

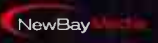
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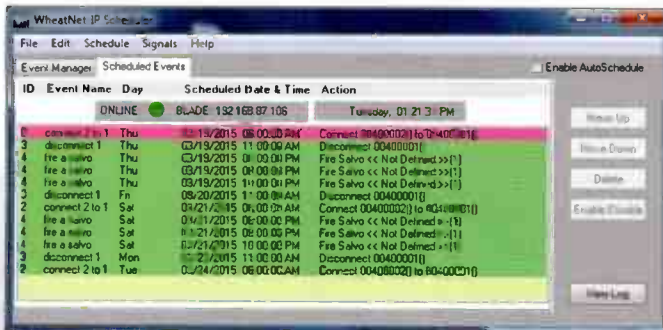
Time to Align: Belar and Wheatstone

We went live in New York and Detroit with a Wheat processor and Belar's ADC algorithm to determine the success of HD radio and analog signal alignment in blended areas.

Tests look promising, indicating a consistent and seamless HD blend to analog whenever HD Radio coverage is less than robust.

"We've had the system on since the beginning of May and the delay between the analog and HD has been within one sample. It was pretty close before, but now it's spot on," said engineer Brian Kerklan with Wmuz-FM in Detroit, a market chosen for its ties with the auto industry. Belar's FMHD-1 continuously measures FM/HD time alignment and transmits closed-loop diversity delay corrections back to the Wheatstone on-air processor via our ACI interface.

For the entire story... INN25.wheatstone.com



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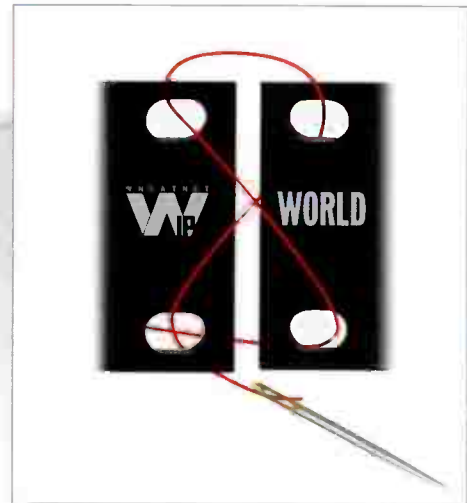
The WheatNet-IP SCHEDULER program triggers events at predetermined times by connecting or disconnecting signal routing. It fires off commands to send a satellite feed direct to air or to turn on mic feeds for the morning show at regularly scheduled times, for example, and so much more...

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ACI: It's Wheatstone's DNA Needle and Thread

We have built into all of our audio processors a control protocol we call ACI for Automation Control Interface.

ACI is how Belar's FMHD-1 with new ADC algorithm tells our audio processors what corrections need to be made for a consistent and seamless HD blend to analog whenever HD Radio coverage is less than robust.



ACI operates over the locally connected network via TCP/IP and can touch any parameter on the processor, whether it's a setting for the diversity delay, recalling a preset, changing input sources, modifying output levels, or even lowering just the AGC band three threshold by 1.62dB during some externally triggered event. Most of the program automation systems can also talk ACI, as can our console surfaces, so ACI brings new possibilities to our audio processors as well as the WheatNet-IP system.

Life on the EDGE: STL via IP Microwave

Any wireless IP microwave system will work as an STL, just as any camera (or phone) can take a picture. But as to how far and how robust, and for how much, that's when the picture starts to get a little fuzzy.



Wireless IP radios connect directly into the WheatNet-IP audio network for a straight hop out to the transmitter site as a main or backup STL, or as a VoIP communication link (in lieu of expensive cell service). When you put up an IP link from the studio to the transmitter, your transmitter site immediately becomes part of your Ethernet network. Audio from a WheatNet-IP audio network I/O BLADE or EDGE unit connects directly into the IP wireless radio through RJ-45 connectors, and because it's all IP, that means you can carry audio, video, voice-over-IP, and data of all kinds. Back and forth. Both ways.

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Read This First



As a reader of Radio, you're likely a dyed-in-the-wool broadcast engineer with many years of experience. We're doing our best to keep you up-to-date on what I would refer to as "standard" broadcast technologies. Still, there is more and more importance being placed upon newer techniques. In this month's Radio, we have a theme — or at least an emphasis — on newer technologies. I hesitate to call them "non-standard" because, as time goes on, they're becoming more and more common.

The industry continues to evolve, as do our techniques. At Radio, we're paying attention to those changes because part of the job of a broadcast engineer is to keep up with newer technologies.

When it comes to the newer technology, there's a tendency among older engineers to simply say, "I'm not interested" or "let the IT guys do all of that." Well, I have news for you: Slowly, but surely, the "IT guys" are doing more and more of the work around a radio station. The lines between IT and radio engineering (as we have known it) are blurred, and it would be wise to respect the evolution of technology.

"Programmatic" is a phrase being thrown around quite a bit lately. As radio's methods of reaching listeners evolve, so do our means of serving our advertisers. This month, we have an interview with Jateen Parekh, the chief technology officer for Jelli, a company that is providing programmatic advertising technology to many radio stations around the country. Whether your station is involved with Jelli or not, I'm sure you'll learn something from this article.

The "on-demand" aspect of podcasting is really nothing new — it's been around for at least 10 years — but it now seems to be hitting its stride. Chris Wygal takes a look at the production of podcasts this time around, with an emphasis on a mixer that podcasters might find useful.

It's been said that radio was the first social media, since it offered a way for listeners to provide feedback (via the telephone). I'm not really sure we can make that claim — after all, one could write letters to the editor of a newspaper a more than a century ago. Nonetheless, radio has always interacted with its listeners. Social media plays an ever-more important role in that process, and our Facility Showcase this month takes a look at how Broadcast Bionics is educating broadcasters in the U.K. on options to increase interaction with listeners.

We also introduce a new feature this month, a column on streaming media. Fardau Van Neerden has a wealth of insight on broadcast streaming media, and shares his thoughts and expertise on that topic. He also sees "a huge gap between the traditional radio and purveyors of this new technology." Fellow broadcasters: We should not let technological inertia lead to our downfall.

That being said, the Wandering Engineer has once again put forth his own thoughts on the matter. Sure — we all agree and know that new technology is important — but let's put it all in the proper perspective. Broadcast radio has been around for 90+ years, while some of the biggest names on the Internet are now all but forgotten, even after less than a decade. The meaning of "radio" has changed from a purely technical one to one that describes the relationship between content providers and users of said content. "Broadcasting," as opposed to the one-on-one relationships that are possible via the Internet, remains viable because of its broad nature and mass appeal. We can't forsake that.

