132 unconventional onshore exploration wells. The entire capital budget for CNOOC for 2022 is in the range of CNY 90–100 billion. About 20%, 57%, 21%, and 2% of total capital expenditures will be spent on exploration, development, production, and other activities, respectively. Therefore, it is anticipated that the Offshore segment of the seismic services market would experience tremendous growth due to rising exploration and production (E&P) activities in deepwater and ultra-deepwater reserves as well as rising efforts by the major oil and gas companies to access the undiscovered assets.

Segmental Insights

Technology Insights

The 3D imaging segment is anticipated to dominate the Global Seismic Survey Market due to its application in problem-solving and uncertainty-reduction techniques for exploration, development, and production activities, and the factors can be ascribed to its increasing demand. Additionally, it speeds up the process of gathering, analyzing, and interpreting data.

Service Insights

The Data Acquisition segment is anticipated to dominate the Seismic Survey Market. Data acquisition is gathering and storing seismic data from the Earth's interior. Seismic surveys are carried out to learn about the geological structures and underlying features. This information is essential for many businesses, particularly geological studies, geothermal energy exploration, and oil and gas exploration.

Regional Insights

The Middle East & Africa region has established itself as the leader in the Global Seismic Services Market with a significant revenue share in 2022. The Middle East and Africa will hold the largest market. Rising offshore exploration in areas such as offshore West Africa, which has many unexplored resources, is occurring throughout the Middle East, and Africa presents opportunities for oil and gas development corporations. As a result, the seismic services industry is probably being driven by explorations in this area.

Key Market Players

Halliburton Company

CGG SA, PGS ASA

TGS ASA

Schlumberger NV

New Resolution Geophysics (NRG)

Geokinetics

Fugro N.V.

Pulse Seismic, Inc

Report Scope:

In this report, the Global Seismic Services Market has been segmented into the following categories, in addition to the industry trends which have also been detailed below:

Global Seismic Services Market, By Service:

Data Acquisition

Data Processing

Interpretation

Global Seismic Services Market, By Technology:

2D imaging

3D imaging

4D imaging

Global Seismic Services Market, By Location of Deployment:

Onshore

Offshore

Global Seismic Services Market, By Application:

Construction

Oil & Gas

Mining

Others

Global Seismic Services Market, By Region:

North America

United States

Canada

Mexico

Asia-Pacific

China

India

Japan

South Korea

Indonesia

Europe

Germany

United Kingdom

France

Russia

Spain

South America

Brazil

Argentina

Middle East & Africa

Saudi Arabia

South Africa

Egypt

UAE

Israel

Competitive Landscape

Company Profiles: Detailed analysis of the major companies present in the Global Seismic Services Market.

Available Customizations:

Global Seismic Services Market report with the given market data, Tech Sci Research offers customizations according to a company's specific needs. The following customization options are available for the report:

Company Information

Detailed analysis and profiling of additional market players (up to five).

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