

Real-Time Access to Expertise

Improving decision making and collaboration through unified communications

Abstract

Increasing production and replacing reserves depend on access to expertise when and where it is needed, but these resources for decision making are becoming scarce. The overarching question becomes: How do we connect the experts to the problem, provide them with complete awareness of the remote environment, and let them collaborate and share information in real time with those who need that expertise?

The answer lies in our ability to create a platform of connectivity that enables us to bring the problem to the expert, provide a complete picture of the context of the situation, and ensure transparent collaboration between participants regardless of their location. We call this platform unified communications...the ability to transform the collaboration experience and provide real-time access to expertise.

This paper explores the capabilities of unified communications and provides examples of how exploration and production companies use convergence in communications to best advantage to allow data, voice, and video collaboration between experts and explore the value that it brings. It includes various case examples of where exploration and production companies are creating these experiences, as well as examples from other relevant industries.

Setting the Stage: The Upstream Challenge

The Factors: Improving Recovery Rates and Reserve Replacement

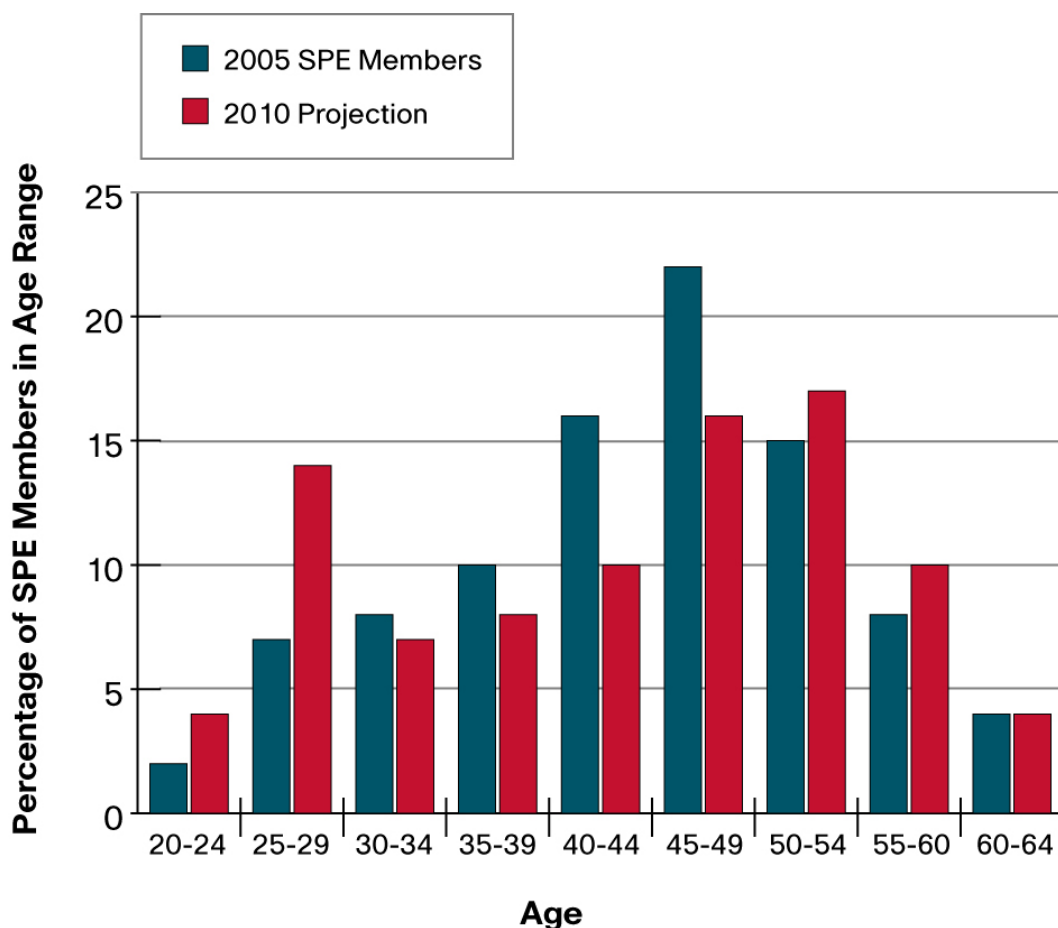
The days of easy oil are gone. It is more and more difficult to replace world oil reserves, requiring all the skills possible to find and extract hydrocarbons. Now, more than ever, decision making is critical to the success of exploration and production. Decisions made by experienced people who understand the complexities of each situation, influenced by their years of activity and exposure to global conditions, are the best suited for making those decisions. The expertise that they bring, coupled with a nuanced view of their current environment, allows them to make better decisions, bringing reserves online faster with less cost, and improves ultimate field recovery.

