

21st Century Energy Boom and Greater Risk Awareness Drive EH&S Software Initiatives

In an effort to better collect, manage, and use environment, health, and safety (EH&S) information, many companies in energy-related sectors are migrating to integrated EH&S software applications for the first time.

Shale oil and gas drilling and deep water drilling in the Gulf of Mexico will raise crude oil production in 2015 to the highest levels since 1972.¹ Recent oil and gas activity and related growth in the chemicals, pipeline, and transportation industries have created a 21st century energy boom. Rapid growth and emerging technologies like horizontal drilling and hydraulic fracturing present opportunities, but they also present operational risks, some with EH&S and sustainability impacts.

The energy boom, added to increased risk awareness due to recent offshore and chemical plant disasters, drives companies to seek better ways to collect, manage, and use EH&S information. Many companies in energy-related sectors are using integrated EH&S software applications for the first time; others are replacing aging, internally-developed applications or older enterprise applications with up-to-date, more capable systems.

Lessons Learned in the Gulf of Mexico

We Don't Know What We Don't Know

According to the American Petroleum Institute (API), the drilling industry has improved safety since the April 2010 Macondo well blowout, with

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new and revised API standards, plus safety and environmental management systems (SEMS) regulations, in place.² Still, the Chemical Safety Board remains concerned about how companies address major incidents.³

Is the Gulf of Mexico safer today? Author and business journalist Loren Steffy says, “We don’t know what we don’t know.” In contrast to the North Sea, where drillers embrace a safety culture, drillers in the Gulf do not consistently collect “near miss” data or report hydrocarbon releases; often the data are lacking and inaccurate. Steffy calls for

- industry to find better ways to collect, evaluate, and allow access to data in order to allow stakeholders to spot trends, assess system effectiveness, and conduct benchmarking;
- added industry scrutiny and added transparency; and
- independent regulators that enable proactive risk assessment rather than deliver prescriptive regulations and impose fines and penalties.⁴

A New Risk Management Approach

The traditional risk management approach causes inconsistent processes and data silos, making it difficult to see the big picture. This approach places responsibility in a central corporate function; the businesses and functions where much of risk resides either downplay their responsibility or address risks with ad hoc business processes and tools.

The new risk management approach is an integrated framework that views an organization’s risks holistically. The framework helps prioritize risks to align with company strategies and apply the appropriate resources. It provides transparency, enhances decision-making, and maximizes a company’s ability to meet its objectives.

This new approach creates a corporate culture that embeds risk management into employees’ daily activities and allows businesses and functions to share risk responsibility with the corporate function. This calls for input from a variety of experts, the use of a variety of tools,⁵ and function-appropriate training.

Brian Salerno, director of the U.S. Bureau of Safety and Environmental Enforcement (BSEE), which

regulates offshore oil and gas activities, says that risk is central to safety culture. Regulators and industry must focus on technology, the human element, an understanding of risk and how to effectively manage it.⁶ Salerno believes that greater emphasis on risk methodologies can improve SEMS, accident reporting and investigation, near miss reporting, and the ability to view trends.

Risk and IT Drivers for Software Solutions

Being able to extract and escalate critical risk information is nearly impossible without a robust risk management framework supported by a strong technology infrastructure. Three risk drivers lead companies to software platforms: understanding the pervasiveness of risk, understanding that risk intelligence drives performance metrics, and leveraging and harnessing big data.⁷

Understanding the pervasiveness of risk. The 21st century energy boom illustrates a competitive landscape with new exploration and production technologies, emerging regulations and as yet undiscovered risks. Companies are tempted to move quickly to capitalize on the next opportunity. They should identify (and catalog), assess, evaluate, control, and monitor risks to protect stakeholder interests. Information technology can support the entire process.

Risk intelligence drives performance metrics. More and more companies use risk metrics in contract negotiations and in executive compensation. They generate massive amounts of data and need the ability to quickly analyze it, put it into context and make intelligent business decisions to provide a competitive edge. This requires robust risk and IT frameworks.

Leveraging and harnessing big data. Today, senior management requires enterprise-wide visibility and the ability to use structured and unstructured data to better understand the potential impact of a range of risks. Big data and analytics tools help to consolidate data in a usable form, showing forward- and backward-looking trends.

At the same time, two information technology (IT) trends are driving companies to use newer, capable enterprise software platforms: consolidating and

‘Risk is an integral component of a safety culture. It must be the lens through which we view the interaction between technology and the human element.’

—Brian Salerno, BSEE Director



replacing legacy systems and increased acceptance of hosted and on-demand software.

Consolidating and replacing legacy systems.

IT groups can no longer support multiple legacy systems, outdated platforms, spreadsheets, and one-off databases. Security and staffing limitations drive IT groups to consolidate and replace legacy systems with current technology that allows data roll-up and reporting and real-time trend analysis. IT prefers a single platform or a limited number of integrated applications.

Increased acceptance of hosted and on-demand software.

Lean IT staffing, high-speed Internet connections, cheap data storage and the Cloud make hosted and on-demand software attractive. Many companies that once insisted

on installing all software on premises are moving enterprise applications to the Cloud.

Capable EH&S Software Enables Risk Management

An enterprise-capable software platform supported by rich, embedded content and robust reporting and analytics—combined with mobile, social, Cloud, and big data technologies—enables companies to

- collaborate to identify, evaluate, and analyze risk to make decisions that impact people, the environment, and sustainability;
- manage the policies, procedures, and regulations that drive data collection;
- drive risk accountability throughout the enterprise;
- consolidate and integrate data, with audit trails and transparency;
- establish and track performance against key performance indicators (KPIs);
- access embedded rich content to support risk decisions;
- visualize data on dashboards and via interactive queries to easily spot trends;
- easily and quickly generate reports and forms;
- access data anytime, anywhere, in the office and in the field, on a variety of devices; and
- add new functionality and data for new facilities as the organization's needs change.

A booming energy economy and growth in ancillary industries create a new interest in risk management. A holistic risk management framework make sense for several reasons. To manage risk, companies need visibility into trends across business lines and geographies. They need consistent, accurate and timely data to make decisions. A capable, integrated, enterprise IT platform enables companies to link standard business processes, data collection, analytical and reporting tools, while taking advantage of mobile, social, Cloud, and big data technologies. **em**

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