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Afognak Native Corporation (ANC) built its five-story corporate headquarters Alutiiq Center in Anchorage AK.

NATIVE ALASKANS EMBRACE MODERN AV

New Afognak Alutiiq HQ and Museum features innovative display and videoconferencing technologies.

BY SHONAN NORONHA

High definition TV channels in the lower 48 bring us the breathtaking scenic beauty of the last American frontier, its fragile environment and glimpses of the lives of native Alaskans. Seldom do we see or hear about the adoption and productive use of modern communications technologies by Native American Alaskans, as they strive to preserve their lands and their ancient culture, and make significant economic strides forward. One major success story is that of Afognak Native Corporation (ANC), which has grown into a diverse company with more than 4300 employees and a $500 million worldwide enterprise, with operations in construction, manufacturing, technology, physical security and IT.

The ANC recently completed construction of its Alutiiq Center in Anchorage, a world-class, five-story corporate headquarters replete with modern AV/IT technology in the boardroom, conference and meetings rooms, and a museum dedicated to the history of the Alutiiq people and Afognak Island. Anchorage mayor Mark Begich calls the new facility a "gift" to the city of Anchorage and "a statement of the success of the company and its impact on the state's economy."

Northern Enclosure

The many challenges facing the integration team on this ambitious project included the facility's remote location, the high aesthetic expectations and the advanced capabilities required for corporate operations. *Sound & Communications* talked with the Virginia Beach VA-based AV design and integration firm Virginia Integrated Communication (Vicom), ANC executives and Anchorage AK-based KPB Architects about the vision and implementation of this dramatic HQ building and museum.

Distances were overcome using a combination of technology, perseverance and teamwork. The integrator had already installed Polycom VC at other ANC offices, and this proved invaluable in overcoming time and distance barriers. "We used VC a lot with the client during the design phase," reported Avery Prindall, manager, AV sales engineering for Vicom, who was the lead engineer on the Alutiiq Center project. Efficient teamwork was

Shonan Noronha, EdD, an independent writer/producer and training consultant, is the author of three books and numerous articles about television, AV, multimedia and music. Send comments to her at shonan@optonline.net.

also critical to the project's success. "The entire design process was performed using floor plans and the invaluable assistance of KPB Architects and Anchorage-based RBA Engineers," said Prindall. "RBA provided the design for all the wiring conduit, which proved to be perfect."

Delivery of equipment provided multiple challenges. The remote location required that equipment be delivered directly to the site, without the usual pre-staging at Vicom. Additionally, because this was a new construction site, elevators were not in operation during much of the installation. "This created the need to muscle equipment, racks, tools and cabling up four to five flights of stairs," recalled Prindall. The long distances involved were also a factor. "Traveling back and forth from the East Coast was tiring, but Alaska is so beautiful in the Summer."

Dynamic Displays

Large visual displays of Alutiiq culture are a key element in this 75,000-square-foot facility. The South façade is adorned with a spectacular 12'x24' glass panel with etchings of ancient Alutiiq petroglyphs, and the museum features a 14-foot model of the Native Village of Afognak, which was destroyed in the 1964 earthquake and tsunami.

Among the AV highlights in the museum are a 133-inch-diagonal custom Nippura Blue Ocean rear screen, with a Da-Lite custom rear projection module and Panasonic 6000 lumen three-chip DLP HD projector. Integrated with an Extron quad display unit, Graphic Still Store, a Crestron touchpanel, Pioneer DVD players, Onkyo audio amplifier and Speakercraft in-wall speaker system, this display provides a dramatic, interactive experience for visitors.

Two major conference rooms are equipped with Polycom VSX 8400 IP videoconferencing systems. The 5th Floor boardroom is used primarily by the board of directors for quarterly meetings, monthly committee meetings and, if available, as a secondary videoconferencing room. It features an 84-inch-diagonal custom Nippura Blue Ocean rear screen, Panasonic DLP projector, Sony DVD/VCR, Crestron touchpanel and an Extron quad display processor. The room also has an additional camera and a 77-inch SMART Board screen, which is used in non-projection mode on the other end of the room. A 15-inch diagonal SMART Sympodium ID250 Interactive Pen Display is also available.

