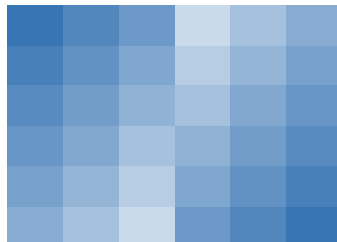
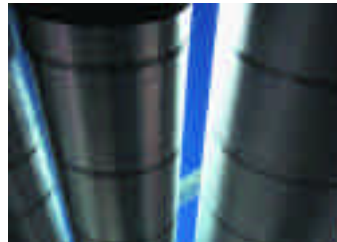
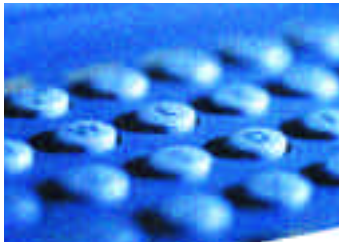


Winning in the Digital Energy Era



Special Section to the *Oil and Gas Journal*

www.microsoft.com/resources/energy

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Finding Competitive Edge Right in Your Own Backyard

Today's oil and gas companies stand at a crossroads. Mergers, acquisitions and consolidations are throwing together disparate business cultures together. Small companies have become large, and large companies have become giants and super-giants. Cloistered silos are giving way to multi-disciplined teams. Global operations are forcing companies to think globally and act both locally and globally.

For public companies, the primary focus has grown from building production volumes or running a solid refining or pipeline operation to ensuring predictable earnings and quality returns for shareholders. And, into this mix come the pressures and costs of safety, regulatory compliance, and the "big crew change"—the impending retirement of the majority of Western exploration and production (E&P) technical professionals within the next six to eight years.

Accelerating time to revenue, maintaining a favorable cost position, and leveraging critical knowledge and expertise across organizations are the keys to competitive advantage in this complex environment known in some circles as the "Digital Energy" era. The edge will go to those companies that can most efficiently and effectively use technology (including information technology) to gather and disseminate the right information

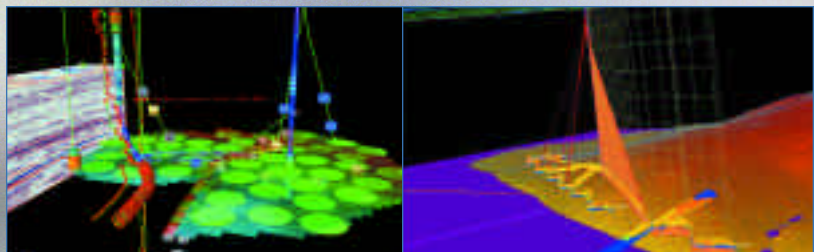
to the right people in the right place, at the right time, and in the right context to effect impactful decision-making at all levels of the organization.

Microsoft and its technology partners are leveraging two computing technology breakthroughs—Web services and high-performance computing (HPC) clusters—to help companies exploit what is in their own backyards (i.e., their existing IT resources and infrastructures) to achieve their goals without incurring huge capital outlays.

SUPERCOMPUTING AT SUPER DISCOUNTS

Recently, exploding volumes of stored information, combined with innovations decreasing the cost of information technology, have prompted energy companies to integrate operations across the enterprise. Multi-disciplined teams now work in tandem to share ideas and analytical processes to make faster, better decisions.

The biggest challenge to successful integration and group computing is collaboration—among people, computers and applications. According to the Meta Group research firm, today's average company operates with 49 major software applications. In merged oil and gas companies, this figure can actually number in the hundreds. As much as one-third of IT budgets are



allocated to enabling applications to communicate with one another.

One of the most important computing trends to emerge in the new millennium, according to Marisé Mikulis, Microsoft's Oil and Gas Industry Solutions manager, is a movement away from large servers and monolithic supercomputers to high-performance computing cluster solutions. These clusters of servers use Microsoft® Windows®-based technology to deliver supercomputing at a fraction of the cost of previous methods without sacrificing ease of systems management.

