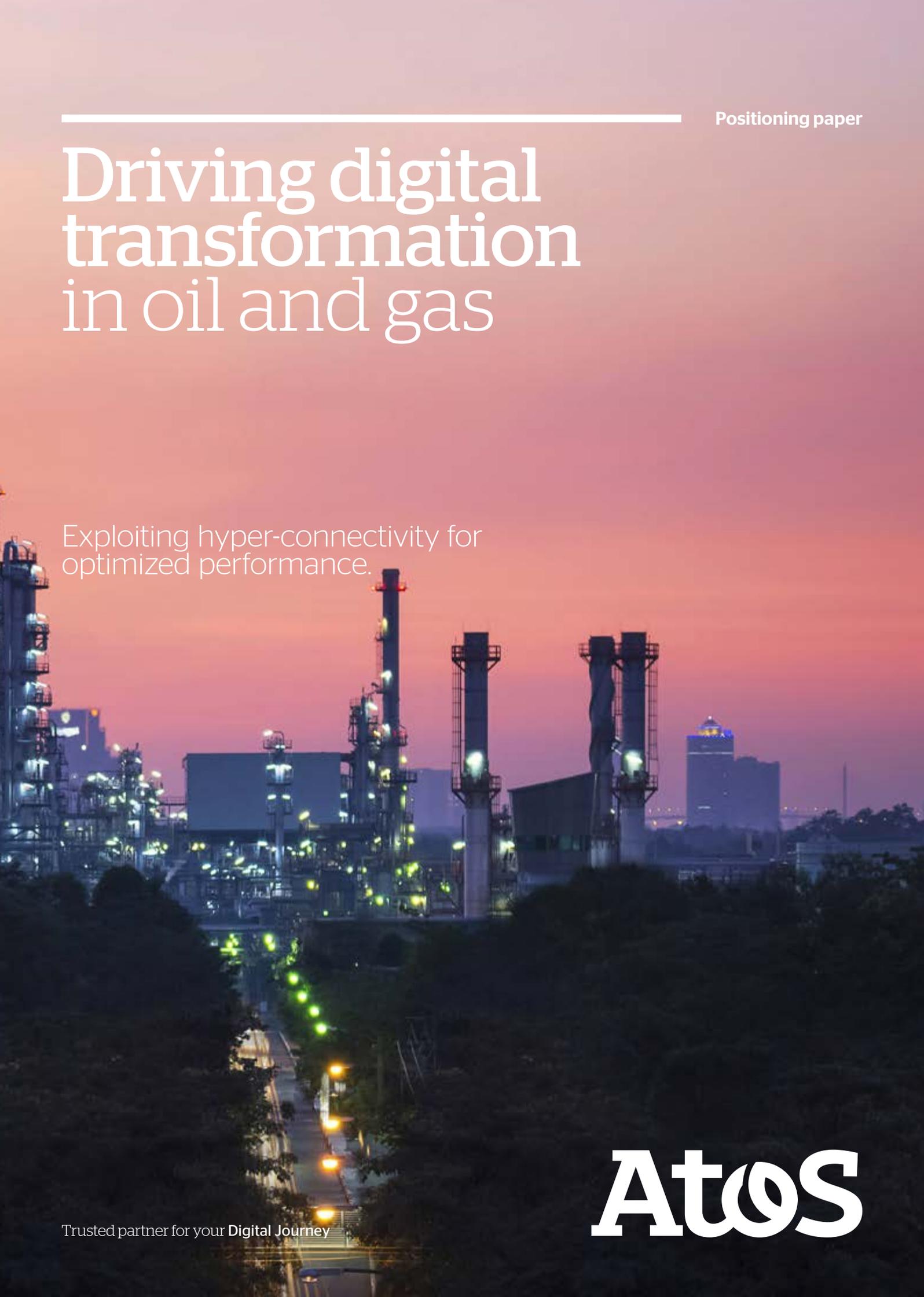


# Driving digital transformation in oil and gas

Exploiting hyper-connectivity for optimized performance.



**Atos**

Upstream, midstream and downstream – digital transformation has a direct impact on every area of the oil and gas industry. Digital innovation does require investment, and ideally the cost of transformation can be covered to a large extent through savings made in traditional IT systems and services.