This issue of Radio isn't only about new technology, though. Lee Petro and Scott Bridgewater (as well as yours truly) are back with information and ideas to help make your job easier and to raise your value around the station.

Thanks for reading this month's magazine.

Doug Irwin, CPBE AMD DRB | Technical Editor

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Field Offices and Towers

by Lee Petro

The FCC approved a controversial plan to reduce the number of its field offices and staff. Citing flat budgets and the need to update equipment in the field offices, the chairman of the commission expects that the reduction of field offices and staff will save “millions of dollars,” while improving their services.

The issue first arose earlier this year, when Chairman Tom Wheeler proposed closing two-thirds of the field offices and establishing “tiger teams” to be deployed when enhanced enforcement action was necessary. According to Commissioner Ajit Pai, the field office staff was not made aware of these plans in advance, which lead to some ruffled feathers.

Also a major concern was the increasing lawlessness of pirate radio operators, particularly in the northeast corridor and Florida. With the reduction of field offices, many feared that the FCC’s current inability to shut down pirate radio operators would only be exacerbated.

The new plan will shut down field offices in Anchorage, Buffalo, Detroit, Houston, Kansas City, Norfolk, Philadelphia, San Diego, San Juan, Seattle and Tampa. Offices will be maintained in Atlanta, Boston, Chicago, Columbia (Md.), Dallas, Denver, Honolulu, Los Angeles, Miami, New Orleans, New York, Portland

(Ore.) and San Francisco.

Although the field offices will be closed in Alaska and Puerto Rico, the FCC stated that it would contract with local personnel to maintain a “field presence” and will periodically “dispatch” agents to Kansas City. Finally, the field offices in Atlanta, Columbia and San Francisco will be relocated to FCC-owned properties.


In addition, all field office staff will now be required to have electrical engineering backgrounds, and there will be an overall reduction of staff from 98 to 54. According to Commissioner Michael O’Rielly, the electrical engineering requirement will result in the termination of six employees — compliance specialists — whom he preferred to grandfather.

Finally, the order contains a commitment to develop a “comprehensive policy and enforcement approach” to deal with pirate radio operators. O’Rielly appreciated the additional commitment, but stated that the FCC already had a policy to treat these operators as broadcasting illegally, so the only acceptable approach is to “go after the illegal broadcasting operations and shut them down, full stop.” Of course, this has been difficult due to Congress’ decision to cut the FCC’s budget, and require it to pay for its services through auction proceeds and annual regulatory fees.

TOWER COMPLIANCE

Spot inspections of tower facilities are among the most active areas of enforcement affecting broadcasters, and the Wireless Bureau released a helpful reminder that many licensees are not in compliance with the rules.

In a rather straightforward public notice released in June, the bureau noted that many Antenna Structure Registration followers have failed to receive a determination of no hazard from the FAA, failed to register the tower before construction, failed to notify the FCC after the tower construction was completed, and failed to comply with lighting and painting requirements.

The bureau also noted that many ASR filers are certifying compliance with the environmental impact rules without actually checking to make sure that the certification is accurate. In some cases, this certification is made prematurely, i.e., before the bureau has determined that an environmental assessment is not required, and in other cases, the filer has failed to complete an environmental review. The bureau reminded filers that false or premature certifications are violations of the rules and are subject to enforcement action. 

*Petro is of counsel at Drinker Biddle & Reath LLP.
Email: lee.petro@dbb.com.*



DATELINE

Sept. 2015 — Annual Regulatory Fees due — actual deadline not established yet.

Oct. 1, 2015 — Broadcast Mid-Term Report (FCC Form 397) is due for radio stations with 11 or more full-time employees located in Florida, Puerto Rico and Virgin Islands.

Oct. 1, 2015 — Annual EEO Public File Reports must be placed in stations’ public inspection files for stations with five or more full-time employees located in Alaska, Florida, Hawaii, Iowa, Missouri, Oregon, Washington, American Samoa, Guam, Mariana Islands, Puerto Rico, Saipan and the Virgin Islands.

Oct. 1, 2015 — Biennial Ownership Reports (FCC Form 323-E) are due for noncommercial radio stations located in Alaska, Florida, Hawaii, Iowa, Missouri, Oregon, Washington, American Samoa, Guam, Mariana Islands, Puerto Rico, Saipan and the Virgin Islands.

This Is a Drill

by Scott Bridgewater

In my previous three articles about disaster recovery, I've shown a simple way to construct a response-based disaster recovery/business continuity plan, discussed using IT tools like Recovery Time Objective and Recovery Point Objective to help figure out how you should prioritize your preparations, and examined how you could use your existing content management systems in the most effective way to prepare for incidents that threaten your business.

Let's look at the last step.

You've made your preparations, found a good spot to use as a backup site, installed equipment and set up backups for your content management systems. You're feeling pretty good about all the work you've done, and you think you're ready-to-go. Bring on the disasters!

Not so fast. Preparations are great, but you don't have a working disaster recovery plan until you originate programming from your backup location and transmit to your community. If you have a generator at your studio and/or at your transmitter, you need to start it up and transfer the



The PRSS Back-Up Network Operating Center, in St. Paul, Minn., is essential for ensuring uninterrupted service for member stations.

facility to it — not run into a dummy load. If you are working with a content management/playback system, you need to use it while you're working from your backup site. You won't have confidence in your planning and preparations unless you operate the backup locations and systems.

Some people are reluctant to actually use their backup systems, seeing

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them as only a last resort to use in situations where the alternative is being off the air. In reality, the best way you can ensure program (and business) continuity during an incident is to practice your procedures and operations from your backups.

REAL-LIFE EXAMPLE

National Public Radio, headquartered in Washington, D.C., operates the Public Radio Satellite System, a multiple-channel live audio and file delivery system. The PRSS delivers thousands of hours of programs for NPR and other public radio producers — many of those hours are live-use at stations. Any incidents at the PRSS Network Operations Center could affect the on-air sound at hundreds of radio stations.

The staff at NPR's distribution department take seriously their commitment to providing programs, even if the NOC is offline. They built and maintain a backup/disaster recovery facility at Minnesota Public Radio's headquarters in St. Paul, Minn.

Toby Pirro, senior manager, Broadcast Operations for NPR Distribution, describes it:

"The Back-Up Network Operating Center is intended to provide

disaster recovery service for the PRSS ContentDepot customers and service. The BUNOC is designed to ingest live audio and files from program producers, store them and then transmit them over the PRSS satellite transponders. When things are operating properly, public media station staffers don't have to do anything to properly receive their scheduled programs on time, even if there's an incident that affects the PRSS Network Operations Center."

