How process intelligence is transforming the oil & gas industry
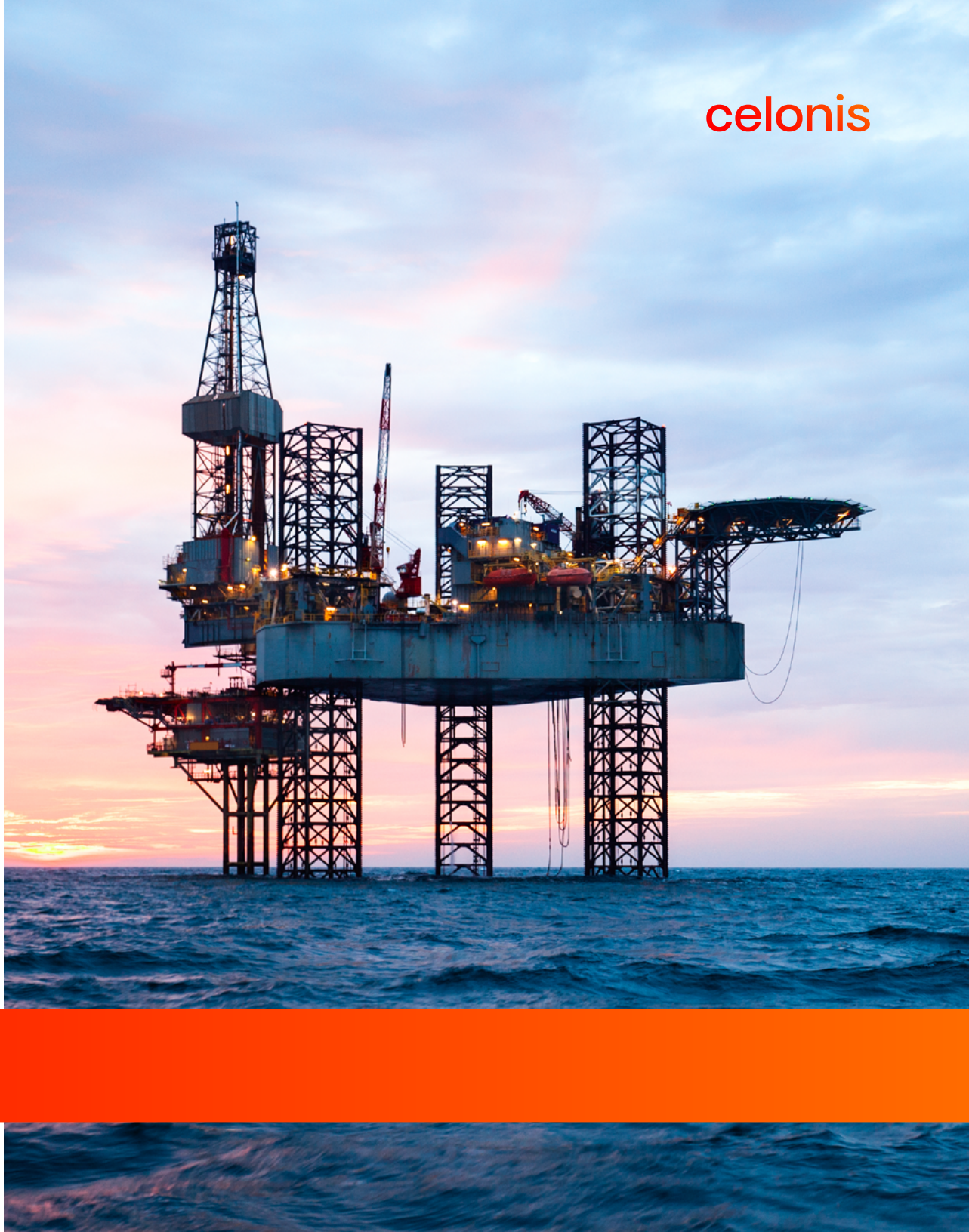
Why process intelligence for the oil & gas industry?

The Oil & Gas industry is under constant pressure to transform and adapt to new societal, political, and external factors, whilst also striving for greater efficiency. But how can you drive efficiency, produce less waste and extend the life of your existing sites, whilst improving performance and driving revenue?

With the price of product outside your control, your competitive advantage is in streamlining your business operations and optimizing your supply chain to reduce costs. That's where Process Intelligence comes in.

