

OFFICIAL SHOW DAILY
FROM THE EDITORS OF

Cablefax

THURSDAY, OCT. 3

SCTE · ISBE CABLE-TEC
EXPO
2019
DAILY

NEW ORLEANS · SEPT 30-OCT 3

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Targeting Piracy with Tech

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Making customers' lives easier

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EXPO IN PHOTOS

A gallery of the week's festivities

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New York Times technology columnist David Pogue entertained at the SCTE-ISBE Awards Luncheon Wednesday

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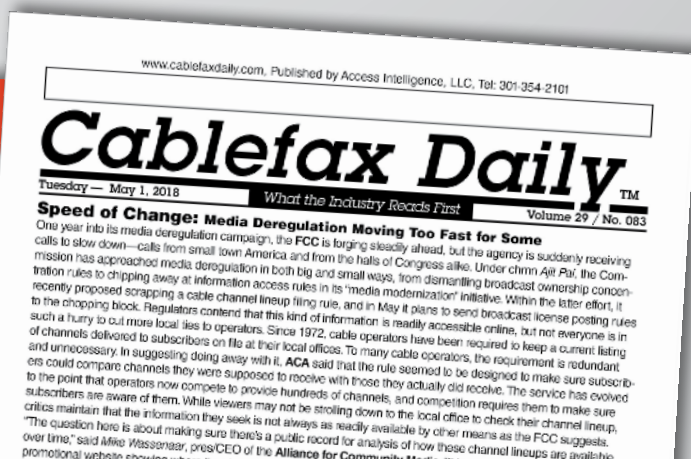
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AI's Place in Preventing Piracy

By Sara Winegardner

The problem of piracy has existed for decades, but identifying illegal behavior has become far more challenging as consumers continue switching to OTT video options. Streamed pirated content typically looks exactly like a typical, legal OTT video.

And while you could use deep packet inspection to identify and track pirated streams, it is cost prohibitive and raises privacy concerns. Machine learning offers a less intrusive and cheaper alternative. By training it to detect variances in meta-data, byte distribution, packet lengths and inter-packet time, AI can identify the illegal streams with a high level of accuracy and precision.

NCTA vp, broadband technology Matt Tooley also believes AI can be used to go out and find the video pirates themselves. “The video pirates have only three or four backend services that they will stream from,” Tooley told attendees at a Cable-Tec Expo panel on piracy Wednesday. “We find those four backends and we can find it all.”

But once pirates notice that cable operators have found a way to identify illegal streams, that very well could change. There is the potential that they could use packet stuffing to make their flows a constant bitrate, but

they won't make those sorts of investments without some poking and prodding.

“The pirates are cheap,” Tooley said. “They don't encrypt any of their video streams because it costs money.”

He's also working on fine-tuning how to ensure AI's effectiveness for larger MSOs. That means continuing to work with the AI, teaching it to ignore activities like music streaming or online gaming sites that also have video features. That will lower the amount of false positives, ensuring the AI's accuracy.

Of equal concern to cable operators and beyond are the DDoS attacks that have the possibility to cause serious disruptions on their networks. Buying an attack against a company is relatively cheap, costing the buyer only \$20/hour for 100Gbps or more. Victims forced to fight back face a much higher price tag, spending on average \$40K/hour to put an end to the attack.

The risk landscape has only expanded as more people adopt IoT devices and place them on their network with little to no knowledge of how that device is actually interacting with that network. In his work in attempting to detect vulnerabilities in networks and



when a DDoS attack could occur, CableLabs senior security engineer Kyle Haefner found that a device as simple as wireless tea kettle could prove usable by hackers. Driving the point home was a slide in his presentation dubbing the iKettle from UK-based connected home company Smarter the “WiFi enabled tea kettle of doom.”

“They can tap into your iKettle... and it gives the attacker the unencrypted WiFi password of your wireless network,” Haefner said. “You have to be a network manager in your own home, and most people don't have that skill.” ■

Expo Says Goodbye to NOLA

By Amy Maclean

Thursday isn't just the last day of 2019 Cable-Tec Expo. It's the conference's final goodbye to New Orleans. “We've been here quite a number of times. So has the NCTA...



We love New Orleans, but what we needed to do, just from a long-term planning perspective is look for the markets with the most cable presence and markets with the lowest costs for our partners like yourselves,” SCTE-ISBE pres/CEO Mark Dzuban told an ACA Connects breakfast at Expo.

Expo moves to Denver next year, then Atlanta in 2021. Those two cities will be its regular homes eventually. There will be one last Expo in Philly in 2022. Then back to Denver in 2023, followed by Atlanta the next year. 2025 will mark Expo's final year in Washington, DC.

“We needed to be able to look out 10 years to get favorable weeks that aren't

overlapping on other events, especially holidays like the Jewish and Christian holidays,” Dzuban said.

Expo 2020 in Denver (Oct 13-16) will be chaired by Ed Marchetti, svp, operations for Comcast, and Tom Monaghan, svp, field operations for Charter. “We want to make sure we cover those issues that are important to you,” Dzuban told the packed room. Cable-Tec Expo 2020 plans to focus on the needs of the networks of the future—increased speed, agility, service availability and reliability—as well as the workforce transformation required to drive satisfaction for a new breed of customer and ROI for the industry. ■

Teching Out the Customer Experience

By Amy Maclean



At a technical conference like Cable-Tec Expo, it's easy to geek out with acronyms and engineering speak. But sometimes you need to move beyond "techs and specs, and look at speed and ease," a phrase coined by a Wednesday Expo panel on network management and growth for mid-size and small operators.