The main 4th floor conference room, used primarily for videoconferences, is equipped with two 84-inch-diagonal custom Nippura Blue Ocean rear screens. A lot of business information is shared during these VTCs, so one of the screens is used to display data and graphics.

SMART Board rear screen projection, NEC short-throw projectors, and other AV equipment are installed in smaller conference rooms on the 3rd, 4th and 5th floors.

Vicom also designed and installed Avaya IP Telephony and Unified Communications systems in the Anchorage Corporate Headquarters and several of the remote locations in the lower 48 states. Among other advantages, this enabled voice calls between locations to be routed over the IP network with simple four-digit dialing. Soft phones were added to many computers, enabling travelers to stay connected via any internet connection.

Two 84-inch rear screens provide the images for all meetings in the 4th floor conference room. The screens use only 40 inches of space from the room. The table, which provides an unobstructed view of all meeting participants for videoconferences, offers connectivity for laptop computers at every seat.

What's In A Display?

Seeing is believing when it comes to large screen displays for business use, so Vicom gives its customers a demo of options at its Virginia Beach HQ offices. "Our conference rooms are quite large, and traditional 50- or 60-inch plasmas would not have been effective," explained Karl McLaughlin, senior vice president for Alutiiq, with oversight responsibility for this project. "Purchasing larger plasmas would have been cost prohibitive and would have imposed too many technical limitations. Thus, we were forced to look in a new direction."

Referring to Vicom's demo of plasma, LCD and rear screen projection, McLaughlin said, "I was immediately impressed by the clarity and contrast, and the flexibility provided by the Blue Ocean screens from Nippura, and that Vicom would customize the screens to any size made all the difference."

Vicom's Prindall said, "We showed

the client both standard and HD content on the various screens. We also talked about the pros and cons of each type of projection system. Obviously, one of the pros of a rear screen is that you can stand in front of it without having a bright light in your face and without having shadows on the screen."

The only hurdle left to overcome was the throw distance that would be required for 84-inch diagonal screens in the conference rooms and the 133-inch diagonal screen in the museum. "Typically, for an 84-inch diagonal screen, we would have required a 10- to 13-foot distance," noted Prindall. "Da-Lite designed a customized rear projection module so the required distance was reduced to only 40 inches. The image is bounced off two first surface mirrors. So, basically, the projector is installed near the floor and projects up slightly. The image then bounces off a small mirror at the floor level, then projects onto a large mirror that's at an angle to the screen, and then onto the screen itself. We also had to put a short-throw lens on the projector."

A single 84-inch rear screen in the 5th floor conference room is suspended from the wall with standoffs providing a flush appearance with the surrounding white glass wall panels. A hidden pocket door conceals the equipment rack (at the left of the screen). (A marble table has since replaced the temporary table shown here.)

Because most of the AV design phase was done without Vicom actually being onsite, "We got from the architects the amount of space they were willing to give up in the room for the rear screen," Prindall reported. "We then provided Da-Lite with the room measurements, so they could design a custom rear projection module. Based on our AV design, we also gave them the height from the floor to the bottom of the screen, from the floor to the top of the screen, the width of the screen, and where exactly the screen would be in relation to the wall: back of the wall, front of the wall, center of the wall. We included the type of projector and lens we would be installing."

McLaughlin is extremely pleased with the outcome. "They provided us

Equipment

Far left: The 4th floor conference room rack is recessed into the customer's cabinetry.

Left: The 5th floor conference room rack

5th Floor Afognak Boardroom

Projection
1 Da-Lite custom rear projection module
1 Nippura Blue Ocean .7 gain rear screen, 84" diagonal, 4x3
1 Panasonic PT-D3500U 3500 lumen DLP projector

Videoconferencing
1 Adtran ACE3 triple NT1
1 Polycom VSX8400 IP videoconferencing system
1 Polycom VSX8400 quad ISDN BRI module
1 Polycom Powercam aux camera for 8000 series
2 Polycom ceiling mic arrays

Control
1 3Com OfficeConnect gigabit switch 5
1 Crestron PRO2 controller
3 Crestron C2COM-2 additional COM ports for PRO2
1 Crestron TPMC-10 WiFi 10" wireless touchpanel w/docking station
3 Crestron IRP2 IR emitter probes
1 Crestron C2ENET-1 Ethernet card for PRO2
1 Linksys 802.11g wireless access point

