

vmware®

Fuel The World, Sustainably

How the Oil & Gas Industry can apply technology innovation and focus on operational excellence to align people, assets, and processes to deliver operational improvements and drive business value.

Uncertainty & volatility ahead: a balancing act in 2023

Key challenges

The oil and gas industry has had a tumultuous 2022. Russia's invasion of Ukraine squeezed supplies, leading to fossil fuel shortages and skyrocketing prices. Energy majors enjoyed bumper profits, making them an attractive target for government tax raids.

Overall, 2022 has been a year of price volatility and huge uncertainty. And while prices should remain high in 2023, there is likely to be more unpredictability on the way requiring companies to work on resilience and agility to prepare for a supply shock or a change in international shipping practices and processes.

Price cap on Russian oil

Adjusting to the sanctions on Russia, particularly the oil price cap implemented by the EU and the Group of Seven nations (G7)

European gas shortages

It is likely that EU and UK further isolate and increase investments in gas storage and processing sites, along with closer ties with gas exporters around the world

Windfall taxes

As profits in the industry skyrocketed in 2022 while inflation was on the rise, EU and UK governments announced tax increases or new ways of taxing industries with high profits.

Supply and demand

With supply potential facing another squeeze due to inflation and zero-Covid policies, and countries desperately trying to shore up their energy security, there may be investment incentives and opportunities available



The future starts today: Leveraging digitization to innovate and thrive

To successfully navigate the future, companies must define a new core, develop markets further downstream and innovate new business models

Optimize Operational Efficiencies

A Portfolio Beyond The Barrel

Invest in Circularity & Collaboration

Focus on New Energies

Optimize Operational Efficiencies Through Digital Asset Lifecycle Management

Process and asset digitization through Industry 4.0 and IoT technologies allow for real-time data insights that help optimize and transform operations, increase resilience, boost agility and the ability for strategic decision-making. Operational intelligence is also the basis for developing and refining new operating and business models.

Legacy operating and technology challenges

- Dependency on field engineers & lack of new talent / workforce
- High risk operations and environmental threats
- High cost of maintenance, repair and operations (MRO) activities
- Lack of real-time insights
- Complexity and inconsistency of assets due to availability on the market

Optimization & efficiencies

- Simplified, future-ready IT and OT capabilities
- Proactive improvement of processes and innovation
- Improved resilience and operational flexibility
- Engaged and empowered workforce

How VMware can help

- Edge Compute capabilities for real-time data insights, remote asset management and protection
- Remote and hybrid workforce engagement through Workspace One, delivering real-time insights and on the job training
- Edge-to-Cloud platform capabilities enable seamless management of data and applications across the entire value chain, lowering cost and increasing flexibility and resilience



“As SOCAR Turkey’s IT team, we constantly work to make our infrastructure more secure, stable and agile with investments in system and network security. VMware NSX provides great flexibility and competence for our IT continuity, which is an important part of our overall business continuity”..

Akin Börekci, IT Infrastructure and Service Management Group Coordinator,
SOCAR Turkey

Investing In Circularity & Collaboration Through Digital Innovation & Open Standards

Integrated digital platforms enhance collaboration among different participants in the Oil and Gas ecosystem, allowing for proactive management of supply & demand while also accelerating innovation, reducing costs and enabling operational insights and transparency for faster decision-making

Circularity starts in the field

- Building intelligence and automation into process controls, assets and product flow
- Leverage smart contracts and blockchain for cradle to grave traceability
- Leverage Private 5G connectivity for reliable and low latency networks

Successful collaborations require...

- Ability to rapidly share, analyze, and act upon data in real-time
- Data sharing based on zero-trust and full sovereignty
- Adherence to compliance and regulatory requirements
- Leveraging open software architectures and APIs to enable 3rd

How VMware can help

- Blockchain and AI/ML capabilities drive full value chain traceability as well as enabling digital twin simulation and modelling
- Sovereign cloud capabilities allow for full control, IP / data protection and traceability while enabling integrability and common data spaces
- A zero-trust approach ensure that internal collaboration as well as partnerships with external parties are trusted and secured
- Leverage VMware's carrier-grade private mobile networking and O-RAN capabilities to drive real-time traceability



“By embracing a cloud-first approach with VMware, KNPC has boosted its agility, efficiency and security to set in motion a new era of digital transformation.”

Ahed Al-Khurayif, Spokesperson and Deputy CEO for Admin & Commercial Affairs, KNPC





Beyond The Barrel

Delivering New Services To Drive Customer Loyalty And New Revenue Streams

Innovative engagement models that provide personalized experiences and flexibility for customers can drive new business opportunities by leveraging existing footprint downstream such as gas stations, new or existing channel and 3rd party relationships for omnichannel retail or service offering.

Driving a greener agenda and meeting changing market demands means...

