THE INTELLIGENT ENTERPRISE FOR THE OIL, GAS, AND ENERGY INDUSTRY

be

Creating superior customer experiences by embracing standardization for simplification to enable innovation

THE BEST RUN SAP

Oil, Gas, and Energy Industry Vision 2025:

Deliver safe, reliable, and sustainable energy products and services focused on the customer and enabled by innovation.

"During the sustainable energy transition, oil, gas, and energy companies that are intelligent enterprises embrace market standards and the cloud to innovate and differentiate."

Benjamin Beberness
Global Vice President
Oil, Gas, and Energy
SAP SE

WELCOME

Dear Customers,

The world is facing huge social, economic, and environmental challenges. To create a sustainable future, every individual and company has a role to play, and the oil, gas, and energy industry in particular has a special role. The path forward requires finding a balance between planning for an uncertain future and optimizing for today's opportunities. Simultaneously, access to resources and capital is no longer enough to sustain competitive advantage in the digital economy. They also need to respond to global trends that are reshaping the industrial manufacturing landscape, including:

Dual challenge with the need for more energy and less carbon, driving the sustainable energy transition: With increasing consumer awareness of environmental and climate impacts, societal expectations are driving companies to embrace sustainability as a core part of their business strategy. Major energy companies are making increasingly sizable investments in new and alternative energy companies and technologies to bring renewable, lower-carbon energy to consumers, and are simultaneously reducing their environmental and carbon footprints.

Energy mix is changing as natural gas is here to stay and hydrogen demand is increasing: Natural gas continues to grow as a source of lower-carbon power generation globally. The wave of new investment in petrochemical facilities is driven by the growing global natural gas and liquid natural gas (LNG) supply. The noncombusted use of oil and gas as feedstocks for petrochemicals, lubricants, and bitumen continues to grow.

Disciplined capital planning and productivity will be a differentiator: The previous downturn saw tremendous gains in cost containment, capital asset high-grading, and operating efficiency. Industry players will focus on three key lessons: adopting a disciplined approach to capital investment, achieving sustainable cost containment, and leveraging digital technologies to achieve higher capital productivity.

Digital technologies are increasingly intertwined with the energy value chain: Energy companies are deploying artificial intelligence, analytics, robotics, and blockchain to increase efficiency, productivity, reliability, and predictability of operations. Digital technology adoption will unlock further value, ensuring that energy companies thrive through business cycles and are responsive to customer and societal expectations.

Rethink how to run the business

Whether you're an upstream producer or a fully integrated company, the industry must embrace dramatic business transformation, driven by the adoption of technical, cultural, and organizational change to deliver safe, reliable, and sustainable energy products and services.

To put these strategic priorities into action, oil, gas, and energy companies must change the way they operate. By shifting routine tasks from humans to systems enabled by machine learning and artificial intelligence, they will free up the capacity to define and pursue transformative business models.

Powered by tools such as Industry 4.0, predictive analytics, blockchain, and machine learning, the digital core is expected to become the platform for managing and optimizing systems and processes, suppliers and networks, the workforce, the customer experience, and all the data an enterprise collects using sensors and other connected Internet of Things (IoT) assets.

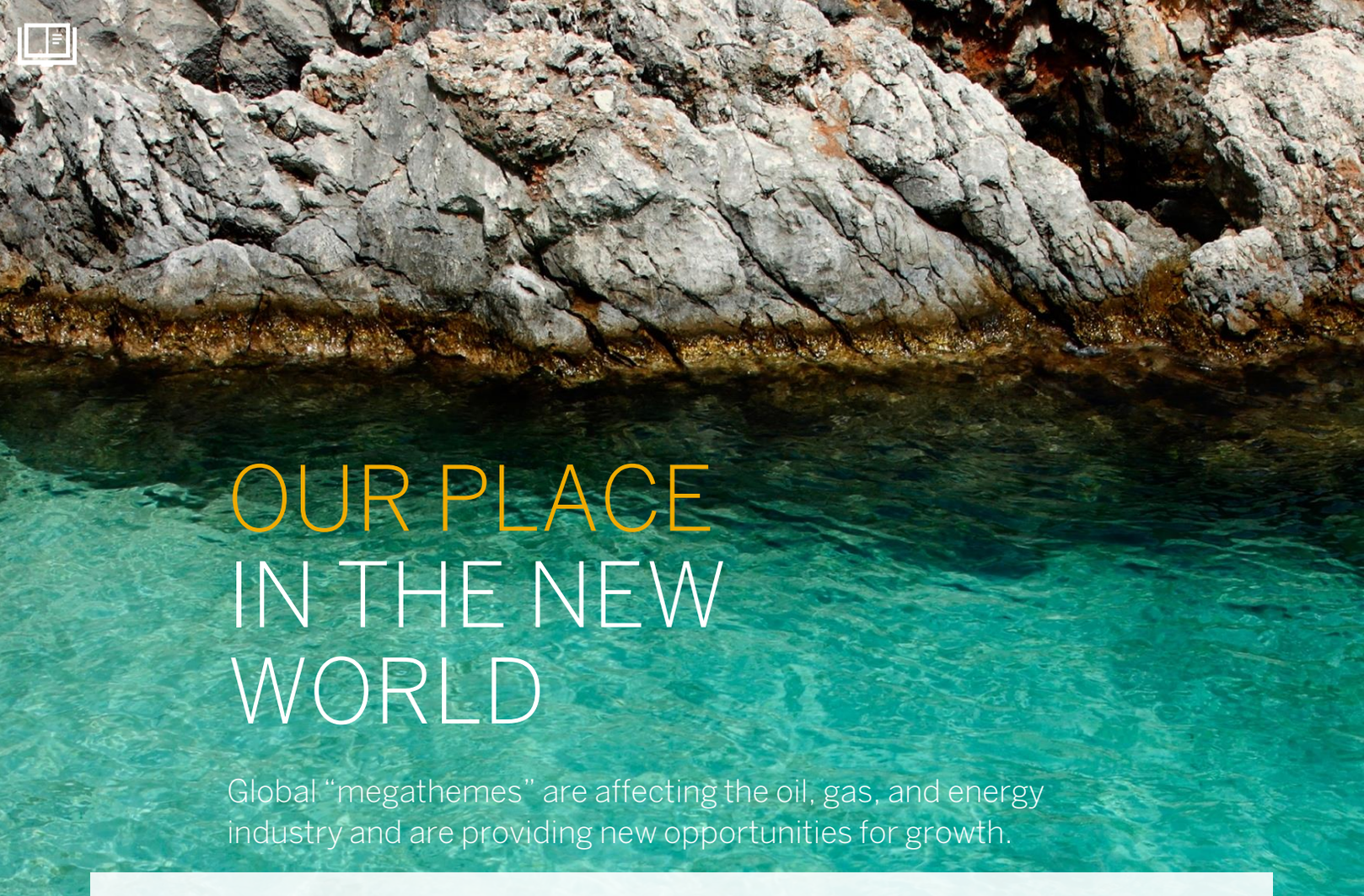
This paper takes a deep dive into the trends shaping our industry over the next five years and the path to innovation.

