



# Radio

THE RADIO TECHNOLOGY LEADER

## This Studio Makes an Impact

Financial Talk Radio Has Never Looked This Good

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## Limited Space and Quick Turnaround Are Hallmarks of Impact Partnership Build

by Marc Lehmuth and E.C. Hamilton

Studio T Control is the TV studio control room. From front to back: teleprompter control, audio board, lighting control and video operator.

**T**he idea of financial talk radio is not new, nor is the idea of building a broadcast production facility in an office building. Nonetheless, our attempt to insert a radio/TV production facility into an already rapidly growing company's office space, with no down time and little disruption, was not an everyday task.

The Impact Partnership is a key distribution partner for 14 U.S. insurance, investment and annuity companies. We educate advisers and agents on financial products and help them to reach more prospects through comprehensive marketing. Many of these advisers market through radio and television. We produce more than 100 custom radio and television shows, advertisements and national celebrity interviews each week.

Most broadcast engineers will face the challenge of planning and installing broadcast production facilities into a working office space at least once in their careers. Sometimes we

have the luxury of creating a new facility in a new location. We did not have that option, and we needed to fit months of planning into a few weeks. Not only did the project need to be completed as quickly as possible, but we also had to work with architects and contractors who had never built facilities such as this one before. We had to teach our architect about sound control walls, acoustic materials and soundproof windows. The electricians installed miles of conduit from two rack rooms to 11 studios with conduits for on-air lights, speaker locations and TV studio lighting control and power; camera location boxes; a 15 KVA UPS; five new HVAC units; and more than 48 dedicated-isolated circuits. The HVAC contractor was taught about sound isolation and the need for individual temperature control in each studio.

### ACCOMMODATIONS

We knew right from the beginning that the furniture design would be one of the toughest

obstacles, due to the limited space and quick turnaround. All of the studios had to accommodate at least two people, such as a host and a board operator. Two of our larger studios needed capacity for six to seven people. Since we were putting broadcast cameras in one of our radio studios, we decided that the furniture needed to be both functional and visually appealing.

We contacted David Holland at Omnix Furniture Company to start the design process. Omnix is able to accommodate many types of materials and the sweeping curves in their builds would provide the look we wanted.

For our main Studio A, we designed a five-microphone-position table, which is composed of four pieces. The base: a semicircle unit with four access doors that contains the signaling, A/C wiring, five Rolls MB15B Promatch, two power strips, two network blocks and a logic block centered over a 2-inch conduit located in the floor from the rack room. The host position: a half-moon-style top, made from white Arctic

Ice Corian, holds an ESE ES520U timer/clock, a Wheatstone TS-22 and a 2RU rack attached to the underside for a Wheatstone IP88a.

Guest positions two through five are composed of curving pieces of black Anthracite Corian. Each guest position has a Wheatstone TS-4 and an Altinex TNP121C pop up access block. These pop-up blocks house the connections for business net data line, power, headphone outs and inputs for the auxiliary audio inputs. The top of the table has three Yellowtec MMS poles, one on each side and one on the middle, that hold five M!ka On-Air Mic TV arms. The MMS pole in the middle also holds a 22-inch monitor for the host position.

The table also features six custom legs with



Server Room 407 has two racks dedicated to radio. Middle Atlantic DRK series racks had cable management in the front and back, giving it that finished look.

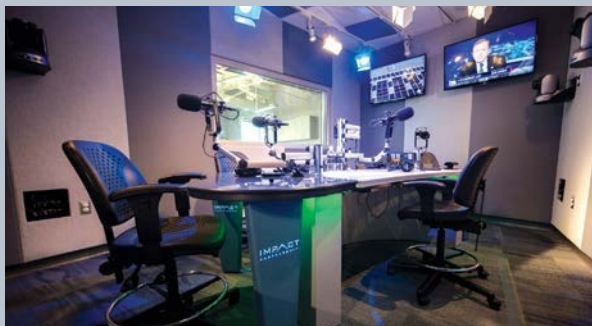
blue powder coated outer shell, laser-etched with our logo and powder-coated white on the inside. We installed RGB LEDs on the inside to

create a cool effect through the laser-etched logo. (It's a small detail, but it gets noticed quite frequently.) Along with the LEDs in the legs, we wired more RGB LEDs under the tabletop to serve as in-studio on-air light; they are green when the microphones are off and red when they are on.