"With the price of product outside your control, your competitive advantage is in streamlining your business operations and optimizing your supply chain to reduce costs"

Process Intelligence helps you:

- ☑ **Analyze supply chain performance:** Visualize your processes, remove bottlenecks and automate repetitive tasks to improve efficiency of your operations

- ☑ **Provide intelligent recommendations to reduce supply chain costs:** Get products to market faster and reduce supply chain costs by using data to streamline process

- ☑ **Meet regulatory and security requirements:** Reduce maverick buying and ensure best practices are maintained across all your business operations

Enabling efficiency with process intelligence

Oil & Gas supply chains are highly complex. With a deeper understanding of how they work there are efficiencies to be found from exploration, to extraction, and even distribution.

Global workflows form an intricate maze of processes; from how you find a product, extract it from the ground, transport it to a refinery, and refract it into a usable product for market, to how it's distributed around the world, bought and sold.

If we take just one example, the opening of a new rig, there are hundreds, if not thousands of processes involved. And hold ups in any of these process can result in several delays getting your product to market:

- Exploration teams need to find a potential site

- Finance and operation teams need to ensure it's viable

- The HR team needs to recruit workers and contractors

- Construction teams need to ensure it's built correctly and safe for work

- The site needs to be well stocked and undergo continued maintenance

- Distribution teams need to ensure goods can get from the site to the customer

Think about all the processes involved in setting up that one site. Now, multiply that by the number of sites you have in operation, the number of employees, contractors, and suppliers on those sites, and you've got some idea of the volume of processes that have to work in order to get your product from the ground to the buyer.

Any friction, delays, or bottlenecks in these processes and the supply chain grinds to a halt, generating knock-on challenges which cost you money, and impact your ability to get your product to market at a competitive price.

Processes involved in setting one site

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Number of sites you have in operation

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The number of employees, contractors, and suppliers on those sites

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The volume of processes that have to work in order to get your product from the ground to the buyer.

Process Intelligence in Action

Here's how Process Intelligence works in Oil & Gas and can be leveraged across the finance organization:

Finance Executives:
Tasked with reducing operating costs, streamlining operations, and ensuring compliance, they need to be aware of cost per PO and SO, volume of compliance violations, and return on capital.

Discover: Understand the existing approach towards cash discounts and quantify the potential based on the percentage realized or not realized

Enhance: Machine Learning technology then helps predict liquidity levels and makes recommendations to help locate invoices primed for cash discounts, so you can maintain ideal working capital at all times

Monitor: Continuously track cash discount developments over time and benchmark other operational costs to provide further opportunities

Finance Managers:
Responsible for optimizing working capital, improving overall productivity and delivery quality, and eliminating the root-causes of manual rework while balancing risk, they need to be aware of DSO, automation rates, cost per invoice, and blocked order rates.

Discover: Understand where late payments occur most frequently and the root cause to prioritize improvement efforts according to highest ROI

Enhance: Once an issue is identified, use Machine Learning and AI to proactively analyze and flag master data issues automatically, before they delay invoicing or force manual rework steps

Monitor: Measure trends over time for DSO and highlight actions to be taken for specific customers, geographies, business units or sales channels that are not showing signs of improvement

Individual contributors:
Contributing to optimizing working capital by processing invoices at the best time, and driving productivity through reduced handling time, your contributors need to understand DPO, cost per invoice, and compliance concerns by reducing maverick purchasing.

Discover: Understand where payments are not executed perfectly and discover the root cause of issues, like invoices with a wrong baseline date sent by vendors and getting paid early

Enhance: Use Machine Learning and AI to put a hold on invoices once discrepancies are discovered, so disbursement is not initiated until the invoice is actually due

Monitor: Track invoices paid early over time, and react proactively should you see an unexpected peak