The Complications: Putting Knowledge at the Point of Activity

But the people with the best skills and experience—the ones that can best make those decisions at the point of activity—are becoming scarce. Additionally, an expertise gap exists between the experienced workers who are getting ready to retire and new workers the industry has hired. A way to “virtualize” the expertise by placing experienced workers in centralized operations centers and have them support multiple physical operations is needed.

In addition, years of cost cutting and layoffs has created a workforce approaching retirement. Although the industry has been aware of this situation for many years, evidence shows that a “youth bubble” will move into the industry by 2010 (Figure 1).

Figure 1. The Age Distribution of SPE Members



An expertise gap exists between experienced workers and new workers the industry has hired. The new teams have not been on board long enough to gain the insight required for nuanced decision making. So the challenge is to determine and deploy the best way to transfer the knowledge from the older workers to the younger workers—in the context of performing their workflows.

This skills gap, plus shortages of rigs and crews to support the rigs, is requiring new ways to staff them, a way to “virtualize” the expertise by placing workers in centralized operations centers and have them support multiple physical operations. This skills virtualization is influenced by safety and security concerns. One way to reduce the risk associated with operation is by reducing personnel on board. Fewer staff is required at the well head if you let centralized workers work virtually in multiple platforms and rigs. And fewer workers will mean less exposure during incidents.

A further complication is that even when you have the expertise in your organizations, contacting the right person to address a particular problem is often difficult. Asset managers or field engineers may be away from their offices. Scientists may have many different devices for communication (a 2005 study by Sage Research found an average of 6.3 devices per person). This communications complexity obviously affects decision making.

The Challenge: Visibility and Context for Real-Time Decision Making

So this brings us to the overarching question: How do we connect the qualified experts to workers at the point of activity, and give them complete visibility to the problem and the interaction capability to address the problem in real time regardless of location?

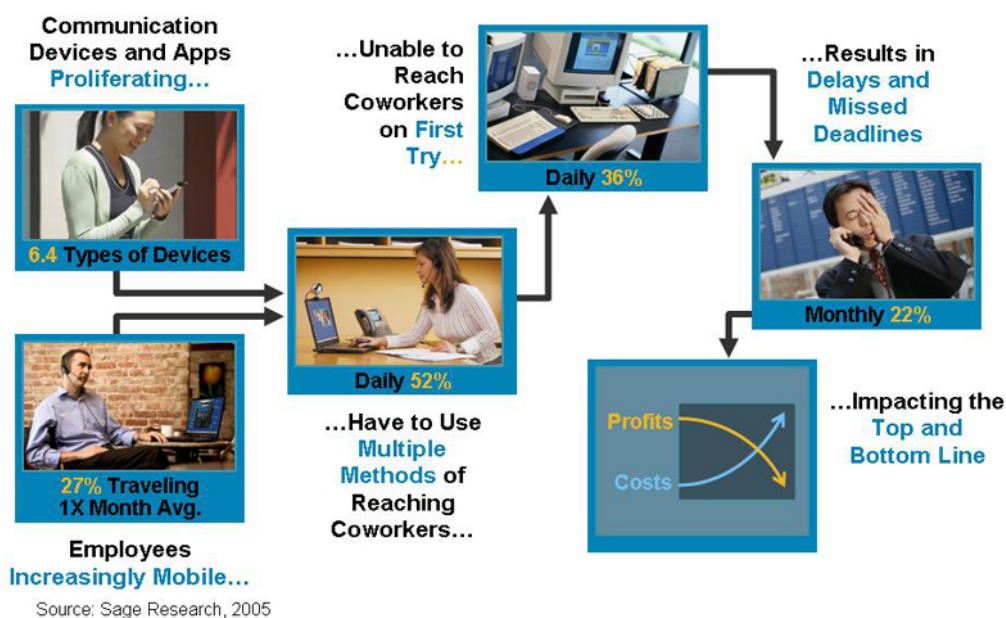
The Answer: Advanced Collaboration Through Unified Communications

