Streaming Across The World

By Brian Galante

The global health of broadcast radio is a topic sure to spark responses as varied as the national New Zealand climate. But the broadcasters who work within the medium will quickly point to a wealth of growth opportunities in the digital domain. Streaming comfortably rests at the top of that pack.

"WE SEE STREAMING MEDIA as an important platform for radio," said Carolyn Luey, Group General Manager for Digital at The Radio Network. "We don't believe that radio listening is decreasing; it's just moving to other devices. We're seeing the leading edge of that now, and streaming will become even more important in the future."

The Radio Network (TRN) operates 124 radio stations in 25 markets across New Zealand. The private company has gradually built its station group, and today offers nine distinct "brands" that broadcast news, talk, sports and music formats.

TRN also has built its streaming platform in increments, first focusing on the web and now expanding into mobile streaming with smartphone apps. The mobile arm is taking off as TRN delivers new applications and improves audio quality across their digital platforms.

"Our strategy for digital is to increase the number of touchpoints into our audience through multiple platforms," said Luey. "We're looking to deliver listeners the full radio experience through streaming, Podcasts and even video. The mobile smartphone is a critical part of this strategy."

TRN's thirst for mobile streaming forced the digital media team to evaluate different service providers. The team had successfully worked with an incountry provider for the Web, but that company's streaming capabilities were limited. TRN had essentially been locked into the Windows Media streaming format, with no possibility of mobile for the foreseeable future.

"We quickly realised we needed to support more formats as the technology moved forward," said Luey. "So one of the key drivers for finding a new provider was the desire to launch an iPhone and Android smartphone app."

The search took TRN to StreamGuys, a content delivery network and streaming media provider with a global streaming footprint – and a tested architecture for mobile delivery.

LOCATION NO PROBLEM

StreamGuys has data centres around the world, but the company is headquartered just off the northern California coast in the United States. The distance from here to there — 20 hours in time zone difference initially raised concern.

"We were at first unsure about moving to an offshore provider to get the service we required," said Wayne Sleeman, Broadcast Engineering Manager for TRN. "But the flexibility they offered and the ease of setting up streams gave us the confidence to make the switch."

Common sense prevailed through a gradual transition that started with a single stream. Latency was a concern – "never a great thing from a streaming perspective," notes Luey – though tests proved signal delays were minimal and reasonable.

For Sleeman it was less about latency than proving that the long-distance relationship would work.

"We had reasonable latency with our previous New Zealand-based provider as well," said Sleeman. "In the end it was about quality and reliability of the stream – and the ability to support many formats."

MULTI-FORMAT SUPPORT

Multi-format streaming support is simplified by reducing the workload at the contribution point. Sleeman and his team wanted to avoid the burden of contributing streams in every format they required for their audience.



"StreamGuys essentially transcodes our streams into all the formats we need for delivery to many devices," he said.

In New Zealand, the TRN architecture encodes audio with Orban cards, which seamlessly hand off the signals to the StreamGuys architecture. Sleeman notes that the Orban product replaces a software-based encoder, and has sharply increased stream quality while keeping the process simple and straightforward.

The Orban cards offer both mp3 and AACplus audio processing, the latter of which gives consumers an even higher-quality listening option.

Live streaming audio is delivered via the open-source lcecast platform to support mp3 and AAC+ audio delivery. Protocols supported include RTMP for delivery to online Flash players; HLS, which handles stream packetisation for the iPhone and iPad; and RTSP, which supports delivery to Android and BlackBerry devices.

Wowza Media servers are built into the StreamGuys architecture to costeffectively support delivery to all targeted devices from a single point.

StreamGuys delivers both live and on-demand content for TRN over its cloud-based streaming platform. The company's cloud-based service abstracts the hardware layer from services by building clusters of physical nodes on top of the VMWare ESXi platform, which enables server virtualisation. This offers broadcasters a streaming architecture with high availability, strong redundancy and flexibility to scale on short notice.

The scalability aspect is one that especially resonates with Sleeman.

"We can add a stream on short notice and at any time using this architecture," he said. "I can have a new stream up and configured by StreamGuys within a couple of hours. There is a lot of flexibility in their architecture, to the point where we can light up a new one-off or permanent stream without a lot of aggravation."

BEYOND AUDIO

Jacobs Media provides the mobile applications that are helping to evolve the broadcast radio experience for TRN listeners. The apps integrate within the StreamGuys architecture to ensure that the live stream and other content are delivered seamlessly through a single user interface.

"Jacobs Media has a lot of experience with producing apps for radio," said Luey. "Our apps are quite dynamic and deliver real-time audio streaming, but also deliver content pages that feed through our websites and are always up to date. We can serve all of our unique content this way, like photo galleries, video, Podcasts, news, weather and traffic. It really supports the multimedia nature of radio."

TRN has only just begun dipping its toes into the video pool. The broadcaster has launched a live studio camera stream for its NewsTalk ZB format that is gradually building numbers.

"It's a small following, but there's a following," said Luey, who notes that the numbers spike a bit when special guests are on the feed. "But we are looking seriously at video, which is expected to grow quite significantly in New Zealand. Today, service providers are in the process of deploying fibre-to-the-home connections to 75 percent of the country. So it's expected that online video will grow quite significantly."

