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Everything as a Service

Radio technology moves to the service model



Paul McLane
Editor in Chief

Nowadays it seems that just about any aspect of radio station workflows and business operations can be outsourced or provided as a service.

The trend is visible in automation and intercom, processing and mixing, sales tools, back-office administration and tower lighting.

Even hardware products may now come with available subscription upgrades to activate premium features.

What new functionalities and capabilities are these tools offering? What questions about backup, security and factory support should buyers be asking?

This new Radio World ebook explores the implications of the op-ex model for technology and business executives. Starting on the next page we talk to a half-dozen experienced engineers and managers about the topic; that's followed by Q&As with sponsoring companies that are helping to lead this growing part of the radio industry.

Continued on page 4



THIS ISSUE

3 Everything as a Service

16 Marketron invests in hubbing and third-party digital

20 Telos Alliance: Hardware and software solutions are developing side by side

24 WinMedia deploys SaaS across the enterprise

26 MaxxKconnect: "Broadcasters don't want to own stuff"

28 NeoGroup: Weighing cap-ex versus op-ex approaches

30 Radio.Cloud's Brenner on the benefits of "going native"

32 StreamGuys: Service model gives you flexibility to make changes faster



4

Above
Derek Murphey sent this photo with the suggested caption: "One minivan full to the brim with new hardware for a studio buildout in Kansas City — how much of that **COULD** be service- or cloud-based today?"

Across the enterprise

"It's probably easier to talk about aspects *not* sold as a service model," said Derek Murphey, network production software manager for [Northwestern Media](#).

"Our drinking water, postage, even printing is one service; and whether we need toner, paper or a completely new machine, we're provided the ability to print documents. Softener salt is delivered on a schedule, and the tank is replaced when it stops functioning properly.

“**Know your critical software vendors and how you would work around the loss of any of them.**”

"We have to look a bit harder on the broadcast side, where we are not as trusting to hand over 100% of the control," Murphey said.

At Northwestern Media, he said, "We are very fortunate to have a robust IT department in-house, so we don't need to farm out those services, something very common for small one-off stations. While we deploy and maintain our own hardware, our billing, our traffic and music scheduling software are all 'leased' services."

Radio sales teams already have a number of tools that are provided as a service.

"From my user perspective as a salesperson," said Rob Evans, account executive for [Bonneville Seattle](#), "service models provide resource savings — time, labor, communication, etc., for instance with Office, Teams or vCreative — or revenue generation support, like Tapscan, Veritone or ZoomInfo. The company selling the SAAS needs to demonstrate positive ROI and solve pain-point problems to be purchased."

But the horizon for service-based offerings is broadening quickly.

Joe Geerling, director of engineering and technology at [Covenant Network](#), says, "My current work uses Barix

boxes and the StreamGuys Reflector service as the 'satellite of IP.' I send audio to 26 transmitter sites through the Reflector service."

Covenant also uses a service to manage fundraising, and it relies on Constant Contact for email management and MS Office 365 and OneDrive for various functions.

"We are an Axia facility and watching for ways to justify taking the studio structure to the cloud; but with such a simple facility and all the connections to talent in place it will be a while," he continued.

"I would consider trying a service to send my audio to and have it monitored, processed and sent to sites ready for composite or whatever input the individual site requires. We own our automation systems and they are pretty simple to run — even when a vendor stops upgrading the software!"

Tony Lorino is CEO of [Throwback Brands](#), which produces three nationally syndicated shows and provides format, digital and consulting services for broadcasters. It offers a 24/7 option "as a service" that includes programming, on-air hosts, imaging, promotions and other services.

"From my perspective, many independent owner-operators are in a tough spot, where they want all of their brands to thrive but they don't have the option to staff all of them to the capacity where they'd like, or even staff their engineering or digital department.

"In addition, it is increasingly hard to find qualified people who want to relocate for broadcast jobs. That's where these services thrive."

Throwback has been working with radio.cloud to build out its 24/7 format on WYET(FM) "Throwback 102.3" in South Bend, Ind. Radio.cloud, Lorino said, "runs the entire side of the radio station's programming, including local news and weather that are inserted locally. Local and national spots can integrate easily too."

Jason Ornellas, regional director of technology for [Bonneville International Corp.](#), notes that service models are not limited to software.

At KTAR(AM) in Phoenix, Bonneville is using LumenServe for tower lighting as a service. "This model seemed like a great way to spread maintenance and capital costs over time as well as take the burden and responsibility off the chief engineer. It's a super-convenient solution that came about when we were looking to replace the current tower lighting."

LumenServe offered a turnkey system that included a new LED lighting system, compliance, 24/7 monitoring and all maintenance and repairs. "The monitoring can be fully customized to your scale, and they provide quarterly reports for your compliance records. It's one less thing our chief has to worry about. The service model means we will never need to purchase a new lighting system ever again — a win all around."

Rob Bertrand is senior director of technology at [WAMU](#)



in Washington and former New York market chief for CBS Radio and CBS Sports Radio Network.

"I've been thinking a lot about this lately, both in terms of what we might benefit from doing at WAMU and, more broadly, where this has implications for ensuring the sustainability for public radio nationally," he said.

"There is a lot of good work going on in the commercial sector, primarily driven by mandates for cost reduction, that could be adapted in the public media space and with a mission-centric focus to reallocate operating expenses and enable greater audience service."

WAMU uses cloud-based WideOrbit Traffic and WideOrbit Payments, as well as on-premises WideOrbit Automation for Radio.

"Our adoption of WideOrbit Payments is a great example of how we leveraged an existing hosted platform delivered as a service to reduce our dependence on multiple back-office personnel to receive and process payments and

Above
Rob Evans. "The company selling the SAAS needs to demonstrate positive ROI and solve pain-point problems."

ensure they were quickly deposited and correctly credited,” Bertrand said.

“As staff turned over, it presented us with both a challenge and an opportunity. Ultimately we adopted WO Payments, which integrates with WO Traffic for billing and reconciliation, and it eliminated the need for lots of manual local work that did not deliver value to our operation.

“While big commercial operators have been doing this sort of thing for a long time, this was an example of where, as a standalone station, we were able to adopt best practices and streamline workflows that would not have been possible if it were not for this SaaS-based solution.”

Bertrand points out that in public media, Jim Taszarek Jr. founded [Market Ingenuity](#) as a corporate sponsorship team using a service model.

“He was able to take his passion for public media and its

audiences, pair that with his knowledge of commercial best practices, and begin to serve the need of public stations who often lacked the sort of expertise and training that can be rolled out across a large corporate player, for example. Today they’re in lots of markets, fueling the missions of lots of public stations.”

Bertrand is aware of LumenServe tower lighting and considers it an innovative approach. “And I’m so impressed with what Josh Bohn and his crew are doing at MaxxKconnect. It was so interesting to see how he’s been evolving his product of ‘bonded wireless internet as a service’ to other part of the air chain.”

Another area where cost reductions can be realized is in the management of ongoing expenses for telecom, internet and point-to-point connectivity.

“Emily Lindner saw this when she worked for AT&T, and she went on to found TruNorth consulting,” Bertrand said. “I used her in New York at CBS and brought her in here in D.C. Our operation at WAMU is much smaller than what I was managing in New York, yet she and her team still found ways to deliver six-digit annual savings to us.

“Coupling that kind of work with new expenditures for SaaS solutions is an interesting approach to finding a way to pay for new ongoing expenses without having to find new budget for it. My only regret is that we did that work long enough ago that those budget savings have long since been built into our budget.”

Pros and cons

What are the benefits and business implications of choosing to purchase a service in this way?

“It really is just moving a line item to another line of the budget, depreciation vs. ongoing costs,” said Jason Ornellas.

“It can allow for more flexibility to use funds while allowing the company to gain additional resources or tools.”

Depending on your organizational structure, Derek Murphey said, it could be an easy shift from cap-ex to op-ex — or it could be a never-ceasing battle to defend your budget line.

“Capital expenses are generally a one-off proposal [involving] proof of ROI; that initial approval can be long and drawn out, but once you own it, you own it for good. Adding operational budget lines can be straightforward as long as the bottom line balances. The unique challenge for op-ex services comes when they are subject to budget review questions: ‘Is this the best service?’ or my favorite, ‘Can you do it for less?’”

Broadcasters, he said, can realize a number of benefits with the service route, given the right provider.

“When it comes to software as a service, even software leases, the trend is regular feature enhancements and service patches. As more and more of the SaS offerings are hosted in cloud data centers, there is some overhead reduction for on-premises computing hardware and consequently reduced utility and cooling demand.”

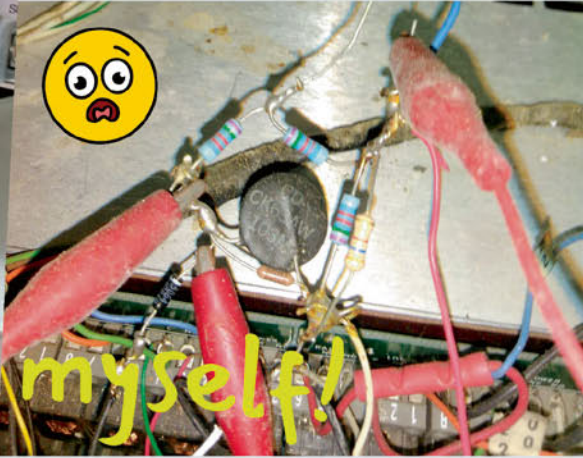
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Rob Bertrand. “As a standalone station, we were able to adopt best practices and streamline workflows that would not have been possible if it were not for this SaaS-based solution.”