Audio
6 JBL Control 26C speakers
1 Speakercraft S4DC 4-pair speaker selector
1 TASCAM AV-452 presentation AV mixer amp

Switching, Distribution
1 Extron Crosspoint 300 12-input 8-output matrix switcher w/audio
1 Extron 1-input 3-output composite video/audio distribution amp
1 Extron DVS 304 scaler
1 Extron 6-input video, audio switcher
1 Extron MGP-464 quad video processor
1 Extron MTP T AV RCA video, audio transmitter-RCA
1 Extron MTP R AV RCA video, audio receiver-RCA
2 Kramer VP200 1-input 2-output VGA distribution amps
3 Network Technologies VGA, audio extenders via Cat5 up to 600'
1 Network Technologies VGA extender via Cat5 up to 600'

Misc.
2 ClearOne ceiling-mounted document cameras w/RS232 control
1 Da-Lite 32" Providence lectern
1 Interlink VP6410 wireless keyboard/mouse/presenter remote 30'
1 Middle Atlantic WRK-24SA-27 equipment rack with accessories
2 Network Technologies Cat5 USB extenders
1 SMART Sympodium ID250 interactive pen display
1 SMART Technologies 77" diagonal SMART Board model 680 (for use in non-projected mode)
1 Sony SLV-D380P DVD/VCR combo
Calrad, Crestron, Extron, Liberty cabling

4th Floor Main Conference Room

Projection
2 Da-Lite custom rear projection modules
2 Nippura Blue Ocean .7 gain rear screen, 84" diagonal, 4x3
2 Panasonic PT-D3500 3500 lumen DLP projectors

Videoconferencing
1 Adtran ACE3 triple NT1
1 Polycom VSX8400 IP videoconferencing system
1 Polycom VSX8400 quad ISDN BRI module
2 Polycom VSX ceiling microphone arrays

Control
1 3Com F37236 OfficeConnect gigabit switch 5
1 Crestron PRO2 controller for touchpanel w/2 additional COM ports for PRO2
1 Crestron C2COM-2 additional COM Ports for PRO2
1 Crestron TPMC-10 WiFi 10" wireless touchpanel w/docking station
2 Crestron IRP2 IR emitter probes
1 Crestron C2ENET-1 Ethernet card for PRO2
1 Linksys 802.11g wireless access point

Audio
6 JBL Control 26C speakers
1 Speakercraft S4DC 4-pair speaker selector
1 TASCAM AV-452 presentation AV mixer amp

Switching
1 CELabs AV-400 1-input 4-output video/audio distribution amp
1 Extron 8-input 4-output VGA switcher w/audio
1 Extron MSW 4V 4-input video switcher
4 Extron Cable Cubby 800 table interfaces
1 Extron DVS-304 scaler
1 Kramer VP200 1-input 2-output VGA distribution amp
4 Network Technologies VGA & audio extender via Cat5 up to 600'
1 Network Technologies VGA extender via Cat5 up to 600'

Misc.
2 ClearOne DocCam II ceiling-mounted document cameras w/RS232 control
1 Hitachi DVPF35U DVD/VCR combo
1 Interlink VP6410 wireless keyboard/mouse/presenter remote 30'
1 Middle Atlantic 24-space sliding rotating rack w/accessories
2 Network Technologies Cat5 USB extenders
1 SMART Technologies SB680 77" diagonal SMART Board model 680
1 SMART Technologies Sympodium ID250 interactive pen display
Calrad, Crestron, Extron, Liberty cabling

1st Floor Museum

Projection
1 Da-Lite custom rear projection module
1 Extron MGP 464 quad display unit
1 Extron GSS100 Graphic Still Store
1 Nippura Blue Ocean .7 gain rear screen, 133" diagonal, 16x9
1 Panasonic PT-DW7000 6000 lumen HD DLP native 16x9 projector

Control
1 Crestron PRO2 controller for touchpanel
1 Crestron STX-1700CW 2-way color touchpanel w/wall-mounted docking station
1 Crestron C2ENET-1 Ethernet card for PRO2

Misc.
1 Avaya IP Telephone System
2 JBL 4" Control 24C Micro 2-way speakers
1 Onkyo TX-SR55 Pro 2-zone audio receiver w/component switching, optical audio
2 Pioneer DVD-V5000 pro progressive scan DVD players
1 Speakercraft BassX-W10 in-wall powered subwoofer w/250W amp
1 Speakercraft In-wall retro construction mount for BassX in-wall subwoofer
2 Speakercraft AIM LCR 3 in-wall speakers
1 VFI AV20RU 20-space cabinet w/locking doors, accessories
Calrad, Extron, Liberty cabling

List is edited from information supplied by Virginia Integrated Communication Corp.

with screens large enough to fill our rooms, at a much more reasonable cost than would have been available with other technologies," he said.