We topped Studio A with JBL Control 26C and Control 19C recessed ceiling-mounted speakers powered by a Powersoft Ottocanali 1204 amp, located in the rack room. We used the remaining channels of this amp to power three Soundtube Entertainment FP6020 dome speakers located outside the windows of

Studio A, Studio C and the HD monitors outside the TV studio. We installed an Electronic Theater Controls 7066A lighting track system

## FACILITY FOCUS: WHAT'S INSIDE IMPACT PARTNERSHIP



### Omnirax

Omnirax is proud to have been a partner on this exciting 10-studio project. We worked closely with Impact's staff, including industry veteran Marc Lehmuth and E.C. Hamilton, to maximize Omnirax's unique collaborative design process.

True to their name, Impact Partnership wanted their main talk studio to make an impactful, lasting impression in addition to being video-friendly. We employed our Shapes line to build a stunning piece, Corian countertops cantilevered from a semi-circular "technology arc" with custom laser cut and branded legs on the perimeter.

The remaining studios were Innova Custom Line furniture, the solution for a project with some unique challenges: A long narrow control room for their TV studio and several small production studios.

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### ESE's ES-520U

ESE's ES-520U is an easy-to-use 60 Minute Up Timer (MM:SS) that can drive up to 100 remote displays. This particular model has several features like a Remote Control Input as well as several available options like a Tenths of Second Display or a rack-mount enclosure. ESE has dozens of remote displays available in desktop, wall mount or rack-mount enclosures, ranging in size from 0.4-inch to 7-inch high LEDs in amber, red, green and blue.

For over 40 years, ESE has been well-known in the broadcast industry for accurate and precise timing products such as timers that count up and down, stand-alone clocks, master clocks/ timecode generators, Network Time Protocol time servers, time code converters, HD or SD time code inserters and many more.

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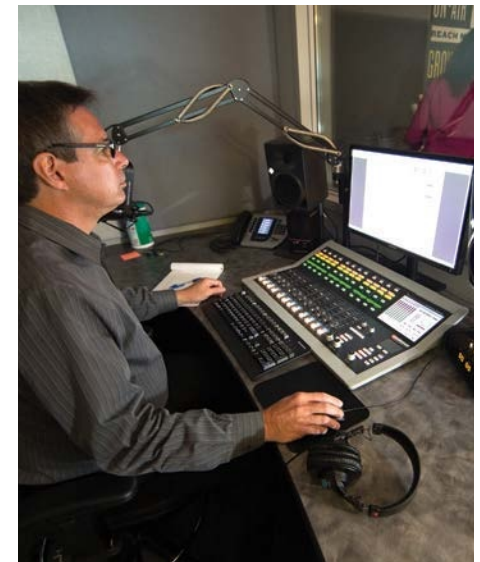
in Studio A with 16 ETC D22 DMX track mount lights, and six ETC Source Four Mini track mount lights on 10 tracks, all controlled by Interactive Technologies DMX controllers.

Studio B is the control room for Studio A and makes use of a stand-up configuration.

Two Neumann KH120A wall-mounted speakers with Yellowtec Mika 3301 microphone arms and dual 3229 monitor arms frame the Wheatstone LX24 console. We wanted to make sure to display some of the gear that might normally live in a rack room, as well as give the viewer an

authentic broadcast studio look. David Holland designed a large turret to showcase two Wheatstone M4 blades, a Comrex Access, a Tieline Merlin Plus, a CD player and a Furman M8DX Power Conditioner. We completed the studio with a VoxPro and Adobe Audition monitors.

All of our studios have a 24-by-24 inch or a 16-by-16 inch in-wall junction box with two or more 3-inch conduits to one of the two rack rooms; a 1-inch conduit to the on-air lights located outside each door; and a 1-inch conduit to speaker location (if needed). A large opening was cut in the lower back panels to make room



Kevin Steele is shown in Studio D's control room.

for the junction boxes that were located before the furniture was fabricated. All the lower racks throughout the facility have Middle Atlantic SRS or SRSR slide out rail systems to facilitate wiring and maintenance. The racks house the Wheatstone IP88 blades, M4 and M2 processors, a Furman M8DX Power Conditioner, and rack drawers and space for future expansion.

Taking advantage of Holland's expertise and attention to detail, we were able to design locations for everything in the studios, with clear

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and precise wiring paths and mounting areas, without the need to cut the furniture after the fact. In Studio C, we have a simple four-person talk table. To help save space, Holland suggested cutting small half-moon indentions for seated positions. This allowed us to have an average of three feet between table and wall, by bringing the person into the table slightly. That design, coupled with the angle at which the table is set, gave us more room than we were expecting.

We were able to economize our furniture cost because we had two studio groups that were of the same shape and size. This allowed us to design two furniture layouts, instead of six. The design consisted of an L-shaped top, including Omnirax rounded edges, where the board operator and host would sit. The host position is a little cramped because the side leg of the desk needed to be very close to the end of the top; Holland made a cutout on the lower side of the leg that allows the host to sit

by sliding his or her feet under the desk, instead of hitting them on a flat edge by the floor.

