ARC BRIEF

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Collaboration in Today's Energy Companies

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Today energy companies are pressed to produce better results in a very difficult business environment. Whether the metric is growth, safety, energy efficiency, service, productivity or green, the pressures for improvement combined with an uncertain business climate compel energy companies to adopt new collaborative practices in established operational areas. ARC looks at how four energy companies are now building collaboration.

Energy Projects in Today's Volatile Environment

Today's major energy companies grow ever larger and more complex. Yet their business climate demands better control of quality, cost and schedule. This situation cries out for new and innovative ways of doing business. How can this be done in a large organization that is diverse technically, culturally, and geographically? Today's energy companies struggle to find answers to the question of how new and better collaboration can help them succeed.

The Energy Industry in Transition

Challenging times create both opportunities and risks for business. Energy and Utility companies well appreciate this, given their long-term planning horizon. The global recession that began in 2008 presents major risks to energy companies, most notably from daily volatility and precipitous rising and falling of energy prices. These companies are now facing markets entering a long transition from recession to renewed prosperity. Such a transition enables leading companies to create new value and growth over the long term.

Today's energy climate is marked by a number of very fundamental changes. While these changes will take place over many years, the number and magnitude of changes taking place in the energy industry today is unprecedented. These changes include:

- Greenhouse gas regulation
- Renewable energy development
- Deep offshore oil exploration and production
- LNG development
- The nuclear renaissance
- Clean coal technology
- The Smart Grid

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None of these changes will take place overnight, but all are now proceeding, and each will have an impact on all types of energy companies.

What strategies will propel companies to success in this new energy world? Below are good examples from four leading energy firms:

BP Spreads Best Practices via Global Collaboration

BP is a global energy giant with 2008 revenues of $361B, 92,000 employees, and major operations all over the globe. The company has extensive experience with many collaboration and unified communications tools. Given that its operations are so dispersed and represent many different businesses, BP has developed its own method for nurturing mission-critical technological change. This work is managed within the office of BP's Chief Information Officer by a staff known as the CTO Office.

The CTO Office of BP does not have a large headcount or a large budget. The organization is a small, agile team that stays intimately engaged with BP's business units by traveling most of the time to work at the locations of their BP clients. The CTO office aims to expand BP's appreciation of emerging technology capabilities. It does this by building a network of engagements and relationships through which new technologies are scouted and vetted. Rapid and structured processes for technology transfer are used to deploy innovations that deliver substantial value.

Recently the group has re-invented itself even further, in the mold of a consulting firm, and it now engages directly with BP business unit leadership to work on critical issues. These days, according to David Lafferty of the CTO office, the team spends most of its time working on projects dealing with issues of personnel safety, supply chain cost, and the aging workforce. "A big part of what we do is the changing of behavior" says Lafferty. "Safety ultimately is about people, their behaviors and their attitude to working safely. But technology can augment their efforts to create a safer working environment," says Ken Douglas, CTO director of mobile and wireless applications.

Over time BP has employed a wide range of virtual and video conferencing solutions. Despite the economic recession, BP will be greatly expanding its installation of Cisco TelePresence in 2009. Lafferty reports that TelePresence is "important for initial meetings" where teams are getting acquainted with each other and develop rapport. Once these relationships are established,

participants may choose to use other collaboration tools in addition to TelePresence. "A WebEx meeting with a webcam is often good enough for an ad hoc situation", he says. While the user experience is not nearly as rich, "the trade-off is that it is simpler because you don't have to go anywhere to use it. Right now most of our people still need to go somewhere to use TelePresence."

Collaboration Tools Dramatically Reduce the Isolation of Remote Work Sites © BP p.l.c.

The widespread use of these virtual meeting tools has changed the work climate in BP and reduced the isolation of far-flung sites. "Right now I am working 800 miles from our operations on the North Slope, and 2800 miles from our R&D office. Nowadays people do not travel often to the Slope, yet our people have dialog and meetings with the Slope much more frequently."

Besides improving collaboration, Lafferty pointed to other very measureable savings from collaborative tools. BP holds an annual forum for its first year engineers who meet with BP's high-level scientific and engineering teams. This year rather than have the participants travel to London from all over the globe, the forum was held as a virtual meeting for the first time. The result was that participation could be broader and the meeting schedule could be adjusted to accommodate greater executive participation. The virtual meeting format also delivered huge savings from reduced international travel expenses.

