FEATURES: BROADCAST

On the air over IP

Broadcaster Albert Cheng has used cutting-edge IP technology to open his new internet radio station, writes **Richard Lawn**

AT A TIME WHEN MOST PEOPLE are looking forward to winding down, D100 internet radio station founder and owner Albert Cheng displays enough passionate energy to drive the airwaves to the Cantonese speaking world.

Now 65 years young, Mr Cheng was once an aircraft engineer in Vancouver, before he returned to his native Hong Kong to become a successful media publisher in the 1980s. He then branched out as a popular radio talk show host, often provoking debate with his pro-democracy opinions. His previous radio ventures led to severed partnerships and withdrawn investments. However, Mr Cheng's insistence on installing the very latest radio technology at his new facility will ensure that D100 stays on the air.

Having moved into contemporary offices located in Cyberport on Hong Kong Island, the talk radio station already employs 50 full time and 50 freelance staff.

'By adopting an IP-based infrastructure, we will be able to quickly branch out into educational, lifestyle, music and entertainment programming, not only in Cantonese but also in Mandarin and English,' he enthuses. Mr Cheng is not a fan of on-air advertising as he fears that it distracts the listener, so incoming revenues are focused on the internet and annual subscriptions. 'We have adopted the latest radio technology which, now being so affordable, provides us with great flexibility and potential for future growth.'

Mr Cheng contracted the services of Hong Kong-based turnkey provider Digital Media Technology Ltd (DMT) for getting D100 on the air. DMT's

GM Desmond Stou and technical director Chris Fish assisted Mr Cheng in drawing up the designs for Hong Kong's biggest internet radio station.

'An all-IP infrastructure offers a great deal of flexibility in the system design and is a lot quicker to install than traditional systems,' confirms Mr Fish. 'Installation costs were reduced because we could employ contractors who specialise in IT infrastructure to install all the cabling.' The Cat-6 cabling that Mr Fish describes connects all the audio-over-IP equipment from six Axia Audio Element-based studios and the Telos VX broadcast VoIP phone system with its office VoIP counterpart.

One of the advantages of installing a broadcast system at the Cyberport facility was that it was very easy to get all of the incoming and outgoing phone lines via SIP Trunks. This negated the need to convert to and

Each of the studios is equipped with an Axia Element broadcast console, KRK VXT6 monitors and EV RE-20 mics
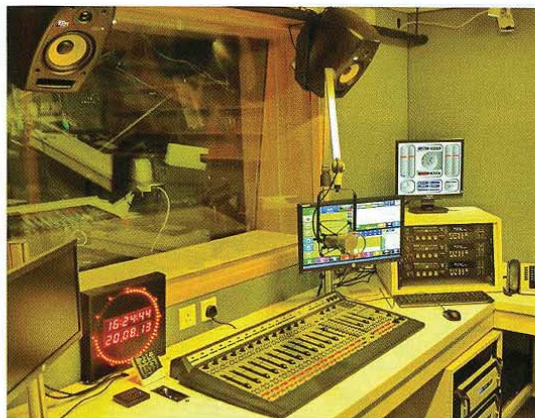
One of the studios in the D100 facility at Cyberport, Hong Kong

from the more traditional POTS and ISDN lines. Installation was simple – a single Cat-6 carries all phone lines – and on-air caller quality is much improved as VX natively supports the latest G.722 codec and Fraunhofer echo cancellation technology. Since Telos is the parent company of Axia, all of this VoIP support is integrated right into the Axia Element surface.

The phone lines can be shared among the multiple studios and incoming calls can be routed anywhere in the facility by recalling a different preset on the Element control surface. The VX Engine located in the master control room provides all the call control and audio processing for D100 and supports up to 30 active calls on-air.

Each of the six studios (five on-air plus one for recording) are equipped with an Axia Element broadcast console, and operators can recall presets for audio sources, fader assignments and monitor settings in

addition to personalised microphone processing and voice EQ settings. Each voice channel comes with compression, de-essing, expansion and three-band parametric EQ. Crucially for D100, every fader has a 'direct talkback' key to communicate with phone callers or individual guest microphone positions. Additionally, an IP-based intercom system, also supplied by Axia Audio, allows simple communication between all studios and the master control room.

The audio output from each Element console connects to the Cisco 3750 Core Ethernet switch via Cat-6 and then to its own dedicated OmniaONE Multicast audio processor. The processor is equipped with Sensus technology, which pre-conditions the audio for low-bitrate broadcasting, before routing the signal to a Sonifex RB-DA6 distribution amplifier, which splits the processed audio to six separate outputs, one of which feeds the

streaming encoders. From there, the signal is fed into a Cisco switch and to the internet via HP encoders.

Each studio is furnished with two pairs of KRK VXT6 monitors (one pair for the control room and one for the studio floor), six EV RE-20 microphones mounted on Yellowtec M!ka arms, Denon DN-C625 CD players and StudioHub+ individual headphone amplifiers. Furthermore, each of the five on-air studios house a full suite of video equipment including a Newtek Tricaster HD video switcher with multiple cameras, chroma keying and video conferencing facilities to allow for a complete A/V broadcast experience.

'We effectively had four days to fully install, commission and test the main studio,' recalls Mr Stou. 'It was a huge challenge, but we managed it as much of the Cat-6 cabling was installed already and we could preconfigure the Axia Element interfaces remotely on a PC. The Telos and Axia components integrate seamlessly, making both ours and the operators lives so much easier.'

Mr Cheng has reinvented his career through his voice and now he has taken that to the world stage with this very current, flexible yet affordable IP addressable solution. 'We've now become a Beta site for all the other radio stations in Hong Kong,' confirms Mr Cheng. 'They have heard about it and want to see it working. I'm hugely impressed by DMT's expertise and knowledge which has provided D100 with the very latest technology for our future needs.'

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