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“Many independent owner-operators are in a tough spot, where they want all of their brands to thrive but they don’t have the option to staff all of them.”

8

Joe Geerling recalls a time when companies were evaluated on how much they reinvested in capital.

“But the more your business depends on software, the less the cap-ex should matter. Radio by its nature will have transmission systems for the long term; but creation and product delivery to the sites can all be software and outsourced hardware. GMs were always looking for ways to use cap-ex to reduce op-ex, and now that has to change.”

If he were pitching an owner or manager on service models for broadcast infrastructure, Geerling would remind them of the benefits radio has discovered with phone systems, Constant Contact, Office 365 or Google’s offerings.

“All remove any burden of local servers, software expertise to install, maintain and update. Even more critical is redundancy, backups, clean power and disaster recovery. Typically remote access is also part of cloud services.”

Applying this to broadcast can translate to smaller rack rooms, smaller UPS units, smaller critical cooling systems, fewer square feet and less dependence on employees to perform updates and security patches, Geerling said.

“If done well, the disaster recovery plan can be more reliable than is possible with a local facility and staff. But it can be done poorly, resulting in single-point failures. Many of us live in a world of many single-point failures already,” he said.

The cloud brings important benefits to many service

Right
Jason Ornellas.
“Enhanced features like additional multicasting, PPM encoding, or additional processing and logging come either at an additional subscription fee or a one-time fee with an annual cost.”





offerings, Rob Bertrand said.

"A huge advantage is not needing to provide the personnel or infrastructure to reliably maintain the system. It's hosted in a data center, ostensibly backed by solid HVAC, UPS and generator power. If you are not in the position to run that level of technical operation locally, cloud solutions are a great option."

You will still need to address other operational contingencies in order to ensure that your station stays on the air, he continued, but it's becoming more and more realistic to operate a simpler local technical facility and leave the "heavy lifting" to outsourced data centers.

"This is not so simple as just picking a few cloud services and ignoring the need for careful technical planning; but one can envision a future where skilled regional consultants are able to help stations build scaled-down local operations that leverage cloud capabilities for day-to-day operation as well as resilience in the event of utility disruption or natural disaster.

"The larger commercial operators are already doing this across their companies, to varying degrees. Cloud-based services are opening up a number of possibilities for smaller independent stations."

Bertrand says systems such as traffic are easy places to start. "I've even been able to successfully argue for the implementation of workflow systems like PromoSuite to assist with underwriting production and approval because of the number of hours it would free up for everyone involved with the process, ultimately increasing our overall productivity."

Where things get more complicated, he said, is looking at tools for which the business is not accustomed to making a recurring payment, such as automation and consoles. "I do think there is a model there," he said, adding that several of his vendors are spinning up SaaS offerings.

"For stations that are struggling to operate because they can't maintain technical personnel and perhaps have costs that are spiraling out of control due to that challenge, diverting those expenditures to a structured solution isn't hard," Bertrand said.

"If you're a standalone station without engineers, and you're somehow making it work with a very part-time contractor — or even just some reasonably knowledgeable operations staff — I think it's a harder sell to upgrade to a superior product that is now going to require a new expenditure to cover."

And for stations with robust technical staffs, especially those with unique production needs, Bertrand said it's much harder to argue to move to a SaaS model for playout or console systems.

"Is that expense in addition to your technical staff? Instead of your staff? There are so few engineers left in this industry. I sure hope that the independent stations that are still employing engineers are not going to see this as a cost-reduction opportunity."



Above
Joe Geerling.
“Losing control of critical paths of the product is the biggest downside to many engineers.”

In a large corporate environment, with the ability to build complex internal support systems, he said it is indeed possible to make such reductions, subject to some debate about efficacy and humanity.

“However, for standalone stations, someone still needs to manage the integrations of these SaaS solutions and weave them throughout a station’s operation. There just isn’t the scale to do what the large commercial operators are achieving in terms of centralized operations.”

Nevertheless, Bertrand said, there is much to be explored. “I do think there is opportunity for everyone — for engineers, manufacturers, stations and audiences. But we need to start working together and thinking differently.”

Pushback

Not everyone will be on board.

“Many engineers are not comfortable giving control of so many aspects of the facility over to a bunch of electrons whose path is completely out of the control of anything in

the local area,” Geerling said.

“Companies supplying the services are often unaware of what we would call critical paths or critical equipment needed to provide the services. They leave that to the providers in the middle.

“What happens when there is a DNS failure or a router is mis-programmed? Losing control of critical paths of the product is the biggest downside to many engineers. The downside for many managers is realizing cap-ex is converted to operating expense, a definite downside depending on how their company adjusts bonus calculations!”

Murphey notes that when a service or subscription ends, there may be little you can do to keep it running.

“The flipside to that fancy software agreement is the day the vendor announces end of life and you’re faced with the decision of how to replace the function, unlike a traditional software buyout where you can sandbox that Win95 tower running a Pentium233 and 64 MB RAM, well, because it just works.



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“Yes it requires new conversations and new ways of thinking, but it’s not terribly hard to break up a \$250,000 capital purchase to a \$2,000 per month budget item.”

“Another consideration as these services migrate to the cloud is maintaining access,” Murphey said. “If the service provides direct URL access, that allows remote workers to connect with little to no planning. To serve a more traditional office with many employees requires some advanced network planning to ensure the bandwidth and redundancy are sufficient.”

Murphey noted that budget managers may hold differing views about the op-ex and cap-ex approaches. “I’ve had success bringing both to the table, especially when you can speak ROI. It’s like walking into Willy Wonka’s Chocolate Factory for them. In all seriousness, yes it requires new conversations and new ways of thinking, but it’s not terribly hard to break up a \$250,000 capital purchase to a \$2,000 per month budget item.”

Bertrand related that WAMU recently evaluated several providers of newsroom software.

“Two vendors offered buyout licensing with ongoing support costs, and two offered it as SaaS. While we ultimately made the selection based on feature set and the match of the vendor’s scale to our own, it was difficult to do the math and look at a very high ongoing cost into the future for the SaaS solutions, particularly given the uncertain nature of whether current revenue declines in public media will continue or will rebound.”

He said that until COVID, public radio generally avoided the declines seen in commercial media.

“However, since 2020, it seems safe to say that all of radio seems to be in the same boat. We’re thinking very carefully about one-time versus ongoing expenses. And it’s a tough sell, no matter how strong the product, to say that choosing a solution with a higher recurring cost of operation is going to mesh with our business needs in the future.”

He said it’s easier to make the commitment to larger one-time spends set against a known economic backdrop than to make a decision that you’ll need to live with in future years, not knowing what conditions will entail.

Custom attributes

And then there is the trend of more hardware devices integrating software upgrades or options that can be

activated for an extra charge or subscription.

“Many manufacturers will give more resources or custom attributes at a cost, which makes sense,” said Jason Ornellas.

“Enhanced features like additional multicasting, PPM encoding, or additional processing and logging come either at an additional subscription fee or a one-time fee with an annual cost. Automation brands do this as well, which we are used to with modules or licensing subscriptions. This is also the model that vendors have begun using for cloud-based applications, so the transition to this model shouldn’t be newsworthy.”

But some users find it annoying to have to pay extra for such activations or for ongoing service in general.

“I feel the pain in that comment,” said Joe Geerling. “It was common to have a broadcast company invest in a 950 STL as well as consider locations for studios to get a reasonable sightline to the tower — incredible reliability, one-time funding and many years of service. No monthly fees. IP audio networks allow one-time investments and years of reliability, as well as a weekend studio move!”

“But the one issue that keeps slapping us all is software and its ongoing need for patching and development,” he continued.

“Once you find a strategic need for a software-driven system, you’re likely locked in for some monthly fees. For some, this is an easy transition, and it would be for me also — except that I tasted 20 or so years when there were no ongoing fees for most critical hardware.”

Protect yourself and think ahead

In shopping for functions sold as a service, how can technology buyers protect themselves from a product suddenly being discontinued, software not updating or a company disappearing?

Tony Lorino of Throwback Brands says users can be put in a real bind if software isn’t updated reliably.

“As a syndication provider, I’m seeing this more and more. As we try to service our programming to affiliates, they have dated systems that they never chose to update, or that a software provider sold to another company and then sold to another company

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and so on. Using cloud-based software keeps you updated, nimble and at top speed at all times.”

Derek Murphey paraphrased Benjamin Franklin. “In software terms, one might say that nothing in life is certain except bugs and change. Having clearly defined terms and a long track record of customer support are critical when looking at services.”

There really is no assurance a vendor will provide adequate notice for a product’s end of life, he said. “Just this year I’ve had two applications I used for random tasks shut down with little notice. One gave notice Monday morning with the page removed by end of the day Friday! Rarely is it good news when the email subject line starts, ‘Thank you to our loyal customers.’”

Joe Geerling echoed the importance of a vendor’s track record and of strong relationships.

“The biggest question anyone should be asking is if they believe that this company, or at least the product, will be around and function through any turbulent times,” he said.