Questioned about how collaborative tools are helping to meet safety objectives, Lafferty cited an example of extensive training in pipeline maintenance being held for their Angolan operations remotely from other locations. "We focus on operations that are performed infrequently", says Lafferty. An infrequent operation that involves hazards becomes the focus of collaboration and training to insure that best practices are used across BP, regardless of how far away the unit is from major technology offices. Often knowledge of these best practices comes from aging workers and can be shared with younger colleagues.

BP's future direction with its collaboration technologies is to integrate them with additional applications beyond virtual meetings. Recently BP had to build a new oil transit pipeline on the North Slope. BP and its partners used a single virtual workspace to merge and examine the proposed design

with their GIS data. The collaboration and merged visualization of disparate data sources was hugely valuable. It allowed them to plan in detail how to construct the new pipeline around existing power lines, pipe racks, drilling rigs, and other obstacles. "Contractors can now do a business process rehearsal before even going to the North Slope. A mistake in the virtual run-through just requires a press of the reset button", says Lafferty. Obviously the same mistake during the actual construction could be far more costly and/or unsafe. Lafferty notes that this type of simulation experience was essential in the training of the US Airways Flight 1549 flight crew that made a safe emergency landing in the Hudson River on January 15, 2009. In that incident all 155 people aboard the plane survived, with only a few minor injuries. Lafferty envisions the day when enhanced collaborative tools will bring process operators the same familiarity with emergency procedures that airline crews now have.

Collaborative Exploration and Production at Hess

Hess Corporation is a $37B global integrated energy company that has oil and gas exploration and production (E&P) activities in 17 countries including, Australia, Azerbaijan, Ghana, Indonesia, Malaysia, Thailand, the United Kingdom and the United States.

Hess E&P Operations Span the Globe

Recently the E&P organization at Hess installed Cisco TelePresence in four key locations: Houston, Kuala Lumpur, London, and New York. The installation was done quickly and without a long formal justification process. Randy Berkow, Head of Global Collaboration at Hess, reports that his users were certain of the value and have no doubt about the investment. "This project was user demand driven. They needed the face-to-face discussions of TelePresence. They felt there was huge value in having a TelePresence discussion without the negative impact of getting people on an airplane for an international flight. They no longer have to fly to London to have a face-to-face meeting."

The company chose these four TelePresence locations based on their criticality to Hess and the availability of high-bandwidth Internet service. "We have many isolated sites we could potentially expand to", says Berkow, "but most of these are now served by low-bandwidth satellite services."

Whereas quality Internet services were available at known cost in the locations that Hess chose for TelePresence. Hess was in the middle of its TelePresence program when the global financial crisis reached its peak in 2008. The volatility of the crisis redoubled Hess's determination to finish the project. Says Berkow, "We asked specifically if management wanted us to continue with this project. Their answer was yes, more than ever."

Initially TelePresence at Hess tended to be used for C-level executive meetings. Now Berkow finds that TelePresence utilization has significantly increased with the centers booked for the entire day, and the users are becoming more diverse. "We are now seeing production groups get together weekly to discuss production plans and issues. There are standing TelePresence meetings now that involve our people in Kuala Lumpur, Houston, and London", says Berkow. While the E&P leadership team is still a major user, operational groups are now using TelePresence for rapid and simple face-to-face meetings.

Hess found that the use of TelePresence expanded from C-level executives to its E&P operating teams, who now use the system regularly for international meetings.

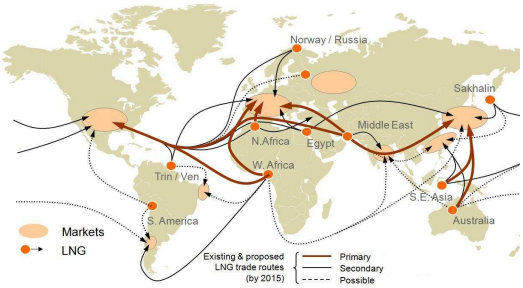
Hess is hoping to soon expand its TelePresence use to include global partners. Berkow looks forward to adding meetings with groups from IBM, which is a major strategic partner. There is a 10 ½ hour time difference between Hess headquarters and IBM's major IT support organization in India. Berkow believes there are substantial future benefits to be had from adding TelePresence meetings with just this single external partner.

