

Fueling the Future: How Data & Analytics and AI are transforming the Oil and Gas Industry

September 2024: Complimentary Abstract / Table of Contents

Market Report
Data and Analytics & AI



Our research offerings

This report is included in the following research program(s):

Artificial Intelligence (AI), Data and Analytics

- ▶ Advanced SciTech
- ▶ Amazon Web Services (AWS)
- ▶ Application Services
- ▶ Artificial Intelligence (AI)
- ▶ Asset and Wealth Management
- ▶ Banking and Financial Services Business Process
- ▶ Banking and Financial Services Information Technology
- ▶ Catalyst™
- ▶ Clinical Development Technology
- ▶ Cloud and Infrastructure
- ▶ Contingent Staffing
- ▶ Contingent Workforce Management
- ▶ Customer Experience Management Services
- ▶ CX Excellence
- ▶ CXM Technology
- ▶ Cybersecurity
- ▶ Cyber Threat Detection and Response
- ▶ Data and Analytics
- ▶ Digital Adoption Platforms
- ▶ Digital Services
- ▶ Digital Workplace
- ▶ Employee Experience Management (EXM) Platforms
- ▶ Employer of Record (EOR)
- ▶ Engineering Research and Development
- ▶ Enterprise Platform Services
- ▶ Exponential Technologies
- ▶ Finance and Accounting
- ▶ Financial Crime and Compliance
- ▶ Financial Services Technology (FinTech)
- ▶ Forces & Foresight
- ▶ GBS Talent Excellence
- ▶ Global Business Services
- ▶ Google Cloud
- ▶ HealthTech
- ▶ Human Resources
- ▶ Insurance Business Process
- ▶ Insurance Information Technology
- ▶ Insurance Technology (InsurTech)
- ▶ Insurance Third-Party Administration (TPA) Services
- ▶ Intelligent Document Processing
- ▶ Interactive Experience (IX) Services
- ▶ IT Services Excellence
- ▶ IT Talent Excellence
- ▶ Life Sciences Business Process
- ▶ Life Sciences Commercial Technologies
- ▶ Life Sciences Information Technology
- ▶ Locations Insider™
- ▶ Marketing Services
- ▶ Market Vista™
- ▶ Microsoft Azure
- ▶ Microsoft Business Application Services
- ▶ Modern Application Development (MAD)
- ▶ Mortgage Operations
- ▶ Multi-country Payroll
- ▶ Network Services and 5G
- ▶ Oracle Services
- ▶ Outsourcing Excellence
- ▶ Payer and Provider Business Process
- ▶ Payer and Provider Information Technology
- ▶ Price Genius – AMS Solution and Pricing Tool
- ▶ Pricing Analytics as a Service
- ▶ Process Intelligence
- ▶ Process Orchestration
- ▶ Procurement and Supply Chain
- ▶ Recruitment
- ▶ Retail and CPG
- ▶ Retirement Technologies
- ▶ Revenue Cycle Management
- ▶ Rewards and Recognition
- ▶ SAP Services
- ▶ Service Optimization Technologies
- ▶ Software Product Engineering Services
- ▶ Supply Chain Management (SCM) Services
- ▶ Sustainability Technology and Services
- ▶ Talent Genius™
- ▶ Technology Skills and Talent
- ▶ Trust and Safety
- ▶ Value and Quality Assurance (VQA)

If you want to learn whether your organization has a membership agreement or request information on pricing and membership options, please contact us at info@everestgrp.com

Learn more about
our custom research capabilities

Benchmarking

Contract assessment

Peer analysis

Market intelligence

Tracking: providers, locations, risk,
technologies

Locations: costs, skills, sustainability,
portfolios

Contents

4	Introduction and overview	23	DAAI adoption across O&G use cases
5	Research methodology	24	O&G value chain
6	Everest Group scope of data analytics and artificial intelligence (DAAI) services	25	Framework for analysis of O&G AI and analytics use cases
7	Background and scope of research	27	Analysis of O&G value chain use cases
8	Summary of key messages	28	Subsurface exploration and drilling – use cases and adoption
10	Current state of DAAI in Oil and Gas (O&G) industry	30	Operations support – use cases and adoption
11	DAAI maturity across industries	32	Midstream operations– use cases and adoption
12	O&G DAAI services market size	33	Refinery operations – use cases and adoption
13	O&G DAAI analytics value chain	34	Sales and marketing – use cases and adoption
14	Adoption of DAAI trends	35	Key perspectives related to O&G industry
14	Challenges to widespread DAAI adoption in O&G industry	36	Key takeaways for O&G enterprises
15	Emerging themes	37	Key takeaways for O&G service provider
17	Digital twins	38	Appendix
19	5G	39	Glossary
20	AI-driven decarbonization solutions	40	Research calendar
21	Generative AI		
22	AI-driven cybersecurity solutions		