We are already witnessing a significant shift in attitudes to new technology practice in oil and gas. A large proportion of oil and gas companies in the US, for example, are already embracing cloud as a means of reducing cost and increasing agility. Some are even looking to public cloud services, something that would have been inconceivable, even five years ago.

We are also seeing significant changes in the ways that people expect to work. Oil and gas companies have always relied on extended networks of employees and sub-contractors – often working in extreme conditions. We now need to respond to opportunities to increase field-force performance through timely mobile access to data through robust, secure and affordable devices.

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Industry 4.0 is driving significant change in manufacturing. It is inevitably set for positive impact in oil and gas too. The way in which we exploit the information flows which overlay every aspect of the industry, will ultimately determine the way in which we build a better future for it.

In this short paper, Atos looks at the areas in which digital transformation promises the greatest short and mid-term benefit for oil and gas companies and at how best to optimize existing IT management practices to help pay for it.

# Exploiting data reserves

One of the greatest technical advances for oil and gas companies in recent years has been their ability to tap smaller and less accessible reserves for profit. It's time to do the same with what until now have been similarly inaccessible reserves of data.

It's been a tough time for the oil and gas industries. We've experienced significant falls in price, and seen consumers expecting a corresponding dip in their own fuel costs. Concern for geo-political stability and worldwide economic fragility have a continuing impact on this, the most global of all industry sectors.

We are witnessing a permanent shift in the energy balance too. Fossil fuels still account for 80% of global energy use, but this is changing - and the current 10% renewable share is only going in one direction.

In the face of these continuing pressures, oil and gas companies must continue to bear the costs of exploration, production, refinery, distribution and sale.

And all of this happens in an industry which must maintain the highest standards of operational safety and environmental responsibility under continual scrutiny in a world connected through critical and sophisticated social media.

## Three clear commitments from Atos

The oil and gas industry has always worked through extended partnership - whether in highly-specialized drilling platform maintenance or in dealer-owned and operated fuel sales. These collaborative models are true for IT too. The expertise of the industry's own IT professionals has always been supplemented and extended through partnerships.

We are now at a point of major digital transformation - a point at which the survival and success of organizations in every industry sector hinges on the ability to capitalize on untapped data - to create a new culture of digital collaboration and process enhancement.

As business technology partners to our oil and gas clients, Atos makes three clear commitments:

1. Our experts will work with your own to help you identify, qualify and exploit immediate and practical opportunities on your digital journey
2. We will help assess and transform existing IT management and practice to ensure it delivers both in terms of expectation and cost-efficiency.
3. We will share ideas from the many other industry practices in which Atos is active, bringing new perspectives and inspiration.

Sharing ideas is particularly important. Atos is working closely, for example, with Siemens in the definition of the factory of the future and in the new reality of Industry 4.0, and the learnings from these initiatives are directly relevant to the development of the digital oilfield and refinery.

We see similar benefits in downstream activity. The e-station will become a reality. In part this will be through rapid advances in the way you cater for e-vehicle customers. But it will also be about smarter transactional models, and here too Atos is leading the field in everything from customer-profiling and e-payments.

# Making digital connections: a focus framework for oil and gas

Digital transformation has a massive and positive impact across the oil and gas sectors. For this to happen, we must have a working framework – a means to match potential digital benefit to actual industry needs and aspirations – leading with business rather than technology.

As truly global organizations with complex business models, every oil and gas company has multiple IT projects happening in parallel at any one time. Some focus on simple operational issues. Others are more strategic, attracting serious high-profile executive interest.

As an active business technology partner, Atos will always look after the detail. But you need the bigger picture too – and this means taking time to think specifically about how new digitally-enhanced processes can help. Key topics include:

## Lifecycle



Maximize the safe working life of assets across wells, production facilities, refineries and retail stations.

Will machine-to-machine communication boost proactive service intervention?

## Workforce



From the oilfield to the forecourt, your people need to work safely, efficiently and cost-effectively.

Are you making the most of mobile and cloud – boosting collaboration and informed decision-making?