1.
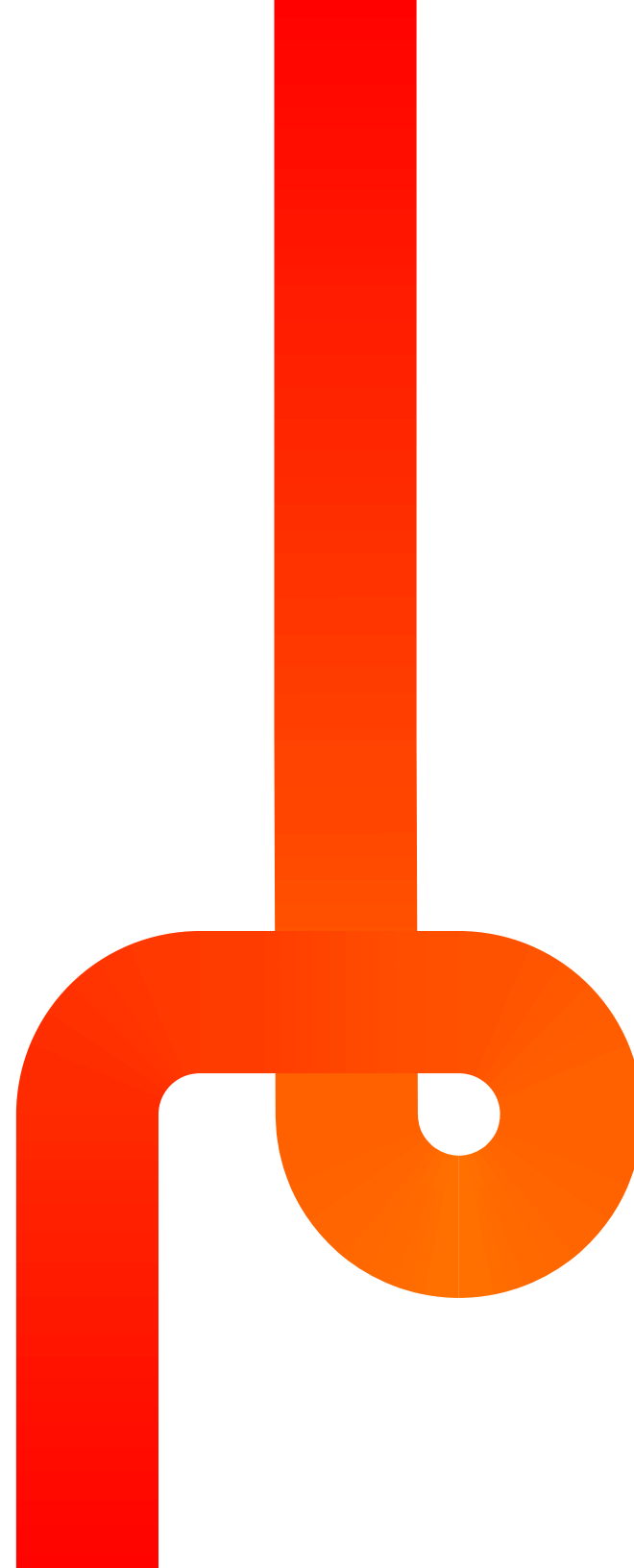# Analyzing performance and extracting value

Analyzing performance and extracting value

With growing pressure to be more sustainable, optimizing performance and ensuring longevity from existing assets is critical. This means scrutinizing the entire business and its operations to identify areas to drive efficiencies.

With Process Intelligence technology you can analyze your as-is business processes, identify where bottlenecks exist, and the best action to take to clear the obstacle and streamline. This end-to-end transparency allows you to automate repetitive tasks, simplify complex tasks that are slowing down business operations, and optimize process management throughout your organization.

"With Process Intelligence technology you can analyze your as-is business processes, identify where bottlenecks exist, and the best action to take to clear the obstacle and streamline."

Case Study

How Schlumberger improved performance with Process Intelligence

"Schlumberger deployed Celonis Process Intelligence to pick apart the individual strands of its disjointed processes and analyze each one from end-to-end."

Business challenge:
With a presence in 85 countries and employing around 100,000 people, Schlumberger needed to untangle its 'spaghetti bowl' of processes to help improve performance across the business.

Growing through acquisition, the company needed to standardize processes across multiple business divisions, and better support transformation efforts during its SAP S/4HANA system migration.

The solution:
Schlumberger deployed Celonis Process Intelligence to pick apart the individual strands of its disjointed processes and analyze each one from end-to-end. From this uncomplicated and singular view the company was able to identify and optimize business processes that were negatively impacting performance.

The results:
By working with Celonis, Schlumberger has improved its focus on process standardization, increased automation, eradicated manual rework, and identified process variances.

As a result, Schlumberger has:

☑ Discovered nearly 20% of all purchasing requisitions deviated from contracted prices, presenting an opportunity to adapt its auto purchase order policy and thresholds

☑ Addressed and near eliminated rework activity across the business

☑ Used automation to remove error-prone and time-consuming manual tasks and set new records for 'Perfect PO' rates

☑ Improved performance throughout its finance operation

Plant Maintenance

Whether it's ensuring suppliers are ready and on time with maintenance work, making sure you have the right materials for plant maintenance, or ensuring your distribution network isn't disrupted by plant downtime, every bit of maintenance has a ripple effect on your business.