The Museum

In the 1200-square-foot museum, installation of the giant Nippura 133-inch Blue Ocean rear screen was accomplished with only nine feet of space behind the screen. Multimedia content on the giant screen can be displayed in four windows simultaneously, through an Extron MGP-464 multi-graphic processor. Custom-produced DVD movies are shown in two of the quadrants. Using the Extron GSS100, a slide show of photos is presented in another window. The fourth displays a continuous presentation of information related to the museum.

"We installed a Crestron STX-1700C touchpanel on the wall next to the screen so visitors can choose to make any of the four quadrants go to full screen and then switch back to the

Vicom Corp.

Virginia Integrated Communication Corp. (Vicom Corp.) was founded in 2001 by Dennis Schliske and BJ Hughes in Virginia Beach VA. It provides total systems integration of voice, video, multimedia and data solutions. "We were first in the Hampton Roads area to offer videoconferencing solutions," said Schliske. "We also offer full conference room integration."

Vicom's 48 employees service nearly 4000 customers. Its revenue has been growing at an average rate of 42% per year over the past five years. "Our rapid growth has been recognized by the State of Virginia Chamber of Commerce," noted Schliske. In 2005 and 2006, the company received the Fantastic 50, an annual award that recognizes the 50 fastest growing corporations within the State of Virginia. It was also named 2006 Small Business of the Year for the City of Virginia Beach. Vicom has more than 50 direct vendor partnerships and is proud to have attained distinguishing levels of sales and support from several manufacturers.

Among its recent projects are the design and installation of videoconferencing, video bridge, multimedia technologies and custom furniture at Ft. Meade Army Base; the integration of the LAN network, servers, IP telephone system, videoconferencing and multimedia, including the Emergency Operations Center and 911 Center at Pasquotank County; and the integration of multimedia technologies for 140 classrooms in a high school for Chesapeake Public Schools.

For more information, go to www.vicom-corp.com.

quad," noted Prindall. "We programmed it to offer interactivity, but limited the options, to make it easy for the user."

The touchpanel is locked into its cradle to prevent tampering, but there is a hidden "press-and-hold" button that allows authorized personnel to remove the touchpanel from its cradle and use it wirelessly. "The customer uses it in this mode for special events, so we programmed additional features that enable the user to access controls such as audio volume, DVD transport and HD cable TV," reported Prindall.

The main audio for the museum's large rear screen is provided through an Onkyo TX-SR55 commercial audio amplifier and an in-wall speaker system. The speaker system features two Speakercraft AIM series in-wall speakers and an in-wall subwoofer. A separate 250-watt amplifier powers the subwoofer. A "Babbling Brook" audio feature was also added around a hanging kayak exhibit through zone 2 on the Onkyo amplifier and two JBL Control 24C speakers. A Mackenzie Minimac repeater was used to reproduce the audio in a continuous loop.

The museum, which features a 133-inch rear screen, is dedicated to the history of the Alutiiq people and Afognak Island.

This custom rear projection module allows for the museum's 133-inch screen to be filled while requiring only nine feet of space. These modules were also used in both of the large conference rooms.

Total system control is provided at the head of the conference table. For convenience, the wireless touchpanel can be removed from the cradle for system operation anywhere in the room. The ability to operate PC applications and annotate over content is available through a wireless keyboard, mouse and interactive pen display. An IP telephone set is available for company voice communications.

Being There

Videoconferencing bridges Alutiiq Center with its offices across the country. "We began deploying VC systems roughly two years ago when our DC and Chesapeake VA offices were installed with Polycom systems," reported Joe LeNoach, systems information manager for Alutiiq, who has been involved with the decisions and purchases for AV, videoconferencing and IP telephony equipment at all the Alutiiq locations.