The answer lies in the ability to create a platform of connectivity that enables us to bring the problem to the expert, provide a complete picture of the context of the situation, and ensure transparent collaboration between participants regardless of their location. We call this platform unified communications...the ability to transform the collaboration experience and provide real-time access to expertise.

What Is Unified Communications?

People communicate today in many different ways. Consider your own experience. In any given day, you might be on a desk phone, a wireless phone, a mobile phone, a radio, e-mail, voicemail, video conference, or instant messaging. Sometimes you are on multiple modes at the same time, and all of them operate independently. If someone wants to contact you, that person has to guess which mode would be best.

Figure 2. Delays in Contacting Team Members Affects Project Completion



Communications research shows that 27 percent of projects are temporarily halted because coworkers cannot reach the right person to get information or decisions. This work stoppage is a byproduct of the complexity that teams face when making decisions. Unified communications is about integrating all of these forms of communication into a common platform and simplifying communications.

Unifying the Channels of Communication

Simply put, unified communications is the integration of the different ways people use to communicate; data, voice, and video over any device, anywhere. Whatever you use to communicate works transparently with all the other forms of communication. Your PC can behave like a phone, your phone can behave like a PC, and they can both provide audio, Web, and video communication, facilitating effective communications for you wherever you are. And more importantly, all of these devices and styles of communication know about each other and work together transparently to create simple collaboration for context-rich interaction. A comprehensive platform will unify:

- Data communications such as e-mail messaging, instant messaging, and other computer-based collaboration tools such as virtual meetings and application sharing
- Voice communications such as your desk phone, mobile phone, radio, voicemail, and even your home phone
- Video communications such as video conferencing, video telephony, Webcams, and high-definition Telepresence.

All these forms of communication become “aware” of each other and can interact. You can use your data device (PC or personal digital assistant [PDA]) as a voice device by running a “softphone” client with a handset or headset. You can run data applications on your desk or mobile phone to receive news or status, or do simple data entry without a PC. Your voice call and application sharing are part of the same “call” and can interact between each other. Video is streamed from and to your PC and phone, facilitating rich interactions.

This unification is not about how the communication is transported—it is about how you use these services. You no longer have to change devices if you want to communicate in a different way. If you are working on your PC, say answering an e-mail message, and you want to respond with a phone call, you do not have to stop what you are doing and dial the number on a phone. Instead, you can use the Click-to-Dial feature on your PC. Or you can use this feature to have the call ring your desk phone if you prefer. Because it is all unified, transferring communication among the devices is transparent.

With your phone and your PC or PDA operating as a single unified device, adding intelligence to communication becomes possible.

Adding Intelligence to Communication

When you have a unified platform for communication, adding intelligence to understand “context” and change the way communication takes place is possible. Figure 3 describes the “intelligence” that makes unified communications different from traditional communications. Consider what this intelligence means for the oil and gas industry.

Figure 3. Adding Intelligence into Communications



Virtualization

The first element is to ensure that you “virtualize” services, and make them available on any device, at any time, anywhere—so your contact information and phone lists are not segregated by device. If you have a speed-dial phone number on your PC, it is available on your mobile or desk phone as a quick dial. Your voicemail is available on your PC or your phone, wherever you need it. If a service or feature is available as part of the platform, then you can use it anywhere, and tailor it to a specific environment. You are no longer tied to a specific device or medium to get your information or to interact.