One of the small rooms posed a unique problem: A column was in a corner where the desk was located. Holland was able to navigate the table-top and wiring paths around this column and still keep the top as one piece. After dropping in the console, there was little space for anything else, and we were out of room for the Neumann LH 65 tabletop speaker stands. We eliminated the base, drilled through the top and bolted them through the top. Since Omnirax products are thick, the stands are sturdy, even with the 14.4 pound Neuman KH120A mounted to it.



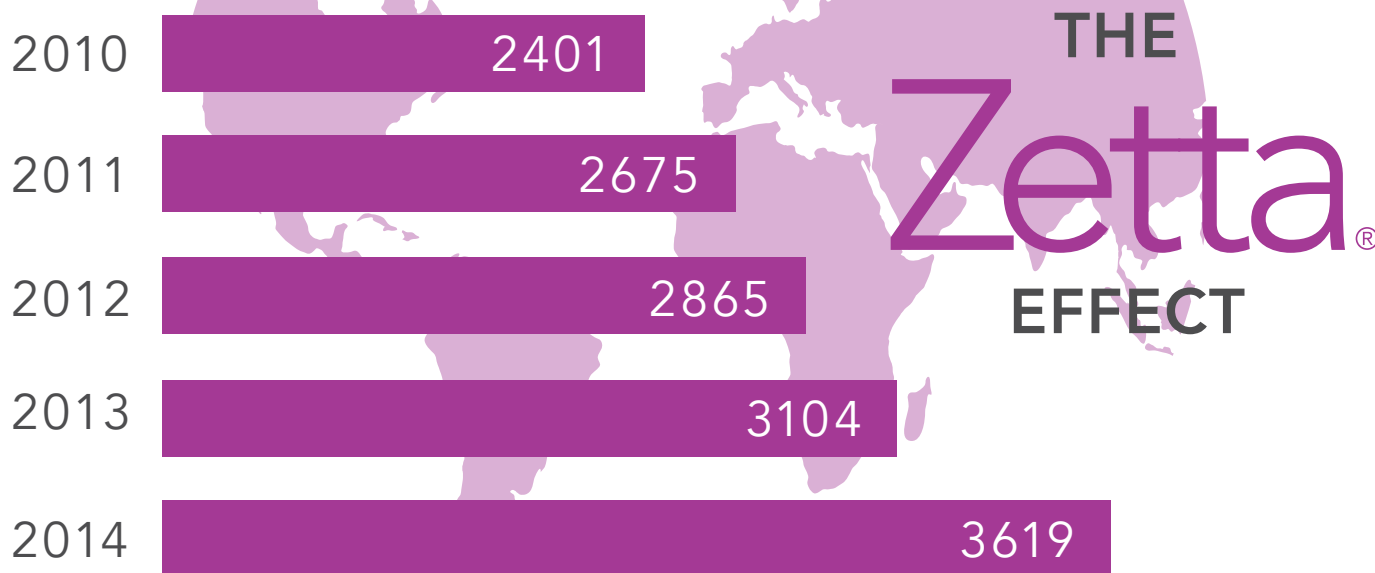
Studio C has room enough for three guests and a host.

#### VIDEO PRODUCTION

Our video production required special attention with equipment selection and lighting design for both the TV studio and Studio



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## FACILITYSHOWCASE

A. We contracted with Clair Solutions out of Nashville, Tenn., to assist with the design and installation of the video equipment and lighting in the facility. Regional Vice President Dan Heins and his team took our concept for the studio and created two fully functioning video production studios.

The control room centerpiece is a Newtek Tricaster 8000 video production system with eight Sony BRC-H900 full HD robotic cameras (four in the TV studio and four in Studio A). Along with the Sony RM-IP10 remote camera controller, we have full control over all eight cameras with multiple selections of presets. Additionally, we have a Colbalt Digital Inc. OG3-FR openGear 2RU frame with 9002 3G/HD/SD SDI distribution amplifiers, 9910DA-AV Analog Video distribution amplifiers and a D6201B AES/EBU Distribution Amplifier. We installed the Sennheiser EW500 wireless systems with DPA 4061-BMK lavalier microphones for talent, with Sennheiser A2003-UHF antennas. We use Lectrosonics RMP IFB transmitters with Lectrosonics IFBR1A-25 belt-pack receivers for IFB to the talent and floor operators. Omnirax designed a long desk that could accommodate a switching position, lighting control, director, audio control and prompter control. Later in the project, we added a Newtek Tricaster 410 in our training room with a ceiling mounted Sony

BRC-Z330 robotic camera controlled by another Sony RM-IP10 remote.