Drills are an investment that will pay off when you most need reliable operations during an unplanned incident, and could easily pay for themselves by helping keep your station on the air when your community needs you.

To make sure that the facility is working properly, NPRSS staff, in coordination with staff at MPR, switches network programming and control from the NOC to the BUNOC at least once every calendar quarter.

Here's Pirro again:

"We have been performing BUNOC drills since August of 2009. We now plan on doing them quarterly. Our last one was on June 14.

"We have been doing them lately on Sunday afternoons/evenings, when the program load is relatively light. We want to give the staffs in Washington and St. Paul the opportunity to get used to the procedures for making the changeover. We have all learned that the time to read the manual is not when the equipment has failed. We have been able to streamline our procedures from what initially took over an hour to make a complete transition of all services to under a half hour, but we can get live stream programming switched almost immediately as the situation may require.

"We are still working to make the switchover a 'one-button' procedure. We look forward to moving drills to other days in the week and different hours, not only for our staffs to become familiar, but to allow stations to experience a 'seamless' transition of services."

The PRSS BUNOC is an elaborate example — they're backing up more than a dozen live audio channels, audio file delivery and a messaging system — but it illustrates why you need to test and practice incident response procedures.

PRACTICE MAKES PERFECT

The staff at the NOC, MPR and at other stations practice their switchovers so everyone knows what to do and where to find information about programming coming from the backup site. Compare that to your station: Does your staff know — *really* know — what to do in case of an incident? Do they even know where the emergency procedures binder is? You do have an emergency procedures binder, right?

The NPRSS switchover time from the primary to the backup site is now about half what it was when NOC staff started drills. A lot of that is because the staff at the two sites can perform the steps faster, but it's also because they've streamlined their procedures over the years. As they go through drills, they discover ways to make switchovers faster — and that can't happen without actually doing switchovers.

You can probably write procedures for your operations staff to switch to

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your backup site or write procedures for starting and switching to your generator at your studio, but wouldn't they be better if they were actually tried multiple times? Wouldn't your staff have more confidence during an incident if they had already practiced those emergency procedures several times in regular drills?

And there's another very good reason to practice your emergency procedures.

Here's Pirro again:

"One time when we switched to the BUNOC, there was an equipment problem there, which forced us to switch back about 15 minutes later. This caused us to review our pre-test inspections to check for some errors we hadn't previously anticipated. Another learning experience that will hopefully save us in a real emergency."

Radio stations are complex systems, which is one of the reasons they're so interesting. Even the smallest stations have to coordinate dozens of individual functions to operate, from the content management and playback systems to the transmitter and antenna, to the traffic and business systems. As I've noted in previous installments, you need to account for all those systems in your disaster recovery plans — even if you decide (based on RTO and RPO!) not to provide backups for some of them.

Your drills provide a great way for you to discover problems transferring to backup systems and operating from them before you actually need the backup systems. In a drill, you should

be able to "back out" of the transfer — or end the drill sooner than planned — if you discover a problem. If you wait until an incident forces you to go to your backups to see how your procedures work, any problems will at minimum cause delays — and at worst could keep you off the air.

MAINTENANCE

There's a hidden opportunity in doing regular drills, too. Since the point of a drill is to move off your primary systems (and possibly out of your primary location), this is a good time to do that maintenance work on your primary systems. Of course, don't do maintenance during the first drill; keep that one for sorting out issues with your procedures. After that, when you successfully move to your backup systems, take that time to do those upgrades or solve those problems that have been bothering you.

Organizing and executing regular drills of your disaster recovery procedures and facilities takes time, effort and money to do well. Drills are an investment that will pay off when you most need reliable operations during an unplanned incident, and could easily pay for themselves by helping keep your station on the air when your community needs you. **0**

Bridgewater works with radio stations, program producers and other media companies to help them solve sticky problems, including analyzing and enhancing their disaster recovery preparations.

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Programmatic May Help Radio Get a Bigger Slice of the Advertising Pie

by Doug Irwin, CPBE DRB AMD

As I have mentioned elsewhere, we're carrying a theme throughout this month's issue — that of non-traditional broadcast technologies.

Usually we write about the evolution of technology utilized in content generation or in

transmission, but this time around, we're going to talk about an evolutionary change in technology used in the generation of revenue—very important to those of us that work in commercial radio. (Readers working in non-com radio should find this interesting as well.)

"Programmatic" is a relatively new term used to describe the technology that allows buyers and sellers to engage in transactions via the programming, or automation, of sophisticated algorithms in a marketplace or exchange.

Advertisers and their agencies have said they would like to enable programmatic trading across all of their media buys, representing as much as 50 percent of all media spending. Few of these dollars have come to radio yet, but supporters say automated buying and selling can return money to radio that has migrated to digital advertising, which advertisers find easier to transact. They're also saying that programmatic technology leads to a greater return on investment for advertisers and agencies, while optimizing the rates media get for their inventory.

JELLI

One of the promoters of programmatic ad technology is San Mateo, Calif.-based Jelli, founded in 2008 by a team with deep experience in Web, media and software innovation.

CEO and co-founder Mike Dougherty is a former Microsoft executive. Jelli's other co-founder, Jateen Parekh, was the first employee of Amazon's Lab126 in 2004, where he became the head of advanced technology and platforms for the Kindle project. Parekh was also an early engineer and architect at ReplayTV, which launched the first digital video recorder.

Jelli recently raised \$21 million in Series B financing. Investors in the round included Relay Ventures, Intel Capital, First Round Capital, iHeartMedia and Universal Music Group. This funding brings the total amount raised to \$37.6 million.

The company also recently announced it has been enlisted by iHeartMedia to provide the technology platform that will allow advertisers to purchase ads, in a programmatic manner, on all of its 850 radio stations. Jelli will also provide the technology behind a new programmatic buying exchange for Katz Media.

I recently interviewed Jateen Parekh to discover more about the technical aspects of the system.

Doug Irwin: *It's my understanding that ad buyers will use an online portal to make ad buys, based on the desired demographic, day-part and cost-per-thousand.*

Jateen Parekh: Initially, ad buyers will still go through their normal sales channels. However, the sales and ad operations teams use SpotPlan, which is a Web application that interfaces with Jelli's cloud-based platform. Planners enter in the goals of the advertisers' campaign, including demographic, day-part and campaign measurement goals (not just CPMs). Jelli's goal is to make buying linear radio as easy and fast as possible. Some ad planners just want to enter high-level goals, and then allow the Cloud Platform to do the rest. Eventually, we will also provide a version of this platform directly to ad buyers to use on a self-service basis to buy inventory directly, but that will be in a future release.