The future may seem uncertain, but one thing is unambiguous: the oil, gas, and energy industry has an important role to play for many, many years to come. The companies that embrace emerging technologies to increase their agility will be best positioned to respond to market changes, whatever the future may hold.

Sincerely yours,

Benjamin Beberness
Global Vice President
Oil, Gas, and Energy
SAP SE

TABLE OF CONTENTS



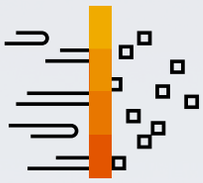
OUR PLACE IN THE NEW WORLD

Global "megathemes" are affecting the oil, gas, and energy industry and are providing new opportunities for growth.

- The emerging circular economy requires oil, gas, and energy companies to find ways to reuse CO_2 and other by-products. Industry 4.0 is an enabler to achieve this, leading to a true Fourth Industrial Revolution. For example, Abu Dhabi National Oil Company (ADNOC) improves operational efficiency by increasing sour gas production and using CO_2 in enhanced oil recovery, delivering greater power output to the United Arab Emirates.[1]
- The need for integrated mobile technology enables real-time visibility to dramatically improve work execution, responsiveness, and productivity for oil, gas, and energy workers. For example, some companies are leveraging mobile apps and the IoT to improve operational efficiency, business insights, and seamless integration to save time and resources and improve innovations and customer experiences.
- The emergence of global supply chains requires oil, gas, and energy companies to have full visibility of demand, supply, and financial information in real time anywhere. For example, Motor Oil Group created an end-to-end process with top-notch integration points that would elevate customer insights and support business resilience and customer satisfaction through periods of stability and volatility (such as a global pandemic).[2]
- New emissions laws and regulations are requiring oil, gas, and energy companies to contribute to sustainable energy. Faster-than-expected growth in renewable fuels is creating margin pressure, requiring oil, gas, and energy companies to look "beyond the barrel" at new business models. Many multinational oil, gas, and energy companies are diversifying into renewables, utilities, and retail to ensure revenue streams well into the future.
- Education and work: Two trends are fundamentally changing the way we look at education and work. Automation, driven by robotic processes and machine learning, will essentially change the work environment of millions of people – from the unskilled worker to the highly specialized knowledge worker. And a single education path or job is no longer enough to sustain a decades-long career; lifelong learning will become the norm. Future generations face a multistage career in jobs that might not exist today. Consequently, the necessary skill set of the workforce will evolve, requiring energy companies to undertake significant cultural change.

The oil, gas, and energy industry is being reshaped by five major trends.

- **A dual challenge exists with the need for more energy and less carbon:** With increasing consumer awareness of environmental and climate impacts, societal expectations are driving companies to embrace sustainability as a core part of their business strategy. Major oil, gas, and energy companies are making increasingly sizable investments in new and alternative energy companies and technologies to bring renewable, lower-carbon energy to consumers, and thy are simultaneously reducing their environmental and carbon footprints.
- **Energy mix is changing, as natural gas is here to stay:** Natural gas continues to grow as a source of lower-carbon power generation globally. The wave of new investment in petrochemical facilities is driven by the growing global natural gas and LNG supply. The noncombusted use of oil, gas, and coal as feedstocks for petrochemicals, lubricants, and bitumen, grows robustly, driven by strong growth in plastics.
- **Disciplined capital planning and productivity is a differentiator:** The previous downturn saw tremendous gains in cost containment, capital asset high-grading, and operating efficiency. Industry players will focus on three key lessons: adopting a disciplined approach to capital investment, sustainable cost containment, and leveraging digital technologies to achieve higher capital productivity.
- **Digital technologies are increasingly intertwined with the entire oil, gas, and energy value chain:** Oil, gas, and energy companies are deploying artificial intelligence, analytics, robotics, and blockchain to increase efficiency, productivity, reliability, and predictability of operations. Digital technology adoption will unlock further value, ensuring that oil, gas, and energy companies thrive through business cycles and are responsive to customer and societal expectations.
- **M&A and divesting are having an effect:** There is significant movement in M&A as companies divest or buy companies to rebalance their portfolio.



