



Safer energy operations with AI and analytics

Progress towards zero incidents with a strategic information management partner





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Two new additions to the 100 largest losses report included property damage costs of \$200 million and \$300 million respectively.

Marsh¹

Industry backdrop

The world is in a race for energy, striving to meet growing demand and overcome supply challenges. Prices of most forms of energy are at record highs on an annual average basis—or are fast approaching them. Energy corporations are under intense pressure to deliver more reliable and sustainable energy without compromising the health of employees, safety of the communities they serve, or the environment in which they operate.

Operational excellence initiatives, such as smart grids, intelligent oilfields, smart refineries, and other smart asset programs, have made a measurable impact on productivity and safety. Today, Energy companies are managing 25 to 100 percent more gross plant, property, and equipment per employee than a decade ago. During that same period, the loss value (including property damage, debris removal, and clean-up costs) of the costliest incidents in the industry hit the lowest average amount for any two-year period in the last 25 years.¹

Despite remarkable improvements in safety and productivity, the journey to zero safety incidents is far from complete. What is considered safe performance in the Energy sector today will be considered average at best, or even poor, just one decade from now. Energy corporations will be pushed by internal and external forces to continuously evolve safety practices and incorporate technologies to reduce the number of incidents and corresponding loss values.

This paper explores how artificial intelligence and analytics technologies will help Energy corporations efficiently organize, manage, and move information across and outside the organization. Energy corporations can use these powerful new tools to lower health, safety, and environment (HSE) risk, incidents, and associated costs.

¹ Marsh, 100 largest losses in the hydrocarbon industry. (2022)

² Journal of Petroleum Technology, Oil and Gas Has a Problem with Unstructured Data. (2019)

The OpenText vision for safer energy operations

Energy companies can move toward safer operations by enabling employees to focus on what they do best—safely and at scale. This includes “turning wrenches” and other hands-on operational and maintenance tasks, while harnessing the power of AI for digital continuity and the ability to analyze and detect risk.

Human expertise, experiences, and skills in maintaining and repairing energy infrastructure are invaluable. Hands-on work demands intricate knowledge of complex systems and the ability to respond swiftly to unexpected issues across energy assets. Using AI enables human expertise and specialized skills to be used at scale.

“Up to 80% of employee time in the energy industry is spent looking through unstructured data in order to inform decisions and get work done.”² This unproductive time consumes mindshare and sacrifices focus on the job at hand, resulting in unnecessary HSE risks.

There are opportunities to leverage artificial intelligence and analytics if any of the following ring true across your energy operation:

- Information is unorganized and lacks governance.
- Employees spend too much time searching through unstructured data.
- AI and analytics are not being used to analyze images, drone videos, and other content to detect hazardous conditions.
- Predictive analysis is not being leveraged to reduce maintenance costs and unplanned downtime.
- Visibility is limited and tied to the delivery of critical spare parts or equipment replacements.



90% of data is unstructured or has no defined schema, making it difficult for organizations to analyze the ocean of data they collect.”

Forbes³

Smart assets and facilities must not only be smarter, but safer too. Evolving your information management strategy to include AI and analytics is imperative to reduce HSE risks and associated costs while moving toward zero incidents.

Using AI and analytics for safe energy operations and reduced HSE risk

Eighty percent of the world's information is unstructured, and that holds true for the Energy sector. A common mistake is to use structured data applications to force fit and manage unstructured information. This approach creates information silos and a lack of digital continuity. It also prohibits safety leaders and operations and maintenance personnel from finding needed information and being able to open it, work with it, understand it, and trust it. Adopting modern information management software technologies and best practices significantly reduces this challenge and leads to safer energy operations.

Enrich asset documentation so it can always be found

It's not uncommon for Energy corporations to simply accept that asset documentation is difficult to find, and that they will never have full visibility into whether documents contain correct information and can be trusted. Unfortunately, it often takes a safety incident to realize that poor asset document management is a contributing cause. For example, when a large Energy corporation recently experienced an uncontrolled leak, only then did the company realize it could not easily locate the asset documentation necessary to quickly troubleshoot and fix the issue.