For more information on this and other research published by Everest Group, please contact us:

Arpit Mehra, Practice Director

Muskaan Jain, Senior Analyst

Kartikey Kaushal, Senior Analyst

Copyright © 2024 Everest Global, Inc.

We encourage you to share these materials internally in accordance with your license. Sharing these materials outside your organization in any form – electronic, written, or verbal – is prohibited unless you obtain the express, prior, and written consent of Everest Global, Inc. It is your organization's responsibility to maintain the confidentiality of these materials in accordance with your license of them.

Background and scope of the research

Increased adoption of advanced analytics and AI is creating new ways of adding value to different industries. The O&G industry is emerging as one of the fast-paced industries, which is seeing major analytics and AI action in the market. This is substantiated by O&G companies' investments in development and incorporation of new technologies to improve operational efficiency, bolster decarbonization initiatives to meet sustainability targets reduce fluctuating demand and volatility in asset management and maintenance and to become cyber resilient. O&G enterprises are also continuing to adopt IoT-based technologies for better data capture and analysis to improve overall decision-making in the market.

While major DAAI applications are seen in upstream businesses, O&G firms are also investing now in solutions for downstream and midstream businesses focusing on refinery operations and storage and transportation, to differentiate themselves in the market.

In this report, We focus on:

- Analyzing the current state of DAAI adoption in O&G industry
- Emerging technology themes to support the changing industry requirements
- Identifying and assessing the real-world analytics and AI use cases across the O&G value chain on basis of value delivered and adoption
- Analysis of the future landscape for enterprises and service providers to stay relevant under changing business environment

Scope of this report

Geography: Global

Industry: O&G

Services: DAAI

Use cases: Only publicly available information (~120 distinct use cases) has been used for the entire analysis in this report

Overview and abbreviated summary of key messages

The report examines the current state of DAAI adoption in the Oil and Gas(O&G) industry, emerging themes that are driving the adoption of data-driven analytics, advanced analytics and AI use cases that support O&G enterprises across the value chain. Further, the report discusses how the future landscape of the industry and what factors should enterprises and service providers focus on.

Some of the findings in this report, among others, are:

Current state of DAAI market for O&G industry

- O&G industry showcases a significant DAAI investment trend primarily in use cases related to operational efficiency, decarbonization initiatives, risk assessment and maintenance, and cyber resilience
- While the O&G spend on DAAI services continues to grow, the relative overall contribution to the energy sector is becoming saturated with firms shifting focus on adopting cleaner energy alternatives

Emerging themes

- Emerging themes driving enhanced focus on DAAI use cases by O&G firms include – 5G, digital twins, cybersecurity, decarbonization initiatives to achieve sustainability targets and gaining prevalence of generative AI
- The adoption of next-generation technologies such as generative AI is in its infancy stages, with preliminary implementation seen in drilling optimization, reservoir management, exploration, and survey and predictive maintenance
- O&G enterprises are prioritizing cybersecurity due to the significant monetary impact. AI-enhanced solutions now encrypt data, enable real-time monitoring, and improve MDR and IAM services, boosting cyber resilience