Digital strategies are disruptive and are changing the rules for the oil, gas, and energy industry.

U.S.-based exploration and production, natural gas retrieval and processing, and natural gas marketing company Mustang Fuel Corporation streamlined production revenue accounting by automating production depreciation and Office of Natural Resources Revenue reporting and security, eliminating multiple manual processes and time-consuming updates.[3]

A large, European energy company implemented a cloud-based mobile app to enable airport operations staff to work more efficiently, freeing them for higher-value work. It creates quicker turnaround times for airlines, so customers spend less time waiting on the tarmac or at the gate. The company now has a globally scalable tool for optimizing its airport refueling operations. With the ability to monitor and manage stock levels at each of its airport installations in real time, the company gains fast, data-driven business insights that it can use to more effectively manage fuel price risk on a global basis.

As a newly minted intelligent enterprise, Aramco Europe has significantly increased process efficiency for delivering support services across Europe, Africa, and Asia. The company has implemented market-standard processes in the cloud, reducing its application management load. Stakeholders everywhere have deeper insight into operations, and the company is well positioned to pilot new technological and business innovations.[4]

PAVING THE WAY FOR BUSINESS MODEL INNOVATIONS

Oil, gas, and energy companies pursue a bold vision for 2025 to deliver safe, reliable, and sustainable energy products and services focused on the customer and enabled by innovation.

To do this, oil, gas, and energy companies will implement new business models with a keen focus on sustainable energy transition. This will include investing in renewables, focusing on retail, electric vehicle (EV) charging at fueling stations, and carbon-cost reduction.

To manage the magnitude of data volume through production and operations, collaboration on, access to, and analysis of data require intelligent technologies such as AI and machine learning. Connected machines and business processes can help realize Industry 4.0 aspirations.

Larger oil, gas, and energy companies will continue to diversify into adjacent industries such as utilities, solar and wind power, and energy storage.

80%

of decision-makers think access to the right information at the right time is critical to their business.[5]

FOUR PRIORITIES FOR SUCCESS

We have identified four strategic priorities necessary for oil, gas, and energy companies to transform their business.

SUSTAINABLE ENERGY TRANSITION

DIGITALIZE PRODUCTION AND DELIVERY

COMPETE AS AN ECOSYSTEM

UNLOCK VALUE WITH TECHNOLOGY

SUSTAINABLE ENERGY TRANSITION

The sustainable energy transition has risen to the top of the agenda for the oil, gas, and energy industry. It has been driven and in fact accelerated by several factors such as the drop in demand due to COVID-19, the increase in volatility of commodity prices, and the fact that sustainability requirements are being driven by the Paris Agreement. The sustainable energy transition is requiring companies to rethink how they run their business. They are looking to shift to more renewables, diversify their revenue and asset portfolio, and converge with other industries such as chemicals and utilities. Ultimately, they are shifting to core profitable and sustainable value pools and minimizing their exposure to the market volatility.

The Vision

By 2050, many oil, gas, and energy companies are targeting to be at zero emissions. Sustainable energy transition and the removal of CO2e are achieved at the intersection of environmental sustainability, economics, and security and access. Environmental sustainability is focused on leaving a livable planet to our children and grandchildren by delivering on the 2050 commitments. The economic focus is on maintaining the license to operate, making viable investments on the capital market, and making business, portfolio, and operations resilient to climate change and regulations. Finally, security and access focus on uninterrupted availability of energy sources at an affordable price by making timely investments to supply energy in line with economic developments and environmental needs. Oil, gas, and energy companies will be able to extend beyond the barrel to new business models that deliver new value and revenue streams. Catarina Ceitil, the shERPa project director at energy company Galp, said, "The world is changing so much, and so is Galp. We are now aiming to bet on solar, on digitalization, and on being a much more customer-centric company. Our CEO says that he wants to be the Amazon of energy."[6] (See Figure 1.)

The Journey

From renewable ventures to retail electric vehicle charging infrastructure partnerships, oil, gas, and energy companies are pursuing new business models and revenue streams built around carbon emission reduction, renewable energy, and the promise of a sustainable energy future. And they're doing so not just because they're required to by increasingly stringent government policies, but because they believe it's in the best interests of their shareholders, their customers, their bottom lines, and, of course, the environment. To play a role in the sustainable energy transition and carve out a profitable piece of the new markets it creates, energy companies must have a digital platform in place.