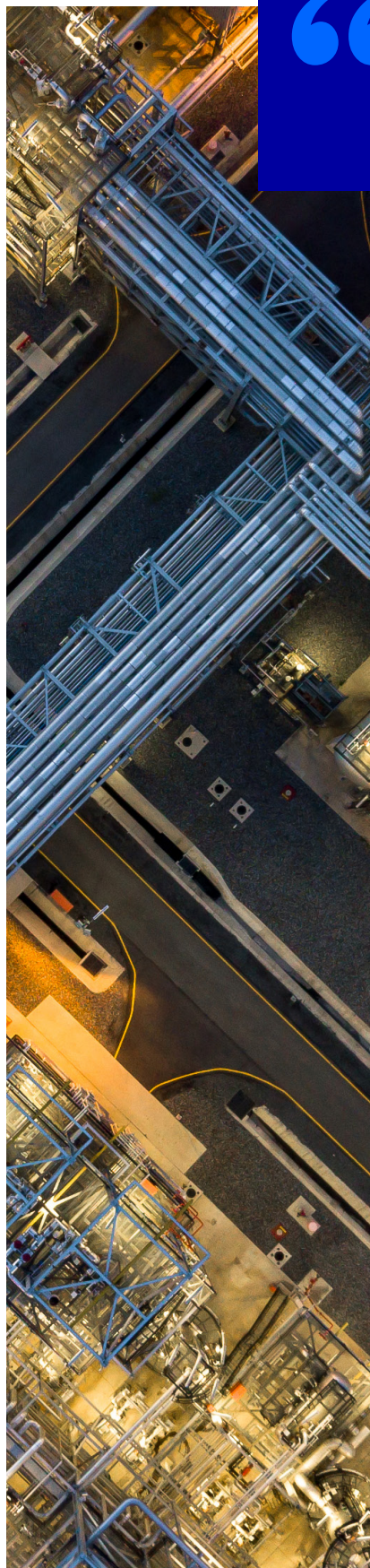
Before asset documentation can be trusted, it must be accessible. Text mining, a form of AI, enables organizations to quickly find, organize, and enrich up to millions of asset documents used for safer energy operations. With OpenText text mining, the solution will point to a content source, securely crawl the network, find unstructured content, extract metadata, illuminate dark content, and improve findability and organization.

Reduce HSE risks through improved surveillance operations and 360-degree asset intelligence

With the growing use of drone, satellite, video, and other imagery, this type of information can be used to make significant progress toward zero incidents. It's not feasible for a human to analyze every single image or video for safe asset operations. Ensuring content is organized, easily used, and compared at later stages of the asset lifecycle is critical in lowering HSE risks.

With OpenText video and image analytics, operations and maintenance and safety personnel can detect HSE risks. Whether identifying “oil bunkering” along pipelines, overgrown vegetation along utility lines, or license plate and vehicle recognition upon site entry and exit, a holistic view of events provides 360-degree asset intelligence and improved surveillance operations.

3 Forbes, Five Data Analytics Trends on Tap for 2023. (2023)





Our customers want the ability to perform greater analysis of their data, for example to predict when components would fail, to extend the life of a component, or to understand the causes of failure.”

Martin Steffens, ICOM Project Manager and Software Architect, Knorr-Bremse Group

Predict and act on unsafe equipment operation

Predictive maintenance requires advanced data analytics and speed at scale. It requires data from sensors, but can also benefit from work order history, inspection data, and other information sets.

The OpenText unified analytics platform is based on a massively scalable architecture that spans the broadest set of analytical functions, including time series sensor data, pattern matching, geospatial, and machine learning. Energy companies can easily apply these powerful functions to the largest and most demanding analytical workloads to predict and act on unsafe equipment operation.

Safer energy operations require smarter asset operations with generative AI

Effective AI needs effective information management. Once asset documentation is organized, enriched, and easy to find, the power and benefits of AI can take off. OpenText AI-powered intelligent assistant solutions bring the power of generative AI and large language models (LLMs) into OpenText Content Services platforms. Safety and operations and maintenance personnel can find content faster through chat-based conversational search. Examples might include “Show me the P&ID for site #123” or “Show me the last inspection for vessel 987, include images, and a new inspection form.”

The OpenText AI platform is a full stack suite of AI capabilities built into OpenText business clouds, delivering innovative AI capabilities to reimagine safe work across energy operations.

Why OpenText

OpenText is the world’s leader in the information management domain and offers the most complete and integrated information management platform. We serve thousands of Energy companies across the world, including 24 of the top 25 by market cap, in their information management journey to organize, integrate, protect, and automate data. No information management platform is more secure or scalable to manage high volumes of information at various stages of the asset lifecycle.

The world is in a race for energy, and that race is just as much about information management as it is about energy itself. It is imperative that your assets are not only smart but evolve to be smarter and safer. Assets and subsequent asset operations are more important than ever, and that makes team members and partners essential to operating safely and reliably.

We would welcome the opportunity to be your strategic partner in your journey to zero and support you in making your energy operations go from safe to safer.





Proposed next steps

Together, we can outline a vision and identify opportunities to quickly improve your HSE KPIs. Below are suggested next steps to ensure your journey to zero safety incidents is in lock step with your information management journey:

- **Introductory meeting**

Bring together the OpenText Global Account Director or Senior Account Representative with your organization's Business Unit President, COO, CTO, VP of HSE, or decision maker on HSE investments.

- **Joint roadmap exchange**

A day-long information exchange with key staff in safety, operations and critical supporting lines of business, such as engineering, supply chain, and IT. OpenText will gather insight about safety initiatives, current approaches, and obstacles to provide an overview of information management technologies and best practices that support those initiatives.

- **Business Value Consulting workshops**

The OpenText Business Value Consulting team will engage with safety, operations teams, and supporting lines of business to assess their current state and quantify the business impact of potential OpenText solutions along your journey to zero safety incidents.



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