With Process Intelligence technology you can learn from past experiences and use these insights to optimize processes and mitigate the impact of downtime on the business. Here's how:

"With Process Intelligence technology you can learn from past experiences and use these insights to optimize processes and mitigate the impact of downtime on the business."

Challenge:

How can you manage scheduled maintenance downtime across the business while keeping throughput as high as possible?

How can you benchmark plant maintenance strategies, and ensure performance is standardized?

How can you learn from previous plant maintenance processes, and avoid making the same mistakes again?

Solution

By giving you a single platform to orchestrate all your operations from, Celonis ensures you can keep throughput high during downtime

Process Intelligence helps you bring together plant maintenance data from disparate systems, across different sites, so you can generate actionable insights and optimize/standardize your maintenance strategies

Built in AI technology learns 'best process' practices from previous plant maintenance operations, and alerts you if you are falling behind schedule, or deviating from the ideal process

The business case

Contractor On-boarding

Whenever you're spinning up a new rig or drill site, there are thousands of things to think about, and principal among those is the workers that you need to run the site. Every day that the site is under-staffed is another day of lost revenue since you can't perform at maximum throughput.

With Process Intelligence technology you can streamline and automate the on-boarding process of new contractors, ensuring they get up to speed quickly and your site remains at maximum capacity.

"Every day that the site is under-staffed is another day of lost revenue since you can't perform at maximum throughput."

Challenge:

How do you ensure you're hiring the right contractors for the job?

How can you vet contractors, and do a background search on them as quickly as possible?

How can you automate the on-boarding process; making it easier for HR and Finance teams to on-board contractors and get them safely on site?

Solution

With Process Intelligence technology you can accurately check your process history with contractors to ensure they're able to deliver on time, and on budget.y and ability to deliver on time, and within budget

By visualizing your processes across your HR and Operations, Process Intelligence helps you identify best practices to expedite workflows and accelerate the hiring process

Process Intelligence helps automate the repetitive tasks in your workflows, so your HR and finance teams can speed up the on-boarding process

Warehouse Management

Staying on top of chemicals, technology, infrastructure, and internal distribution for multiple global locations is a full-time job, often dealing with impartial data. To keep throughput high, you need to know you have what you need, at the right site, to turn crude into a viable product.

With Process Intelligence technology you can compile datasets from different systems around the world to visualize your global stockpile and management processes; ensuring you always have what you need, where you need it.

"End-to-end process visualizations enable you to automate warehouse management processes"

Challenge:	Solution
How can you keep tabs on your global inventory when using multiple systems in multiple locations?	Process Intelligence connects the dots in your global processes and systems to provide you with a holistic and complete overview of your stock, replenishment, and distribution processes
How can you ensure you always have the inventory you need, at the right place, at the right time?	AI embedded in the Celonis Process Intelligence platform monitors stock levels and notifies you when anything is running low to ensure you never miss a delivery date
How do I streamline and optimize my warehouse management to minimize human error?	End-to-end process visualizations enable you to automate warehouse management processes to eliminate human error

2.
Reduce operating Costs

Reduce Operating Costs

In an industry where demand in the global market depicts the price of your product, the only thing differentiating you from your competition and driving brand value, is how quickly you can get it to market, and at what cost. This means driving down operating costs is critical.

Process Intelligence can help you remain competitive by evaluating the performance of your organizational processes and identifying areas of efficiency. Whether that's realizing how much revenue is being lost in your supply chain, optimizing your working capital, or prioritizing for cash discounts in payments, Process Intelligence plugs gaps in your operating costs so you can keep costs low, whilst generating good ROI.

"**Process Intelligence plugs gaps in your operating costs so you can keep costs low**"

Case Study

How Neste reduced supply chain costs with Process Intelligence

"Process Intelligence gave Neste end-to-end visibility of its company processes"

Business challenge:
With 5,000 employees across the world all using different systems, Neste was struggling to understand its existing business processes, and how to reduce global supply chain costs. In need of greater transparency into existing processes, the company turned to Celonis to identify bottlenecks in the supply chain and how to eliminate them.