Figure 1: Sustainable Energy Transition[6]

Creating New Sources of Client Value Through Unified, Customer-Centric Operations

Company

Galp Energia SGPS SA (Galp) is a Portugal-based energy company present in 11 countries, with up- and downstream oil and gas operations and offering a comprehensive range of products and services. Galp aims to build on its diversification strategy, transforming itself from a traditional oil and gas business into a modern, sustainable energy innovator – offering high-quality customer experiences and value-added services. Galp was keen to adopt intelligent business technologies to help support and accelerate its transformation journey, including a conversion to SAP S/4HANA® going live during COVID-19 lockdown constraints.

Solution

Galp delivers a wide range of petrochemical products and services for the business-to-business (B2B) and business-to-consumer (B2C) markets. Using integrated SAP S/4HANA workflows to support its B2B customer operations, Galp now offers corporate customers a streamlined procurement experience driven by one client relationship manager – helping to enhance service quality and boost lifetime value. In the company's B2C retail stores, SAP S/4HANA enables real-time point-of-sale data insights, ultimately helping to optimize in-store product mixes and drive revenues. In the future, the solution can support innovative business models, such as online grocery ordering through third-party providers. Today, the solutions are live in the Azores and Madeira regions, and as the global rollout continues, Galp is confident the SAP® solutions will support its ongoing transformation strategy.

SUSTAINABE ENERGY TRANSITION

BUILD NEW BUSINESS MODELS AND EMPOWER CONSUMERS

With the focus on the sustainable energy transition, energy companies will extend beyond the barrel to master value-added activities, such as analytics on consumer energy usage, so they can offer services that optimize the delivery of goods, transportation, heating and cooling, and power. For example, fuel retailers will become more customer centric, using pay-for-outcome pricing and offering personalized configurations that improve the customer experience. They will create new services and experiences that focus on convenient energy outcomes that cross traditional market boundaries, including delivering the outcomes of transportation, climate control, or a powered device, and not just the traditional fuel inputs.

TRADITIONAL SCENARIO

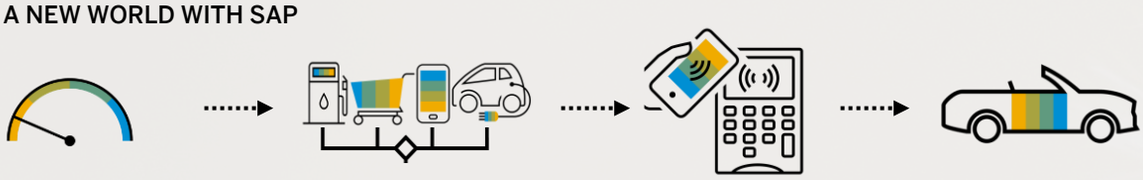
The service station manager has checked the tanks are full and opens the station.

Drivers eventually stop at the station and refill their car. Some also buy a washing service or some food and beverage at the boutique.

After filling up the vehicle, the drivers pay for the purchase.

Drivers resume their trip as soon as possible not to spend more time in the station.

A NEW WORLD WITH SAP



Optimized replenishment orders have been automatically executed during off-peak hours so that the service station open time is maximized.

Loyalty program members and clients visit the service station to replenish their car. Those who drive electric vehicles can recharge their batteries. The regular clients benefit from a free washing service, if conditions are met. In the meantime, they can take a lunch, visit the nearby shopping center, or enjoy the playground with their kids.

After the vehicle is filled up, the driver is notified and pays for the purchase with the touch of a button on their smartphone.

The clients had a seamless consuming experience and know they would feel the same way next time in other stations of the brand.

TOP VALUE DRIVER

US$95 billion

Is the expected business opportunity for personalized offerings in oil, gas, and energy by 2025.

Source: SAP Performance Benchmarking

DIGITALIZE PRODUCTION AND DELIVERY

Oil, gas, and energy operators will disrupt the value chain by managing physical deliveries across the network with new value chain partners, often without owning or operating any of the necessary inventory or assets or hiring the necessary employees. Oil, gas, and energy operators of the future will become masters at gaining insights into operations, products, and services, using real-time monitoring, integrated data sources, AI, predictive analytics, and machine learning capabilities. The value chain will be resilient and adapt rapidly to supply chain changes. Companies will optimize human activities by digitalizing assets and outfitting humans with digitalized sensors ("wearables"), minimizing manual intervention, and supporting the automated digital hydrocarbon value chain.

The Vision

By 2025, oil, gas, and energy operators will implement a digital hydrocarbon supply chain by digitalizing products and services (see Figure 2). As companies put their customer in the center of their business growth, new collaboration and business processes will emerge. Industry 4.0 innovations will facilitate companies' process efficiency and proactive awareness with their business partners and customers by enabling increased transparency.

The Journey

Oil, gas, and energy companies will start toward this goal of optimizing maintenance and operations by collaborating in a business environment of the asset lifecycle. By leveraging Industry 4.0, they will extend and continue their journey by providing a remote monitoring and collaboration platform, and they will eventually transform and fully achieve their vision with 360-degree digital tracking and analysis of hydrocarbon molecules. Additionally, they will monitor primary and secondary costs to optimize pricing and the supply chain.