What It Means for Oil and Gas

- Inspection engineers on rounds have access to the same toll plans and dial assistance as at their desk. If they have speed dials or common phone numbers at their desk or on their mobile phone, the features are available in both places, simplifying their experience and connecting them to peers more quickly.
- Different participants with different devices and capabilities (for example, one participant on a mobile, one on a traditional phone, and one on a PC phone client) can conduct collaboration sessions without a degradation of service. Field workers can be voice-only, reservoir engineers can share data and e-mail snapshots to the remote workers, and those with video can view either video streams from the field or video conferencing. The interaction services are all virtualized and available to all participants based on their device capabilities rather than their location.

Mobility

Mobility involves the unification of wired and wireless worlds and treating them as a single platform. With unified communications and a wireless handset, you can have two phones that act as your “desktop” or wired phone. Everything that is available on the desk phone is available on your wireless device, anywhere in the field, including any presence information and policy information set up. The call transmits over the same low-cost corporate LAN or wireless LAN and effectively gives free mobile calls while on site.

Mobility for Unified Communications can extend into the mobile (Global System for Mobile Communications [GSM] or Code Division Multiple Access [CDMA]) phone space as well. In this space, a single phone number will ring to the wired, wireless, and mobile phones simultaneously. Additionally, Nokia today offers a dual-mode phone that uses a corporate Wi-Fi network in the office and a GSM network outside the office. Integrating the mobile phone with unified communications makes it easier to contact people by removing the “should I call her desk phone or her mobile?” question.

Mobility also allows for the consolidation of voicemail; it allows for extension of calls to cell phones, PDAs, or even home phones, but then pulls back the call if the device is not answered so that the caller can leave a voicemail message in one place, the corporate voicemail system. You do not need to check cell-phone voicemail, corporate voicemail, or other message stores associated with point devices. You can store all voice messages in one place for easy retrieval.

The goal is for the choice of phones not to dictate which services you can consume, and multiple phones should not complicate how you are “seen” on the network. Wired or wireless, you are available or not. The intelligence is in the network.

What It means for Oil and Gas

- If maintenance or production supervisors receive a call on their desk phone but then need to leave to check some equipment, they can transparently transfer the call to their mobile phone and leave the office to check the equipment. If they are on site when the call starts and walk back to the maintenance office, they can pick up the desk phone and continue the call.
- Mobile field workers can look at the presence information on their mobile wireless phone to find out which of their colleagues are currently available and place a call directly to one of them, avoiding the need to leave a message or wait to get information needed to make a decision.
- Supervisors no longer need to publish their mobile number and their corporate Direct Inward Dial (DID) number. With Single Number Reach, the corporate DID number is always dialed and the intelligence within the system locates and automatically alerts you on your cell phone (or any number of remote devices), simplifying how you are reached and allowing for the creation of user-based filters and rules to streamline how you are contacted across multiple devices.

Presence

Presence is the intelligence to know the current state of anyone on the communications platform. The network understands who is available and what devices they are available on. The most common example of presence is the “buddy list” in instant-messaging applications. With one quick look you can tell if the person is connected, and whether that person is in a meeting or otherwise engaged. When you extend this concept across all forms of communication, you can quickly pick the right person to contact and the right medium to use, and be assured of getting that person the first time, reducing the time it takes to get the information needed for decision making (Figure 4).

Figure 4. Presence Information Across Multiple Devices



When you put the presence intelligence in the network, it becomes available to any device or application that wants to use it. So communication tools such as e-mail and productivity applications such as maintenance and repair operations (MRO) or Proxima can take advantage of presence. Even your exploration applications supporting team-based workflow, such as reservoir modeling or simulation, can embed the ability to quickly contact a person into the application, improving the teamwork aspect of the workflow.

What It Means for Oil and Gas

- Reservoir modelers can quickly review the people on the reservoir team to find out what means of communication is best-suited for them at that time, and easily select the person and medium appropriate for their interaction. When the person is not available, they can either select a different person or leave a message...and the message can be voicemail or e-mail, depending on the recipient's preferences. It thus takes much less time to collaborate during a workflow.
- Field engineers can take themselves "offline" when performing a field task to eliminate unwanted interruptions. When finished, they can go back "online" and retrieve their messages, either read them or listen to them, regardless of how they were created.