DI: *The actual spot audio is uploaded to the Jelli*

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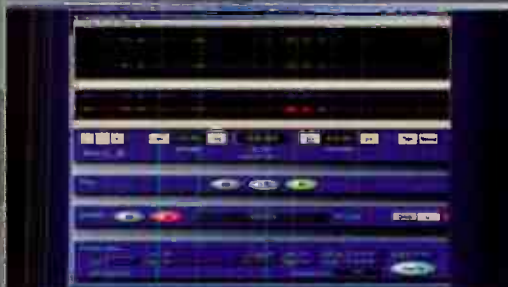
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TRENDS IN TECHNOLOGY

system via an online UI also, correct?

JP: That is correct. Before a campaign is scheduled to start, audio creative is securely uploaded into the platform and automatically rendered for length, levels, audio quality and broadcast suitability. The agency and the network manager review and approve creative prior to the campaign start.

DI: Ads are transferred to their respective radio station from Jelli servers via "the cloud." Tell me a little bit about how that is accomplished.

JP: The RadioSpot Ad Server is installed at the radio station and configured in a secure network, and only makes outbound calls to the Jelli Cloud Platform using a secure application programming interface. Once properly authenticated, the appliance downloads a playlist containing the spots to air. If ad spots have not been previously downloaded, or are new, the appliance makes secure connections to the Cloud Platform to download any missing audio creative.

DI: Regarding spot playback: When the spots come up in the commercial log, the Jelli server plays them out, without further intervention.

JP: Yes — every station traffic manager has the ability to schedule "Jelli breaks" into their existing traffic system. When the break is encountered by the local automation system, it triggers the RadioSpot Ad Server to fill the break. All modern automation systems work similarly to NexGen, where the trigger mechanism is a TCP-based message. RCS Zetta, WideOrbit Automation for Radio, AudioVault FLEX, STORQ, iMediaTouch fall into that category.

However, we also work alongside another 25 other systems [including multiple versions of some systems], including Maestro, Scott Studios 32 [SS32], and RCS MasterControl and older versions of AudioVault that don't support TCP-based messages.

For that reason, we developed a proprietary audio trigger technology that does not require any automation system configuration, networking or



There are two kinds of RadioDash: One for advertisers and agencies to track campaigns, and another for affiliate stations.

interruption to playback. The automation triggering is pretty cool for traffic because you can now just place the dedicated breaks in your logs and without having to deal with changing creative, affidavits, rotations, etc., because the RadioSpot Ad Platform manages all of it automatically and in real time.

DI: After the Jelli server confirms the spot played, it generates an appropriate affidavit, as a final step.

JP: That is correct. The Jelli Ad Server records all breaks and automatically detects whether ads have

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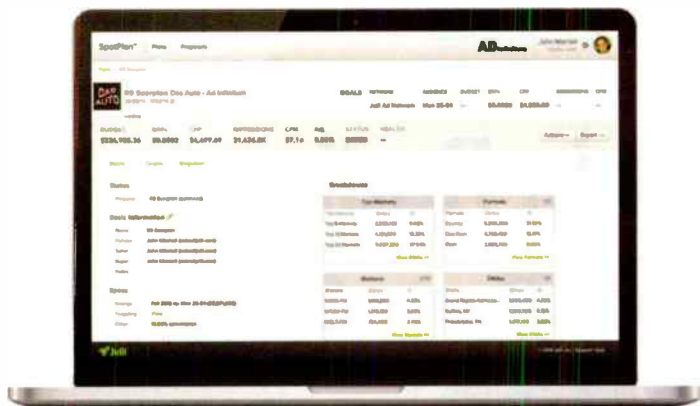


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bdi



Sales and ad operations make use of a special UI called SpotPlan to create proposals and place orders.

played properly and reports all plays that can be viewed [or listened to] by ad buyers or advertisers, on a self-service basis. Jelli's reporting Web application used by advertisers is called RadioDash, which is also available to sales and local traffic managers who want visibility into RadioSpot performance. Essentially, RadioDash real-time reporting eliminates the needs for affidavits.

DI: Do ad buyers make use of a special UI, or do they access the system using the public Internet?


JP: Sales and ad operations make use of a special UI called SpotPlan to create proposals and place orders. SpotPlan is used by sales teams to look into

available inventory, setup campaign goals, create proposals and handle insertion orders. Once spots air on stations, RadioSpot reports the data back to the Jelli Cloud Platform, which is then displayed in RadioDash.

We have two flavors of RadioDash: One for agencies and advertisers to track all of their advertiser's campaign goals across all markets, and another one for affiliate stations who want visibility into what ran on their particular station or market.

DI: Where is the Jelli system located? Is it a cloud service supported by something like Amazon Web Service or does it have its own data center(s)?

JP: It is a hosted cloud service that does not rely on Jelli's own data center. All of Jelli's programmatic systems are handled, and hosted, by AWS, allowing us to easily scale up without having to manage and operate a local datacenter. Jelli uses AWS for computing [EC2], storage [S3], and content delivery [CloudFront]. Our platform runs out of AWS, and is accessed by our Web applications using Jelli developed APIs.

It's long been said that radio's slice of the advertising pie is not as large as it should be, based on measured audience size and return on investment. In order to remain in the same league as the other big media, radio has to avail itself to advertisers in the same manner as they do. Programmatic buying represents a further evolution of the commercial radio business model, and I, for one, am hoping that our slice gets bigger because of it. 

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APPLIED TECHNOLOGY

Changes in Radio Distribution — and Monetization

by Fardau Van Neerden

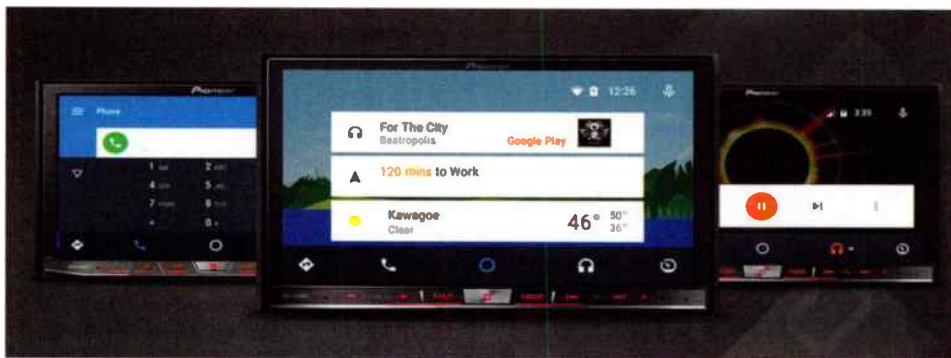
Radio as we know it has been around for almost a century in a basically unchanged form.

