`USER` `REPORT`

MPR Goes Modular With Element

Axia's Element Console Enables Minnesota Public Radio to Build Customized Surfaces

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ST. PAUL, Minn. Minnesota Public Radio is expanding our Twin Cities facility to keep pace with the growing amount of content we produce. Our St. Paul headquarters were already moderately sized, with eight control rooms, five on-air and production studios, two full recording studios and several small editing rooms.

The expansion will add another six control rooms, three studios, 10 small production rooms and a moderately sized auditorium space. These facilities will go on-line by January 2006.

Late in 2003, we began planning our new technical infrastructure with a thorough examination of the distributed routing/control surface model. Our goal was to determine if it would give us operational advantages. The answer to our research was a resounding yes.

In 2004 we began the task of deciding which manufacturer's system would best suit our needs, and after thoroughly weighing each system's strengths and weaknesses, we chose the **Axia** IP-Audio system and its new Element modular control surface.

We like the Axia system for several reasons. The lower cost of entry was a factor in our decision but not the driving force; we believe the combination of Ethernet and IP functionality is Axia's biggest advantage. An IP-based infrastructure is scalable, and economic forces beyond the broadcast industry will continue to add capacity and functionality to that structure.

The obvious questions about IP-Audio concern latency and reliable audio delivery. Axia gave us honest, complete and detailed answers to these questions. Axia's Ethernet links are switched connections — no hubs. An audio node with all its inputs and outputs running simultaneously, generating both RTSP and real-time audio, can't overload the capacity of the 100-BaseT connection linking it to the network. With guaranteed bandwidth, and some clever clocking mechanisms, latency isn't an issue.

With regard to cost, we found a significant difference between Axia and the other options we examined. Going with Axia cut our costs by roughly 33 percent. When comparing systems of similar functionality, we saw that the price difference was greater.

Which brings us to the console. We liked the Axia concept but SmartSurface, their fixed-size control surface, didn't fit our operational needs. We said so, and Axia President Mike Dosch showed us Element, then still in development.

Surface value

In contrast to SmartSurface, Element was a modular design that would allow us to build surfaces as large or as small as we wanted for individual studio applications. A major factor in Axia's favor was the fact that every Element surface would be fully functional, with no additional cost for EQ, dynamics processing or other features.

MPR produces both network and local station programming. This results in some unique operational requirements, and the capability required to fulfill these requirements was not a part of Element as we first saw it. But Axia was able to accommodate our needs, adding the desired functionality.

Element is available in multiple frame sizes that accommodate from four to 32 faders, making it suitable either for small news/voiceover rooms or large master-control applications. Element operates in conjunction with the Axia Studio Engine, which mixes program audio entirely in the digital domain before distributing it to the switched-Ethernet audio network using standard Cat-6.

Axia has taken the "surface" concept even further with Element, even moving its CPU out of the surface and into its power supply. Only two cables connect Element to the network: one Cat-5e cable to the local switch, and one power cable.

Element features four stereo pro-

gram busses, dedicated off-air Phone and Record busses, and four assignable send/return busses for outboard effects or processing. EQ and voice dynamics are built in and can be assigned on-the-fly, or saved as a part of each source's "profile," which is loaded whenever a source is assigned to a fader. Source names are shown in each fader's accompanying 10-character alphanumeric display.

The control surface itself is relatively uncluttered. Each module (faders come in sets of four) contains bus assignment and preview (cue) buttons. There are phone modules available that integrate directly with phone systems made by Telos or other manufacturers; and a master module, which provides control of Element's options and settings as well as monitor and headphone feeds.

Element uses an external VGA display rather than displays built into the console itself. This allows the use of any off-the-shelf flat-panel, providing flexibility. The position of on-screen clocks and timers in the central cluster, and the positioning of meters and other information provides real, usable information in a size and scale that is easily visible to the user.

Generating mix-minus with Element is easy. Each audio source connected to the network can be assigned a backfeed; this setting is saved in its source profile. When a codec or a phone hybrid is placed on-air, Element automatically generates a mix-minus and sends it to that backfeed without any operator intervention. Every source has its own unique mix-minus; the number of mix-minuses per console is limited only by its quantity of faders.

Element also handles talkback smoothly. Pressing any fader's Talk button lets the operator talk to that source. Pressing several talk buttons lets you talk to several locations at once. Individual mic or remote codecs can use the remote talkback function to communicate with the operator as well.

Because of the large amount of content MPR produces, we wanted studios that could accommodate any show at a moment's notice. Element functions equally well as an on-air or production console, so we sidestepped the need for different control boards in various studios. This reduces the learning curve, since our operators can do any show in any studio and be instantly familiar with the console's controls and operation.

We're told that Axia also is developing a "virtual Element," a PC controller that looks and works just like the physical console. This should prove extremely useful in news desk or bullpen environments where space is at a premium.

For more information, including pricing, contact Axia Audio in Cleveland at (216)241-7225 or visit www.axiaaudio.com.