"High-performance computational clusters can be built using commodity, off-the-shelf PCs and software such as the Microsoft Windows operating system," says Mikulis. "These clusters lower total cost of ownership by delivering comparable or superior

across organizations and to customers. Functions that are enabled or enhanced by this agility include desktop integration and business intelligence. "Often what global energy players need to accomplish high performance computing can be found right in their own backyards—with already existing and highly familiar IT tools and technologies as readily available as Windows and Microsoft® Office, software," Mikulis concludes.

The Cornell Theory Center (CTC), an interdisciplinary research center on the campus of Cornell University that supports research projects in engineering, geosciences, math and business, was among the first high-performance computing centers to move all its applications from UNIX to Windows. Today one of CTC's clusters is among the 100 fastest supercomputers in the

world. Development times have been reduced, code is better, and data reuse across teams has improved. And now, the CTC team is using commodity computers and standard Microsoft tools to support computational steering, the ability to monitor and manage complex analyses and simulations in real time, using interim results to guide decisions about how to direct (or "steer") the ongoing computation. The implications for this type of application in the oil and gas industry are tremendous.

LOGGING IN TO PROFITABLE COLLABORATION

One key enabler of high-performance computing clusters is Web services — small, building-block applications that expose and consume data in XML, the universal language for data exchange. Web service >

The edge will go to those companies that can most efficiently and effectively use information technology to gather and disseminate the right information to the right people in the right place, at the right time, and in the right context to effect impactful decision-making at all levels of the organization.

response time and performance at one-fifth to one-third the cost of deploying a similar UNIX solution," she notes, and adds that PC-based servers running on Windows Server 2003 have already set records for performance, scalability and reliability.

Analysis sequences can be expedited because model preparation can be performed directly on the desktop. The business decisions these analyses support are made faster and with greater accuracy. And, says Mikulis, many organizations are discovering that moving to the Windows platform still allows them to work with and benefit from their legacy investments in UNIX applications and infrastructure.

Finally, she explains, computing clusters are agile enough to allow integration both vertically within an organization and horizontally



Data, data everywhere ...

Preserving and accessing data have perplexed business people throughout history. Emperor Justinian, ruler of the Roman Empire from 527-565 AD, ordered his subjects to erect buildings in which to store records "... so that they may remain uncorrupted and may be found quickly by those requiring them." Fourteen hundred years later, we deal with the same issues but on an infinitely grander scale. Moore's Law, named for Intel co-founder Gordon Moore, who first stated it in 1965, holds that the data density per square inch on integrated circuits doubles approximately every 18 months. What does this mean?

Consider the following statistics:

→ From 1975 to 2000 the computational power of a microprocessor increased by a factor of 66,000.

→ The number of host computers

connected to the Internet in 1989 was 80,000.

→ The number of host computers connected to the Internet in 2001 was more than 125 million.

→ The number of sites on the World Wide Web in 1993 was zero.

→ The number of sites on the World Wide Web in 2003 is greater than 280 million.

→ Since the 1980s, enough fiberoptic cable has been installed to circle the earth 11,320 times.

There are few places where Moore's Law is more evident than in the oil and gas industry, where capturing, storing, analyzing and using data to enhance decision-making have made petroleum geosciences consistently one of the largest—and best—users of IT outside of government and the high-tech industry itself.

ROI — Return on Integration Investment

Companies with high levels of IT integration are seeing significant return on their technology investments, including the following:

- 80% reduction in new product development**
- 30% reduction in manufacturing cycle times**
- 55% decrease in new product costs**
- 9% reduction in manufacturing costs**
- 53% increase in new products to market**
- 65% customer revenue increase**
- 35% customer retention increase**

How energy companies are doing more (high-performance computing) with less (capital expenditure):

- Moving from UNIX to standards-based PC platforms
- Shifting from high-performance, RISC system-based E&P analysis software to less expensive Intel-based systems that perform equally well or better
- Considering alternatives to high-cost proprietary corporate database management systems
- Consolidating and standardizing software applications portfolios

Source: NerveWire Research, 2002

- < applications connect to one another and to other, larger applications over the Internet in order to connect information, people, systems and devices. Web services is a framework that enables a Web-enabled server to present its information to the world at large in a secure, consistent manner that can be automatically queried by applications from other servers. It is the

foundation for building a transaction—versus publication—oriented Web.