Of course, there has been a huge amount of progress in terms of the technology for studios, automation and transmitters, but the fundamentals remain the same: You make a program, you transmit it and people listen to it using their radio at home, in the car or in the office.

of application of these services. How are people able to use them?

WHAT I WANT

I've been talking to many companies in this industry on how I think this would work on a large scale, and the basics behind my thoughts are always these: It needs to be as easy as what we've been using for the past century.



Android Auto user interfaces, as depicted on the Pioneer Systems website.

This is something we've been doing for a long time and we do it quite well. It may seem there are no big surprises left for the world of broadcasting— but I think this is about to change.

Streaming technology is evolving at a rapid pace, and new services are popping up everywhere. Apple, Google, Spotify, et al, each offer streaming services with some sort of monetization, whether via advertisements or a monthly user fee. This is not a huge technological breakthrough, but more of a natural evolution for streaming.

The big breakthrough is more in the area

When I step into my car, I turn the key and the radio starts playing — and that's what I want for the replacement of AM/FM.

I *don't* want to pair my phone with the car — or even worse, plug in cables, start an app and reach for my phone each time I want to switch stations.

It should be as easy as turning on your radio and scrolling through streams, the same as you would tune through the AM/FM band.

Luckily, my prayers have been answered: Apple is rolling out its Apple CarPlay and Google is doing a similar thing with its Android Auto.

At first, I was afraid that a lot of car manufacturers were going to develop their own (usually not so great) solutions. And some did. But, fortunately, it also appears that a lot of the big manufacturers are embracing these



Apple CarPlay

platforms, and some even offer both Google and Apple's digital dash interfaces.

One in five passenger vehicles across the globe will be connected by 2019, according to the new report from Juniper Research (<http://tinyurl.com/juniperresearchreport>), and I'm sure that this number will be much higher in western countries in just a couple of years.

You must be ready to offer your services on these devices and this is where I see a huge gap between the traditional radio and purveyors of this new technology.

THE AD EFFECT

Apart from listening experience and quality, there is also a lot going on in the world of advertising.

I work for a Dutch TV broadcaster, and we are always looking for ways to monetize our content.

At this moment, we see a lot happening in targeted advertisement and last moment bidding. This is a technique where just before an ad break comes up, we ask an ad network with a set of user profile criteria to come back with a list of ads to play.


While this is nothing new, on the other side of the ad network, there will be real-time bidding going on between companies

that want their ad to be played. The highest bidder will win and that is the ad that will be served. The end result is that the most expensive (and relevant) ad is served to the user.

Over the past few years, I've been discussing this type of monetization with companies in the radio industry, but I haven't

seen this type of service offered for radio just yet. I think that there will be a need for a turnkey solution that offers this out-of-the-box to compete with the emerging streaming services.

In my next column, we will tackle how broadcast radio can compete against (or with) streaming services. **Q**



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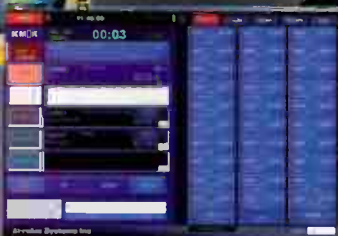
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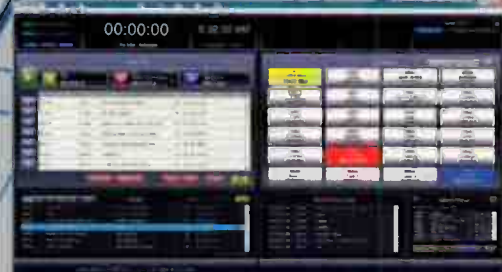
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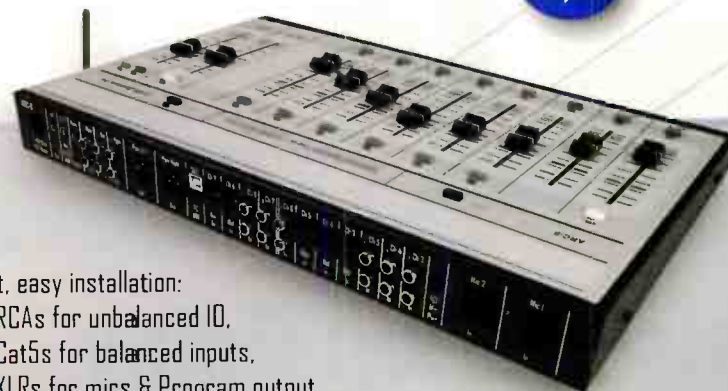
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Talk, capture, share

Step inside the social studio

Fold-up branding looks great — and can be easily masked when the van is not in use.



This Citroën Relay Is a Mobile, Social Studio

FACILITYSHOWCASE

by Chris Wygal, CBRE

The work of radio broadcasters revolves around content delivery. Prior to the birth of the World Wide Web as we know it, radio had a comparatively easy assignment: Deliver the content over the airwaves and do it in a way that gains and retains listeners.

That assignment remains; the difference now is that the Internet has compelled broadcast to adopt a multi-layered approach. Deciding how to stay competitive and to create a socially relevant atmosphere is not easy. We see an entangled web (not to be confused with the Internet) of product after product that promises to hurl us headlong into the social media rat race. We can stream audio, provide metadata, create and upload videos, stream live video, tweet in real-time and garner Facebook comments all in concert with our radio content creation.

An interesting integration of these techniques is being demonstrated with the Bionic Van, which is used by supplier Broadcast Bionics to promote its product lines and educate customers around the United Kingdom.

A NEED TO SHARE KNOW-HOW

Phil Bignell, broadcast systems architect at Broadcast Bionics, recognized a problem: There hadn't been a trade show specific to radio technology held in the U.K. in eight years. Giving engineers, sales staff and management a hands-on look at equipment and integration techniques was difficult.

Bignell and Business Development Manager Kirsten Smith decided it was time to collect much of the company's product line and install it in a mobile "social studio." With the motto "Talk, capture, share," a plan for the

Bionic Van was set in motion. It would go on the road from the company's headquarters in Sussex, England, and demonstrate radio studio technology offerings, especially as related to social media integration.

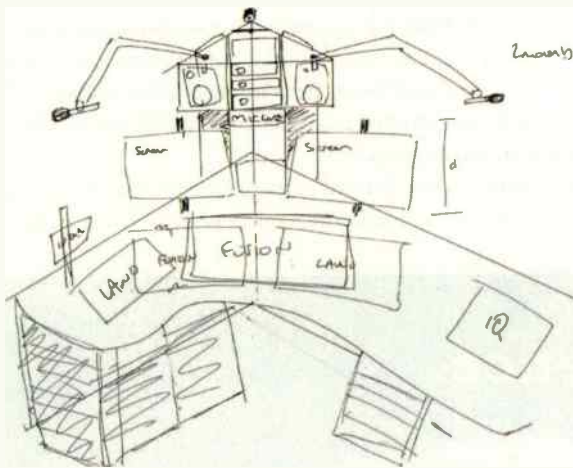
BUILDING OUT THE BIONIC VAN

Showcasing the product line in a mobile fashion would begin with Masters Exhibitions in Kent.