“Know your critical software vendors and how you would work around the loss of any of them. Businesses as small as many of the broadcast software vendors can go away in a hurry, perhaps without finding a buyer or company interested in servicing existing customers. Add that to the reality that you may not know if the team writing the code is actually two people in some foreign country that suddenly stops development.”

To sleep soundly, he said, also create a plan for what to do if any given product fails.

“Do you want a backup plan from the same company? Or a completely separate company? You may want to be able to spin up the services on your own cloud-based servers, or even on servers in your facility, should future situations warrant. And should you keep your old gear in place just in case?”

He emphasized the importance of passwords. “Most tech ops will want access from everywhere. Even in large companies, engineers and IT techs will figure out

ways to access remotely from non-company devices. Security practices are crucial. Make sure the service delivering to all critical locations is secured — buried is best, entering the building in conduit. My personal choice would be one fiber-fed connection in conduit and one cellular feed as backup.”


Geerling said a service-level agreement should include guaranteed service response times, latency, minimum continuous data speeds up and down, and notification procedures.

“I have never done [an SLA] for the software side, but I would add metrics for performance like a responsiveness measurement; and make sure all locations are covered, possibly worldwide. You also have to address redundancies in delivery so the failure of a data center doesn’t take you out. Data backups and data security must also be addressed — as well as how I get my data if I leave, and under what conditions the agreement can be ended.”

Make sure you have flexibility to opt out should a service become no longer competitive, “for instance in a data delivery contract with a cable company before fiber became available at a facility.”

In general, Geerling encourages engineers and managers to think ahead.

“Look for opportunities as equipment ages out to replace it with a service, and evaluate if it makes sense. Does it enhance the station’s product, does it reduce a cost without reducing the quality of the product? Look at getting the facility in order for these changes — reducing square footage, rethinking the network area or phone closet so that new fiber is protected and easily identified,” he said.

“Keep up with trends that are a few years out and make changes with these in mind. Be doing anything you can now so when the opportunity to convert even one system comes along, you are ready and the change has little stress.” 

“ I do think there is opportunity for everyone — for engineers, manufacturers, stations and audiences. But we need to start working together and thinking differently. ”

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Marketron invests in hubbing and third-party digital

A core product can evolve as needed with extra “service” features

Jimshade Chaudhari is senior vice president, product, for [Marketron](#), where he is responsible for the product strategy, roadmap, user experience and customer adoption across the company’s portfolio of solutions.

RW How are service models showing up in offerings from Marketron?

Jimshade Chaudhari: Marketron has expanded its service models in a few areas to support our radio

customers. Because we understand the environment well and listen to our customers, it’s been an area of investment and focus.

First, we offer hubbing as a service to our traffic users. This allows stations to outsource traffic management, either long-term or interim. We have veteran traffic experts on the team who work for you.

The other area of our service model is around third-party digital. As part of the Marketron NXT ecosystem, we have the Integrated Media Specialist or IMS program. In this partnership, our digital media experts become an extension of a station’s sales team to provide training, strategy, mentoring and support. In addition, NXT users have access to client development managers or CDMs, who are experts as a service, helping organizations in many of the same ways. They are an on-call resource for digital sellers.

RW What are the business or budgeting implications of choosing to pay for something on an operating expense basis rather than as a capital expense?

Chaudhari: In looking at operational expenditures vs. capital expenditures, there are several considerations. With op-ex, you have predictable costs, which makes budgeting easier. There’s also a lot more flexibility with op-ex. If your business changes, you have more agility to respond to it.

Other financial positives are that operational expenditures are tax deductible in the year you pay them and don’t require a large upfront investment. However, the overall cost is often higher than cap-ex.

With cap-ex, you retain control and don’t have to depend completely on a vendor. That means it’s all on you, which means more internal resources that some stations may not have.

RW How do legacy systems fit into the evolution of as-a-service?

Chaudhari: A business can’t use an as-a-service model for every element in its tech stack. However, there are opportunities to add on to legacy systems in a way that makes them more flexible and feature-rich.

For example, traffic software, which is the core component in radio spot management and revenue,





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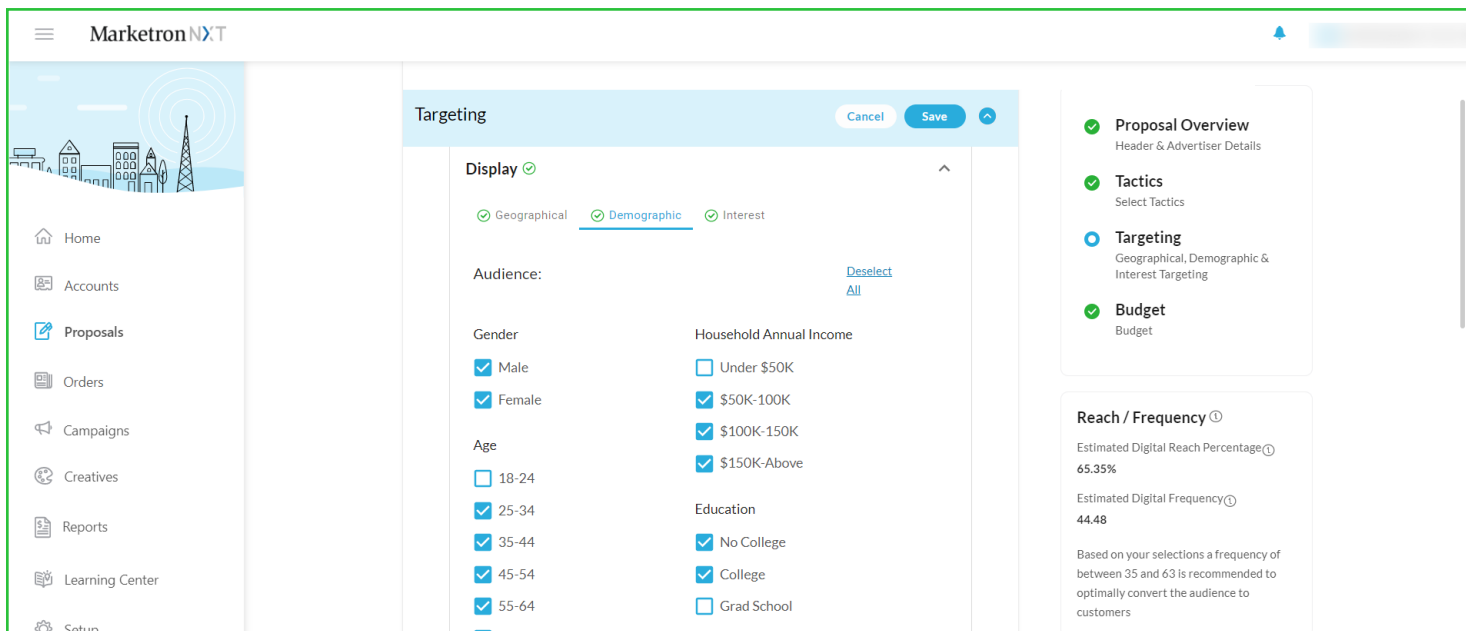
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Climate Menu



Everything as a Service



Above
A screen image from the Marketron NXT digital advertising platform.

isn't a software-as-a-service product. It's a platform with some SaaS options, like digital advertising, payments and creative workflow, which extend the product's capabilities. So the takeaway for stations is that a core product can evolve as needed with these extra "service" features. We're continuing to develop this in response to what our customers need.

RW The service model idea isn't limited to software, is it.

Chaudhari: No, it's not. Really, the future of as-a-service relates to many areas where there's an extension of "services" tied to a software platform.

For example, we discussed the expert-as-a-service models related to the IMS program, CDMs attached to NXT, and hubbing for traffic customers. As-a-service doesn't have to be a specific technology. It can be anything that adds value to the software and is purchased in a subscription-like way.

RW What are the advantages or disadvantages of being "cloud native"?

Chaudhari: With cloud native, the focus is on cloud-based services and delivery models. They use a distributed architecture, and, as a result, functionality is broken into multiple services. It has many benefits, including scalability, efficiency, accessibility and portability. Additionally, the cloud offers more confidence in resiliency should an incident occur.

There are drawbacks. Moving to a cloud-native architecture can require significant upfront investments and may require changes to existing processes and workflow. It's something for stations to consider when seeking any SaaS product.

RW With a centralized service, what happens if the data center or other infrastructure goes down? Is there redundancy across geographically distinct datacenters?

Chaudhari: Marketron understands how important it is to protect data and maintain business continuity. The safety and security of client data is a priority. We devote significant resources to protecting systems and client data, and our data center strategy reflects that. We have multiple data centers that are geographically dispersed. This provides redundancy and protection should something like a natural disaster occur in one area of the country. With cloud-hosted applications, there is more confidence in resiliency should an incident occur. We have redundant systems and frequent backups for fast recovery.

RW With traditional hardware, it's yours forever. What happens when software is no longer updated?

Chaudhari: Hardware, a capital expenditure, is yours forever, but you have to upgrade and replace it, so it's not a one-and-done. The benefit of SaaS is that the vendor will continue to update it to the next version without any work on your part. Also, with SaaS, most of the time, this will be hosted in the cloud. You don't need servers to run it at your location, so there's less expense.