Microsoft .NET™ is the Microsoft Web services software that enables integration and collaboration throughout and across organizations by bridging gaps in programming languages, platforms and devices. It is also the cornerstone of the entire Microsoft software portfolio, including the new flagship Office System, which marks the evolution of Office from a suite of personal productivity tools to a more comprehensive and integrated system of information work products.

EARLY WINNERS

BP and Landmark Graphics Corp. are among energy industry companies that are reaping benefits from early adaptation of Web-enabled collaboration technologies. Using a Tablet PC running the Microsoft Windows XP operating system and featuring Microsoft .NET with its support of Web services, a group of executive-level users in BP's Integrated Supply and Trading (IST) group were able to:

- work more productively by trading a portable computer, PDA, mobile phone and paper notebook for a single machine and a mobile phone;
- move beyond their offices; and
- benefit from free flow of information and automated business processes.

The users have endorsed the Tablet PC as their preferred productivity tool, and BP says it will reap significant savings just by reducing the number of assets it provides and supports for its employees.

In a similar situation, Halliburton business unit Landmark Graphics recently released its Handheld Field Operator (HFO™) software package that connects field operators and asset decision processes in real time. Commenting about the Microsoft Windows Mobile™ software and Intel X-Scale technology-based HFO product, Landmark President and CEO Andy Lane said, "Mobile computing is a strategic growth area for Landmark Graphics. Working with Intel and Microsoft, we are able to provide cutting edge technology to our customers."

A representative of Swift Energy Company, which participated as a beta HFO user, noted, "We are currently able to analyze field data in a more timely fashion from our corporate offices, enabling our field personnel to operate more efficiently and almost seamlessly."

The fact that IT is intertwined with so many business functions means that it will continue to consume a large portion of corporate spending. New research from IDC reveals that IT spending by the U.S. energy industry alone is expected to grow from \$18.9 billion in 2002 to more than \$25 billion in 2007. According to Harvard Business Review, companies need to evaluate expected returns from their systems investments and be creative in exploring simpler and cheaper alternatives. Pursuing technology solutions such as those presented here will help companies leverage the simplest and cheapest alternatives of all—those that they already own. *



Marathon Oil lowers total cost of ownership by adopting newest server technology

In mid-November 2003, Marathon Oil Company became an early adopter of Microsoft Systems Management Server (SMS) 2003. Marathon upgraded to SMS in order to improve delivery of software and critical security patches to 10,000 PCs in multiple locations. Using the new server, Marathon was able to find and manage nearly all of its systems, streamline deployment processes, and reduce staff management time. Marathon believes its decision to use SMS will lower total cost of ownership (TCO) by allowing several servers to be retired with no new hardware replacement investment.

Logging On to Profitable Real-Time Decision-Making

“The time it takes to recognize and respond to anomalies, correct them, and redirect resources can spell the difference between profit and loss, success and failure, bonus and no bonus.”

Michael Saucier, vice president, OSIsoft



Consider this. A major oil and gas company operating off the coast of West Africa has an electric submersible pump outage on a production platform. The operations team scurries to get the pump back on line ASAP. A new pump is ordered, delivered and installed, and production is back onstream in record time. But there is something wrong with this picture.

What is wrong is that the operations team in Africa did not know when they replaced the pump what the managers in Houston knew—that the field where the outage occurred was producing greater volumes than expected. Replacing the pump with a larger-capacity model would have enabled the operating company to produce more oil and gas faster and improve its return on investment. Instead, an opportunity was missed.

Although this scenario is purely hypothetical, it is representative of the tremendous decision-making challenges that permeate every aspect of oil and gas operations today. Many companies are identifying the untapped benefits related to greater business visibility and are integrating people, processes and technologies supported with IT-enabled, real-time decision-making capabilities.