## Relationships



Strengthen and extend relationships with both partners, sub-contractors and customers.

Does enterprise social networking impact the efficiency of virtual teams?

## Revenues



Establish new revenue streams and manage variations in demand.

How can you maximize returns from retail sites – maybe in combination with e-commerce initiatives?

## Cost



Minimize the cost of routine and one-off operations without compromising security.

Are you making maximum use of data analytics to automate routine maintenance tasks?

## Regulations



Accelerate compliance while maintaining transparency and keeping up to date with regulatory change.

How can smart documentation eliminate continued reliance on paper-based process?

## Security



Ensure that your people and assets are continually protected from physical and cyber-attack.

Should bio-metrics be sharpening access to both physical sites and data sources?



# Why now?

For every oil and gas company, digital transformation and sustainable success are now inseparable. The good news? For oil and gas companies, this means building on a strong tradition of leadership in technology innovation.

The business challenges facing oil and gas companies can only be met by recognizing the essential contribution of transformational digital technologies. All of these are now achieving a degree of early maturity and mainstream acceptance.

What does this mean for oil and gas? Simply that these digital developments can now be considered with confidence for practical application right across their operations. We will always start with practical analysis of your operational and business challenges. This will not stop us, however, from taking any striking technological innovation and asking, "How can we turn this to benefit for our oil and gas clients."

And as always in the new digital landscape, all seven of these key technology themes are strongly inter-related: in short, everything is connected to everything else.



## Seven technologies shaping digital shift in oil and gas



# Why Atos? —

Atos has over 30 years' experience in serving the world's oil and gas companies. Today, Atos has around 6,000 specialists in the energy and utility sectors, working to ensure that our company skills remain focused and relevant to the specific operational and commercial demands of our clients.

We also have a dedicated solutions company, Atos Worldgrid, with some 1,600 specialists dedicated to solutions design and implementation for the energy and utilities sectors.

Many of the world's foremost oil and gas companies work with Atos.

With some 100,000 business technologists working across 72 countries, Atos has the global scale demanded by its oil and gas clients.

As a trusted partner for your digital journey, Atos is one of very few IT companies whose experience spans both operational and information technologies. This experience has helped form, for example, our vision for the digital refinery driven by real-time data from industrial sensors.



# Transformation in action

Digital transformation means taking bold yet well-considered moves. Take a look at some of the areas in which Atos is exploring opportunities for radical improvement across oil and gas operations.

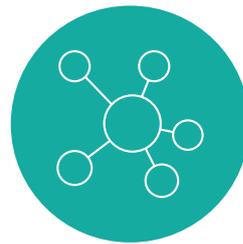
As a partner in digital transformation, Atos takes a pragmatic approach - contributing to strategic thinking while remaining grounded in the practical application of digital innovation across four areas critical to our oil and gas clients.



## Customer Experience

You can only build and maintain loyalty at the pump and beyond if you know who your customers are and how they behave. Atos key skills in customer experience combine to deliver this knowledge and span:

- **CRM:** building a 360° view of individuals and customer types to profile client expectation and behavior.
- **Customer engagement and self-care portals:** empowering clients and partners to actively manage services and incentives.
- **Payment and loyalty services:** as a leader in payment services, Atos' specialist Worldline company helps oil and gas companies maximize customers' loyalty and revenues.
- **Fleet management:** Atos offers solutions for contract management, CRM and enterprise fleet management.
- **Customer analytics and marketing:** analytics span both spending and social media behavior to better target individual and business customers and provide essential business development intelligence.
- **Digital signage:** make sure every pole sign, pump display and convenience store screen are continually tuned to grow business.



## Business Reinvention

Oil and gas companies are eager to establish new revenue streams and newly connected business models are the key. Atos is keen to help stimulate thinking, drawing on experience of business reinvention across diverse industry sectors. When oil and gas companies own multiple pockets of urban real-estate, for example, how can these be used efficiently as pick-up points for customers' online purchases?