However, not every SaaS product will live forever. Sometimes things sunset. Most often, when that happens, your vendor will have a better version of the SaaS service for you to migrate to. With our products, we've got a roadmap to continue to bring more innovation to the radio industry. **RW**



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Hardware and software solutions are developing side by side

Sacks of Telos says vendors must be flexible and accommodating

Below
Marty Sacks with eldest grandchild Austin after the latter's first airplane ride. Sacks teaches flying and is a search and rescue pilot with the Maryland Wing of Civil Air Patrol.

During more than a decade with [Telos Alliance](#), Marty Sacks has held various roles in management and sales as well as business and product development. Today he is executive vice president sales, marketing and strategy.

"Our Telos Infinity VIP intercom system is available as a service from vendors like Grass Valley and Vizrt, and will soon be available from Panasonic, Ross and others," he said.

"We have plans for other offerings in a few different forms. It's important to meet these needs as they develop."

While the service model is not limited to software, Sacks said it is still a new concept to some customers, so where it

will end up in radio is a bit unclear.

"One thing we do know is that our industry has always had people with great ideas and different ways of looking at things, like our founder Steve Church, and innovation will continue. I'm excited about the future and what we'll learn about together. We've always believed that 'the best idea wins,' and this topic is no different."

As an example of the changing mindset, Sacks said Telos has a client that brings hundreds of streams online around the holidays for about 90 days to offer specialized programming to their audience.

"They don't want to make cap-ex purchases to create an infrastructure for formats that are only offered for one quarter of the year, so 'as a service' solutions to broadcast





“ If a software solution ... is advantageous, we can support those. If a more traditional hardware approach makes more sense, we’re not shy about suggesting that path. ”

that material are perfect for them. Their costs are limited only to the months when those services are online and don't reoccur until the following year.”

Another example: Broadcasters typically have built infrastructure to support peak needs, as with election night coverage, but that means that a lot of facilities remain unused for significant periods of time. By building a combination of fixed and “variable” facilities, Sacks said, needs are covered in a more efficient way.

When it comes to audio on such services, Sacks acknowledges that latency is an important consideration.

“With the correct system design, latency effects can be largely mitigated,” he said.

“The speed of these systems is a direct result of the distance between physical endpoints and compute resources running in the cloud. The location of servers, local headphone monitoring and the careful use of mix minus can all contribute to the best possible outcomes. We’ve been working hard at this for several years now, so some of what we do is already designed into our solutions as part of our Telos Alliance ecosystem.”

Told of one engineer who complained to Radio World that capex-type purchases now often require op-ex to continue functioning, especially for cloud services, Sacks replied: “We appreciate our industry friend’s comment and have heard similar concerns from others, and in our 40-year history of serving broadcasters, we’ve learned to listen and learn. We’ve also heard the opposite point of view, where trading cap-ex for op-ex has resulted in significant savings over time.

“This is why having detailed conversations upfront with


Above
Axia Altus is a virtual mixing console offered by subscription or one-time buyout.

our Professional Services team is an important part of the start-to-finish partnership we have with clients who are exploring new ways of doing things. If a software solution (buyout or subscription) is advantageous, we can support those. If a more traditional hardware approach makes more sense, we’re not shy about suggesting that path. This is one of the reasons we continue to invest in developing hardware offerings while exploring software-based and virtual solutions. The goal is to be able to say yes as often as possible.”

Sacks notes that a cloud-native approach can provide nearly limitless scale, redundancy and high availability.

“Cloud-native services in AWS, for instance, can be leveraged to speed up deployment, enhance security and improve the quality of the overall infrastructure. In many cases, those can be managed for customers by a services-based team, again such as our Professional Services group, which helps onboard customers who are new to these performant solutions.”


With on-premises deployment, Sacks said, resilient large-scale structures require significant cap-ex sunken costs up front. They are usually sized for a worst-case scenario, which is difficult to predict and can result in inefficiencies and the need for server-friendly facilities and the resulting HVAC and electrical considerations.

“The disadvantages are that some organizations may find it necessary to outsource IT and maintenance work to a third party, as on-premises deployments typically require less internal retraining. And as mentioned, some customers may find a capex-forward approach fits better into their business model for certain products.” 

winMedia

radio & tv software suite





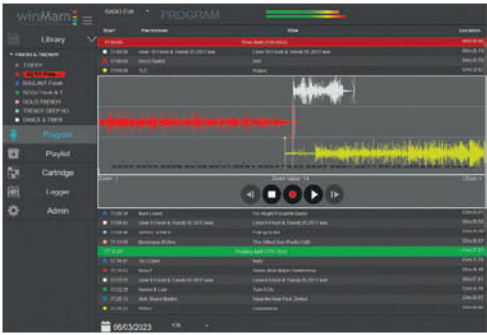
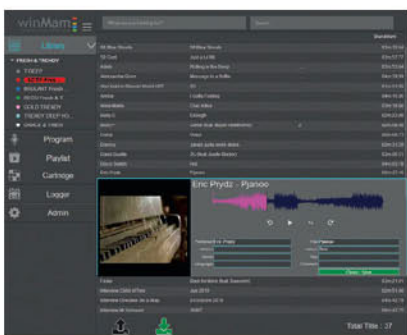
winMam

MANAGEMENT
LOGGER
LIBRARY
ASSET
VOICE-TRACK

WinMam is a versatile tool that offers great benefits to winMedia automation users.

With this tool, users can easily access and manage their station's Library, adding new elements and manipulating existing items as needed.

Thanks to its fast production and multi-platform distribution capabilities, all assets and meta-data, including archived items as well as enabling remote voice-track insertion, are readily available with a simple browser. In addition, WinMam allows users to control Playlist scheduling in real-time and easily perform remote live shows.



winNews


LIBRARY
VOICE
SCRIPTING
RUNDOWN
PROMPTER

WinNews is a tool that simplifies newscast production and supporting TV news.

Its intuitive interface makes adding and managing content easy, and updates playlists in real-time, providing flexibility for live broadcasts and last-minute changes.



Date / Hour	Station	Title	Order
2010 11:22	TV 24 h News	NEWS1	3
2010 11:21	TV 24 h News	NEWS	2
2010 22:40	TV 24 h News	Drive 2	1
2010 22:30	TV 24 h News	Drives 1	1
2010 10:49	TV 24 h News	Lyde Klap Moven Orient Star	1
2010 10:48	TV 24 h News	TNT Nouveau Emmeure France TNT STEF	1
2010 17:40	TV 24 h News	Alfonso 1 Peru AZE	1
2010 15:33	TV 24 h News	genere AZE2 22	1
2010 15:03	TV 24 h News	Imagination France Stephane and Hugues	1
2010 15:01	TV 24 h News	DAUTHER Eugene US She anchor of the fox news	1
2010 13:16	TV 24 h News	TIBET FRANCE STEP	1
2010 10:19	TV 24 h News	Script 2 USA Obama	1
2010 10:10	TV 24 h News	Script 1 Europe Walesa	1

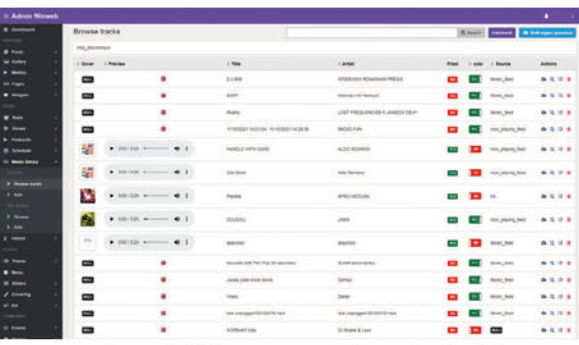


winWeb

CMS
CONNECTED
MEDIA
SOCIAL
NETWORKS

winWeb is a winMedia module for broadcasters looking to extend their potential reach to the Internet and to every device. Including a customizable web template and a mobile application, winWeb lets your listeners bring the station with them wherever they go.

Fully integrated with winMedia Podcast, this solution will make publishing on your website effortless. WinWeb integrates with winMedia Podcast to simplify website publishing, generate hits with the best rotation, and provide access to the database playlist. With WinWeb, social media content management is effortless, allowing for the full integration of user-generated content into your workflow. This feature simplifies the process of engaging audiences and capitalizing on social media, helping you create a vibrant, interactive online presence for your station.



ID	Preview	Type	Asset	File	URL	Name	Address
1		VIDEO	PREVISION 10/20/2010	10/20/2010	10/20/2010	10/20/2010	10/20/2010
2		VIDEO	PREVISION 10/20/2010	10/20/2010	10/20/2010	10/20/2010	10/20/2010
3		VIDEO	PREVISION 10/20/2010	10/20/2010	10/20/2010	10/20/2010	10/20/2010



winApps

CMS
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ANDROID
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winApps gives you the power to have your audio, video live streams or podcasts at your fingertips. You can integrate RSS feeds, have your events scheduled and automatically pushed to your users. There are so many more things that until now you may not have dared to hope for and all of this even includes the ability to do pre-launch testing in the Preview mode! Keeping your apps content up to date was never so easy as it is with winApps.