The solution:
By working with Celonis to get 100% process visibility, Neste was able to fully understand how work was being done throughout the business, visualize processes, improve transparency, and foster a fact-based analysis to its entire supply chain operation.

The results:
Process Intelligence gave Neste end-to-end visibility of its company processes, identifying the root causes of friction and providing leaders with actionable data to make the right changes and improve performance.

This improved transparency has helped Neste:

☑ Improve delivery accuracy

☑ Shorten invoice approval lead times

☑ Speed up cash-flow management

☑ Secure more on-time payments

Production & Revenue Accounting (PRA)

Volatility and uncertainty are enemies of accounting in any industry, and in the Oil & Gas industry they are rife. Finding cost savings across your production and revenue accounting without a fixed price for your product, and when inventory is largely unknown, is extremely complex.

To realize maximum revenue and optimize cash discounts, you need total transparency into your finance department operations. Process Intelligence enables you to visualize processes as they happen – including all the ways they deviate from the ideal – and gives you insights and next-best activities to improve them.

"With a single platform detailing your end-to-end procurement process, you can spot any problems early"

Challenge:	Solution
How can you extract value from your Accounts Payable without oversight of product costs?	Whether you want to deliver more on-time payments, cash discounts, or boost productivity, Process Intelligence can optimize your Accounts Payable function by using AI to prioritize and make smart recommendations for next-best activities for payments
How can you improve operations in your Accounts Receivable department to ensure you are optimizing for revenue across all business operations?	Process Intelligence makes it easy to Identify patterns of late payments, missed discounts, and problematic suppliers, helping you improve billing accuracy, drive automation and reduce late collections
How do you meet month, quarter or year end financial and production close deadlines?	Celonis Process Intelligence provides insights into approval workflows and makes it easy to track who made changes to price, delivering a comprehensive audit trail and notification platform to nudge approvers and avoid bottlenecks

Procurement

Managing organizational spend and ensuring procurement policies are adhered to throughout your complex supply chain is extremely difficult. Couple this challenge with increasing external pressures, a need to react quickly, and limited visibility into your spending or buying behaviour, and precision is near-impossible.

Process Intelligence technology enables procurement leaders to navigate these difficult conditions, eliminate maverick buying, and reduce costs by visualizing how processes really flow. From sourcing contracts, purchase order creation, goods receipt, and payments, Process Intelligence is transforming procurement in the Oil & Gas industry.

Challenge:

How can you know that your procurement best practices are being followed throughout the supply chain?

How can you ensure that each drill site or refinery has what it needs, at the right time, in the right quantity, every time?

How do you know that you are optimizing procurement spend to capitalize on vendor pricing?

Solution

Combining datasets from all of your systems, Process Intelligence visualizes workflows and surfaces discrepancies to ensure best practices are followed throughout your organization (and proactive recommendations are made if they are not)

Process Intelligence technology tracks your entire digital footprint to highlight problematic suppliers, process challenges, or anything else impacting delivery; making recommendations on how to avoid issues in real-time, and in the future

With a single platform detailing your end-to-end procurement process, you can spot any problems early, identify the right time to buy, and optimize future performance based on historic and real-time data

3.
Regulation, security and longevity

Regulation, security and longevity

With new regulations introduced often and a growing need to be sustainable and efficient, you must be ready to respond rapidly to shifting consumer expectations, and regulatory requirements, while remaining compliant and secure.

Producers of crude or natural gas have to be fully aware of emission caps and other compliance issues, and be able to supply a complete audit trail of everything throughout the production process. Process Intelligence can gather up-to-date data and provide you the insights you need to stay compliant at all times.

Case Study

How a Fortune 500 Oil & Gas company achieved 100% compliance with Process Intelligence

"Process Intelligence gave the organization the insights and control it needed to eliminate risk from the business and deliver 100% compliance"

Business challenge:
With over 20,000 employees worldwide, the organization was struggling to efficiently segregate duties and was lacking the insight required to effectively mitigate the risk of fraud. It was also suffering with large volumes of POs with SoD violations, and without approval, these were costing the business money.

The solution:
Using Celonis's Process Intelligence technology, the organization was able to pinpoint every single case where a process deviated from best practice and eliminate the risk to the business. The organization was proactively alerted to all approvals that were surpassed, specifically POs that were approved without a requisition or by having the same user approve a requisition and create a PO.

The results:
Process Intelligence gave the organization the insights and control it needed to eliminate risk from the business and deliver 100% compliance

Another line here?