They first procured a lightweight van, a Citroën Relay about 22 feet long, in which custom countertops were built atop existing cabinets. The cabinets and cupboards made room for retrofitted equipment racks and storage space. The van was outfitted with a 1 kW generator that powered the broadcast equipment, alongside travel essentials, such as a refrigerator. As groups gathered to tour the Bionic Van, the fridge came in handy for hospitality.



Although it is certainly compact, this set-up does not look much different than the typical stationary on-air radio broadcast studio.



This sketch shows the concept that Bignell envisioned for the Bionic Van. The photo, at top right, illustrates the faithful execution.

Bignell and his design team made quick work of outfitting the Bionic Van with the products they wanted to feature, in a fashion that was aesthetically pleasing. The Citroën Relay lent itself in contributing to the feel and theme of the installed gear.

With help from U.K.-based design agency Sublime Live, Smith was able to create a look consistent with the company's exhibition branding. However, the necessity of leaving a vanload of equipment parked overnight was good reason to not put a great deal of identifying graphics on the outside. Sublime created display graphics and branding in the right places — only visible when the van's opening-sides and canopy were unfurled for exhibition.

KEYS TO A SOCIAL STUDIO

Broadcast Bionics wanted to highlight its Virtual Director product for hands-on demonstrations. Because of its installed nature and integration with Axia nodes and PhoneBox, Virtual Director requires a full install to operate, impractical for simple demo purposes; the van is equipped with the necessities to give Virtual Director and PhoneBox a good showing.

PhoneBox is a software-based solution that integrates with Telos VoIP

systems, radio automation and social media accounts. It allows producers and air talent to interact with listeners more socially; platforms such as Facebook, Twitter, Google Plus and YouTube are managed in PhoneBox and its social media server OASIS.

With these tools, engagement with listeners and social interaction is

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FACILITYSHOWCASE



The Bionic Van logged a lot of miles during its tour around the United Kingdom.

filtered, curated and analyzed through PhoneBox. Analytics also show audience reaction and content impact.

The supplier felt that putting PhoneBox where prospective customers can see it is important; thus the van is of service.

VIRTUAL DIRECTOR

Three ingredients have increased the viability of utilizing video in radio control rooms: More and cheaper IP bandwidth, smaller cameras and low-profile LED lighting.

Broadcasters can now provide real-time video streams of their control rooms online, in addition to over-the-air broadcasts — and installing economical video cameras and lights is the easy part. Finding human beings to operate a video switcher, create lower-third graphics, roll video and manage the numerous other tasks involved in live video is difficult.

The company's Virtual Director system can be utilized to solve that problem. Combined with Axia consoles, Panasonic HE2 cameras and hardware from Blackmagic, it allows for camera shots of studio talent, lower-third CG, “now playing” information from automation and live texts and tweets from listeners to be displayed visually on

one screen. Album artwork and other content-rich options are visible on the screen simultaneously.

The system can be operated in automatic or manual modes. A producer can switch camera shots manually, or Virtual Director can

**“You cannot create experience.
You must undergo it.”**

~Albert Camus

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Visitors get a demonstration of the Virtual Director and other equipment inside the mobile van.

follow camera sources based on which studio microphones are spoken into. For example, if camera one is fixed on the host, each time he or she speaks, the camera one shot is taken. In the event that several people speak at once, Virtual Director will switch to a wide shot. When a song starts and the microphone faders are muted, album art will be brought up on-screen.

Broadcast Bionics refers to Virtual Director and PhoneBox as “shareable radio, not automatic television.”

This content-rich environment is equally driven by listener interaction. Social media elements are managed through PhoneBox by producers or air talent before an erroneous or inappropriate text or tweet shows up on screen.

MORE INSIDE

Bignell and Smith were tasked with stuffing the Bionic Van not only with Phonebox and Virtual Director, but products from Music Master, WideOrbit, the Telos Alliance, Digigram, Lawo, Stirlitz and Newsboss as well others from Genelec, Yellowtec, Shure and Viprinet.

Many folks along the U.K. tour were interested in seeing the Lawo Sapphire broadcast console and its integration with Ravenna and Axia’s Livewire. Additionally, two Axia Fusion consoles were on board to demonstrate the AoIP install. Omnia.7 and the Omnia.9 processors were on hand to demonstrate new techniques offered by the Telos Alliance. Since the Bionic Van speaks heavily to social media content creation, Omnia 9 was included for its ability to process FM, HD1,

HD2, HD3 and Web streams uniquely.

Shure SM7 microphones, Yellowtec Mika microphone booms, Genelec 8000 Series monitors and WideOrbit automation systems made for an aesthetically pleasing experience for van visitors. During its tour, engineers, administrators, sales and production staff were impressed by the combination of the products and how they worked together.

Minimal wiring is used in this environment, and Smith noted that a few runs of low-cost Category 5 cable were the only wiring used for AoIP interconnection. With a Cisco Catalyst switch at the center of everything, and wireless VPN Internet service from Viprinet, AoIP and Livewire platforms were quick hookups and Internet service was simplified. Bignell was able to elevate the Viprinet router aerial antennas using a robust speaker stand and upside down Christmas tree stand. Go ahead — feel free to steal that idea!

More information and plenty of photos can be found on the Bionic Van blog at bionicvan.tumblr.com.

Wygal is operations manager for The Journey Radio Network in Lynchburg, Va.

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How to Plan For Emergencies

by Doug Irwin, CPBE AMD DRB

It's quite likely that you are a one-man (or one-woman) band, providing technical support at a radio station (or stations). Many of the recent messages I have received from readers show that a lack of help in the form of a second person is endemic in radio.

In Tech Tips, I'm going to continue to do my best to explain tried-and-true ways to cope with this situation.

While you cannot be in more than one place at a time in the literal sense, you *can* be in the figurative sense. In order to do so, you must plan for events that may or may not ever

happen. Let me give a few examples:

Our transmitter never fails—therefore we don't have a backup. While this might be true over a short period of time, eventually every transmitter will need some down time.

The power has never failed at the studio—therefore we don't have a generator. Again, over a several-year period, this might be true. Not to seem like too much of a pessimist, but you can almost bet that when it does fail (because it will), it will be during an inopportune time.