Afognak-Alutiiq is a geographically dispersed company with Polycom VC systems installed at eight locations: Anchorage AK (two systems), Charleston SC, Chesapeake and Vienna VA, Dallas TX, Denver CO, Huntsville AL and San Diego CA. The next installation will be at the Kodiak AK office. "The technology allows us to hold meetings that, in the past, would have required both planned and unplanned travel. We are now able to have impromptu conferences without the added time and expense of travel," noted LeNoach.

Videoconferencing is used daily throughout the company. "On average, we are scheduling two to three videoconferences a day, many of which are multipoint meetings between sites," LeNoach said. "The conferences include Divisional Meetings, Executive Meetings, Board Meetings and Staff Meetings. Additionally, we have utilized the technology for interviewing potential employees, as well as for internal training."

Integrating a Unified Communications Solution greatly increased the capabilities of this widely dispersed organization. "All of our internal site-to-site VCs communicate through our IP network and VPN connections. We've also deployed ISDN/BRI connections, allowing us the flexibility to communicate with external customers and government agencies. As an added benefit, the BRIs serve as redundancy in the event of an IP network outage," LeNoach explained.

The 4th floor Main Conference Room is used primarily for VC. "The frequently used applications include Microsoft Office products such as PowerPoint, where the presentation can be viewed simultaneously by other VC locations," reported Kevin Ivanoff, systems information manager, Alutiiq Center AK. "In this conference room, we have two 84-inch Blue Ocean screens, two ceiling-mounted document cameras, two ceiling-mounted microphones, DVD/VHS, cable TV, a SMART Board Sympodium, and four data and VGA connections integrated into the table."

Designing a user-friendly touchpanel interface is one of the most important elements for a complex AV system. Extensive collaboration with the customer is essential for success. "Touchpanel designs must be based on specific room requirements and, most importantly, ease-of-use," noted Michael Waldbaum, Vicom's programmer who worked on the Alutiiq Center project. "The ability to update or change touchpanel programming remotely was important for this project."

Customer Network

For this requirement, all control systems were attached to the customer network. This allows for touchpanel programming to be performed remotely on any system in the building. "This presented some challenges because it required someone local to the system to be available to assist," Waldbaum reported.

The 5th Floor Boardroom and 4th Floor Main Conference Room are programmed with three modes: Videoconferencing, Local Presentations and Audio Conferencing. "To prevent multiple page flips, two main pages are used for these functions," explained Waldbaum. Small popup windows are used for camera controls, VCR/DVD

controls, CATV controls, etc. "Because the 4th floor Main Conference Room has two projection screens, the touchpanel is programmed to allow different sources to be selected on each screen in the Local Presentation mode. In the Videoconferencing mode, the touchpanel is programmed so any source in the room (laptop, main computer, ceiling document cameras, VCR/DVD, etc.) can be sent to the far end while videoconferencing."

Lighting and shade controls are on the main page of each touchpanel. This allows for the lighting or shades to be controlled from the touchpanel without turning on any other system components. "We also placed lighting and shade controls on the Local Presentation and Videoconferencing modes so they could be adjusted if desired," noted Waldbaum. "Several preset buttons are programmed for lighting. Each shade in the room can be controlled individually or all at one time.

Automated lighting and shade presets are also set for the Local Presentation and Videoconferencing modes." Every page contains volume control and system-off buttons. The system-off buttons initiate a confirmation page: "Are you sure you want to turn the system off? Yes or No." This helps to prevent the system from being turned off by accident.

The small conference rooms are also well equipped for extensive AV capabilities.

Keeping the Faith

Close cooperation between the client, integrator, architect and engineering firm helped to assure that the ANC was able to create a facility that reflects its culture and values and would help the organization prosper. "Though the Alutiiq Center project did not target a LEED accreditation, it does incorporate a number of sustainability features that have value in the Alaska environment," reflected Ken Burkhart, principal, KPB Architects.

"Landscaping is native to the region and requires no irrigation." The location of the main entrance and petroglyph panel on the south side of the building has both visual and practical advantages. "Prudent use of glazing balances the need for daylight and views, with energy efficiency in minimizing heat loss, and the building incorporates energy-efficient lighting and heating systems," Burkhart noted.

Integrating advanced technologies with respect for the environment and cultural heritage, the new Afognak Alutiiq HQ and Museum helps light the way to a better tomorrow in the far north. ■