# Using Operations Intelligence to Optimize Your Energy Supply Chain

Using real-time monitoring and alerts to support interactive decision-making



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Companies in the global energy supply chain strongly depend on situational awareness in daily operations. Today, they need to sense and respond to emerging situations more quickly than ever. However, their operations are spread across multiple business functions, devices, geographies and systems. Implementing operations intelligence allows these companies to maximize the potential of their value chain by continuously monitoring and managing their global processes from a single platform.

This paper introduces the concept of operations intelligence and examines how it can help optimize energy supply chains. By gathering information and creating a real-time foundation for better business performance, operations intelligence solutions provide real-time monitoring and alerts to support interactive decision-making.

The paper also explains trends driving the need for operations intelligence, examines the benefits of implementing systems to support its practices, and explores common use cases.

# Introduction: using data to improve business operations

The CGI Client Global Insights[1] shows that energy companies are focusing on transforming their business mix by increasing agility and harnessing the power of data and analytics to increase business value.

**Operations intelligence** is a set of event-focused information gathering and delivery processes that provide data and analytics about current conditions. This allows business users to improve situational awareness to make faster, smarter decisions.

As the industry experiences dramatic shifts, such as increasing electric vehicle use, the Paris Agreement on climate change, the emergence of renewables and the globalization of natural gas, companies must devote more time and resources to energy supply chain optimization. A significant way to free up resources for optimization efforts is by reducing the time spent scouring through integrated processes across multiple systems to detect and resolve the source of transaction failures and business process latency.

> 85% of oil and gas executives interviewed cite responding to revenue pressures from low oil prices as a top business priority.
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> (CGI Client Global Insights 2017)

Increasingly, employees and processes in trading, logistics, risk management, credit management, accounting, regulatory and information technology (IT) functions need to identify and respond to events as they take place. With operations intelligence, dashboard views and notifications provide full visibility into what is happening in the business. Users are notified of threats and opportunities that require immediate action and are able to assess the potential impact of their decisions on client, regulatory and business obligations. Dashboard information is presented in terms that are important to the business operations. For example, while technical monitoring tools might identify that a file is stuck in processing, business operations will indicate which customers are affected and the value of the transactions in the file.

Operations intelligence provides real-time views of information so that line of business teams can take corrective actions before there are negative impacts on counterparty or contractual obligations. With the right information in the right context at the right time, operations teams have the insight they need to proactively reduce risk, improve their supply chain value, satisfy regulatory requirements and meet contractual obligations.

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1. For the 2017 CGI Client Global Insights, CGI leaders conducted more than 1,300 in-person interviews with business and IT leaders across 10 industries and 17 countries. The results bring together the findings, insights and CGI's point of view on the strategic topics that emerged through these face-to-face interviews. https://www.cgi.com/en/global-insights

# Benefits of operations intelligence

Many companies use data discovery tools, spreadsheets or business intelligence (BI) reports to provide a periodic window (hourly or daily) into their operational metrics. This approach lacks the up-to-the-minute visibility of continuous monitoring, and the pattern detection, connectivity, alerting and response management capabilities of an operations intelligence platform. Investing in operations intelligence empowers business leaders to act quickly on insights gleaned from streaming data and information. A good operations intelligence solution combines the ability to analyze streaming big data, complex events and processes with the ability to take immediate action through automated procedures and workflows.

Energy companies are seeing results from implementing operations intelligence solutions in several areas, including the following.

## Process performance

Trading operations are proactively identifying and resolving unusual or unexpected situations before they impact customers and business. They are able to:

- Identify business transactions at risk of missing service level agreement (SLA) and customer delivery deadlines

- Eliminate surprises related to processing irregularities

- Detect slowdowns in processing steps and provide early warning to IT and business operations in order to avoid customer and business impacts

- Maintain smooth operations by immediately identifying emerging risks

## Client and supplier performance

Trading operations are gaining a proactive counterparty view of activity, quality and risk across multiple commodities. This allows them to provide a more fluid experience and value to counterparties and suppliers. As a result, they can:

- Ensure counterparty-specific transactions are processed on time

- Understand customer activity patterns to upsell with more appropriate services

- Provide transparency by pushing actionable intelligence and insight to suppliers and customers to foster a more agile and responsive environment

## Workforce performance

Trade accounting functions are proactively optimizing the workforce to increase efficiency and match demand across multiple activities, processes and geographies. This allows them to:

- Handle unexpected surges in workload by directing available staff to the most urgent queues to meet contractual obligataions.