IT-enabled, real-time decision-making can significantly boost yields and production, increase worker productivity, and accelerate time to revenue. It can also reduce operating risk and cost and defer capital investment. Independent software vendors such as OSIsoft and Invensys are providing dynamic, flexible solutions based on Microsoft technology that record events as they occur and distribute relevant

information about those events to the people who need it, in a form that they will immediately understand. As a result, key performance indicators can be tracked in real time; future behavior and times to failure can be predicted; and profitable action can be taken to prevent problems in most cases and provide rapid, correct response when it becomes necessary.

WEB PORTALS CREATE WINDOWS OF OPPORTUNITY

In an article for *Oil & Gas Journal* in December 2001, Accenture's Michael Yeaman, senior manager, Resources, observed, "There's so much information out there that the question becomes: How does an individual bring to their desktop just the key information they need to make their next decision?" >

Independent software vendors such as OSIsoft and Invensys are providing dynamic, flexible solutions based on Microsoft technology that record events as they occur and distribute relevant information about those events to the people who need it, in a form that they will immediately understand.

< Web portals such as those built on Microsoft SharePoint™ Portal Server, which makes business intelligence more readily and easily accessible across the company, are proving to be the answer. “The opportunity to profit from information is inversely proportional to how fast one acts on that information. So, the time it takes to recognize and respond to anomalies, correct them, and redirect resources can spell the difference between profit and loss, success and failure, bonus and no bonus,” says Michael Saucier, OSIsoft vice president.



Portal technology assists in diffusing vast amounts of information into smaller, more easily digestible pieces of data that can be used to make better day-to-day decisions. In a real-time portal environment, users can easily interact with current business processes, related documents and real-time information via the Internet or corporate intranet to identify and resolve problems as they occur, not simply report on them after they have already impacted the business.

OSIsoft's RtPortal, based on Microsoft SharePoint Portal Server 2003, closes decision support loops by allowing individuals to easily configure displays that track key performance indicators in real time. According to Mark Brown, Field Data Acquisition Engineering for Calpine Corp., “At Calpine, we routinely collaborate with our 88 generating facilities from our Fort Collins, Colo., headquarters. We use OSIsoft's RtPM platform to address diverse business requirements such as plant operations, emissions cap monitoring, asset risk management and even real-time trading functions. Stakeholders all across

Calpine have access to critical, role-based information they need to make better, faster decisions. This allows us to isolate and correct problems before they materially affect our business.”

Additionally, Invensys' Real Time Enterprise Framework leverages .NET and other Microsoft offerings in converting data and information to help measure crude, natural gas or LNG quality in minutes; predict when a pump will burn out days before it happens; and improve resource productivity. Calvin Cobb, Ph.D., Invensys vice president and general manager, Global Hydrocarbons, contends that information technologies have evolved to the point where valuable solutions to existing oilfield problems are now technically and economically feasible. Moreover, he says, applications of such technologies enable novel solutions to problems that have not yet been envisioned.

According to Cobb, whereas Invensys' Microsoft-driven technology once created systems designed for oilfield equipment,



Putting real-time decision making to work

IN PRODUCTION

Pioneer Natural Resources was challenged with improving the accuracy and quality of information about its drilling locations in the mature Red Cave field. The company turned to Petrel, a Windows PC-based workflow tool from Schlumberger Information Systems, to reduce its data-to-decision cycle time. The results were dramatic—the overall time spent modeling the field was reduced from months and even years to less than two weeks for first field model.

Using Petrel allowed Pioneer to quickly determine the horizontal reservoir limits and distribution of quality sands. As a result, Pioneer successfully drilled 21 wells with a correlation coefficient of 84 percent accuracy in predicting hydrocar-

bon pore volume—a 20 percent increase over previous efforts. And, the company was able to pick better infill drilling locations and capture additional reserves, allowing rejuvenation of the rapidly declining field.