Speech

The ability to control your device by speech or by using text-to-speech or speech-to-text capabilities is important at times. Mobile phones have had "voice-activated dialing" for many years, but these capabilities have not translated into corporate phone systems. When you embed the capability into the platform, making it available for any device to use, you can communicate "hands free" more often, making operation easier for field personnel. Additionally, speech allows you to contact others through their spoken names instead of difficult-to-remember phone numbers, simplifying the interaction and masking potentially complicated dial plans.

What It Means for Oil and Gas

- Field service engineers can have their e-mail messages read to them as they travel from well site to well site by using text-to-speech reading. Taking advantage of this travel "downtime" gives them less time back at the field office at the end of the day to complete their work. They can also reply to an e-mail message with a voicemail message, all without stopping to push buttons on their phone.
- Inspection engineers can use voice dialing to contact either their maintenance supervisor or a colleague to discuss the equipment without having to take off gloves or remember the phone number by using voice dialing.

Policy

Policy intelligence is about defining the desired behavior of communications. Communications is a highly diverse and independent process. What works well for one person may not work for others. So why do virtually all traditional communications systems work the same for everybody? It comes down to a lack of intelligence about policy.

Policy is about defining a profile with preferences. Who are you, and how do you like to communicate? Are you a voicemail person or e-mail person? Do you answer your mobile phone during meetings, or would you prefer calls to roll into voicemail or indicate that you are unavailable? What about calls from your boss or partner? Would you take their call during a meeting? Do you want a specific message reply back to certain people when you do not answer the phone? You can set up these types of preferences to change the behavior of the unified communications platform.

These preferences then need to be enforced with a common policy across all communication devices, meaning that you get the experience that works for you, not a generic experience that does not perform the way you like. The only way that can happen is for the intelligence about preferences and policy to be embedded in the network. This setup helps ensure that every communication request is filtered based on how the recipient wants to get that communication, regardless of the source of the request.

What It Means for Oil and Gas

A geologist is preparing to interpret some seismic data and does not want to be disturbed, but is expecting a call from his boss. The geologist sets a policy that says “only let these ‘VIP’ people get through directly...show ‘unavailable’ to everyone else.” This setup allows the geologist to focus on the task without unnecessary interruptions, while still allowing critical communications.

Video

“A picture is worth a thousand words” is a commonly held belief, and this idea is naturally extended to “a video is worth a thousand pictures”. Communicating by words (voice) or pictures (data) does not deliver the full context of the situation nearly as well as through video. Communications experts’ research show that words and voice account for only 45 percent of how people listen and receive communication. In other words, 55 percent of the message is nonverbal and is lost if the hearer cannot see the person delivering the message. Video can improve communications by delivering full visibility to the interaction.

However, video is historically very difficult to integrate into communications. Video conferencing has typically been limited to dedicated “advanced-collaboration” rooms with finicky controls, whereas video telephony seemed like science fiction decades after it was first discussed in business. Unified communications, with the built-in intelligence to handle video traffic, eliminates these barriers. Finally, organizations can build the capacity to deliver video one time, and have it apply to all communications regardless of place, time, or device.

Putting video intelligence into the network enables the complete range of video options, from high-end “virtual presence” Telepresence systems to other room-based and traditional video conferencing, to desktop video telephony. Each of these becomes just another endpoint, and video becomes just another communication stream that is deployed and managed efficiently and centrally in a secure environment.

What It means for Oil and Gas

Geologists in the field can fully participate in an advanced collaboration conference from their standard IP phone using a simple Webcam. They can view the video feed from the video conference system of the room on their PC, and share any application, such as well logs or reservoir modeling, in real time with the team.

A field team, acting without a local medical team through staff scheduling, can use a handheld video-streaming device to discuss a medical situation on board a platform or rig to determine the best way to respond.