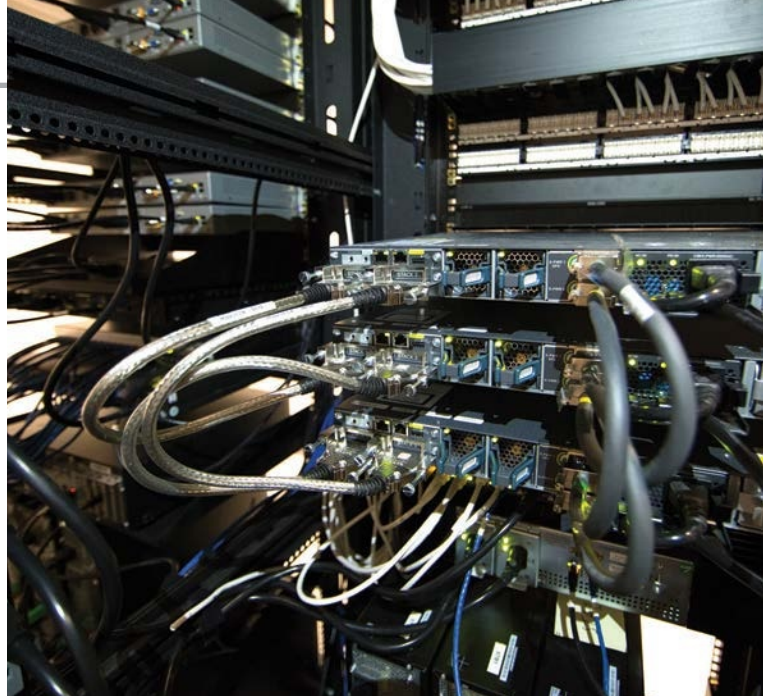
Lighting for the TV studio is controlled by an ETC SmartFade 1248 console located in the control room. Several presets are stored and controlled in both studios by four Interactive Technologies SS-305 DMX controllers; these give the average user a quick selection of lighting presets without having to dive into the SmartFade console. We have 12 Lite-pans 903-1001 1 X 1 Mono daylight spot fixtures, 22 various ETC Source Four fixtures and five Altman LED Spectra Cyc 100 RGBA cyclorama wall wash luminaires, hanging from a 1- to 1.5-inch schedule-40 black iron pipe grid. Particular attention was paid to assure that our three-wall full cyclorama wall was evenly lit for our green screen productions. Clair Systems had their top designer on-site to locate, focus and program the lighting in both studios.

### AUDIO PLANT

Our entire audio facility is built around Wheatstone IP. We chose Wheatstone because

we believe that they build the most reliable and robust IP audio networking systems and that the programming is simpler than competing systems.

We installed the Wheatstone E-1 consoles in all our studios, except an LX-24 in studio A. Most of our studios use the IP88CBE blade for the DSP engine with predefined connections and connectors for control room and studio monitors, cue output and headphone output. In the main rack room, we use a Wheatstone Aura8-IP Blade with eight individual stereo multiband processors to pre-process all of our Comrex and Tieline feeds. We installed Wheatstone M4-IP four-channel microphone processors that have direct connections to



Rear view of the Cisco 3750 switches in Server Room 407.

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WheatNet-IP. All of our cabling is Cat-6E and our core switch consists of three Cisco Catalyst 3750-X switches with stacking cables. We located the studio PCs in the main rack room with Gefen EXT-HDKVM-LAN KVM extenders and Wheatstone IP drivers so that there is no need for audio cards.

Telephony has always been a thorn in the side of many broadcast engineers. No matter how hard we try to have the highest quality audio throughout our facility, there is always a need for telephone audio at some time. That's where we made the call for the Telos VX system. Telos has always been known for high-quality telephone hybrids, and now the VX system bridges the gap to SIP. We have a Mitel MiVoice 7.0 SIP phone system that we configured to talk directly with the VX engine. This gives us the the full functions of our PBX with the quality of SIP lines. Each studio has a VSet6 with six extensions. The I/O of the VX is AES, so there is no loss of audio quality integrating into our WheatNet-IP system.

No matter what size project is underway, proper planning and design can make the difference. Working with the right vendors can make all the difference. We could not have completed this project, on time and under budget, without Omnirax, Wheatstone, Telos, Clair Solutions and Broadcasters General Store offering solutions, innovations and exceeding all expectations. 



Studio A, with its Sony BRC-H900 cameras



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