According to Larry Brooks, Geologic technical advisor, Pioneer Natural Resources, “In the latest phase of drilling, hydrocarbon pore volumes and economic completions have risen by 30 percent. Prior to implementing Petrel modeling and petrophysical calibration, our probability of success was 65 percent. Now, our probability of success is 84 percent, and the wells perform better.” And the benefits continue—updating the model now takes only one or two days, working three or four hours per day on input. This makes it possible

“Stakeholders all across Calpine have access to critical, role-based information they need to make better, faster decisions. This allows us to isolate and correct problems before they materially affect our business.”

Mark Brown, Field Data Acquisition Engineering for Calpine Corp.

today’s innovations are designed to help people run and optimize their business. Invensys is currently delivering integrated, real-time solutions using Microsoft Business Framework technology to connect facility data and information systems to the business and decision-making systems of a company. These solutions are utilizing technology standards to transition away from non-standard, customized platforms that are more expensive to develop and maintain.

WHY .NET?

Web Services are the foundation for real-time decision making. Using the Microsoft-based infrastructure and Microsoft .NET Web services software, companies can employ solutions that use data from many more areas within their enterprise. Rather than having business data trapped in silos and only visible within those silos, .NET helps break down barriers to data integration and enables development of solutions that can aggregate and analyze data from a wide range of areas. Through .NET, individual users gain the

ability to quickly effect tactical and strategic decisions that impact the business in real time. And, managers gain a more “holistic” view of corporate performance. Additionally, because employees already know the Windows® operating system and are comfortable working within it, enhancing the way they already work is much easier and more efficient than changing the way they work.

ALIGNING SHORT- AND LONG-TERM STRATEGIES WITH REAL-TIME DATA

In the 1980s and ’90s, the business world saw tremendous advancements brought about by the integration of digital office systems. Today this trend extends to the oil and gas industry, linking desktops company-wide directly to oilfield locations around the globe, and joining together complete operational processes such as drilling and production within a worldwide secure infrastructure. These efforts are generating impressive results—as dramatic as cutting drilling time by 25 percent, drastically reducing drilling failure

rates and increasing user efficiency as much as 20 percent due to streamlined information workflow.

Hovey Cox, Schlumberger Information Solutions (SIS) Real-time Development project manager explains why: “During production, real-time measurements such as fluid rate, log, temperature and pressure not only drive short-term decisions, but also feed into the shared earth model to shape the longer term portfolio strategy,” he says.

“Being able to quickly synchronize the measurement data with the simulated model allows you to align short-term and long-term strategies.

“Short-term strategies are driven by immediate decisions,” he continues. “Using real-time data and decision support tools, these decisions can be made quickly and with greater confidence. And better short-term decisions give you better control of your longer term goal—improving the profitability of the reservoir.”

Clearly the key to fully leveraging real-time data is making the cycle time real time. *

for Pioneer to continue to realize the benefits of real-time data on an ongoing basis.

IN TRANSPORTATION

Bord Gais Eireann (BGE) manages the supply, transmission and distribution of natural gas in Ireland. Switching from a manual, paper-based system for managing and controlling the construction of pipeline transmission infrastructure to a Microsoft SharePoint Portal Server-based system and integrating standard Microsoft Office productivity tools with users already familiar with Office technology brought benefits from the following:

→ **Fast development**—the new system was implemented

very quickly, with minimum interruption to existing systems that continued to operate during the installation period

→ **Document retrieval and increased productivity**—access to documentation has been reduced from hours to seconds

→ **Cost reduction**—in operations, time, paper, and filing space

→ **Minimal training effort**—because of SharePoint’s easy integration with other Microsoft products that users were already competent in using.

BGE estimates that there will be up to 400,000 documents (requiring approximately 6 terabytes of storage) stored and fully indexed when the projects are completed.