Figure 2: Digitalize Production and Deliver[7]

Digital Transformation to Boost Efficiency and Unlock Operational Insight

Creating an Intelligent Enterprise That Responds Actively to Customer Demand

Combining the power of a full suite of solutions based on SAP S/4HANA alongside SAP SuccessFactors® solutions and SAP Integrated Business Planning for Supply Chain applications in one integrated platform enables Vivo Energy to predict demand for particular products and automate replenishment at the service stations, reducing its fuel distribution costs.

"By implementing SAP S/4HANA, we're not simply upgrading our technology. The software is helping us to **transform our business**."

Mike McCormick, CIO, Vivo Energy

Streamline
Processes

Enhance
Employee productivity

Improve
Data visibility

DIGITALIZE PRODUCTION AND DELIVERY

LEVERAGE AUTOMATION

Oil, gas, and energy companies will disrupt the entire value chain by managing physical deliveries across the network with the help of the IoT, machine learning, and automation. This will be done without owning or operating any of the necessary inventory or assets or hiring the necessary employees. As many companies recognize Industry 4.0 as a strategic priority, IoT integration across the entire organization will unleash new potential, where the assets become a flexible hybrid system of automation and humans, adding to digital processes.

For example, the SAP Predictive Asset Insights solution provides real-time equipment monitoring and health information for assets, based on critical values and trends, thus enabling efficient asset maintenance strategies for better managing costs, risks, and performance. The SAP Upstream Operations Management application integrates field-data capture and production planning with what-if scenarios, production allocation, maintenance, reporting, and analytics capabilities so upstream oil, gas, and energy companies can improve decision-making related to hydrocarbon production operations linked with downstream customers and business partners. SAP for Oil, Gas & Energy solutions, along with the SAP Commodity Management solution, provide real-time trading, risk management, and scheduling integration. This integrated digital system breaks down traditional business siloes and provides real-time visibility into the hydrocarbon value chain inventory and costs for downstream operations margin improvements. Integrated trade-to-profit functionality provides real-time, integrated trading, scheduling, and pricing on SAP S/4HANA, with a user experience designed for ease of use and enhanced simulation capabilities to optimize the supply chain.

TRADITIONAL SCENARIO

- Time-consuming and siloed processes
- Mostly manual process

Generate the stock-projection worksheet for multiple locations and materials.

Open the worklist to review inventory alerts, and review inventory information details for each location.

Regenerate the stock-projection worksheet, check results, and adjust the nominations' scheduled time of arrival.

Revise the final schedule.

A NEW WORLD WITH SAP

- An approach that enables optimization of cost, risk, and performance
- Fully integrated, real-time trading, scheduling, and pricing
- Ability to use any device

Access current and planned inventory and nomination data in real time.

View, simulate, and adjust inventory projections and related nominations in one transaction.

Revise the final schedule on any device.

TOP VALUE DRIVERS

5%

Improvement in return on assets

25%

Improvement in first-time fixed rate

15%

Reduction in unplanned asset downtime

Source: SAP Performance Benchmarking

COMPETE AS AN ECOSYSTEM

The success of oil, gas, and energy operators will largely be determined by three variables: safety, cost, and agility. Augmented reality and robotics will help to improve safety and productivity. Companies will work together in meeting production, profitability, and safety targets (possibly as "pay for outcome"). They will also master the convergence of IT and operational technology with machine learning and prescriptive operations and maintenance and will develop greater asset intelligence by cooperating and sharing performance data with OEM and engineering specialists. Last, they will collect performance feedback from connected assets to continuously improve and innovate the design and operation of new and existing assets.

The Vision

By 2025, there will be an increasingly volatile energy market with a broadening range of asset types and energy sources, as the energy transition continues to accelerate. Operators will push the boundaries of automation and AI in operations activities to improve safety and productivity and seamlessly share data with all ecosystem partners to work together in ensuring that production, profitability, and safety targets are met (see Figure 3). Industry 4.0 stands for thinking beyond silos. The connectivity of production within the supply and demand chain makes a difference, since a slight problem upstream can result in a large, expensive problem downstream.

The Journey

As the circular economy accelerates, oil, gas, and energy companies will start toward this goal by providing a collaboration network for business partners and customers to facilitate recycling. They will continue their journey by fostering predictive and optimized supply chain planning capabilities, such as integrated business planning and secondary costs, and will achieve their vision by managing projects collaboratively across the project lifecycle and ecosystem. They will employ continued emissions reductions throughout the process and divest nonstrategic assets. Customer experiences can be improved by driving feedback to resolution in no time, leveraging in-the-moment customer feedback to enable high retention and loyalty while optimizing cost to serve. Loyalty is also improved by using customer and field technician feedback to orchestrate agreeable experiences for both.

Figure 3: Compete as an Ecosystem[8]

Motor Oil: From Oil & Gas to an Integrated Energy Conglomerate

Before: Challenges and Opportunities

- Need for a better customer experience
- Need for increased equipment availability with reduced maintenance cost
- Fewer business-critical shutdowns
- User-friendly visualization of historical and forecasted values

Why SAP

- SAP Cloud Platform supports the development of predictive maintenance models and SAP Analytics Cloud houses the data and enables reporting
- SAP's intelligent strategic planning tools enable the organization's finance and supply chain functions to create alternative scenarios on the fly
- SAP's model to become an Intelligent Enterprise

After: Value-Driven Results

- Reduction of unplanned corrective maintenance up to 30%
- Increase of productivity up to 25%
- Reduction of carbon emissions up to 25%
- Reduction of the inventory of spare parts up to 10%
- Reduction of operational costs up to 5%

Up to 25%
Increase in productivity

Up to 25%
Reduction of carbon emissions

COMPETE AS AN ECOSYSTEM

CONNECT AND COLLABORATE BEYOND YOUR TRADITIONAL BUSINESS MODEL

Operators are pushing the boundaries of automation and artificial intelligence in operations activities to improve safety and productivity and seamlessly share data with all ecosystem partners to work together to ensure production, profitability, and safety targets are met.