- Empower employees to focus on what is most important to achieving their objectives

- Provide management with workforce productivity insights

## Business performance

Trading operation functional leaders are proactively detecting patterns and analyzing data with business activity monitoring across organizations and systems. They are able to:

- Use systematic observation of transactions to identify new business opportunities

- Identify unreconciled items leading to inaccurate billing and purchase order approvals

- Provide an objective view of prioritized work in the event of a crisis

- Provide stakeholders with real-time and historical data and the business context they need to make better and faster decisions

## Risk management & compliance performance

Trading operations proactively make time-sensitive decisions while demonstrating control to auditors and regulators. This enables them to:

- Adapt immediately to regulatory changes

- Provide monitoring oversight to identify compliance risks, e.g., Dodd Frank and Sarbanes-Oxley (SOX)

- Provide complete end-to-end transaction traceability to support audit and prove compliance

- Understand the impact of issues on counterparties and business obligations and the risk associated with each

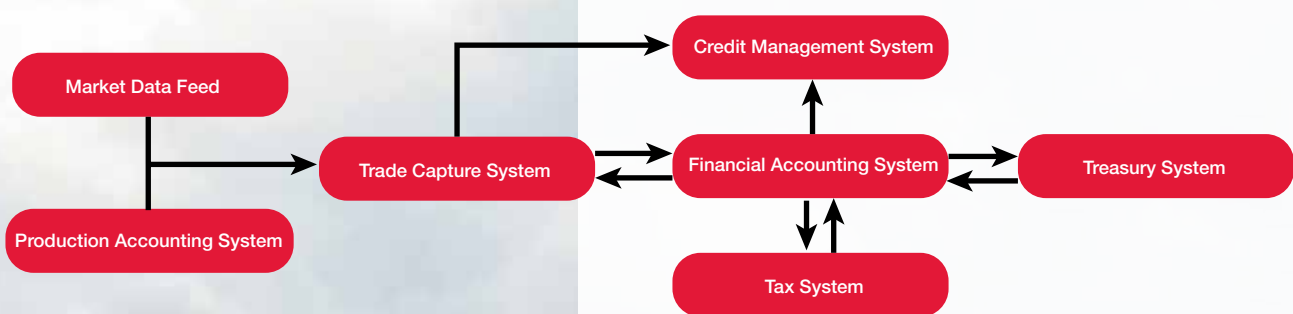# Operations intelligence in trading operations

## Monitoring processes in a multi-system environment

Optimizing an energy supply chain involves the integration of many different business functions, from production to treasury. Monitoring and measuring business processes in a single system can be done with reports and alerts specific to that application. However, monitoring and measuring business processes that support the entire supply chain would involve developing a customized platform that sits above and connects to all of the applications. Operations intelligence platforms enable businesses to monitor and measure:

- Processes within the various applications
- Integrations between the various applications

Trading operations that optimize an energy supply chain require situational awareness and the capability to sense and respond to operational issues in (near) real time. An energy supply chain can then measure business processes across multiple systems. This makes it possible to ensure processes are executed in a timely, sequential manner and data is being entered on time. Supply chain operations can set up centralized monitoring across the different systems, thereby managing the entire energy supply chain from one dashboard.

**Simple energy trading and supply chain application ecosystem**



Operations intelligence does more than provide alerts and visibility into what is happening. Operations intelligence provides the means to take action by invoking other applications and triggering business processes. It also supports collaboration among decision makers.

## Remote business activity monitoring

Most companies can obtain some real-time information from dashboards and alerts provided by packaged applications and physical devices. However, these stovepipe or keyhole views into individual applications and devices do not show issues that involve multiple applications or devices (systems of systems) or end-to-end processes. In the absence of a holistic monitoring solution, such as an operations intelligence platform, processes and operations run largely in the dark.

Many companies are also moving parts of trading operations, including IT, to areas that provide low-cost talent and infrastructure. While such transformation can reduce costs significantly, it can also increase operational risk. It is very difficult to manage and monitor performance of business processes across several systems and locations against defined service level obligations.