This of course makes advertising over the streaming platform an important consideration. Today, TRN is selling audio pre-rolls with fairly high demand.

RADIO

NUMBERS AND ANALYTICS

No streaming service is complete without facts and figures. TRN is today using StreamGuys' monitoring and reporting software to positive results, some of which have helped the company strategise for the future.

The two primary resources are SGMon, a concurrency monitoring service that provides per-stream data; and SGReports, which provides richer details within custom reports.

"SGMon offers data tied to simultaneous listeners per stream, per format and per station," said Andrew Jones, sales engineer for StreamGuys. "The software polls the server every five minutes to take readings on listener numbers and create an archive.

SGReports broadens the scope for TRN and other users. This is a log-based analytical service that can

create very specific reports on visitors tied to geographic locations, average dwell times, individual IP addresses and other figures.

"The purpose of these services is to assist with business plans and determine if and when service changes are required based on numbers and bandwidth commitments," said Jones.

Luey notes that TRN wasn't completely certain of its bandwidth requirements upon migration to StreamGuys. Her team worked closely with Jones and sales representative Matt Marvin to determine capacity needs at the time and into the future, gradually scaling to their current bandwidth needs.

"It quickly became clear that we under-forecasted our bandwidth requirements," said Luey. "Matt was very good about introducing tiers into our contract that gave us the advantage to increase bandwidth requirements on the fly."

Luey adds that the analytical software has been helpful with forecasting.

"There's a lot of data crunching to be done, but we get all the analytics we need in terms of streaming hours, unique users, total number of unique streams and similar information," she said. "You start to notice the seasonal trends as well. Our Radio Sport brand is a good example. Traffic really pegs during big events like the Olympics and the Rugby World Cup, and then decreases quite significantly during slower sports cycles."

Frontier Silicon Transforms the Listening Experience

FRONTIER SILICON, a leading supplier of Digital Radio and Network Audio technology, has announced the launch of its new DAB 5.0 Software Development Kit (SDK). By adding Bluetooth connectivity to Frontier's Verona DAB/DAB+ module, DAB 5.0 introduces a closer level of integration between smartphones/tablets and radio/audio devices delivering a simple and intuitive user experience.

As trends in digital listening evolve, it is vital for consumer electronics brands to meet the needs of customers by delivering audio systems that integrate with the connected world. DAB 5.0 provides the technology to give consumers complete freedom of listening choice in one simple audio product.

"Today's consumers expect the freedom to listen to music from a vast number of different digital sources," said Prem Rajalingham, VP of Sales & Support at Frontier Silicon. "DAB 5.0 has been designed to enable products to bring this content together and deliver an enhanced experience via wireless integration with iOS and Android handheld devices – and all in a product the size and cost of a traditional speaker dock or quality portable radio."

DAB 5.0 runs on Frontier Silicon's range of Made for iPhone compatible DAB modules and chipsets. When combined with controls, display, amplifier, loudspeaker and a suitable Bluetooth module, DAB 5.0 provides a simple route to a wide range of advanced digital audio products.

Visit www.frontier-silicon.com



SPECIAL EVENTS

The recent Rugby World Cup is an ideal example of TRN and StreamGuys working together to launch a special service on short notice. TRN served as host broadcast for the Cup, which took place in New Zealand last fall.

"Part of their contract with the International Rugby Board required delivery of a 128 kbps mp3 Flash stream, along with content protection that would prevent audiences from outside the country from accessing the streams," said Jones.

Sleeman asked StreamGuys to establish a test stream within the existing architecture. The quality was confirmed, and StreamGuys added its Geo-Blocking digital rights management technology to an existing Wowza Media server. This fulfilled the legal obligation of preventing access to audiences outside New Zealand.

"It's a simplistic view, but it just works," said Sleeman. "They turn it on and we go about our business."

The importance of communication for both special events and ongoing support of existing services is critical given the distance between the two companies, ensuring that nothing skips a beat.

"The fact that they are 20 hours ahead of us means that our around-the-clock technical support is that much more important," said Marvin. "We have wellestablished protocols to help them light up new streams and troubleshoot issues. It doesn't take very detailed requests to get them what they want. It's a big testament to the quality of their workflow and operation."

VDL Monitoring for New DAB+ Network in **Hong Kong**

VDL HAVE SUPPLIED ensemble and SFN monitoring products to system integrator, BTL – Broadcast Technology Ltd., who were awarded the contract to build Hong Kong's DAB+ transmission network.

VDL supplied a number of Single Frequency Network Synchronisation Monitors (DAB Monitor SFN) that continually measure the offset timing of each transmitter in order to maintain integrity of coverage.

VDL also supplied an off-air Ensemble Logger and Monitor (DABSTOR-Rx) that captures ETI files and, also, allows the network manager to play the audio and view DLS text and Slideshows from all 18 DAB+ services simultaneously in real-time.

BTL also used a number of VDL ETI Splitters in the DAB+ Multiplex distribution network to transmission sites.

The Hong Kong Government issued DAB+ licences to three commercial operators – DBC HK, Metro Broadcast and Phoenix U, and the public broadcaster RTHK.

Broadcasting of 18 channels in DAB+ began on a 24 hour basis in November 2011.

Visit www.vdl-broadcast.com