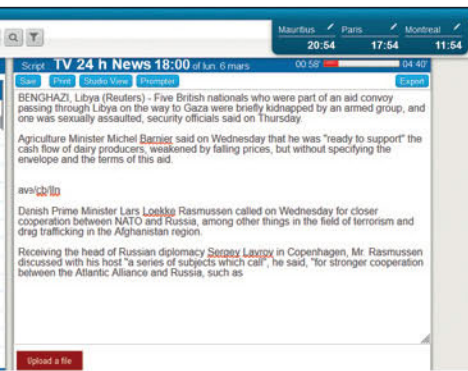
WIN-OMT SOFTWARE
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QUEBEC - CANADA H7M 1Y9
Tel. +1 514 984 4912

WIN-EUROPE
375 avenue du Mistral
FRANCOIS
Tel. +33 49

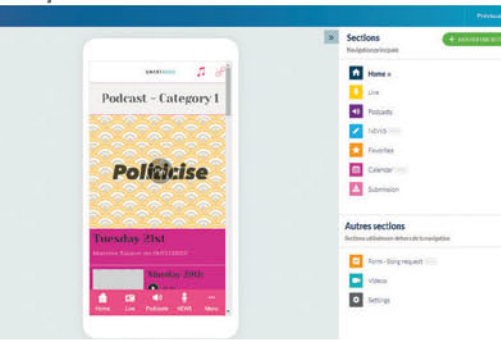
Sensing the trend in user preferences for broadcast software products, Win-Group Software already offers multiple SaaS products. These are dedicated to the production and transmission of radio or TV programmes, but also to the management of newsroom activity, sales and commercial traffic activity or the easy creation and management of your own website or mobile application. Using just a web browser, users can securely access and use winMam, winNews, winSales, winWeb or winApps applications. Beside all that, the well-known winMedia Playout suite is proposed also SaaS as winCloud, with versions for both radio or TV broadcasting.

an all-in-one NRCS solution that
ys production for broadcasters,
, radio, and digital news production.

face enables chief editors to schedule, script,
timings, while drag-and-drop functionality
stories to rundowns effortless. WinNews
ts and rundowns bidirectionally, allowing
contributions.



intuitive and user-friendly web
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and publish and monetize your
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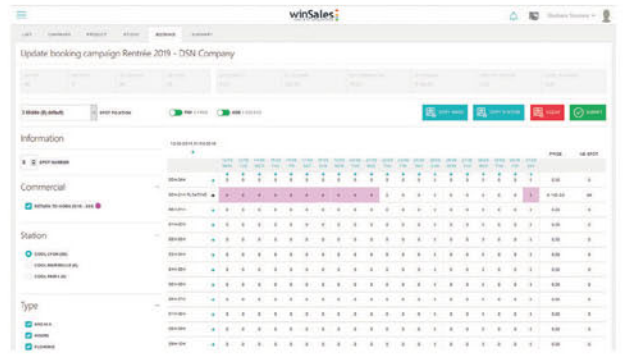


WinSales simplifies booking and billing processes with real-time online booking, customized CRM, and management, billing, and reporting options.

winApps gives you the power to have your audio, video he web platform allows sales teams to book from anywhere, with quick quote creation providing management better insight into pending proposals.

Yield Management algorithms optimize revenue by optimizing spot placement and pricing in real-time.

WinSales provides tailor-made CRM and easy-to-understand reports with real-time information on inventory, revenue, pacing, and projected revenue. With WinSales, synchronizing breaks across multiple stations and expanding to new channels is possible from a single user interface.



winCloud offers the whole set of winMedia tools necessary to run in the cloud a radio or TV station, and here we point out just few of them:

- ▶ ingest and easy management of audio/video files in the Library
- ▶ grid scheduling
- ▶ music programming using generation rules
- ▶ traffic management
- ▶ live audio mix adjust
- ▶ multi-track editing
- ▶ playlist management
- ▶ overlay graphics creation and control



- ▶ Output Electronic Program Guides
- ▶ publish the associate Data
- ▶ streaming on any format



Everything as a Service

Above
Stephane
Tesoriere

WinMedia deploys SaaS across the enterprise

Users avoid hardware upgrades
and always have access to the
latest version

S

tephane Tesoriere is president and founder of WinMedia. His development of playout and broadcast software beginning in 1995 grew from a passion for music and radio in high school, and his subsequent experience working in radio and TV.



How are service models showing up from your company?

Stephane Tesoriere: Sensing the trend in user preferences for broadcast software products, Win-Group Software already offers multiple SaaS products. These are dedicated to newsroom operations, customer relation management with booking, media asset management for the production and transmission of radio or TV programs, but also to the easy creation and management of your own website or mobile application.

“With the advent of software products offered as a service and the effort of these manufacturers to popularize the concept, perceptions have changed.”

Using just a browser, users can securely access and use the winMam, winNews, winSales, winWeb or winApps applications. In addition, our well-known winMedia Software suite offers winCloud, which provides the same tools as on-premise, and WinSafe, which allows you to back up and still broadcast in case a disaster occurs with your on-premise system.

RW What are the business implications of choosing to pay for something on an op-ex basis?

Tesoriere: You eliminate the need for a considerable initial investment in high-performance IT equipment, and you eliminate security concerns or operating costs inherent in an on-premises operation — like energy consumption, human resources for maintenance and a long payback period.

This allows many more users the possibility of starting a broadcast activity much faster and under high-quality conditions. And all that for very affordable monthly cost.

Apart from the initial smaller financial outlay, I would also highlight two extraordinarily important aspects: first, the elimination of the need for hardware upgrades generated by software developments; and second, the user has access to the latest product versions. This avoids creating a technology gap that inevitably would lead to limitations and a decrease in quality.

Not to mention the support services included.

RW What new capabilities have recently become available “as a service”? Are you seeing this model in other aspects of the air chain?

Tesoriere: Incredible as it may seem, all areas of a station's business now are available as a service. WinMedia Software provides all the products a station needs for content ingest and management, production and editing, sales and marketing, newsroom, scheduling and planning, program production and broadcasting, distribution to operators.

The service model has been present in our lives for a long time, but it was perceived by the public through the notion of subscriptions. With the advent of software

products offered as a service and the effort of these manufacturers to popularize the concept, perceptions have changed, increasing demand but also raising the bar and refining demand. Those who were simply offering rental of goods have realigned themselves by adding what was missing for consumers.

RW What questions should a technology buyer keep in mind?

Tesoriere: I would say the most important is security, closely followed by redundancy level.

RW What issues should be addressed with a service level agreement?

Tesoriere: The SLA has to describe in detail the terms you agreed for the services you will receive. You should pay close attention to parameters that are directly related to the desired outcome of your activity, and ask for a realistic level of responsiveness and performance.

I say “realistic” to avoid an increase in costs generated by an oversized SLA request.

RW With hardware, it's yours forever. What happens when software is no longer updated?

Tesoriere: Given the pace at which operating systems are advancing to keep up with requirements — particularly, but not only, for security — a software product that is not upgraded soon will become unusable or, at best, will end up being used in a closed environment running on obsolete hardware with an increasing probability of failure.

RW With centralized service, is there sufficient redundancy across geographically distinct data centers?

Tesoriere: Even if a product offers centralized services, that doesn't mean it can't have a level of redundancy.

In the case of our products, and depending on demand, we offer redundancy by replicating services in Tier 3+ data centers in Switzerland, France, Singapore and Canada, allowing automatic service switching in case of need. **RW**

“Broadcasters don’t want to own stuff”

Josh Bohn on the changing mindset among company execs

Josh Bohn is president and CEO of [The MaxxKconnect Group](#), a broadcast technical firm and provider of the MaxxKconnect Wireless prioritized, high-speed LTE internet service.

RW Do you accept the premise that our industry is now experiencing rapid uptake of more functions provided “as a service,” in the air chain as well as the front office?

Josh Bohn: It’s happening. For the radio air chain it started when Adobe bought CoolEdit and turned it into Audition. I think they only released two versions that were buyouts; after that you had to get a Creative Cloud subscription.

I remember everybody complaining “I don’t want to pay 20 bucks a month to use this, we’ve got six production rooms.” Everybody was using hacked versions of Adobe 3 because it didn’t require a subscription.