By layering an operations intelligence platform over the various regions and systems, trading operations can monitor and optimize the processes across the globe and across business functions. Key Performance Indicators (KPIs) and SLAs can be set up to ensure that while processes migrate and are executed remotely from one another, operational decisions are being made with complete data. Trading operations with processes monitored using operations intelligence platforms can ensure that:

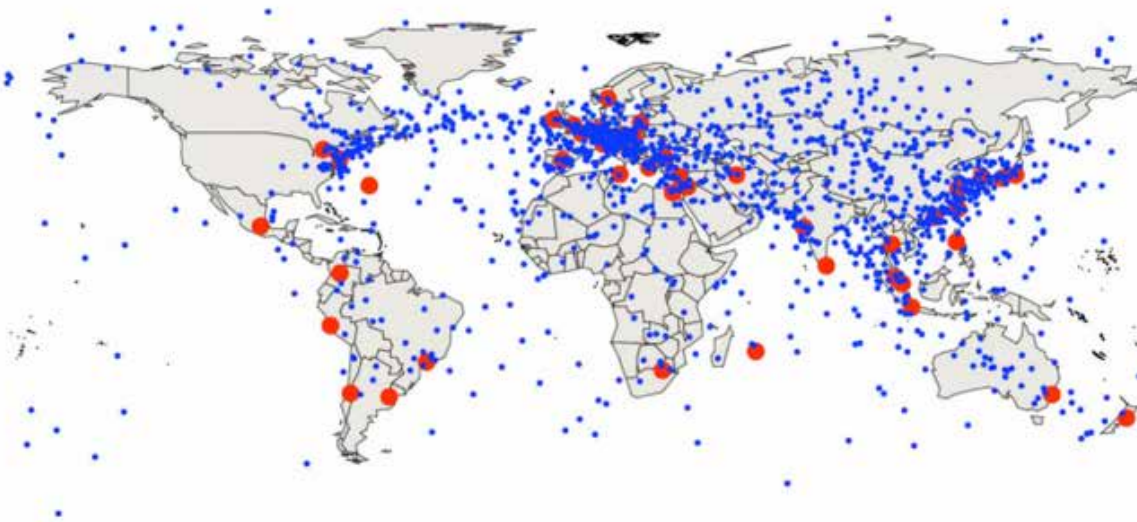**Sample energy trading and supply chain global operations**



- Pipeline statements and truck tickets are entered into the system before running monthly settlements
- Prices are imported into the system before the nightly valuation process is run
- Payments are received before credit exposure reports are run

## IoT and operations intelligence

As more aspects of companies' operations incorporate physical devices and sensors, they need software that is capable of combining operational technology (OT) data, such as sensor data, with IT business data. An energy company may have between 100 and 1,000 applications used by a few thousand employees. With the emergence of the Internet of Things (IoT), companies will need to monitor and measure input from hundreds of thousands of connected devices across the globe in remote locations. Trading operations will be able to take advantage of real-time data generated by these devices. However, once a trading strategy execution becomes dependent on the information from a device, it becomes imperative that the device has consistent availability. Monitoring one device is easy. Monitoring thousands of devices separately will quickly limit the ability for a trading operation to rely and incorporate IoT data into their decision processes.

**Sample global energy trading and supply chain global IT and OT footprint**



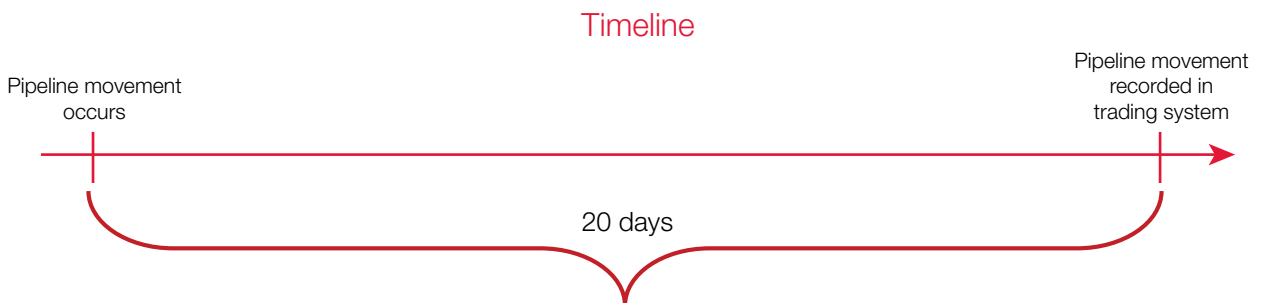## Improving process performance using operations intelligence

