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ILLUMINATING THE FUTURE

Chemical, Energy & Natural Resources



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ILLUMINATING THE FUTURE

A person wearing a white, textured sweater is shown from the side, pointing their right index finger towards the sky. Another hand, from the right side of the frame, reaches in and points its index finger towards the same point in the sky, creating a sense of shared focus or collaboration. The background is a bright blue sky filled with soft, white clouds.

During half a century of supporting the world's leading organizations through the use of innovative technology, we've amassed some of the most knowledgeable and proven business leadership in key vertical industries.

Standing at the forefront of their respective industries, each leader strives to offer valuable insight into practices that your business should follow for even greater success.

CSC World has gathered their informed viewpoints on topics ranging from increasingly collaborative and transparent business-IT organizational relationships; consumer-driven innovation; and "extreme data"; to Green IT and the economy's impact on technology. These leaders also present the biggest IT challenges facing their six industries:

Chemical, Energy & Natural Resources

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Chemical, Energy & Natural Resources

by Bob Welch

Information is the asset that helps us achieve our goals, whether those be growth, efficiency or regulatory compliance. Right now, we are experiencing a wave of information explosion in all industry segments across Chemical, Energy & Natural Resources (CENR), and IT will play a key role in both managing that data and harnessing its power.



Industry getting smarter

Today, the utilities industry is becoming more “consumerized” as it seeks better information about its users. Smart meters — and ultimately the smart grid — are giving utilities the opportunity to understand and change consumers’ electricity usage. The meters collect information several times per hour, providing the basis for usage patterns. These can be used by the utilities to offer variable pricing and thus reduce peak demand. Better information delivers benefits to customers as well: Technology now allows some consumers to shop for competitive electricity prices in jurisdictions open to retail competition.

Smart meters with two-way communication capability will also be an important link to the emerging home area networks (HANs) market. HANs will enable device-level control of appliances,

lights and HVACs in response to energy pricing and consumer preferences. Meanwhile, the chemicals industry is finding new value in shop-floor and building level data. This information allows companies to monitor and improve manufacturing processes and energy consumption. In mining and energy exploration, many operational decisions are being supported by remote devices that constantly collect performance data.

Getting a better view

It’s not important just to get the data — you also need a smart and fast way to analyze, share and act on it. In mining and energy, for example, the acquisition and management of huge amounts of geophysical, financial and operational information is crucial to success. This data is typically shared with partners, requiring new collaborative platforms that allow greater transparency, faster decision making and more flexible business models.

The ability to make decisions at the mine shaft or wellhead means better performance, greater productivity and higher returns on investment. With high variability in commodity prices and uncertain markets, this enhanced performance capability often enables the ability to continue operations.

The wave of information explosion in the CENR sector is just beginning, and many competitive technologies are being introduced. There is an aggressive move in our industry away from business transaction systems to IT-enabled operational systems with a connecting layer, such as service-oriented architecture (SOA), that provide a blended operational and financial view, often in near real time.

These blended informational systems are even more critical now because our clients are dealing with a shortage of highly skilled employees, and retirements in developed countries like the United States are driving a rapid loss of highly trained personnel. We are seeing a great deal of interest in collaboration in our industry segments, especially as a platform for specialized knowledge and expertise. Collaboration platforms, combined with effective information management, have the potential to bridge knowledge gaps by making it possible to connect people and information in a context-specific way. Additionally, the need for knowledge has brought external sources of information into the enterprise through open, Web 2.0 platforms.





Economy not souring industry on IT

IT that provides enhanced operational performance or greater efficiency will continue to be considered a critical investment in all CENR segments. We believe the business community will continue to fund such areas as collaboration platforms, shop-floor data management, energy efficiency, supply chain and logistics improvements, and revenue cycle management — particularly debt management.

The current world economic climate is having an impact on the CENR market in a variety of ways. Public utilities, while somewhat resistant to downturns, are experiencing the pinch through a slow-down in new construction. The chemical industry has been affected significantly across the board, although economically developing regions continue to grow in such areas as agriculture, which require chemical products in large quantities.

The energy and fuels markets are seeing increased interest in the development of new energy sources, and a moderately positive view of continued oil and gas exploration. And most of the major mining companies are taking a very conservative position, although commodity prices vary widely, so some sub-segments continue to grow.

Adding a layer of complexity to the economic challenges is the regulatory environment in most areas of the world. And the cost of compliance, particularly in the areas of employee and product safety and the environment, is growing. Companies increasingly want to be seen as Green — good stewards of their envi-

ronment, going beyond regulatory compliance. We believe that an enterprise approach to compliance and sustainability, enabled by standardized IT, is more effective and cost effective than regulation-specific programs.

Regulations, environment driving challenges

The CENR industries will face some key IT issues in the coming years, driven largely by these regulatory and environmental changes. Utilities are dealing with heavily increasing electricity demand, with the introduction of hybrid and Green technologies. Demand is expected to increase 40 percent over the next 20 years, as the infrastructure ages. IT teams are dealing with automation and intelligence in the grid and process-based technologies, as well as management of the data and information associated with consumption and consumer behavior. As physical infrastructure and assets are refreshed and updated — enabling technologies to proactively capture data and automate operational functions — IT will face increased challenges in managing a broader base of data collection and a more complex enterprise architecture.

Energy and mining companies will seek more efficient ways of harvesting traditional and alternative energy and resources. Their IT teams must develop and manage a complex architecture of data and information to give business users the visual means for fast, accurate decision making. Enabling technologies at the wellhead, for example, are increasingly complex and automated; IT is challenged not only to implement and maintain these technologies and the broader infrastructure that serves them, but also to manage the rapidly increasing volume of data they generate. Operations teams have no time to wait for data on where to find fuels or metals, how to harvest them quickly and efficiently, and how to get them producing safely and efficiently; IT must be an active partner in making that happen.

Chemical companies and refineries are facing increasing pressures for regulatory compliance and sustainability of an efficient and safe operating infrastructure. IT teams are working actively with companies in this sector to respond to reporting and safety requirements, manage data to identify and mitigate risk, and enable plant automation and safe operations — with accurate, timely transaction and data capture and management on the back end.

We are also seeing IT challenges in implementing more sophisticated automation technologies, more robust business intelligence and data management, and more demanding reporting and compliance requirements. Businesses leverage technologies to enable their customer relationships, their infrastructure management, and efficient and safe utilization of their human assets. In all segments, close partnership between business and IT is becoming more and more evident.



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CSC makes a special point of understanding its clients and provides experts with real-world experience to work with them. CSC is vendor-independent, delivering solutions that best meet each client's unique requirements.

For more than 50 years, clients in industries and governments worldwide have trusted CSC with their business process and information systems outsourcing, systems integration and consulting needs.

The company trades on the New York Stock Exchange under the symbol "CSC."

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