DAAI adoption across the O&G value chain

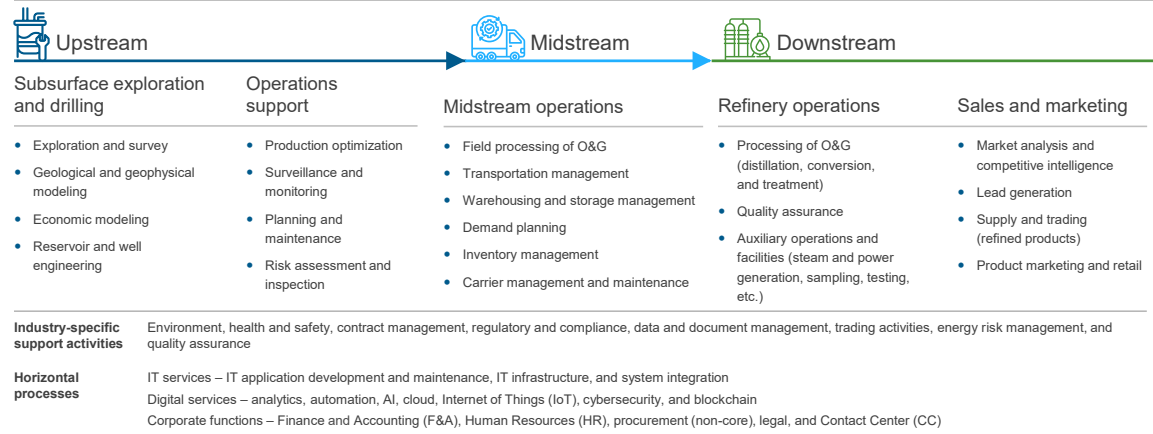
- The report examines the potential and impact of DAAI use cases for O&G enterprises, focusing on market adoption and value delivered across the value chain
- While upstream activities like subsurface exploration and drilling and operations support witness high DAAI market adoption and value delivered, there is growing trend of DAAI adoption in midstream and downstream activities

Future landscape for O&G enterprises and service providers

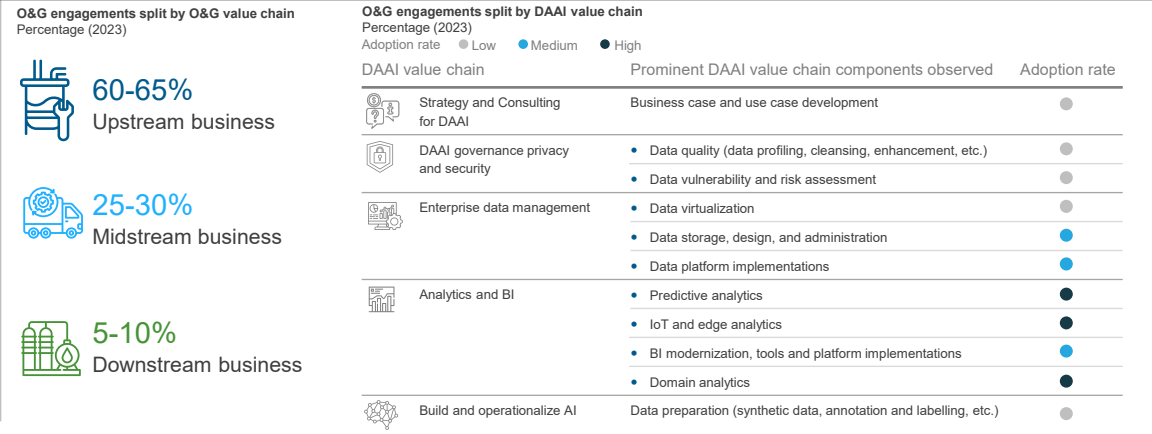
- O&G enterprises should prioritize partnerships to accelerate new technology adoption, focus on energy transition, and integrate sustainable practices across upstream, midstream, and downstream operations
- O&G services, to remain relevant in the future, need to consider the perspective of developing next-generation technology solution for complex use cases, ensure cyber security measures, and support sustainable operations

This study offers distinct chapters providing a deep dive into key aspects of O&G market; below are four charts to illustrate the depth of the report

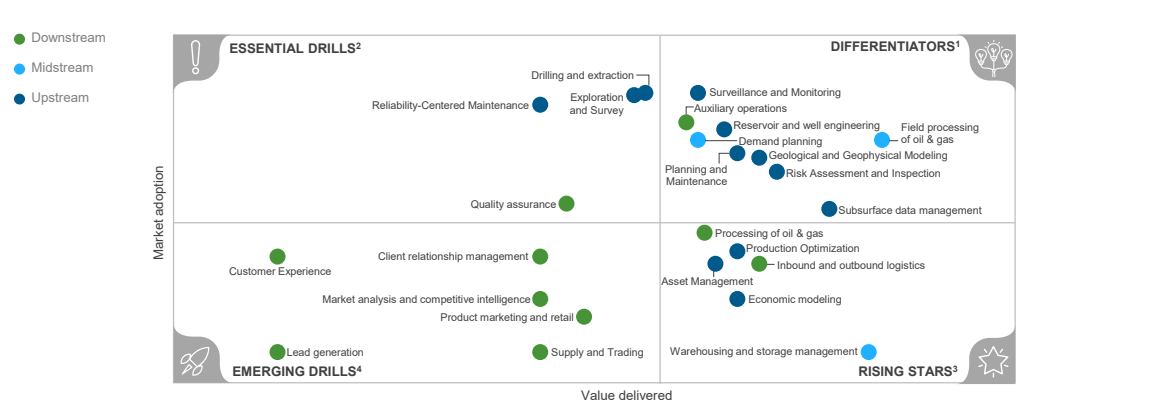
Analysis of O&G value chain segments and major subprocess within