Integrating Unified Communications into the Way We Work

Using the network as a platform for unified communications, with the intelligence embedded in the network and available for every communication, offers oil and gas companies many opportunities to change the way they work (Figure 5). This transformation can be classified in three ways:

- Impromptu communications: Improving the way people interact in normal day-to-day basis
- Automating interactions: Including communications into process automation to extend from basic transaction processing into rich interactions
- Real-time decision making: Connecting people with data in the context of making decisions in real time or the “right time”

These three categories of transformation are central to how exploration and production companies can receive value from unified communications.

Figure 5. Unified Communications Changes the Way We Work



The Value of Improving Impromptu Communication

Work is getting more collaborative. You can no longer sit at a desk or work individually in the field to get your job done. Every day, you make unscheduled phone calls, send e-mail or text messages, use instant messaging, or have meetings with colleagues as part of doing your job. You have to reach out to get information, make decisions, or participate in workflows, and all these tasks are done with independent tools. Your mobile phone, your desk phone, your PC, your fax machine, and physical and virtual meetings are typically all separate tools that do not share information or functions. When you are on a phone call and want to share your presentation or other application, you use a separate tool. You have to stop the call, interrupt the flow, and work out how to begin sharing with a different tool. When the sharing begins you have to pick up the flow of creativity again. This productivity loss slows decision making.

In unified communications, all of these tools are integrated. If you are on a phone call and want to share data from an application, it is a natural act that does not disrupt the flow of the conversation. It is as simple as “look at this well log”, and after a couple of clicks everyone on the call can view the data. Adding people to the call is simple as well, achieved with a search click or drag and drop of a name into the call and they can view the same data. If you want to share a video stream (for example, “here’s what the mud looks like now”), you can bring a camera feed into the phone call and let all participants view the picture. It is simple because the camera is just another endpoint to unified communications.

Impromptu communications is a natural part of our daily jobs. Unified communications makes all forms of communications interact transparently, taking advantage of the intelligence of presence, mobility, policy, and video to remove the friction in real-time interactions.

Example

Petrobel (an Egyptian drilling operator for ENI) had a common business challenge: the operator was working on a field previously abandoned because of pressure and temperature complications. New technology was allowing the operator to reenter the field and reassess the economic viability of getting to the reservoir. During this complex drilling with new technology, the drilling supervisor frequently needed to communicate with the experts in Italy. However, communications on the rig were limited to radio when they left the office block. To speak with the experts, the drilling had to be paused while the supervisor went to the office block to call, and then resumed when the supervisor returned to the drilling floor.

By extending the unified communications solution with Zone 1 EX-Certified wireless mobility to the rig control room, Petrobel’s drilling supervisor was able to avoid work stoppage and improve the company’s decision-making process. In addition, operators could use video collaboration from the office block using the unified communications video telephony—all over the existing very-small-aperture-terminal (VSAT) link used to get communications back to shore. In the future, if they could secure an EX-certified PC, they could actually extend video and data collaboration down to the drilling floor. For Petrobel, unified communications could mean a \$9,000,000 annual savings in operating costs and faster well completions, and it could improve access to decision makers in real time.

The Value of Moving from Transactions to Interactions

Today, many business processes have been automated to remove inefficiencies. This automation is usually done by mapping out the process, applying workflow technology to automate data capture, and route the information to improve control and visibility. MRO is a common example from the oil and gas industry. Taking the maintenance work order through purchasing and repair automates the flow of forms and data and improves efficiency.

But even this highly automated process has gaps, where the next step of the process involves mapping calls for person-to-person or team interaction. For example, the process may call someone in scheduling to find out if an engineer is available, or an engineer may need to call the manufacturer for support on a part installation. The system provides the visibility to see that the purchase order is at a certain approval stage, but you may have to call the person to find out why that person has not approved it. These types of “soft” interactions are traditionally very difficult to automate.

Unified communications can remove this limitation. When the intelligence to quickly connect people, capture the contact that takes place, and capture any value or decisions made during the contact is employed, a new wave of productivity in automation is released. This process is called transforming a transaction into an interaction, where the transaction is surrounded by the context of the situation to improve and speed decision making in transactional processes.