A major problem with being the sole person in engineering is the stress that comes from having to decide which fire to put out first; another is having to drop everything and go off to perform a technical miracle at one site, while another fire is still smoldering.

Planning for emergencies is something that gets easier as you gain more experience. You'll take on a new station, walk through it and think to yourself: "This is wrong, this is wrong, this is wrong," while making mental notes of all that needs to be done. As you recall all the emergencies that have come your way, you'll begin to recognize which ones are just waiting to happen in your new charge.

Here's the one key takeaway: Always plan your response from the perspective of the emergency responder.

Let me give you an example.

You take on a new job or an additional radio station. You study the studio-to-transmitter link configuration. From the comfort of your desk, in the middle of the week, during normal business hours, you conclude that having a spare STL transmitter sitting on the shelf means that you are covered in the event that your single-thread STL fails for some

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TECHTIPS

reason. Your emergency plan is to swap the unit out in the event the normal one fails, taking the station off the air. Satisfied, you then move on to the next topic.

That is what I would call emergency planning from the comfort of home.


Now let's play out that fairly optimistic scenario. You're out having dinner with a significant other. It's wintertime; the roads are slick. Plus it's Friday night, and frankly, you've had it with work for the week. Your cell phone rings; your station is off-air, with nothing but silence. You get a jock at the studio to look in the rack room,

Always plan your response from the perspective of the emergency responder.

and this person tells you that the STL transmitter is dark. Clearly, it blew a fuse. Your emergency plan means you need drop to everything, excuse yourself and head out, accepting that the station is off until you manage to get there.

While driving in the cold winter darkness, you think to yourself: "Wouldn't it be great if I had set up a remote control, and a second STL transmitter — or another STL, making a second thread — so that I could have just switched over to it, keeping the station on-air, and staying on my dinner date?"

You don't want to wait until you find yourself in that position to realize how you could have made your life easier. You want to imagine yourself as the person dealing with the emergency — and give that person what they need to get the station back on-air in the most expedient fashion. That's called "being prepared."

The next edition of Tech Tips will continue this same topic. Drop me a line with thoughts or tips on this or any other suitable topic. 

Irwin is RF engineer/project manager for iHeartMedia Los Angeles. Contact him at doug@dougirwin.net.

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RADIO AUTOMATION SOFTWARE

Yamaha AG03 Has the Right Mix for Podcasts

by Chris Wygal, CBRE



Yamaha AG03

In 2004, I received an interesting phone call. “Would you help me record a podcast?”

A podcast is a downloadable audio file, a program on which hosts originate unique ideas. Apple invented the notion of the podcast with the intent of making a genre of spoken content (on nearly every subject matter) available to iTunes subscribers for download onto their iPods. Over time, the term has become a household name for an audio file that is downloadable from almost any source. If a podcaster has something to say, the chances that someone is ready to ingest that material are fairly high. In a society that gets its marching orders from social media, podcasting is a sizeable player.

Back then, I wasn't exactly sure what was needed to record a podcast.

But as I worked for nearly five years with this client, I certainly learned some ins and outs. His podcast was a full-fledged radio-like production that garnished 20,000+ downloads a week. On one episode, we had guests on the show simultaneously from Baltimore, Dallas and Los Angeles. As far as podcasts go, it was a heavy production.

But what is the purpose of podcasting? Does every podcast need to be a major production? No.

The best podcasts available today are the ones that contain great content and compelling ideas. A podcast host need not invest in a big mixing console and studio time. A laptop and editing software in concert with a sensible audio interface is more than sufficient. With the spirit of this type of economy in mind, Yamaha has developed the AG03 mixing console. For a demanding podcaster, the AG03 is a great solution.

FORM FACTOR

As more USB-driven computer peripherals populate desk space, a mixing board is the absolute last item a podcaster needs on his desk. The AG03 measures five inches wide, 8 inches deep and sits 2 1/2 inches tall. It is smaller than a tablet!

Additionally, by way of eliminating power cords, the AG03 is powered via a USB 2.0 terminal when connected to a PC or Mac. When used with the aforementioned tablet, a USB power adapter or mobile battery must be employed using the USB micro B plug to provide the necessary 5V (500 mA) supply power. The AG03 weighs less than two pounds and travels well in a laptop bag.

FULLY LOADED

For the purpose of this review, only five cable connections are made to the AG03, and we'll start with the microphone options. One fader facilitates level control for a dynamic or condenser mic plugged into an XLR jack or a 1/8-inch mini input. The XLR input has options for a 26 dB pad and 48V phantom power. I used a side-address condenser on the XLR input, and as is expected from Yamaha, the “D-PRE” preamp delivers a smooth and clean reproduction of any mic plugged into the XLR jack. The 1/8-inch mic input is located in the “headset” section in tandem with a 1/8-inch headphone jack for use with a headset.

The next cable is, of course, the USB 2.0 connection to the computer. This is where the AG03 gets power and 24-bit/192-kHz audio is transferred to and from the computer. The third and fourth cables are connected to

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World Radio History

the left and right 1/4-inch monitor jacks and are used to send audio to a set of powered speakers. RCA jacks are also available for connecting to unbalanced monitoring systems.

The final cable is for the headphones plugged into a 1/4-inch TRS jack. The speakers and headphones have individual level control knobs, a handy feature usually not found on small-format mixers. Another equally handy feature is the "monitor mute" button that mutes the speakers only. This prevents blown speakers and injured eardrums when the mic is turned up.

MORE STUFF

A 1/8-inch TRS mini jack is on-board for using a tablet, phone or any other audio device for auxiliary audio. This input does not have a level control, as most phones and tablets have their own volume controls.

Routing audio to the computer is handled in the "TO PC" section where three options are available: The first sends the microphone "pre-fader" directly to the computer. Option two sends the stereo mix of the AG03 and "loop-back" sends the AG03 stereo mix and computer



AG03 is perfect for small studio applications where desk real estate is limited.

audio back to the computer. This is a great feature for live webcasting, but it can also create feedback if not used properly. The computer return has its own level adjustment knob.

Channels 2 and 3 on the AG03 each have three 1/4-inch jacks for a stereo line level source or a guitar. This section is available primarily for musicians, but it can be used by podcasters who wish to include line-level audio source gear during production. Channels 2 and 3 have dedicated level adjustment knobs as well.

MAKING IT SOUND RIGHT

The AG03 is designed for the novice; however, for more seasoned users, the AG03 has compression and EQ settings that are fine-tuned by the AG DSP Controller. Once installed (in addition to the computer drivers, also available on Yamaha's website), the AG DSP Controller offers a surprisingly intuitive and powerful on-screen interface. Easy compression settings and a parametric EQ give the user plenty of options

for creating up to ten definable user presets. Additionally, the acoustic effects and guitar amp simulator are an added touch for the music gurus.