Applying integrated digital platforms enhances collaboration among ecosystem participants, helping to fast-track innovation, reduce costs, and provide operational transparency.

To drive logistics requirements and operations, your company must know what equipment and materials you have (whether owned or rented), where they are (whether at the well site, on the platform, in the warehouse, or in transit), and what they cost (to buy, to rent, to transport, to operate, to repair, or to replace).

Imagine an experience with near-touchless warehouse processes for receiving and shipping material. Material details, including complex parts list or modifications, are readily identified by image processing. Shipping instructions and documents (manifests, customs, dangerous goods) are automatically generated based on movement type (to warehouse, to field, to platform, to vendor). Automated tracking and receipt notifications are automatically received. All equipment and material movements to inventory, the vendor, or the recycler are now automated and intelligent. The benefits include:

- Lower capital deployed and improved return of rental equipment (stop payment)
- Lower ops downtime with quick turnaround of equipment and material for the next job
- Optimized inventory with clear identification and classification of material and equipment

TRADITIONAL SCENARIO

- Managers and workers rely heavily on experience instead of data.
- Processes are largely manual.

Budgeting and staffing
Obtain the budget, and use experience to estimate staff needs.

Planning and scheduling
Use manual planning tools, and schedule using spreadsheet estimates.

Performing work
Onboard workers with data-entry processes, issue equipment through administrative processes and use manual recording.

Completing work
Complete work with some issues, compile written reports, and remember experiences.

A NEW WORLD WITH SAP

- Workforce management is fully integrated throughout the ecosystem.
- Processes are optimized and safe.

Budgeting and staffing
Analyze workforce requirements from previous projects to find an optimal way to staff the project.

Planning and scheduling
Build a statement of work collaboratively with subcontractors using optimized schedules.

Performing work
Update a workforce "digital twin" as workers arrive, providing full knowledge of workers on-site, with proper access control.

Completing work
Complete work with no safety incidents, staffing shortfalls, or cost overruns.

TOP VALUE DRIVERS

10%–20%
Increase in revenue from new products or services

5%–30%
Reduction in supply chain planning costs

Source: SAP Performance Benchmarking

UNLOCK VALUE WITH TECHNOLOGY

Powered by tools such as predictive analytics, blockchain, and machine learning, the digital core becomes the real-time platform for managing and optimizing systems and processes, suppliers and networks, the workforce, the customer experience, and all the data an enterprise collects using sensors and other connected IoT assets. Housed partially or wholly in the cloud, a strong digital core is critical to an energy company's ability to efficiently and nimbly create new revenue centers, develop new business models, build relationships with consumers, and improve project collaboration.

The Vision

By 2025, continued investment and ingenuity will expand intelligent enterprises for oil, gas, and energy companies. Digital leaders will deliver operationally ready assets, often on a performance or revenue-share basis by using the power of automation and machine learning for more accurate exploration and effective asset design and constructability. Additionally, the industry will use a networked platform for collaborative project management that will orchestrate work and logistics across multiple trades and disciplines empowered for and by the workforce (see Figure 4).

The Journey

Oil, gas, and energy companies will start toward this goal by optimizing real-time, profit-based decision-making driven by edge-to-digital-core connectedness. They will extend with industry market standards for next-generation, optimized business processes in the cloud and will transform and achieve their vision with fluid collaboration with business partners and remote workers over networks. Companies will leverage mobile communications to improve asset performance, ensure worker safety, and extend operational insights beyond traditional business boundaries.

Figure 4: Use Technology as an Enabler[9]

Transforming to Create Merger Synergies with SAP S/4HANA

Gaining the Agility to Integrate, Innovate, and Accelerate a Merger of Two Leading Companies

As a leading provider of integrated well completion services, NexTier OilField Solutions Inc. helps exploration and production companies accelerate their production and increase returns in the most demanding U.S. land basins. Formed by the merger of two public oil-field services companies, NexTier needed to integrate multiple ERP and related systems on one platform. It wanted to simplify systems and processes to realize greater synergies across the merged entities. And the company also set out to simplify workflow reporting processes and make its supply chain more efficient.

Value-driven results included:

- Smooth integration with a third-party solution for integrated field ticketing and customer invoicing
- More-efficient exchange of supply chain partner information
- Reduced manual effort, simplified work processes, and increased employee efficiency
- Greater operational and financial visibility thanks to improved data aided by spread-level profitability reporting and increased process discipline
- Fewer application management services tickets for increased cost-effectiveness

"SAP S/4HANA allowed us to build an ecosystem of tools that were fit for purpose and aligned with the business. In addition, it helped us reduce our run-rate costs for the maintenance of an ERP application."