The Value of Real-Time Decision Making

The heart of the challenge for reducing the time to first production or improving recovery rates is enabling real-time decision making. To connect the people making the decisions together with the data that they need to base those decisions on will improve efficiencies and speed the exploration and production processes. Traditional solutions to this challenge involve knowledge-management systems such as “knowledge databases”, collaboration tools such as discussion groups or wikis, or Web portals and data analytics to expose data and trends from underlying systems. All of these aids are designed to help people find the information they need to best address their problems.

These traditional decision-making aids are impeded by one common limitation: connecting people and data requires many different, independent tools that are difficult to bring together. Integrating voice and video communications into the analytical tools such as seismic interpretation, supervisory control and data acquisition (SCADA) historians, or reservoir modeling is beyond traditional communications solutions. Even when they are brought together in the form of an advanced collaboration environment (ACE), they are high-cost projects that require special rooms to be built and maintained, thereby limiting their scope of collaboration.

Unified communications, with its unique simplicity for combining data, voice, video, and mobile communications, becomes a primary facilitator of real-time decision making. Inclusion of presence, click-to-talk, or multiple styles of video together with any PC or data application brings people together in rich context, regardless of their location. For example, a work-over manager on a control truck in the middle of an oilfield can interact with the same voice, video, and collaboration tools that are used in any office around the world.

Example

In the United States, public-sector organizations have deployed first-response trucks to incidents such as floods, fires, and potentially pipeline or oilfield explosions to quickly connect to the crisis management team, the local asset manager, and local emergency response teams on site.

Through specially equipped command vehicles, radio, telephony, video streaming, Telepresence, and data applications such as SCADA, everyone in the response team can view historian portals. This information can be extended anywhere in the incident area using mobility options such as Wi-Fi video cameras.

Unified communications forms the platform for this rich collaboration environment, which eliminates communication breakdown between disparate radio networks, gives participants a common understanding of the current state of the incident, and improves decisions made to respond to the incident. For health, safety, and environmental (HSE) incidents, this real-time decision making can save lives.

The Future: Unified Communications in Real-Time Access to Expertise?

Unified communications capabilities can deliver many benefits to oil and gas companies today. In the future, it will do even more to connect less-experienced workers to experts that have the experience to make the right decisions quickly. This section shows how other industries are solving the same problem that the oil and gas companies face when using unified communications.

Advanced Collaboration Virtualizes Experts in Financial Services

The first example is in financial services, specifically retail business banking in India. A leading bank was looking for ways to reduce revenue leakage and improve margins in servicing its small business customers. The commonalities with the exploration space lie in the lack of experienced personnel in the field to answer complicated questions about technical products. Where exploration does not have enough experienced personnel, such as drilling supervisors for every rig, the bank could not afford to put an expert for every product in every branch. This skills gap led to the bank's losing sales because the decisions to be made in the branch required expertise that they did not have onsite.

To address this problem, the bank had to figure out how to "virtualize" the expert from a central location into the field office in a way that provided the customer with enough feeling of engagement and "context" to capture the sale. But the expertise needed at any given time was unknown until the opportunity arose. The field agent needed to be able to quickly find the right expert given the business challenge at the time. A further goal was that the field agent would be party to the interaction, a scenario that would increase the skill of the local resource and improve that person's ability to perform the task in the future.

Figure 6. Real-Time Access to Experts in Financial Services



In other words, the bank needed to locate an expert in a specific product or skill set from the broader organization and collaborate in a context-rich, real-time manner to reach a decision...very much the same problem set as oil and gas.

The solution the bank developed used unified communications to:

- Let the local branch representative use presence to locate an expert in the specific financial product the bank needed to sell to the customer
- Enable “one-click connect” to that expert
- Provide a rich-media collaboration, sharing Web applications and video telephony to collaborate with and sell to the customer
- Capture the data in real time with the customer to speed the financial transaction and close sales that would have been lost before
- Improve the experience for high-value customers by creating special all-in-one options for interaction

The net result is that the bank uses virtualized expertise to capture sales at enhanced margins, transfers knowledge to the local resources, and gains market share in a growing market, a scenario that could ultimately mean a \$3.5M annual benefit for the bank.

