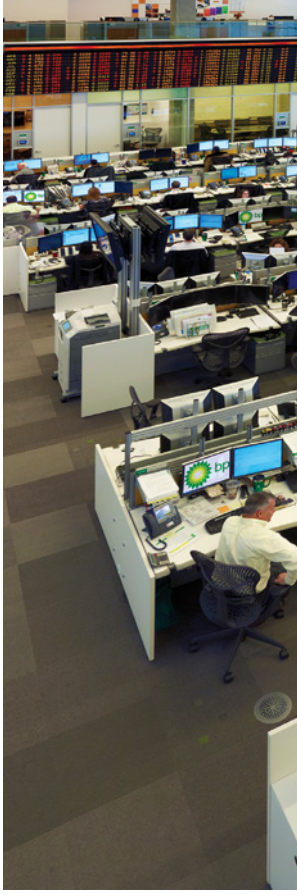


BP Gets In Sync

AV Over IP Keeps Global Energy Giant In Touch

by Carolyn Heinze

One of the largest energy companies in the world, BP provides customers with energy, fuel, petrochemicals for everyday items and retail services. Presently, the company boasts four trading floors located in London, Singapore, Houston and Calgary. BP is currently in the process of expanding into a fifth trading floor, which is slated for Chicago.

A key function in all of these facilities is streaming audio and video: traders have access to real-time data not only via a wall of large-scale LCD monitors, but they can also have this information broadcast to them directly on their desktop and/or laptop computers. Sounds simple enough, but with digital video the task of achieving synchronous network delivery of both video and audio from multiple sources to multiple displays in high definition is no small one, as both AV and IT teams learned on BP's trading floor in Houston, Texas.

"The traders have the option of viewing any images on a public display at the end of a line of desks, or they can do it on their desktop," explained Joe Christensen, technology design consultant at Houston's Datacom Design Group. "One of the first challenges was getting that synched up."

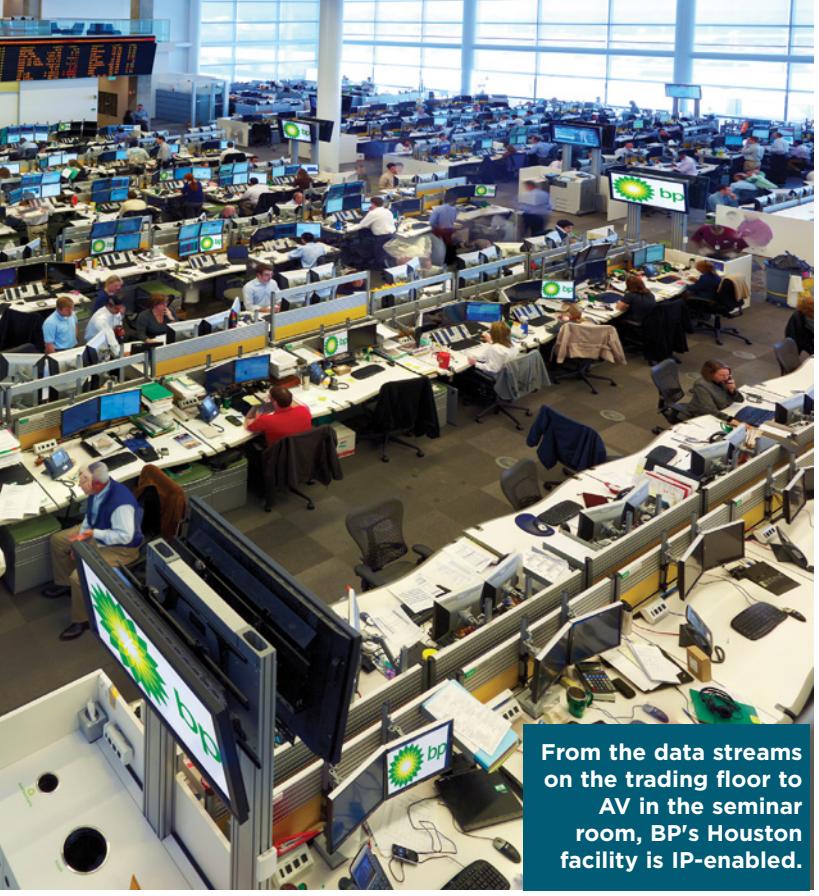
Christensen's colleague, Richard Brink, an associate principal at Datacom, notes that part of the issue was related to BP's desire to stream to different devices, including set-top boxes and computers. "You're on the same network, but you're dealing with a computer and you are also streaming to a set-top box," he said. "It's two different animals because you are streaming to two different environments."