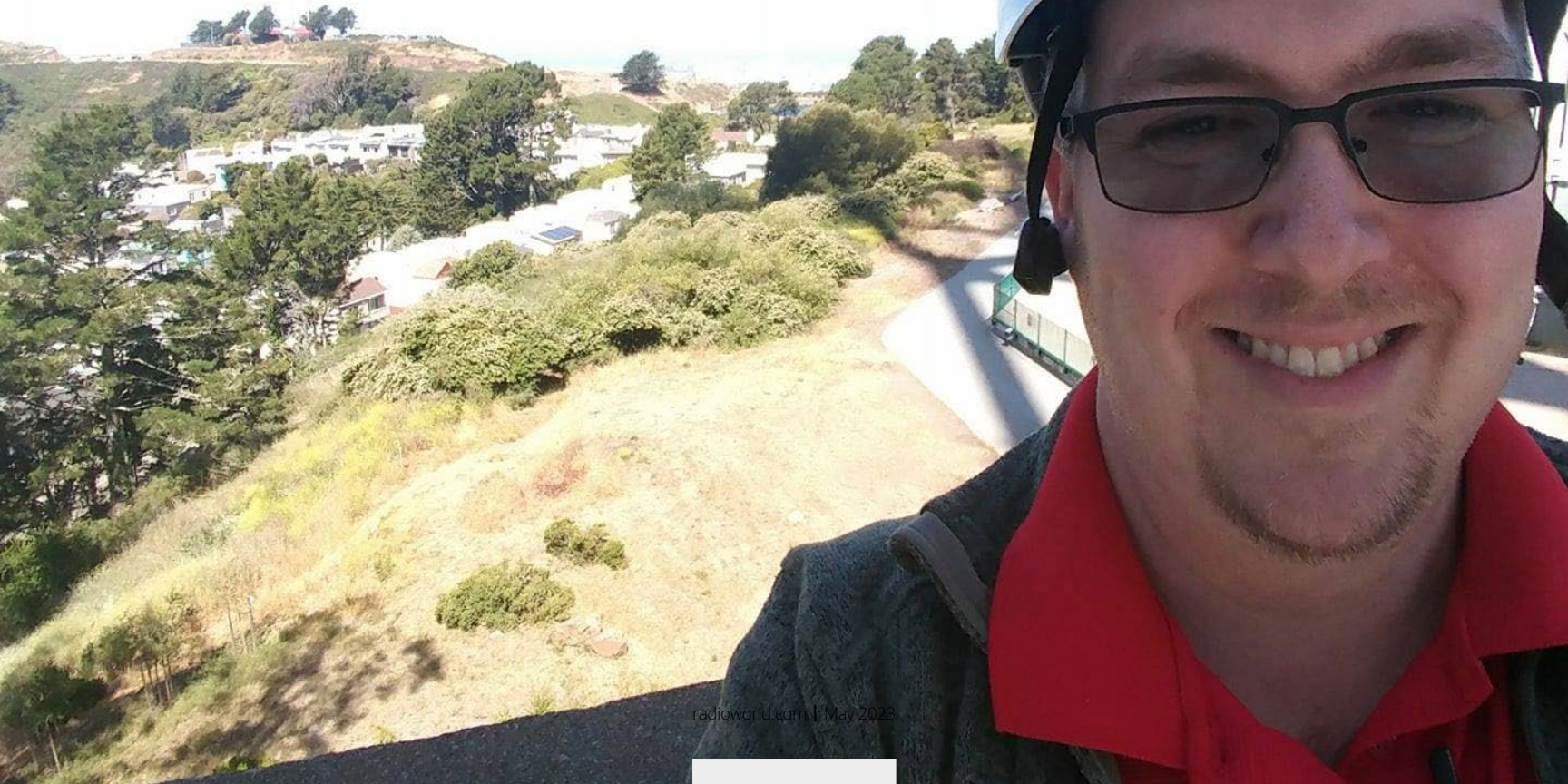
Automation as a service is starting to be a “thing” as more people learn how it works. For audio mixing and audio processing? I don’t know that the industry is fully ready to trust the entire air chain to the cloud unless there’s a significant cost savings, but I think we will get

there at some point.

Yes, there’s a lot showing up or coming soon. Lumenserve is doing tower lights as a service, and they’ve gotten quite a few sites. Everybody looked at that and asked, “Why would you do this,” but if your tower lighting system is failing or out of compliance, what would you rather pay — \$600 a month, or 50 grand? A lot of smaller stations don’t have 50 grand to replace their tower lights.

26

Right
Josh Bohn at the Sutro Tower site in San Francisco.



Our own MaxxKonnnect priority LTE offering is a service, with a recurring monthly cost. We're looking into other ideas to do as services. Often it's easier for a station to amortize a \$300 per month operating expense than it is to amortize a \$30,000 capital expense.

Interestingly, project engineering, while technically a service, is almost always classified as capital, because you lump the whole project together in the budget. So as an integrator, when we build studios or put transmitters in, we're offering them a service, but it's not a recurring expense.

RW If they're contemplating a month-to-month kind of arrangement, what should a manager or engineer ask about things like security and the assurance of customer support?

Bohn: With our wireless product, we get asked that a lot: "How do we know you're still going to be here?"

Look for established companies — a brand that has a good reputation, or one that you've had a relationship with in the past. Conduct a Better Business Bureau check. Ask other folks in the industry.

It's one thing to deal with AT&T, Verizon or Comcast; their network isn't going anywhere — their customer service might suck but at least you know it's going to be there — but there are all these other companies popping up.

Is your potential supplier launching something completely outside their wheelhouse? Do they know what they're getting into? Some companies get into wireless services but don't really have an idea how to bill services because they're used to selling widgets.

When you offer a service, a lot of bigger companies take you out of their budget's technical line items and move you over into the "utility" category so they can pay you every month without cutting POs. Also, a lot of bigger companies will outsource their utility payments; so now the supplier is dealing with a third party that may or may not know what's going on.

Still, stations are used to paying for services, like internet service or contract engineering services. There are just more things going that way. It's a matter of which budget line you put it in, whether it's a utility type of service, or staff — and with everybody cutting staff, more will go to the utility type service now.

RW For your MaxxKonnnect service, do you require a minimum commitment?

Bohn: No it's month to month. I don't want anybody to feel like they're locked in if they're not happy with it.

I also tell people: If you're unsure, get the service for a month and try it; and if you don't like it, turn it off. Or send the router back and we'll give you credit, as long as you haven't destroyed it.

I want to be the opposite of major carriers and utility companies whose customer service is just a disaster. Have

you ever tried to cancel a subscription to SiriusXM?

RW Do you use service level agreements?

Bohn: We don't. The carriers have SLAs on certain types of service. I don't do that because we're at the mercy of the carrier's network — if a tower goes down, I have no control over when they get it back up.

RW What is it about the "as a service" approach that's good for the broadcaster?

Bohn: The thinking has changed over a decade.

Broadcasters don't want to own things — they don't want to own buildings, they don't want to own transmitters, they don't want to own *stuff*. Because if you own it, you have to pay to maintain it. If your transmitter blows up and it's out of warranty — or even if it's in warranty — you've got to pay to send somebody out to figure out why.

If you have a point-to-point IP radio for your STL, great, you've got your own little private point-to-point network and everything's good — until a storm comes through and lightning goes "pow" and blows up your radio at the top of the tower. Now you've got to pay a crew to come take that down, and buy another radio and put it up there.

The cost of that tower crew plus the cost of that radio could be anywhere from \$3,000 to \$5,000 or more, whereas you could do the same thing — depending on what you're using that IP radio for — with an LTE service for \$50 to \$300 month. So maybe it's \$3,600 a year for that service. Then if something dies it's their problem, not yours as the broadcaster.

Broadcasters are more worried about generating ad revenue than they've ever been. And in these days of leaner staff and regionalizing offices, they just don't have the manpower to do it anymore; there aren't enough people who work in a radio station who can go out and deal with that.

Also, with traditional hardware, it's yours forever. What happens when the software is no longer updated? You run into security problems, you run into access problems. Maybe the software was phoning home to a licensing server. Once those software updates stop, you open yourself up to lots of problems. **RW**

“Often it's easier for a station to amortize a \$300 per month operating expense than it is to amortize a \$30,000 capital expense.”

Weighing cap-ex versus op-ex approaches

Halin of NeoGroupe says users are getting more comfortable with security

Philippe Halin, the CEO of [NeoGroupe](#), has worked in IT for radio and television broadcasters since 1994, and has a particular interest and expertise in intuitive database applications.

RW How are service models showing up at your company?

Philippe Halin: NeoGroupe started offering cloud-based database hosting four years ago, based on client suggestions. This was in addition to our software product licenses, which were already available under a subscription model.

We now offer hosting of our client’s database in our front-end servers, where it is closest to their operations — in Oregon and Washington, D.C., in the United States; in Quebec City in Canada; and in France, Germany, the UAE and Singapore — as well as strong security and backup, replication, failover and monitoring services.

We have seen quite a number of clients selecting our cloud-hosted database offering because, first, they do not want to be bothered with another server — electricity, maintenance, OS upgrades, obsolescence, security, exposing IP ports, insurance — and second, their faith in data security has increased. Part of this success is in showing clients the security measures that are in place at the vendor. Security is a whole topic in itself.

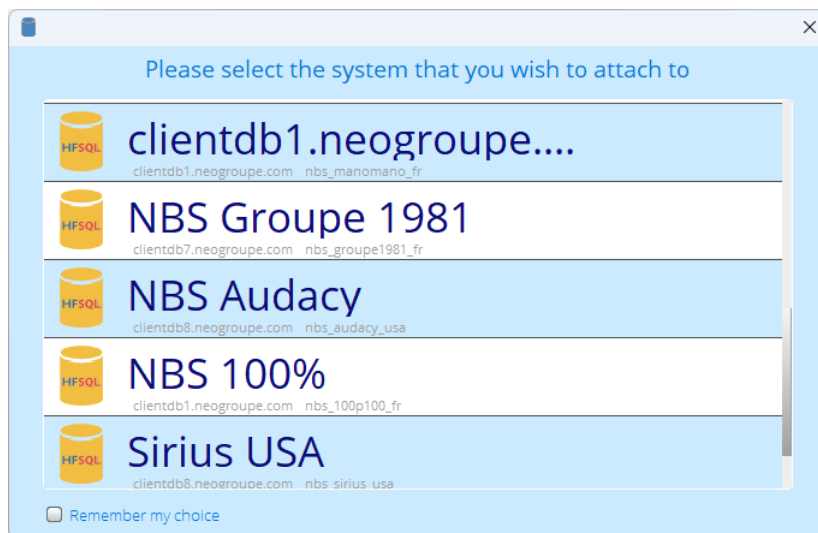
RW What are the business implications of the operating vs. capital expense approaches?