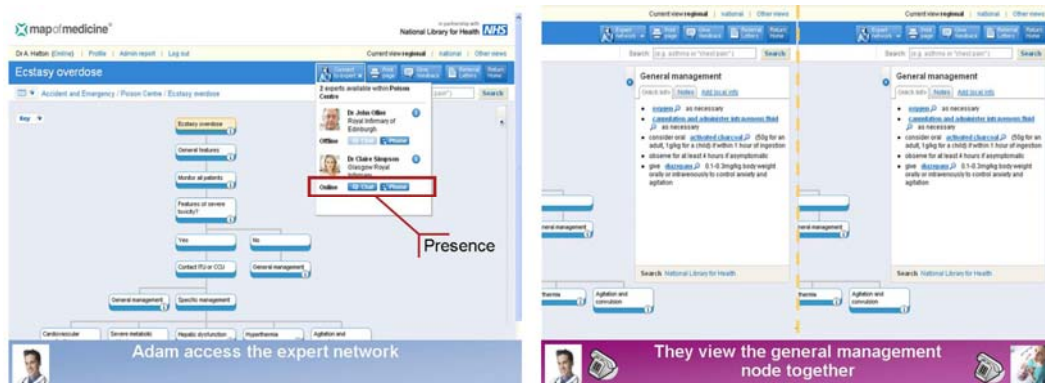
Collaborative Medicine in Healthcare

Another industry that shares characteristics with the oil industry is healthcare. In healthcare, as in exploration and production, day-to-day activity can be highly specific and technical, where decisions require expertise that is best achieved through years of experience. Paradoxically, at the point of activity such as the local clinic or hospital, there are typically no specialists that have those years of experience. Healthcare, like Exploration and Production, must somehow virtualize the knowledge and expertise in those few experts to assist the younger physicians and clinicians in their diagnosis and response out in the field.

The United Kingdom began an expert-system project to transfer this wealth of information from the experts to the younger doctors, called the “Map of Medicine” (MoM). This system, a first of its kind, aggregated and documented the standard practices around healthcare. From descriptions of symptoms, through the protocols for treatment that nonexperts could use to find the latest practices in a given specialty, the system produced a wealth of practical information.

Although the program was successful in its own right, it did suffer from the same limitation of traditional expert systems. There was no way to interact with the experts, only the system. When a younger doctor wanted some advice about how to interpret the data in the system, that doctor had to rely on some other form of tracking the experts down and connecting with them.

Figure 7. Real-Time Access to Experts in Medicine



Unified communications provides the answer to this problem. Using the intelligence in the platform, the team behind the MoM is developing a prototype that:

- Allows doctors to find the symptoms that they believe best apply (data application)
- Locates the preidentified experts who are currently available and determines the method for contacting them (presence)
- Selects a method to connect to the expert and automatically connect the two parties
- Unifies the voice and MoM browsing, taking the expert to the same part of the map that the local doctor is viewing
- Enables the expert to direct the local doctor to browse the map together, confirm diagnosis, and decide the best course of treatment
- Helps ensure that the local doctor makes a better decision about treatment

With this program local resources will have not only system data to help make decisions, but also rich interaction with the experts around a specific domain, providing the context and nuance to the decision-making process. This scenario will result in better decisions and more effective patient care.

Unified Communications: The Platform to Connect, Collaborate, and Compete

Through these examples of what other leading organizations are doing in oil and gas and other industries with similar needs for exploration and production, you can envision how you can apply these tools to your specific problems. Unified communications, with its ability to unify data, voice, and video communication into a transparent experience available anywhere from any device, can help E&P companies:

- Connect experts and field workers quickly and easily
- Collaborate with rich context and interaction, unifying voice and video with the data and analytics from their applications
- Compete through better decision making, enabled by real-time access to expertise delivered at the point of activity

The challenge of transferring the decades of experience from the people who have “been there, done that” to the next generation of engineers is not an easy one. Unified communications can simplify interactions and be an important part of the journey.

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