GETTING IT ON TAPE

After the AG03 setup is complete and the content for the podcast is ready for the world to hear, the Cubase AI recording software that comes standard with the AG03 provides a simple way to record the show. The AG03 can certainly be used with other PC- or Mac-based recording platforms and DAWs as well.

WRAP UP

Out of the box, the AG03 appears to be just another small-format mixer with the same familiar features. However, the utility packed into its diminutive design is surprisingly refreshing.

For a mixer with only one real microphone channel, I was delighted to see a real fader. The microphone preamp still sounds classy and the USB-only power is a great bonus. AG DSP Controller, while fairly basic, is intuitive and packs a punch.

For startup podcasters or even a voice-over talent who need a small, lightweight solution for USB audio recording, AG03 is a home run. **0**

Wygall is the operations manager for The Journey Radio Network in Lynchburg, Va.

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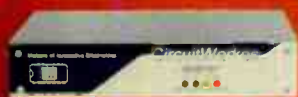
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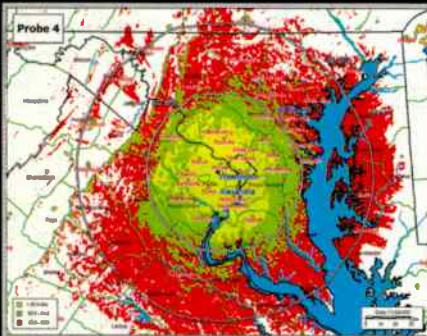
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Social Media Is Impermanent, But Broadcast Spectrum Is Forever?

by the Wandering Engineer

“One of the troubling aspects of modern life is that attention has been shattered into smaller and smaller pieces.” — James Taylor, June 2015 issue of Hemispheres

Traditional broadcasters have social media envy.

Not that any sane person would trade a thriving broadcast enterprise and license for some local social media/Internet marketing concern.

However, there is great fear that the wolf is at the door and that the competition will somehow more effectively connect with our audience and steal our advertisers, or maybe we'll miss a ride on some magic social media rocket that will change everything overnight.

The social media grass that is greener is a business where 0.001 percent of college drop-outs create media giants that have market caps in the billions. It's the space where 140-character topple empires, billionaires are made, where the very way we think is changed, where we meet and mate, where we find ourselves, our careers, our friends and our frenemies.

Yet social media is far more impermanent than a spectrum license.

MYSPACE'S RISE AND FALL

For example, next to Myspace, the erosion of AM radio has occurred in ultra-slow motion. In 2006, Myspace beat out Google for the title of the most visited site in the country. News Corp. had just bought it the year before for \$580 million. Four years ago, Justin Timberlake and Specific Media Group acquired what was left for \$35 million. As of February, the site was the 1,296th most popular site in this country, and 1,594th in the world, falling deeply into the noise floor.

The social media grass has been grazed to the rock. Social media has raised the noise level for all media and fragmented our attention and

audiences. It's the world where 90 percent of our station's mind share is on "digital," where we might make 10 percent of our revenue. It's where frequency outstrips reach so dramatically that it's hard to justify the "broad" in broadcast electronic media. Social media competes with electronic media. Every person who turns to their smartphone or computer instead of a radio or TV is a loss for electronic media.

IF YOU CAN'T BEAT 'EM ...

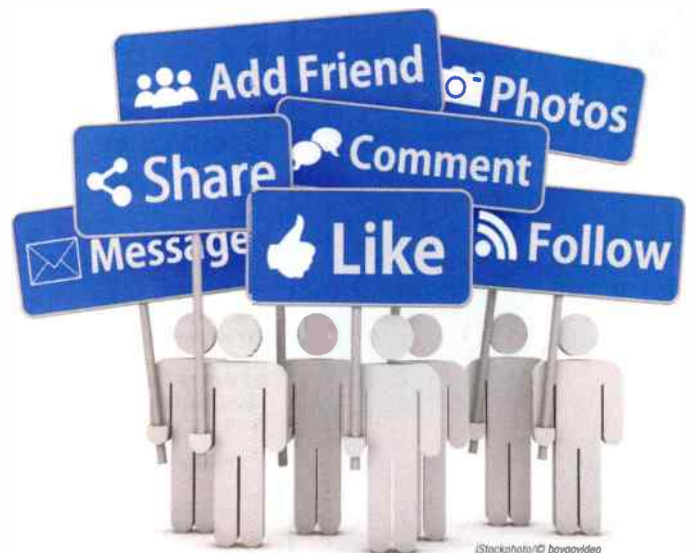
For the most part, broadcasters and print publications have opted to defect to the winning side.

The print world is shifting its business plan — selling access and advertising not so much to a physical medium, but to Web pages.

Broadcasters, on the other hand, are using their cash flow to chase social media to supplement their businesses. It's like getting a power increase or simulcasting: More reach, cheap marketing.

Consider this, though: When your audience gives a station a preset, they make a long-term choice. Earning a preset is a difficult task. "Following" on social media or loading an app might be a choice, but it's one that soon gets forgotten and eventually cleaned up along with the rest of the garbage that got sampled or slammed onto the desktops and devices. A radio preset is a destination, whereas an icon is a sometime-convenience in a field of noise.

Shannon's theorem is still spot-on: Noise is the enemy of communication. In the social media space, curation and filters address the noise obstruction. Half the pages on the Web



have no original content at all — they simply curate links to the half that does. The cheapest show we broadcasters can produce is one where interns scour the Web for cat videos, crash videos, opinions and jokes to stitch together and broadcast.

For the last decade, broadcasters have looked for that digital business plan. More channels, sub-channels, IP channels, social media channels and efforts to crank out more and more content, often with less and less substance — fragmenting our audience's attention — and that of our personnel — into smaller and smaller pieces.

Maybe the value of broadcasting comes from the "broad." Just being "casters" might not be that great of a business plan.

Sometimes more is just noise — punch that broadcast preset and the noise goes away. Maybe that's why TSL beats browsing time and average TV viewing time has grown to five hours. **0**

The Wandering Engineer is an industry stalwart who has been in broadcasting since the days of Marconi and Tesla. He gives his thoughts on the current state of broadcast engineering and the broadcast engineer.

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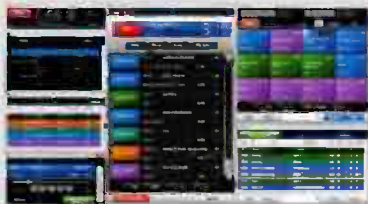
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