Umar Farooq, Vice President of Information Technology, NexTier Oilfield Solutions Inc.

12%
Reduction in month-end closing time

50%
Reduction in ERP costs

US$120 million
In merger synergies through reduced costs across IT and ERP systems

UNLOCK VALUE WITH TECHNOLOGY

EXPAND THE INTELLIGENT ENTERPRISE

Continued investment and ingenuity are expanding the energy network infrastructure. Digital leaders are delivering operationally ready assets, often on a performance or revenue-share basis, by using the power of supercomputing for more accurate exploration and effective asset design and construction. Automation using artificial intelligence and robotic process automation can be used to improve efficiency and accuracy. Others are using a networked platform for collaborative project management to orchestrate, design, build, and maintain assets across multiple partners.

For example, using artificial intelligence, machine learning, and robotic process automation, SAP Predictive Asset Insights provides real-time health information of assets based on critical values and trends, thus enabling collaborative asset maintenance strategies for better managing cost, risk, and performance.

TRADITIONAL SCENARIO

- Time- or condition-based inspection and maintenance
- Unknown real-time risk of failure and performance
- No optimization of cost, risk, or performance

A time-based inspection-planning approach is used.

An inspection is conducted.

The inspection triggers maintenance work.

Maintenance records are updated.

A NEW WORLD WITH SAP

- Condition-health monitoring identifies failing equipment so it can be repaired before failure.
- Uptime improves consistency of equipment performance.
- The approach enables optimization of cost, risk, and performance.

Sensors continuously monitor equipment performance.

If equipment exceeds operating limits, a sensor sends a notification to the control center.

The notification identifies equipment failure and specifies the component needing repair.

The repair is completed, and maintenance records are updated from work orders and sensors.

TOP VALUE DRIVERS[10]

15%

Reduction in unplanned downtime

10%

Reduction in maintenance cost

Getting There: How SAP Can Enable Every Organization to Become an Intelligent, Sustainable Enterprise

We enable our customers to become intelligent, sustainable enterprises by bringing together our comprehensive portfolio of solutions and technology in service to customers' business process needs.

- It starts with our platform technology that provides the foundation of application integration, extension to a robust ecosystem of solutions, and data and AI.
- Then our industry-leading business applications work together spanning front-end and back-end systems that only SAP can provide.
- This all comes together to provide the customer with support for the end-to-end, industry-specific business processes they need to run as an intelligent, sustainable enterprise (see Figure 5).

Figure 5: SAP Intelligent Enterprise Framework

OPEN INNOVATION PLATFORM AND ECOSYSTEM

- SAP's industry cloud is the way for our partners and SAP to deliver industry cloud solutions for customers that unlock new levels of efficiency, extend end-to-end business processes at the edge, and enable innovative business models.
- SAP partners find a unique environment in our industry cloud in which the data domains and business processes of our solutions and business networks are readily accessible through open APIs. This allows our partners to accelerate innovation by focusing on the differentiating business capabilities they want to build and deliver to our joint customers.
- This enables a spectrum of partnership and innovation models ranging from close co-innovation over identified white spaces to completely open innovation spaces with free competition to drive customer value.
- The innovation models are complemented by a set of commercialization models that are strongly correlated to the value the solutions deliver to the business of our customers.
- Freedom of choice is a key value, so customers can choose any partner or hyperscaler to deploy their industry cloud solutions.
- **Open Ecosystems Deliver More Innovation**
  Open platforms, available to the wider ecosystem, have consistently delivered more innovation and choice for customers. Therefore, our industry cloud solutions can be run by the major infrastructure-as-a-service providers, giving our customers the freedom to implement their own individual platform strategy.

RISE with SAP: Driving Business Innovation Together

Every enterprise needs to develop new business models to avoid being disrupted, gain efficiencies to fund innovation, and transform mission-critical systems without business risk. RISE with SAP is the solution.

RISE with SAP is a comprehensive solution with:

- Cloud ERP for every business need
- Industry next practices and extensibility
- Analytics and business process intelligence
- Outcome-driven services from SAP and partners

Discover the value of RISE with SAP

Take the lead with industry innovation for top-line, bottom-line, and green-line growth

- ✓ Grow revenue by creating differentiating business models in your industry
- ✓ Increase margin with built-in industry-specific processes and best practices
- ✓ Unlock new efficiency with intelligent automation across mission-critical processes
- ✓ Manage sustainability with company-wide transparency and controls

Never stop improving with continuous insight to optimize business processes

- ✓ Prioritize optimization opportunities with instant analysis of processes, activities, and tasks
- ✓ Sharpen process performance based on actual system usage, best practices, and industry benchmarking
- ✓ Accelerate your progress with tailored insight on where to automate business processes with AI

Secure your business with a trusted partner for your needs, every step of the way

- ✓ Run your mission-critical operations at their best around the globe
- ✓ Reach the cloud without compromise with solutions for every business and every regulatory requirement
- ✓ Take charge of change using a versatile platform to speed innovation
- ✓ Own your tomorrow with a guided journey and outcome-driven practices from SAP and our partners

RISE with SAP is built to fit your needs

RISE with SAP is designed to support your business needs – for your industry, in your geography, for your regulatory requirements – with SAP responsible for the holistic service-level agreement, cloud operations, and technical support. It includes:

Cloud ERP
SAP S/4HANA Cloud

Business process intelligence
Business process intelligence starter pack

Business platform and analytics
SAP Business Technology Platform (CPEA credits)

Business networks
SAP Business Network Starter Pack

Outcome-driven services and tools
From partners

RISE with SAP is the foundation for an intelligent enterprise in the cloud. We look forward to joining our customers on their transformation journey into the future. Find out more about RISE with SAP.