- **Open collaboration and innovation platforms:** Atos can help establish practical frameworks for effective multi-stakeholder collaboration.
- **3D printing revolution:** taking advantage of additive manufacturing to produce parts onsite can massively shrink traditional supply chain time and costs.
- **The industrial cloud:** by combining commercial and operational technologies in the cloud oil and gas professionals can gain ever-more intelligent business views with smart dashboards.
- **New Business Process Services:** new offshore production models, in Liquefied Natural Gas (LNG) for example, demand new planning and control systems.
- **E-vehicle revolution:** as e-vehicle adoption increases, oil and gas companies must be ready to offer compelling automotive services.



## Operational Excellence

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Oil and gas companies continually seek to optimize operations across upstream, midstream and downstream activities. Achieving excellence now means re-examining even the most well-established processes to ask how advances in digital communication and collaboration can make them even more robust, agile and efficient. Key focus areas for Atos include:

- **Process efficiency:** examining current business processes and asking how their underlying digital frameworks can be streamlined for safe, cost-effective and efficient operation.
- **Next-generation asset management:** using analytics-enabled predictive maintenance to maximize useful life of all assets, to minimize service disruption, and to shift from rigid book schedules to condition-based intervention.
- **Field-force efficiency and agility:** exploiting mobile communications to optimize scheduling and job management with embedded skills-profiling and availability helping drive out cost.
- **IT optimization:** ensuring that all mature IT operations are conducted with the greatest efficiency, and that opportunities for further cost savings are continually pursued.
- **IT transformation and cloud services:** examining the viability and timing of replacing traditional with cloud-based IT models, with corresponding gains in agility, security and cost-reduction.



## Trust and Compliance

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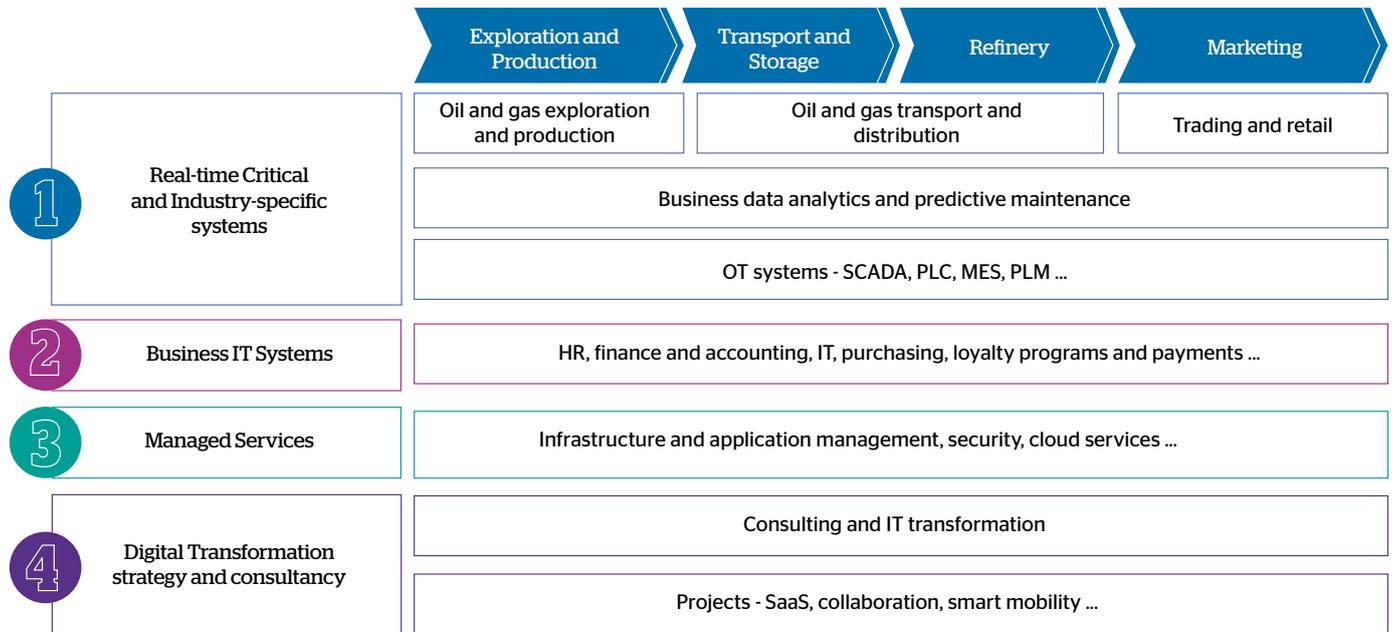
Every oil and gas company faces rigorous regulatory demands and penetrating public scrutiny. As providers of some 80% of global energy requirements, oil and gas companies are also very much a part of our essential social and business infrastructure, and need protection against both physical and cyberattack. As a partner in digital transformation, Atos spans all aspects of support for the systems and processes needed to earn trust and ensure compliance:

- **Design and management for critical systems:** Atos builds and sustains resilient, high-availability infrastructures and systems, including SCADA solutions.
- **Cybersecurity:** designing and delivering end-to-end cybersecurity across the oil and gas value chain, offering fully managed and continually updated Security Operation Center services.
- **Data protection and risk management:** design secure ecosystem communication models that both protect direct operations and allow partners to offer optimum security to their own customers.
- **Regulatory and compliance reporting:** comprehensive management processes for regulatory checks and reports.

# Extended Focus

Atos has a clear focus on digital transformation in the oil and gas sectors. But this does not happen in isolation. As long-term service partners to clients in these industries, we must maintain a clear standard of excellence in infrastructure, application and workplace management.

Just as oil and gas companies seek to extend the maximum viable life of exploration, refinery and retail assets, so they must do the same for IT. As an integral part of the Atos business technology culture, we strive continually to help ensure our clients get the best value from existing investments.



In an increasingly interconnected world, the benefits of innovation will always depend on the quality of integration with existing systems. When, for example, an oil or gas company decides that it is time to decommission traditional desktop computers in favor of tablets, new cloud-based application delivery will still rely on access to heritage data management applications.

As a partner in digital transformation, Atos will not ignore the importance of continual improvement to the performance, integration and cost-effectiveness of the heritage environment. Ideally, savings made in traditional management will make a major contribution to paying for the new.

# What next?

In recent years, Atos has invested significantly in the skills and resources needed to take up a position as your partner in digital transformation.

In part, these investments have shaped our acquisition and partnership strategies. By combining our resources with those of Bull, for example, we have gained supremacy in high-performance computing, which in turn makes an invaluable contribution to our ability to offer complex data analysis as a service.

Similarly, Atos company Unify lays the foundation for the smarter, safer and more collaborative ways of working which are so essential across the oil and gas industries.

We believe the new wave of digital transformation will be driven by data analytics, and we have made corresponding investments in Atos Codex, for end-to-end analytics.

Our expertise in Industry 4.0, and our research and collaboration with Siemens, will also remain a consistent point of focus in digital transformation initiatives for oil and gas. Indeed, the full potential of the digital oilfield and refinery can only be realized through Industry 4.0.

Combine all this with a depth of experience in the oil and gas sectors, and we believe Atos is ideally positioned to act as a pragmatic, intelligent and collaborative partner to any oil or gas company seeking to explore opportunities for digital transformation.

It's time to make the digital oilfield and refinery a reality, to turn the fuel station into an e-station.

Join us to start the journey - discover your untapped data reserves.



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# About Atos

Atos SE (Societas Europaea) is a leader in digital services with pro forma annual revenue of circa € 12 billion and circa 100,000 employees in 72 countries. Serving a global client base, the Group provides Consulting & Systems Integration services, Managed Services & BPO, Cloud operations, Big Data & Cyber-security solutions, as well as transactional services through Worldline, the European leader in the payments and transactional services industry. With its deep technology expertise and industry knowledge, the Group works with clients across different business sectors: Defense, Financial Services, Health, Manufacturing, Media, Utilities, Public sector, Retail, Telecommunications, and Transportation.

Atos is focused on business technology that powers progress and helps organizations to create their firm of the future. The Group is the Worldwide Information Technology Partner for the Olympic & Paralympic Games and is listed on the Euronext Paris market. Atos operates under the brands Atos, Atos Consulting, Atos Worldgrid, Bull, Canopy, Unify and Worldline.

Find out more about us

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Let's start a discussion together