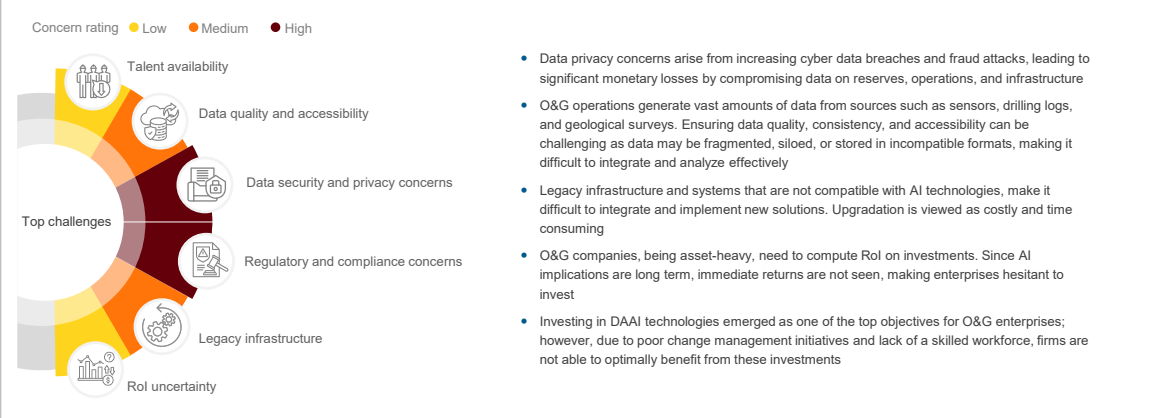
DAAI services scope within O&G engagements



Analysis of O&G DAAI use cases



Challenges inhibiting widescale DAAI adoption in O&G industry



Research calendar

Data and Analytics

	Published	Current release	Planned
Reports title	Release date		
Data & Analytics – Review of Google Next '24 Product Launch			May 2024
Generative AI – Review of Adobe Summit 2024			May 2024
Google Workspace – Review of Google Next '24 Product Launch			May 2024
Security – Review of Google Next '24 Product Launch			May 2024
Low-code Application Development – Review of Appian World 2024			May 2024
Cloud ERP – Review of SAP Sapphire 2024 Event			June 2024
Security Products: Review of Cisco's Security Product Announcements at RSAC 2024 and Cisco Live 2024			July 2024
Telecommunications - Review of Ericsson Site Energy Orchestration Product Launch			August 2024
Microsoft Security – Review of Microsoft Security's Product Launch at RSAC '24			August 2024
Fueling the Future: How Data & Analytics and AI are transforming the Oil and Gas Industry			September 2024
Analytics and AI Services Specialist Provider Compendium 2024			Q3 2024
Unveiling the Modern Data Tech Stack: Evolution Over the Years			Q3 2024
Data and Analytics (D&A) Services PEAK Matrix® Assessment 2024			Q3 2024
Data & AI (D&AI) Services for Mid-Market Enterprises PEAK Matrix® Assessment 2024			Q4 2024
Data and Analytics (D&A): State of the Market 2024			Q4 2024
Analytics and AI Services Specialists PEAK Matrix® Assessment 2025			Q1 2025

Note: [Click](#) to see a list of all of our published Data and Analytics reports

Research calendar

Artificial Intelligence (AI)