Joe Gaucher, chief technology officer at HaiVision Network Video in Lake Forest, Illinois and founder of Video Furnace, likens it to the age-old scenario whereby one is watching a television program where the actors' lips aren't synched up with the audio track. "The problem was that the traders liked to look at their individual information channels broadcast to their desktops so that they could watch and listen to them, but some of those channels are also the channels that are on the large-panel displays," he illustrated. "With all of the current technologies that were out there, they were completely out of synch with each other."

While this issue is a little easier to solve in the analog world, the fact that in the IP world it's difficult to control when packets arrive to various devices makes synchronization tricky. "Those various devices even have delays built into themselves," Gaucher said. "For instance, you take one manufacturer's large-panel display versus another with the exact same signal, and it takes one manufacturer's product a longer time to refresh than another manufacturer." This makes achieving harmony between devices are the more difficult.

Philip R. Whitley, IT&S project manager at BP, explains that another project goal was to use minimal bandwidth on the facility's network infrastructure. "The whole building essentially sits on the same network, and some of the solutions that we were finding required us to use one-gigabit connections just to run one channel," he said.

During construction, BP built a mock-up lab that would allow them to 'stage' the video distribution system in order to test the technology beforehand. HaiVision provided the best solution with the final installation featuring the manufacturer's Mako/Makito HD H.264 encoder technology, an IP video distribution system by Video Furnace, 80 Stingray set-top boxes, and HaiVision's InStream player technology for over 1,000 desktops. The LCDs are by NEC.



From the data streams on the trading floor to AV in the seminar room, BP's Houston facility is IP-enabled.

"We went through it and scrutinized the software, and we worked with HaiVision to tweak their software and get it perfect to where we actually delivered it," explained Terrell Coble, senior systems consultant/account executive. "It was something that you don't usually see in the AV world, because setting up a lab and doing software development is one thing, but at the enterprise level it's completely different."

Gaucher explains that one advantage of HaiVision's InStream technology is that it provides bi-directional communication between the server and the viewer. "This is something that, generally, a desktop install player does not have the freedom to do," he said. "You don't own your Windows Media Player; you don't own a QuickTime Player." InStream, however, is client-server based. "Because we have this bi-directional communication capability, we can negotiate with each other. It's a very large harmonious dance with all of the devices, synchronizing with each other."

Coble notes that much of the daily management of the system is automated, facilitating day-to-day operations. "The set-top boxes can be managed remotely, and the clients can be remotely managed as far as the PCs are concerned as well," he said. "Anything that is repetitive can be automated because it's all digital technology and it has an operating system." A Linux client runs on the set-top boxes, while a Windows client runs on the PCs. "All of those are synchronized because they are all running the same software from the HaiVision's Furnace server." The Furnace server is actually doing the calculation for the delivery, de-coding and buffering time needed to have everything in synch.

For his part, Whitley deems the daily management of the technology to be straightforward. "We occasionally receive a call to change a channel, but that's about all we receive calls for," he said.

Whitley notes that BP traders are now able to watch high definition video at any point in the building, which was not possible before. "We can do that in a fully flexible manner, because any time we want to add a new TV, it's just a matter of getting a network drop – of which we have several in the building—so it makes it very flexible and future-proof in terms of growth capacity," he said. "It's something that our users enjoy, and it's an added benefit that beforehand we weren't able to provide."

As the distribution of video to the desktop grows increasingly standard, both technology developers and end users are starting to explore the shipping of video and audio to other devices, especially those in the mobility space, Gaucher notes. "Now we're going to have tablets that are very capable of streaming video while we are walking around with them," he said. "Synchronization is going to become increasingly important as the employee force becomes more mobile, even if you're just being mobile at your own office."

Carolyn Heinze is a freelance writer/editor.

pop quiz

AV OVER IP

You need the synchronous network delivery of audio and video from multiple sources to multiple displays. A no brainer? Not quite. Over Ethernet-based IP networks, it's not so easy. Solution: Design and collaboration by the Whitlock Group, Datacom, and HaiVision, made magic happen in this British Petroleum facility in Houston. Another Texas company, NetStreams, specializes in streaming AV over IP. Their recent acquisition by ClearOne was designed to shake up AV over IP in digital signage and videoconferencing environs. Visit netstreams.com for more info.

For more information:
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