From Compliance to Assurance: Reducing Risk in a Stringent Regulatory Environment



For companies operating in today's highly competitive and highly regulated energy markets, the ability to measure uncertainty and manage risk is crucial, not just to "win the game" but even to be considered a player. Nowhere is this more apparent than in the areas of business governance and health, safety and environmental (HSE) risk management, where the cost of compliance may be great but the cost of non-compliance is far greater.

Complying with the United States Sarbanes-Oxley Act of 2002 (SarboX) requires reporting every event that could impact share price. Virtually every decision made within a company has the potential to impact share price. And, executives of companies who fail to comply with SarboX face personal risk.

Health, safety and environmental (HSE) risk

management is equally fraught with uncertainty and risk. Failure to manage the risk can result in fines, lawsuits and disaster. On the other hand, companies who manage HSE risk successfully stand to gain tremendously from expanding their business into oil- and gas-rich frontier areas.

The "flip side" of the compliance coin is that the performance improvements that result can also improve companies' operating prospects and bottom lines. Successful compliance hinges on collaborative workflows and effective data and information management. Microsoft and its partners provide solutions that "harness the Internet" and ensure trustworthy computing to help oil and gas companies transform compliance from a cost of doing business to an opportunity for improving it.

THE IT/RISK MANAGEMENT CONNECTION

Successful HSE risk management hinges on effectively managing volumes of data and information that have exploded with an ever-growing number of regulatory commitments, modifications and new programs that began in the 1980s. Today, IT-based HSE risk management solutions offer energy companies visibility into, understanding of, and control over risks for hazardous operations, whether in E&P, pipeline or refining. Additionally, these solutions streamline communication and collaboration with stakeholders including subcontractors, partners, government agencies, and the public.

According to Greg Gasperez, vice president, EHS, of Enviance, companies are looking for better ways to manage and continually

improve compliance. “They want to decrease time and cost involved by consolidating and managing across the organization. They also want to preserve organizational memory by institutionalizing and standardizing information and processes so that, when someone leaves the organization, all their information won’t leave with them,” Gasperez says.

Enviance partners with Microsoft to offer an Internet-based compliance management solution based on Microsoft .NET that Gasperez says takes companies beyond compliance, to assurance. The Enviance System is both a platform for storing and processing environmental compliance data, and a communications device for tracking and improving environmental performance. Based on an application service provider (ASP) model, the Enviance system is 100 percent Web-deployed and accessible by Web browser anytime. There is no software to download or install, no hardware cost, and no server maintenance or upgrade cost. As a result, says Gasperez, users spend less time collecting, processing, retrieving and reporting environmentally related data and tasks, and more time improving environmental performance.

PUTTING TECHNOLOGY-BASED RISK MANAGEMENT SYSTEMS TO WORK

Valero Energy is looking to Enviance to help improve its



Managing unpredictability in pipeline construction

Pipelines generate revenue only when product is flowing through their pipes. Global management consulting and technical services company Accenture works with pipeline companies to get projects onstream on the specified day while satisfying multiple stakeholders and regulatory agencies in the process. Using Web-based Microsoft Project Server 2003 and other Microsoft enabling technologies, Accenture helps pipeline clients manage unpredictability associated with conducting land surveys, securing right-of-ways, having governmental files approved, answering compliance inquiries on what is being done, and looking at encroaching on

population centers.

“Historically,” says Accenture Partner David Day, “pipeline companies haven’t looked closely at these issues to understand how to manage them better. Project Server 2003 provides transparency and tracking of critical information. If we reveal problems sooner, we have the key to fostering collaboration and more rapidly finding solutions.”

According to Day, all companies are trying to achieve data transparency. “It’s not easy to do,” he says, “but those who do it right will be able to better manage what was previously considered unmanageable, and save a lot of money and make a lot of money in the process.”

compliance management processes and performance.

“Environmental compliance is not academic,” says Valero Benecia Refinery’s Principal Environmental Engineer Don Cuffel. “In many cases it is driven by Title V (Clean Air Act) permitting, which requires continuous compliance certification and is enforceable even if the permits are flawed when they are issued.”