COMPREHENSIVE SAP ECOSYSTEM: ORCHESTRATING THE PARTNER ECOSYSTEM TO DELIVER VALUE FASTER

Our comprehensive ecosystem for the oil, gas, and energy industry offers:

- The Intelligent Enterprise as the overarching strategy to meet future requirements, providing:
  - SAP S/4HANA co-development programs for customers and partners
  - Industry co-innovation programs for industry-specific use cases
  - Delivery of enterprise-to-enterprise industry clouds
  - Thought leadership, evangelism, and enablement by industry through events, councils, and regular customer exchange
- Integration into a wide range of business services (OEMs, suppliers, key vendors, and more)
- Open architecture, with a choice of hardware and software specifically designed to meet requirements
- Complementary and innovative third-party solutions to provide leading-edge technology

SAP is a founding member of the Open Industry 4.0 Alliance, which aims to overcome proprietary, isolated solutions with a common reference architecture to accelerate the implementation of Industry 4.0 solutions and services.

Our partner ecosystem includes, among others:

accenture, BearingPoint, Capgemini, celonis, DELL, Deloitte., DNV, EY, IBM, implico, Incture TECHNOLOGIES, INNOVAPPTIVE innovate. transform. empower., intel, Microsoft Azure, msg, OIS, OPEN INDUSTRY 4.0 ALLIANCE, OpenText THE CONTENT EXPERTS, OSIsoft., pwc, RIZING, Sodales Solutions, SPLISYS, TATA CONSULTANCY SERVICES, utopia Perfect Data. Perfectly Possible., wipro

SAP IS COMMITTED TO INNOVATION

Oil, gas, and energy cloud consortium

Driven by leaders in industry for industry, SAP and Accenture are enabling oil, gas, and energy companies to become intelligent enterprises with a portfolio of industrialized, innovative, and intelligent cloud services that set the new market standards for the energy industry.

- Incorporates innovative technologies, delivering real-time insights, greater visibility, and better decision-making
- Delivers preconfigured, integrated processes that are user ready
- Reduces complexity and the cost of adopting and running new capabilities and technologies

Comprehensive industry coverage

SAP enables comprehensive coverage of the oil, gas, and energy value chain across the enterprise. With its clear industry road map, SAP is the partner of choice for the oil, gas, and energy industry.

- More than 3,300 oil, gas, and energy companies in 118 countries innovating with SAP solutions
- 99% of oil, gas, and energy companies in the Forbes Global 2000 as SAP customers
- Support for lines of business on a single platform

Proven services offering

By bringing together innovators, industry and emerging technology expertise, proven use cases, and design thinking, we help oil, gas, and energy companies develop innovations that deliver impact at scale.

- Proven methodologies to help drive innovation, from reimagining customer experiences to enhancing operations
- Innovation that is fueled through a managed innovation ecosystem from SAP
- Ability to build your own innovation capability and culture

SAP supports oil, gas, and energy companies in becoming intelligent enterprises – providing integrated business applications that use intelligent technologies and can be extended on SAP Business Technology Platform to deliver breakthrough business value.

Learn more

- SAP for Oil , Gas, and Energy solutions
- SAP Services and Support

RESOURCES

Outlined below is external research that was used as supporting material for this paper.

1. Abdelghani Henni, "ADNOC Harnesses CO_2 to Increase Oil Recovery," HARTENERGY, February 2, 2018.

2. SAP Customer Success Story: www.sap.com/documents/2021/01/fa9929f7-c77d-0010-87a3-c30de2ffd8ff.html

3. SAP Customer Testimonial: https://www.sap.com/documents/2021/02/bc03914c-d07d-0010-87a3-c30de2ffd8ff.html

4. SAP Business Transformation Study: www.sap.com/documents/2021/02/e001ac13-cc7d-0010-87a3-c30de2ffd8ff.html

5. SAP Performance Benchmarking.

6. "Thinking Beyond the Barrel: How Galp Increased Agility Through Business Transformation," SAP blog by Brent Potts, June 18, 2020.

7. SAP Business Transformation Study: www.sap.com/documents/2019/11/5ea7624d-727d-0010-87a3-c30de2ffd8ff.html

8. SAP insider: https://www.sap.com/documents/2021/01/fa9929f7-c77d-0010-87a3-c30de2ffd8ff.html

9. SAP Customer Reference Story: www.sap.com/documents/2020/12/92332869-c17d-0010-87a3-c30de2ffd8ff.html

10. Geoffrey Cann and Rachael Goydan, "Bits, Bytes, and Barrels: The Digital Transformation of Oil and Gas," 2019.

Note: All sources cited as "SAP" or "SAP Performance Benchmarking" are based on our research with customers through our benchmarking program and other direct interactions with customers.

Follow us

www.sap.com/contactsap

Studio SAP | 82525enUS (22/04)

THE BEST RUN SAP