Asked about any difficulties or lessons learned from the initial TelePresence project, Hess reports that their TelePresence program "was a vendor management project more than an IT project". With regard to lessons, Berkow advises others to "watch out for construction contractors who treat a blueprint as a suggestion. If they substitute different products for the outlets, or for the light fixtures, or for the furnishings, it will have to be fixed. Cisco helped us with this, but a precise installation and environment are critical for achieving the in-person effect."

Hess found that while it invested in TelePresence as a collaborative tool for its high-level executives, the benefits have also accrued to their global operating units. ARC has seen this phenomenon again and again among manufacturers who invest in TelePresence simply as an executive tool.

Ease of Integration Critical for Energy Giant

ARC also discussed plans with a collaborative systems architect at another global energy company that insisted on anonymity. Their company perspective is in some ways similar to BP, in that the scale of their deployments is massive, global, and consisted of products and solutions with widely varying ages. But in other ways this company's strategy is distinct. The most distinct aspect is that this company viewed its technology strategy through the lens of desktop integration.



Oil and LNG Projects Require Global Collaboration

Unified communications is an important application for this company, but not one that could justify a wholesale replacement of their telecom infrastructure. They are using an accelerated replacement cycle to bring Cisco VOIP and unified messaging to their organization. With over 90,000 desktops to support, their VOIP roll-out is still less than half complete, and is now being done on an opportunistic basis.

With all their collaborative technologies, new operations and project-driven joint ventures most often had the latest of everything due to their status as "Greenfield" offices that needed entirely new systems and support. This included VOIP services and various web and video conference services.

The justification for capital expenditure is most often based on speed of business execution. Reductions in business travel are a secondary justification for conferencing technologies, but the value expected from travel reduction is not as high as the value from faster business execution. Video conferencing facilities at this company ranged from very old systems to the very latest. There are 400 endpoints of room-to-room video conferencing installed.

> For this company the value of faster business execution represents a much larger value from collaborative tools than the savings from reduced employee travel.

The focus of the company's collaboration technology efforts in the immediate future is to improve the level of video standardization and to drive integration of collaborative technologies with presence services. The company views presence services as a lynchpin of many collaborative deployments. They envision presence services being the primary user interface to these tools. "You don't use the phone to call or contact someone, instead you use the presence service", said their architect. Because of this,

the ease with which products could integrate with the corporate desktop client software (Microsoft-Office Communicator) is an important consideration in its cost of deployment and support.

ARC asked if the recent rise in oil prices had loosened the corporate purse strings. As of the date of our interview, crude oil prices were up nearly 100% from their lows of a few months ago. Had this returned their IT spending patterns to the pre-recession equilibrium? "No" was the emphatic answer. Despite the higher crude prices, "we are still constrained with respect to IT spending. Nothing has been relaxed yet."

This company is managing is collaboration investments during the recession in order to harmonize the tools it has installed and also to integrate its installed tools with the presence services that will eventually form the primary interface to all their communication and collaborative technologies.

Quality and Collaboration in Field Activities

While global oil companies struggle with operations on several continents, the needs of electric utilities are much different. "We are not a globe-girdling company", says Situ Ramaswamy, General Manager of Technical Services at Southern California Edison (SCE) . "We have a large service area – 50,000 square miles – and we must manage literally millions of customers, workers, and assets that are distributed throughout this area."

The SCE Service Area

SCE serves 5 million customers in the greater Los Angeles area. While its service area ranges from urban to desert, most is suburban. The Los Angeles area has one of the most mobile populations in the United States, and 10-15% of SCE's residential customers move each year. In addition, SCE is widely recognized as a leading US utility in the deployment of smart metering and smart grid programs.

From a business standpoint, SCE's pressing need is for high levels of quality in their volume customer interactions such as service connect/disconnect. The company serves all its customers through 2 contact centers, which are now being upgraded to Cisco VOIP technology. These are business-critical operations, and Ramaswamy emphasizes the need for built-in reliability. "With every new technology, customers expect us to achieve a higher level of reliability, which is always a challenge. The old systems, though limited technically, are highly reliable. The replacements must be well engineered systems in order to improve

that." The contact centers also support emergency operations. Improving these ongoing business processes is what drives SCE's collaborative system upgrades, rather than the need for new face-to-face collaboration tools such as TelePresence.