Halin: Talking about software solutions, there isn’t much difference if you plan to use your “something” in the long run.

Cap-ex offers you a “perpetual” license; it will run forever or until that server dies. You have a financial commitment up to the price of the license; and you must finance the price of the product up front.

The data is yours whether the database is on premise or in the cloud.

If support and upgrades are renewed yearly, those are operating expenses and are in addition to the overall cost. With cap-ex, if you don’t renew, the solution is likely less costly, but then it has no support and can become obsolete.



Above NBS is a modular software solution that manages budgets, purchasing, assets and inventory. The screen shows several destinations for this cloud-based service.

With op-ex, on the other hand, you get a “subscription” license; and if you stop the subscription, your product will not run any longer. The financial commitment is far smaller than paying up front; the cost is leveraged over months and years. And if you want to leave, there’s usually no long-term commitment that would represent a high cost. So the financial risk is smaller, especially if plans change.

The op-ex approach usually includes support and upgrades. And the data is also yours whether the database is on premise or in the cloud.

As a side note, consider that renewal of support, updates and subscriptions are a way to increase the likelihood that the software editor still operates a few years from now. At least this has been the case for us, as the company is now 20 years old.

Also, subscription may lead the developers to innovate existing solutions, more so than with cap-ex, because their revenue is linked directly to the satisfaction of their customers over time.

As a general tendency, we noticed that customers on smaller budgets tend to prefer purchasing licenses and not renewing support. This is riskier in terms of operations, as opposed to those who select a subscription model in order to ensure business continuity.

RW **The service model is no longer limited to software.**

Halin: No, of course it can be applied to other domains. We have seen some studio builders offering maintenance contracts on equipment sold previously, so the stations can benefit from setup, training and maintenance services from qualified personnel on gear with a lifespan that extends over the product warranty.

RW **One engineer told us, “Service models cause a headache because capex-friendly purchases now require op-ex to continue functioning, especially for cloud services.”**

Halin: This was already the case for software licenses. If “capex-friendly” means costing less over five years, with no op-ex maintenance, it is at the expense of not covering the risk of downtime with the product.

RW **What are the pros and cons of being “cloud native”?**

Halin: Most systems now can be “on premise” or “in cloud.” If you are “cloud only,” obviously a secured failover and redundant internet access are required to continue operations. We are still seeing businesses running off a single ISP connection, with no backup system in place that will automatically switch over in case of failure.

This should be part of the security evaluations that a business needs to conduct: “What happens if I have not

paid my ISP bill?” “What if a truck destroys the fiber closet down the street?”

RW **What other questions should a technology buyer keep in mind when shopping for a licensed- or subscription-based service?**

Halin: What is the subscription commitment duration? What about level of service — how long can the service be inoperative in a year’s time? What are the options for the data left behind when canceling the service? What security measures are in effect at the service provider? **RW**

Below
Philippe Halin

“ We have seen quite a number of clients selecting our cloud-hosted database offering because, first, they do not want to be bothered with another server ... and second, their faith in data security has increased. ”

29



Christian Brenner on the benefits of “going native”

Radio.Cloud seeks to help broadcasters shift operations out of the server room

Below
Christian Brenner.
“Our clients save cost by eliminating many manual workflows that are well known from legacy radio automation systems.”

“**B**esides the DJ’s microphone, a laptop and the transmitter, everything else runs in a cloud-native infrastructure.”
That’s how Christian Brenner describes [Radio.Cloud](#). “All the user needs is a web browser, a username and a password. Radio.Cloud provides the software platform, updates, infrastructure, backup and 24/7 service, packaged together in a SaaS model with a monthly subscription.”

Brenner, its CEO and founder, said “Radio.Cloud offers the complete chain to operate single radio stations or radio networks with hundreds of affiliates.”

He describes himself as a serial entrepreneur who has been at it since 1992, launching technology companies to serve media industries. Before focusing on radio, he built a TV SaaS company called SmartCast and sold it to SES.

At first glance, he said, the SaaS model for a complete radio operation may look more costly than buying software.

“But Radio.Cloud is much more than that. Our clients save tremendous costs in both cap-ex — hardware and setup — as well as op-ex — service, maintenance, electricity, replacements. Another big factor is that Radio.Cloud not only operates in the cloud, but we reinvented the entire workflow of radio networking. Our clients save cost by eliminating many manual workflows that are well known from legacy radio automation systems.”

He said this approach allows Radio.Cloud to provide approximately 80 different features for a radio operation. One of the newest options is Live Cloud Studio, which won a Radio World “Best of Show” Award at this year’s NAB Show.

“Using only a web browser, we provide a complete radio board with up to six microphones, two virtual phone hybrids and an entire playout including hot keys. Another function you can do right in the browser is add remote DJs with just an email invitation. We’re also able to connect to professional studio hardware like Wheatstone and Telos, or semi-professional low-priced MIDI hardware.”

Many legacy radio automation suppliers, he said, are taking their Windows machines and moving them to a cloud.

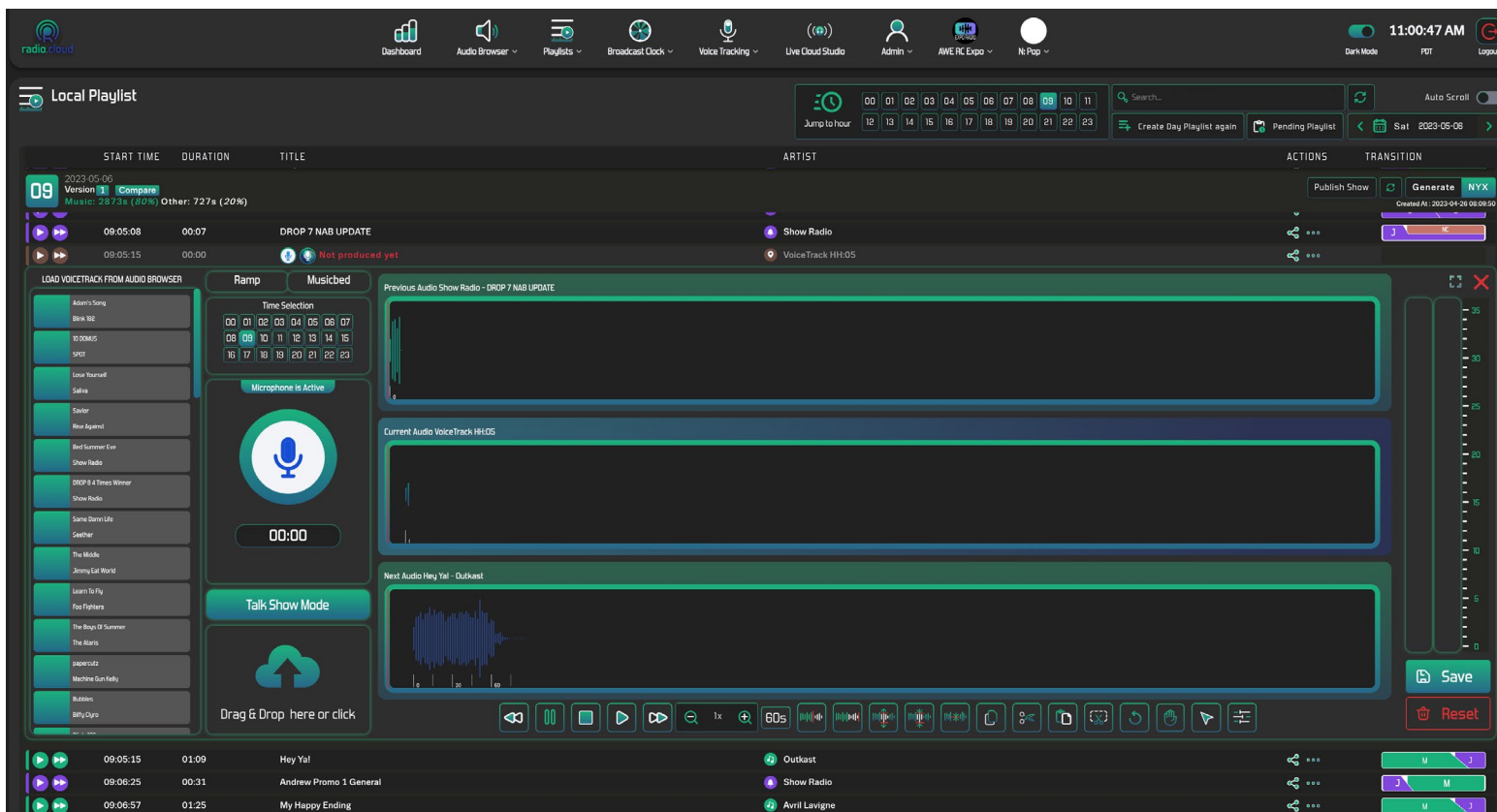
However, “It’s a ‘lift and shift’ operation. All the powerful cloud infrastructure offerings like serverless technology can’t be used. We see this lift-and-shift approach as a way to say ‘We also do cloud’ even though it doesn’t solve a problem for the industry.”