	Published	Current release	Planned
Reports title	Release date		
Generative AI Adoption – Examining Real-world Use in Horizontal Functions and Future Outlook			June 2024
Generative AI Adoption in Customer Experience Management (CXM)			June 2024
AI-led Business Transformation – Review of PegaWorld iNspire 2024			June 2024
Generative AI Adoption in Talent Acquisition Services			June 2024
Generative AI Impact and Adoption in Trust and Safety (T&S)			June 2024
Generative AI Adoption in Human Resources			June 2024
Generative AI Adoption in Marketing Services			June 2024
Cloud ERP – Review of SAP Sapphire 2024 Event			August 2024
Microsoft Security – Review of Microsoft Security’s Product Launch at RSAC ’24			August 2024
Fueling the Future: How Data & Analytics and AI are transforming the Oil and Gas Industry			September 2024
Artificial Intelligence (AI) and Generative AI Services PEAK Matrix® Assessment 2024			Q3 2024
Artificial Intelligence (AI) and Generative AI Service Provider Compendium 2024			Q3 2024
AI Top 50 2024			Q3 2024
Data Annotation and Labeling (DAL) Solutions for AI/ML PEAK Matrix® Assessment 2025			Q1 2025
Analytics and AI Services Specialist Provider Compendium 2025			Q1 2025
Data Annotation and Labeling (DAL) Solutions for AI/ML – Provider Compendium 2025			Q1 2025

Note: [Click](#) to see a list of all of our published Artificial Intelligence (AI) reports

Stay connected

Dallas (Headquarters)

info@everestgrp.com

+1-214-451-3000

Bangalore

india@everestgrp.com

+91-80-61463500

Delhi

india@everestgrp.com

+91-124-496-1000

London

unitedkingdom@everestgrp.com

+44-207-129-1318

Toronto

canada@everestgrp.com

+1-214-451-3000

Website

everestgrp.com

Blog

everestgrp.com/blog

Follow us on



Everest Group is a leading research firm helping business leaders make confident decisions. We guide clients through today's market challenges and strengthen their strategies by applying contextualized problem-solving to their unique situations. This drives maximized operational and financial performance and transformative experiences. Our deep expertise and tenacious research focused on technology, business processes, and engineering through the lenses of talent, sustainability, and sourcing delivers precise and action-oriented guidance. Find further details and in-depth content at www.everestgrp.com.

Notice and disclaimers

Important information. Please review this notice carefully and in its entirety. Through your access, you agree to Everest Group's terms of use.

Everest Group's Terms of Use, available at www.everestgrp.com/terms-of-use/, is hereby incorporated by reference as if fully reproduced herein. Parts of these terms are pasted below for convenience; please refer to the link above for the full version of the Terms of Use.

Everest Group is not registered as an investment adviser or research analyst with the U.S. Securities and Exchange Commission, the Financial Industry Regulatory Authority (FINRA), or any state or foreign securities regulatory authority. For the avoidance of doubt, Everest Group is not providing any advice concerning securities as defined by the law or any regulatory entity or an analysis of equity securities as defined by the law or any regulatory entity.

All Everest Group Products and/or Services are for informational purposes only and are provided "as is" without any warranty of any kind. You understand and expressly agree that you assume the entire risk as to your use and any reliance upon any Product or Service. Everest Group is not a legal, tax, financial, or investment advisor, and nothing provided by Everest Group is legal, tax, financial, or investment advice. Nothing Everest Group provides is an offer to sell or a solicitation of an offer to purchase any securities or instruments from any entity. Nothing from Everest Group may be used or relied upon in evaluating the merits of any investment. Do not base any investment decisions, in whole or part, on anything provided by Everest Group.

Products and/or Services represent research opinions or viewpoints, not representations or statements of fact. Accessing, using, or receiving a grant of access to an Everest Group Product and/or Service does not constitute any recommendation by Everest Group that recipient (1) take any action or refrain from taking any action or (2) enter into a particular transaction. Nothing from Everest Group will be relied upon or interpreted as a promise or representation as to past, present, or future performance of a business or a market. The information contained in any Everest Group Product and/or Service is as of the date prepared, and Everest Group has no duty or obligation to update or revise the information or documentation. Everest Group may have obtained information that appears in its Products and/or Services from the parties mentioned therein, public sources, or third-party sources, including information related to financials, estimates, and/or forecasts. Everest Group has not audited such information and assumes no responsibility for independently verifying such information as Everest Group has relied on such information being complete and accurate in all respects. Note, companies mentioned in Products and/or Services may be customers of Everest Group or have interacted with Everest Group in some other way, including, without limitation, participating in Everest Group research activities.