"Given the nature of our business and its geographic characteristics, when we need a face-to-face meeting, we can drive to one without much trouble. We use WebEx as a preferred tool for ad hoc meetings, but it is part of our corporate culture to use either face-to-face meetings or email", explains Ramaswamy.

Supporting the Mobile Worker

SCE depends on a large number of mobile workers for routine operations, maintenance, and emergency work. These workers have traditionally been managed by several distinct SCE divisions: Meter Reading, Customer Service, and Transmission and Distribution (T&D). The T&D operations use ruggedized truck-mounted laptop computers that support a suite of business applications. Not all are fully mobile, and some applications are re-synchronized when the truck parks in an SCE garage, all of which are equipped with WLAN.

Mobile Workers Need IT at the Point of Work

Other mobile workers use different sets of applications. SCE is now in the process of consolidating and unifying this "e-mobile" suite of applications, and improving application performance on mobile platforms. The laptops are supplemented by a private radio network and carrier cellular voice and data. Ramaswamy notes that much of SCE field network data traffic is shifting to cellular, with the private radio network becoming a backup service that is necessary for safety and emergency operations, when utilities cannot assume that carrier services will be available.

SCE looks to add greater mobility to its field computing. "The laptop is not ideal for our field workers, since it remains in the truck cab. We need to provide true field access to information. We need to use forms of mobile computing that support rich data capture during increasingly rare occasions when field assets are seen or inspected SCE personnel. We are looking toward form factors that are almost wearable", says Ramaswamy.

Widespread Use of Rooftop Solar Collection Is Only One of the Changes in Store for California's Future Electric Grid

What is causing the rarity of SCE field inspections? Mainly it is the transition to smart meters and the smart grid. SCE is a recognized leader in both areas. With legacy metering technology, SCE workers had to visit each meter or drive by it monthly. With smart meters this will no longer be necessary, as the new smart meters will enable granular remote monitoring of the power distribution system in near real-time. SCE's Smart Grid programs involve the support of large numbers of small roof-top solar plants, so energy will soon be flowing in many ways on SCE distribution circuits, depending on any number of factors. "The line between T&D and customer service will soon become blurred", says Ramaswamy.

In response, SCE is creating new Joint Operations Centers where all field operations will be coordinated from a single point. These centers will be the point of coordination for future field operations that leverage AMI and Smart Grid technologies. "Our operations can be vastly improved as a result of these new capabilities", says Ramaswamy, "but to realize these improvements we will have to work across our traditional silos". Through these upgraded customer contact and field operational centers, SCE is planning to deliver that change.

SCE is creating new Joint Operations Centers that will coordinate every type of SCE field activity from a single point.

Common Threads

ARC finds some similarity in the situations faced by these four organizations. These firms are all large and well-established, and their business and operational practices are also well established. Their difficulty involves the fact that many of these existing practices have become outdated and unaffordable.

They are unaffordable in the sense that these organizations cannot afford the luxury of cloistering best practices and knowledge in relatively small units within their organization. The information and knowledge has become too important to those outside of the groups that have traditionally "owned" it, so it needs to be shared more freely with other groups within their company. Collaborative technologies such as TelePresence and WebEx allow these organizations to more effectively share this information, collaborate in real-time, integrate their operations, and improve their organizational efficiencies.

The practices are outdated in the sense that in today's business environment of great uncertainty, greater demands are being made on the corporation by today's customers. If the business is to respond effectively, it is simply not an option to maintain the operational status quo. These firms are actively engaged in integrating their operations by breaking through operational boundaries and silos, thereby encouraging more efficient collaboration, facilitating sharing and transfer of knowledge, and driving costs out. Working effectively across existing organizational silos demands that active collaboration become part of business processes, rather than allowing knowledge and practices to percolate through the organization slowly or not at all.

This paper was written by ARC Advisory Group on behalf of Cisco Systems. The opinions stated are those of ARC Advisory Group. For further information contact the author at HForbes@ARCweb.com.