- Eliminating inefficient processes
- Leveraging legacy applications and modern, cloud- or edge-native apps to deliver new business models and services
- Reducing carbon footprint across a complex ecosystem
- Investing into start-ups to expand footprint and services beyond the barrel
- Integrate existing and new services for better manageability and decision making

How VMware can help

- Building a technology platform for operational efficiencies from edge to cloud
- Leveraging Edge Compute capabilities to facilitate new application and service deployments across a diverse and distributed ecosystem
- Establish an open-source application development platform for faster time-to-market
- Build operational and commercial intelligence through data insights with Tanzu Greenplum

Create **outstanding services** with modern apps

Employees and customers expect

- More digital services and convenience
- Better and real-time control of energy usage and costs
- Personalized customer experiences
- Engaging and intuitive apps
- Real-time information and training capabilities on the job

Businesses need

- Modern infrastructure and apps to deliver new cloud-native apps and features to market at speed
- More expertise in software and app development
- Competitive advantage with enhanced customer offerings
- Empower workforce anywhere at anytime on any device

How VMware can help

- Attract software development talent for faster time to market
- Build open, secure software architecture
- Leverage Tanzu Application Platform* and Tanzu Labs services*
- Agile approach to operations
- Increase innovation capabilities

Focus on new energies

Master uncertainty and volatility through diversification

Digitalization is promoting new energy sources and carriers, as well as innovative models for the optimization and marketing of energy. To remain relevant to customers, the Oil and Gas industry needs to understand the full impact of these changes on the broader energy system by assessing new ways of innovating and partnering across a more diverse value chain.

Faster time to market with new business models...

- Digitize and virtualize operations and infrastructure to facilitate M&A activities
- Leveraging open software architectures and APIs to enable 3rd party integration
- Leverage innovative tech start-ups by setting your own standards across a multi-cloud / open technology universe
- Build flexibility into your operations to provide real-time insights and guarantee reliable access to applications and data across locations and services
- Protect your IP no matter how you change or tweak your business model by following a zero-trust approach across the enterprise and its ecosystem

How VMware can help

- Build a future proof technology platform to easily integrate new acquisitions and extend your portfolio through VMware Multi-Cloud Platform (VMC)
- Facilitate integration and migration of legacy applications to consolidate infrastructure and data centers by implementing VMware Cloud Foundation (VCF)
- Eliminate the pains and efforts around physical networks and risks of cybersecurity challenges when diversifying by taking a software-defined approach across your business (VMware SD-Wan)



Trending Upwards: Innovation And Digitization Building For An Agile And Resilient Future



Innovation & collaboration capabilities



Technology transformation for flexibility and scale



Deploy, manage, track & trace assets and services



Enable data intelligence & real-time analytics

Results

- ✓ Improved efficiency
- ✓ Increased sustainability: lower resource usage and carbon footprint
- ✓ Lower operating cost
- ✓ New revenue streams
- ✓ Reduced downtime
- ✓ Less operational risk
- ✓ Engaged workforce

Case study

Drax Group accelerates toward a carbon-negative future

Business needs

- Adapt strategy and operations to meet carbon negative goal by 2023
- Build a flexible infrastructure that can respond faster to changing business needs
- Consolidate disparate data sources to make better decisions

Impact

- Microservices Hub, built on VMware Tanzu® Mission Control™, centralizes and simplifies Kubernetes cluster management.
- Operations can apply consistent security and governance guardrails.
- Developers have quick, self-service access to clusters.
- Transformed app development, able to deliver reusable blocks that can be built out to create scalable, future-proof applications.

Customer story

“We’re increasing productivity, enhancing our skills, and doing a lot more with less effort, to higher quality, and we have the inherent benefit of reuse.”

Mark Leonard, Director of Global Business Development, Drax Group

Case study

SOCAR Turkey strengthens its agile structure

Business needs

- Eliminate silos in architecture
- Reduce manual processes

Impact

- Single-point management without any data loss, built on VMware NSX
- Less operational burden when managing disaster recovery
- Adoption through automation on software-defined architecture
- Use of software-based firewalls, routing and switching technologies, as needed
- Full network visibility

Customer story

“VMware NSX is the right platform and solution for us. It provides great flexibility and competence in IT continuity”

Akin Börekçi, IT Infrastructure and Service Management Group Coordinator, SOCAR Turkey

Case study

Iberdrola takes step forward in digitalization and flexibility

Business needs

- Meet customers' new requirements
- Integrate new distributed resources
- Support increasing electrification of the economy

Impact

- New digital platform for secondary substations
- Edge computing and virtualization
- Real-time use of information from IoT devices
- Advanced computing capabilities

Customer story

“Iberdrola is leading the digitalization of the electricity grid with this innovative initiative that makes use of cutting-edge technologies to continue improving the efficiency and quality of service for our customers.”

Iberdrola Blog

Let's talk



Alexandra Baleta, PhD
Senior Director, EMEA Industries
abaleta@vmware.com



Artem Gimadiev
Director, Head of Advisory
Services, South EMEA
artem@vmware.com