Operations intelligence platforms can be used to monitor processes, thereby identifying areas where events are being recorded significantly later than they occur. Delays in data entry present risks, costly inefficiencies and lost opportunities throughout the trading transaction life cycle. Operations intelligence platforms can be used to measure the differences in time between:

- When an event occurred and when it was recorded
- When the event was recorded in one system and when it was received by a downstream system

By quantifying all these differences in time, analysts can determine whether processes and technical changes can be made to reduce the time differences and what the economic benefit will be from the improvement.
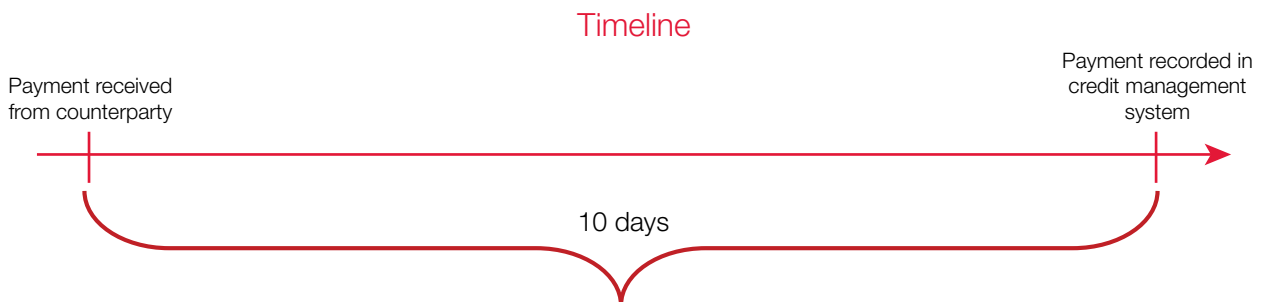
# IDENTIFYING OPPORTUNITIES IN TRADING OPERATIONS

## Improving asset location

### Timeline

Pipeline movement occurs

Pipeline movement recorded in trading system

20 days

Is it possible to condense this timeline? What are the costs? What are the benefits?

## Improving counterparty credit management

### Timeline

Payment received from counterparty

Payment recorded in credit management system

10 days

For 10 days, traders were curbed in their ability to transact with the counterparty

# Informed, proactive, secure—and ahead of the market

The benefits of operations intelligence to companies in the energy supply chain are significant, especially in light of:

- The speed at which trading operations need to react to situations
- The global markets in which they participate
- The number of applications and devices integrated to service the processes that must operate well to meet their strategic objectives
- The efficiencies that need to be gained in this era of low hydrocarbon prices

Operations intelligence enables companies to increase their real-time situation awareness across the devices, systems, geographies and business functions involved in their global energy supply chain.

# How CGI can help

CGI can help you embed operations intelligence into strategic decision-making processes across your business ecosystem, instead of monitoring and measuring business processes in isolation.

Drawing upon our deep experience in operations intelligence, we help oil and gas clients build the new capabilities necessary for business process optimization.

Connect with us to learn how we help clients use operations intelligence to enhance their competitive edge.

**CGI**

## About CGI

Founded in 1976, CGI is one of the largest, end-to-end IT and business process services providers in the world. Operating in hundreds of communities across the globe, we help clients become customer-centric, digital organizations. Our high-end business and IT consulting, systems integration and transformational outsourcing services, complemented by more than 150 IP-based solutions, help clients accelerate their digital strategies. Our unique client proximity and best-fit global delivery model enables highly responsive service, on-time and within budget delivery, and competitive advantage for an increasingly digital world. We are one of the few providers with the talent, scale and end-to-end capabilities that clients need to connect legacy to digital for holistic success.

For more information about CGI, visit www.cgi.com, or contact us at info@cgi.com.