With a cloud-native approach, he said, Radio.Cloud takes full advantage of many powerful cloud functions to improve the user experience.

What about the issue of latency?

“Only while using our Live Cloud Studio do we need to address the latency topic,” he replied. “We run the infrastructure as close as possible to the client, for





example U.S. east and west coasts. Things like playout reaction time and communication with other DJs are below 150 ms, which is not audible.”

The exception is when a DJ wants to hear his or her signal in the headset. In that case, the mix for the DJs is created on-site using a small remote-controllable device that is in sync with the cloud.

“It’s important to note that Radio.Cloud operates perfectly with existing studio hardware,” Brenner continued. “On the other hand, we have clients who don’t have studios at all anymore. The DJs work from home and Radio.Cloud hands over the signal directly at the transmitter site. This is technically doable and a good option for a low-cost operation. Radio.Cloud also interacts with professional radio boards.”


For reliability, the system uses the Amazon Web Services global infrastructure, taking advantage of locations in the U.S., Europe and Asia. In the rare case of an AWS issue, this ensures the ability to switch a station to a different location with no delay, for example rolling a stream over from U.S. East to U.S. West, or from one of the U.S. locations to Frankfurt.

“In each region there are multiple layers of safeguards, things like storage getting mirrored three times. The durability of our data storage and databases is 16 nines — that’s 99.99999999999999%.”

The company also provides an Edge Gateway, a small

box for use on-premises that “stores forward” content and logs and can keep playing even without internet; the device is included in the SaaS monthly rate.

As subscribers to a service-based product, Radio.Cloud users receive free new features weekly. “Operating Radio.Cloud is very easy for the user,” Brenner said. “Everything can be configured in a friendly web-based interface.

“Our clients don’t need to deal with setting up the cloud infrastructure, as this is part of the SaaS model. Users don’t even need an AWS login, since this is handled by us.” 

Above
A screenshot from Radio.Cloud’s browser-based playlist page with in-line voice tracker.

“Our clients save cost by eliminating many manual workflows that are well known from legacy radio automation systems.”

The service model gives you flexibility to make changes faster

It can stabilize costs over time and assure long-term updates or support

Tim Labelle is broadcast streaming specialist at [StreamGuys](#), where he helps media companies in their streaming and podcasting efforts.

RW Nowadays it seems that just about any aspect of station workflows can be outsourced or provided “as a service,” not just in the front office but also on the technical side. How are service models showing up in offerings from your company?

Tim Labelle: As a service company, this model is very familiar to StreamGuys. We’ve been offering streaming as a service for 23 years now.

The noticeable changes in our world are moving playout systems and encoders to the cloud as a service. We are seeing encoder vendors offer their licenses as a service, or even requiring an annual service subscription to be included with a hardware purchase. This is helpful when it gives broadcasters the flexibility to stabilize costs over time and receive long-term updates or support on products.

Below
Tim LaBelle. “Most off-air outages don’t seem to come from the cloud providers ... That’s why it’s important to identify single points of failure up and down the signal flow.”

32



RW What are the business or budgeting implications for a company of choosing to pay for something on that basis rather than as a capital expense?

Labelle: Choosing op-ex over cap-ex gives you flexibility to make changes in the shorter term. For example, if you have a \$30k op-ex option and a \$10k per year cap-ex option, you need to stick with the op-ex option for at least three years to have the same price per year. If technology changes, or a better option hits the market, you can quickly pivot with the op-ex model.

From a budgeting perspective, you’ll need to account for the lifespan of each capital expense to ensure you’re getting it back on the budget when it’s time for replacement. On the other hand, the operating expense model will keep your costs more stable because each item is on the budget each month, and should be getting regular updates and support long-term.

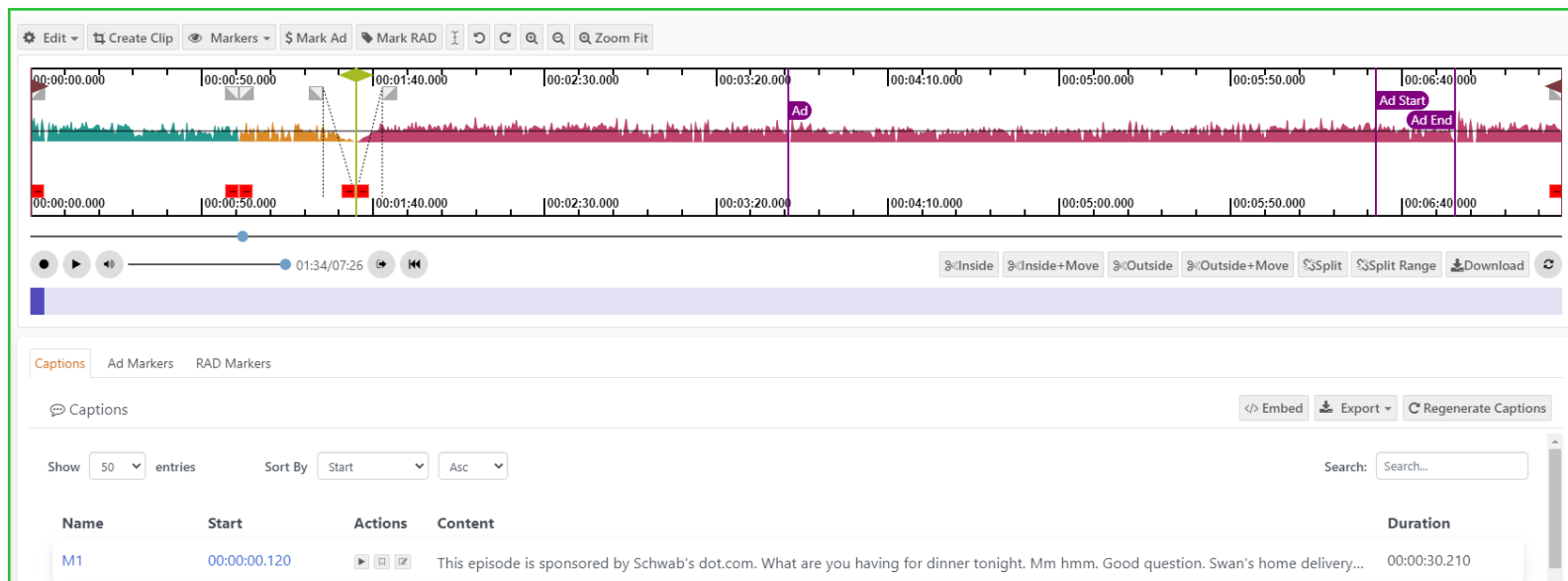
RW What considerations must be given to latency, and how fast can we realistically expect systems to be in this regard?

Labelle: If we’re talking about backhaul or audio distribution as a service, latency deserves consideration. Protocols specifically used for backhaul can get below 1 second of latency, with the option to increase that buffer to better tolerate jitter or packet loss. There’s a tradeoff on the internet between ultra-low latency and reliability. If there’s a longer buffer, then you can tolerate more packet loss before it impacts your audio.

For most content, adding a few seconds of latency in the backhaul signal flow is not a problem, the exceptions being in-stadium audio. If you’re listening to the radio broadcast of a baseball game at the stadium, adding a couple seconds is noticeable. You’d want to tune that as low as possible.

However, for most listeners the only latency comparison they have is the over-the-air broadcast vs. the stream, where the stream is usually a little behind over-the-air.

RW What is the role of a service level agreement? What issues around metrics, performance penalties or service support should be addressed with it?



Labelle: Service level agreements are a backstop, but that company's reputation is more important than the SLA. Hopefully the service you're buying is worth a lot more to you than you're paying for it. That's why the penalties detailed in an SLA won't make you feel much better about bad performance or a big outage.

On the other hand, it is important to know what kind of support, uptime and response time you can expect. The SLA is the company's official agreement to a certain level of service. Talking to current or past customers will give you the actual track record though, which is more valuable in my opinion.

RW How does this service model trend relate to trends in radio toward virtualization, leaner offices, regionalization and cloud?

Labelle: There is certainly a relationship between these trends. Service models, virtualization and the cloud are in pursuit of flexibility. There is overlap in those trends, as being able to virtualize something means you may be able to move it to the cloud. Once it's in the cloud, it can be provided as a service.

As I mentioned, the service model gives you flexibility to make changes faster. For example, you don't need to own hardware for as long as possible to get the cost per

year down. The cloud promised easier updates, long-term support, less physical hardware, less management overhead and flexible scaling. Much of that applies to the service model as well.

RW With a centralized service, what happens if the data center or other infrastructure goes down? Is there redundancy across geographically distinct datacenters?

Labelle: If you or the service provider haven't engineered redundancy in the service, then the service is offline in the event of a data center outage. That's why active-active geographic redundancy is a part of our enterprise streaming deployments. Active-active means both regions are participating in delivery, and failover from one region to the other is automated.

Most off-air outages don't seem to come from the cloud providers, though. That's why it's important to identify single points of failure up and down the signal flow. In streaming workflows that includes UPS for critical in-studio equipment, two ISPs with diverse paths and geo-redundant streaming infrastructure. Depending on the specific failure you're solving for, there are a variety of other measures to be taken. **RW**

Above
A screenshot of SGrecast's cloud-based AudioLogger tool.

“The penalties detailed in an SLA won't make you feel much better about bad performance or a big outage.”