Refineries, he explains, must satisfy the most stringent of various overlapping and sometimes conflicting federal, state and local regulations. They must also achieve timely detection of non-compliance and, in the San Francisco Bay Area, provide reports on 10- and 30-day,

6-month, and annual bases.

“One of the most exciting aspects of the Enviance System is its event-triggered reporting, because it reduces dependency on human intervention. With Enviance, there is no reason to miss deadlines or opportunities to improve,” says Cuffel.

“Other applications require modifying workflows to meet the needs of software. Because it is .NET enabled and Web based, there is no need for that with the Enviance System,” Cuffel continues. “As a result, employees do not need to do anything differently, but they are provided with a tool to help them with their tasks. The system sets them up to succeed, so they buy in to the systems approach.” >

Successful compliance hinges on collaborative workflows and effective data and information management.



Taming the trading monster

Three years ago energy trading was seen as an industry “darling” that generated massive earnings and shareholder value. Today its reputation is so sullied that Wall Street penalizes some companies with significant trading operations.

Trading is a piece of the energy value chain that cannot disappear. However, it can be managed to limit exposure and potential losses. Trading organizations are looking to information technology solutions to manage risk, improve operational efficiencies, and bring down costs. Microsoft provides enabling technologies for partners such as multinational systems integrator Infosys and enterprise trade management consultant SolArc, whose Web-based solutions provide straight-through order processing and real-time visibility into risks across the enterprise. Solutions such as these are helping make energy trading both manageable and profitable.

◀ Pumbed, a solutions provider that bases its offerings on Microsoft technology, has taken a different approach. Engaged by a multinational oil company, Pumbed chose to employ an enterprise project management solution that takes advantage of Microsoft Office as a centralized scheduling tool to track environmental compliance requirements and deadlines while minimizing training for busy field managers. In the past, managers sent information about permits and testing requirements to necessary personnel and then monitored monthly, quarterly and annual projects and deadlines using Microsoft® Word documents, Excel spreadsheets, or calendar reminders. Microsoft’s Enterprise Project Management (EPM) solution makes it easier to track

and communicate project status at all stages. Minimal training is required because managers responsible for compliance already are familiar and comfortable with Outlook.

“Compared to our client’s previous environment, the EPM solution is a big improvement and exactly what they needed, and the cost was lower than purchasing an off-the-shelf Environmental Management Information System,” says Matt Vasey, Pumbed’s director of Marketing.

Regardless of the approach, energy companies are finding that Web-enabled technology fundamentally changes all the rules that previously applied to risk management and creates an extraordinary opportunity to reshape thinking about the affordability, effectiveness and reliability of HSE risk management systems. *

Understanding the Lingo

Not familiar with technology talk? Here are some key terms and product names deciphered in lay terms:

Architecture — A broad term used to define a couple of distinct computer aspects, one of which is the physical structure or design of a computer system and its components. For example, the architecture may consist of the internal operating system and the chips and programs that make a computer useful.

Applications — Used interchangeably with program and software, this is a general term for a program that performs specific tasks, such as word processing, database management, e-mail sending or retrieval, or Web browsing. Unlike system software, which maintains and organizes the computer system (such as the operating system), an application is an end-user program.

Infrastructure — The underlying base for a system, supporting the flow and processing of information. In IT, this term is widely used to mean the internal setup of a particular system, especially of the hardware used to connect computers and users. On the Internet, the infrastructure also includes software programs that are designed to leverage the protocols of the new technology, primarily for transmitting information.

Operating system — The foundation software of a computer system, responsible for controlling and launching the installed applications and computer peripherals. It is the software that schedules tasks, allocates storage, handles the interface to peripheral hardware, and presents a default interface to the user when no application program is running.



Improving near-field exploration

London-based Paras Consulting collaborated with a global supermajor oil company to manage and enhance the performance of its near-field exploration program, which had a poor performance record. Spending and delivery targets for the program were set, portfolios managed, and investment decisions made within the near-field group, made up of representatives from each participating business unit. All members of the group were jointly accountable for spend

that incurred an exploration write-off.