☑ Adding a segregation of duties step into the credit check process ensured 100% risk avoidance

☑ Process Intelligence helped the organization identify POs with SoD violations and ensure 100% compliance

☑ 90% KPI fulfillment achieved for all credit applications, saving the organization $9.2M annually Secure more on-time payments

End-to-End Finance

As well as reducing costs and optimizing productivity, the finance departments in the Oil & Gas industry have to manage price fluctuations, shifting consumer demands and a mountain of regulations around production and excavation.

Insight into your overall performance is vital to drive better outcomes, fuel digitization, provide a platform to analyze activity, and remain compliant. Process Intelligence provides the platform to help you free up working capital and deliver the insights you need to drive the right actions.

"Process Intelligence helps you ensure financial compliance throughout the organization"

Challenge:	Solution
How can you optimize your finance processes and ensure you remain compliant across the organization?	With end-to-end audit trails highlighting who touched what, when, and what for, Process Intelligence helps you ensure financial compliance throughout the organization
How can you ensure the longevity of existing drill sites and refineries to leverage investments in the best way possible?	Comprehensive oversight of performance from each and every site or refinery enables you to orient the business and its operations to optimize throughput and maximize your investment
How can you monitor your entire network and distribution health to be more cost effective with fewer movements?	Process Intelligence provides an overview of tracking shipments and material movements, so you get transparency into root cause analysis for volume metrics, miles and cost per truck load, and route optimization

Supply Chain Management

Ensuring everything happens as it should, when it should, is a full time job. With the unrivalled complexity in Oil & Gas, however, the real challenge is identifying the gap that lies between your planning and execution.

Fuelled by operational silos and inaccurate data, it's extremely difficult to pinpoint where errors happen and where you are deviating from your optimal course. Process Intelligence doesn't just ensure compliance throughout your supply chain, it identifies exactly where errors happen and gives you the insights needed to fix them, meaning your supply chain can always perform at its best.

"Process Intelligence helps you run your supply chain as efficiently as possible, reducing waste and maximizing ROI"

Challenge:	Solution
How can you be confident you are able to fulfil orders and commitments, no matter what happens?	With visibility into the causes of delays or rising costs, Process Intelligence provides the opportunity to intervene to improve efficiency, reduce waste, and ensure that everything in your supply chain runs as it should
How can you ensure you have everything you need to continue production and maximize throughput?	Process Intelligence makes it easy to stay on top of inventory and stock levels, better manage variability, and ensure you can always get what you need where you need it
How can you ensure your supply chain is generating maximum ROI?	Whether its warehouse management, stockpiling, distribution or anything in between, Process Intelligence helps you run your supply chain as efficiently as possible, reducing waste and maximizing ROI

Auditing

Big Data within your organization can be a blessing, and a curse. Managed well it presents opportunities to drive efficiencies, but managed poorly it can add unnecessary complexity stifling throughput, breaking supply chains, and costing the business millions.

Process Intelligence is a Big Data analytics technology which makes sense of all your disparate datasets and visualizes your operations in an easily digestible format. Now, when the auditors call, you can rapidly surface pertinent information and assist them in accelerating the right outcomes for your business.

Collecting data from your IT systems, it reconstructs, visualizes, and analyzes processes in real time to give auditors a holistic, real-time view of what's going on.

Now auditors can get a deep understanding of your internal operations, your exploration and extraction, refining and transporting, and even your marketing, much faster. Which means they can help determine how you should operate for maximum efficiency and productivity.

Challenge:	Solution
How can you ensure when the auditors call, you can help them do their job and reach positive outcomes, faster?	Process Intelligence leverages the digital event logs in your IT systems to create a visual reconstruction of your processes, making it easy to quickly analyze and ensure regulatory compliance
How can you capitalize on the wealth of data now available in your organization to generate valuable insights and increase efficiency?	Machine Learning and Artificial Intelligence algorithms guide auditors through the analysis and can point out compliance issues and inefficiencies, as well as provide a full automated, root cause analysis with prescriptive recommendations
How can you reduce costs while ensuring compliance?	Deploying Process Intelligence technology can help you reduce your compliance costs by uncovering hidden inefficiencies and giving you real-time surveillance of your transactions and business outcomes

How process intelligence is transforming the oil & gas industry

Want to get started
for your organization?

Get in touch with one of our Oil & Gas experts
today, to find out how Process Intelligence
can help your business.