Working with the energy client, Paras built a commercial prospect database on Microsoft® SQL Server™. Together, they developed a Web-based, transparent system that allowed all participants to see who is requesting money, for what reasons, and what types of results they are achieving. Two years after the system’s implementation, the near-field exploration program enjoyed a 75 percent success rate.



Managing Pipeline Construction at the World's Largest Gas Company

Platform — The type of operating system on which a computer or software application runs.

Portal — A Web site that serves as a starting point to other destinations or activities on the Web. Initially thought of as a home base with links to other sites in the same subject area, portals now attempt to provide all of a user's Internet needs in one location.

Server — A computer specifically designated to perform centralized data processing, file and print services, etc.

Microsoft® Windows® — Microsoft Windows Server System integrated server software is a comprehensive and integrated server infrastructure designed to meet the needs of developers and IT professionals, and to flexibly run the programs and solutions that enable information workers to obtain, analyze, and share information quickly and easily.

Microsoft® SQL Server™ — Provides the enterprise data management platform your organization needs to adapt quickly in a fast-changing environment.

Microsoft .NET™ — Microsoft Web services software that enables computing throughout and across organizations by bridging gaps in programming languages, platforms and devices.

Microsoft® Office System — Includes servers, services, programs, and solutions all engaging .NET to help you connect people and organizations to information, business processes, and each other.

SharePoint™ Portal Server 2003 — Enables enterprises to develop an intelligent portal that seamlessly connects users, teams, and knowledge using .NET so that people can take advantage of relevant information across business processes to help them work more efficiently.

Gazprom-controlled gas distribution organizations sold more than 150 billion cubic meters of gas domestically in 2002, accounting for approximately 60 percent of all gas supplied in Russia. With one of the largest pipeline systems in the world, Gazprom's main ongoing strategic goals are to provide guaranteed gas deliveries to customers in the Russian Federation and beyond, and to strengthen its position in the international energy market.

Vladimir Chukichev, deputy head of Gazprom's Department for Automation, Information Technology, Telecommunications and Metrology, explains, "The role of IT is very important because each company is involved in many lines and business, and supports many production sites."

THE CHALLENGE

Gazprom's 800+ construction projects in gas extraction, processing and transportation are conducted throughout the Russian Federation, which stretches out over 11 time zones. Adding to the complexity are the numerous customers, contractors, and suppliers involved in these projects.

The absence of a comprehensive project management solution was making it difficult to collaborate on projects, stay up to date, and work efficiently. Gazprom needed to take back control, and employ information technologies to help the company make better decisions, and

thus avoid incurring operations losses.

THE SOLUTION

Gazprom chose to work with Microsoft and its partner, Lanit, a top systems integrator in Russia.

"What attracts us to Microsoft technologies is the great power and flexibility of the company's products, its centralized system management capabilities, and its ability to implement projects very quickly," says Chukichev.

Gazprom decided on Microsoft's web-enabled Enterprise Project Management (EPM) solution. "We like Microsoft Project 2002 because it is enterprise-enabled," says Chukichev. "It allows us to organize huge projects, while keeping IT investment at the right level."

THE BENEFITS

By deploying Microsoft's Enterprise Project Management solution, Gazprom will be better equipped to effectively plan its investment activity and control its progress, making and adjusting plans as projects unfold, in real time.

"The main goal we set for ourselves was to bring the planning function to the point where it runs smoothly and at a much lower cost," says Dmitri Arkhipov, deputy head of Gazprom's Department of Capital Construction and Transport. "The implementation of this solution will help us modernize investment planning and control." *



> **Marisé Mikulis** manages Oil and Gas Industry Solutions for Microsoft Corp. Headquartered in Houston, Texas, Mikulis applies her more than 20 years of diverse experience in the oil and gas industry toward developing strategies for incorporating Microsoft's proven enterprise technology into business solutions that meet the needs of the energy industry worldwide. For more information about Microsoft and its oil and gas industry capabilities, partners and solutions, visit www.microsoft.com/resources/energy.