"We keep trying to push speeds and feeds and everything else, but not really taking a step back and looking at how they are getting service from us," Tom Williams, Schurz Communications' vp, engineering & technology, said on the panel moderated by ACA Connects pres/CEO Matt Polka.

The network and the rich data it offers can help get service providers to step up their customer service game. "Even looking at and understanding when people disconnect. Do they start running more speed tests?" Williams asked, noting that it's usually a signal that they're having connection issues. "They'll run it and they'll run it, and then we'll see that they disconnect. If we can look

at that and make changes in the way we communicate to the customer and possibly go out and fix an issue that's there, we can save that customer and not have to go back out and get them again."

That sort of network analyzation is OpenVault's bread and butter. "Our goal is to get into the predictability business. We want to stop the congestion points on the network before they become alarming," said Josh Barstow, OpenVault's evp, corporate strategy & business development. He threw out the example of a customer who signed up for a 10Mbps data package three years ago, who now has 25 devices riding on the network today. "They normally never call and say I need more speed. They call and say, 'my service isn't working.'"

OpenVault started using data on the engineering side, but now "there's as much, if not more benefit, to the marketing side of the business," Barstow said.

There's a real opportunity for operators to super serve their customers in this

increasingly connected world. "I think where we're at now is the consumer who goes to Best Buy or Amazon and buys a bunch of IoT stuff, comes home and goes, 'now what?'" said Evolution Digital COO Cash Hagen, who spent time at WOW! as COO and CTO. "I think there's a real opportunity for us to own the home."

With operators increasingly extending the demarcation point to include the entire wireless network in a home, there are questions over how to monetize it. The answers are mixed. Sparklight looked at adding a managed WiFi network fee, but ultimately

decided to include it in the base fee. "If we need to put more access points into the home to make sure there's ubiquitous coverage, we do that. There's not an extra fee for that," said Ken Johnson, Sparklight's svp, technology services. "We're trying to provide the consumer with an outstanding experience in the home as part of their base level service. We've seen because of that, a dramatic drop in service activity to the home because they have a better foundation. Ideally, we win the battle long term because we're the better experience for the consumer."

Schurz offers a "smart WiFi service," giving it away for free in one system and charging \$12.99/month in another. "What's interesting in our surveys is the happiness of our customers is exactly the same, whether they get it for free or pay for it. We're moving across the entire company to charge for it," Williams said. "We have a backlog of people willing to pay for it. They want this thing that badly." ■

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And the Winner Is...

By Mollie Cahillane



Wilt J. Hildenbrand Jr. Award recipient Christopher Zydel of Alice USA with Hildenbrand's daughter Mandy.

The industry celebrated leaders far and wide during Wednesday's annual Awards Luncheon hosted by SCTE-ISBE, with *NY Times* technology columnist David Pogue even breaking into song.

Many may not have realized that luncheon keynote Pogue holds a BA in music from Yale and spent 10 years working as Broadway conductor and arranger. Those in attendance however are unlikely to forget his performance of an original ditty about iPhone's first launch in 2007. That came after he pumped up the crowd with talk of the future—from smart homes to self-driving cars.

He spent a lot of time showing smart objects that can be placed around the household, even a smart egg holder that can be checked remotely to tell its owner how many eggs they have left. Demonstrating how smart thermostats work, Pogue got back at his children for keeping his house at 65

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Xfinity Assistant: More Than a Chat Bot

By Mollie Cahillane

Five years ago, Neil Smit told Charlie Herrin and his team that it was time to make customer experience Comcast's best product, and Xfinity Assistant was born.

"There's really three secrets for making a great product. One, is you save someone time, the second is you save someone worry, and the third is you give someone a way of improving themselves," Comcast Cable's chief customer experience officer Charlie Herrin said at Cable-Tec Expo this week.

Customers had four major requests regarding interaction with Comcast customer service: they wanted it to be simpler, to be kept informed along the way, more control over what was happening, and consistency. "Unfortunately, we weren't doing any of these very well," Herrin said. Comcast's solution? Four technology routed platforms built on the basis of a new interaction model that make up Xfinity Assistant. "At its most basic you might think it's a chat bot, but it's actually a lot more than that," said Herrin.

The first platform is identity, fully ensuring the identity of the consumer behind the screen. Comcast hired an "identity expert" and the group has its own product owner, designers and developers. "It wasn't sort of a side engineering project, we actually treated it as a product," said Herrin. "We're really looking at multi-factor authentication, household linking, identity-linking profiles to the actual home."

Comcast developed an AI platform of all the data for Xfinity Assistant, and includes a system that tracks every interaction, marketing piece, email, tool and login that a customer has used. "We looked at all this data from the node, to the CPE, to the WiFi signal strength, and we put it in a custody chain at the customer level," said Herrin. "That's how we're going to predict and talk to the customer about what's going on in a very personalized, unique way versus a generic average way that our tools previously allowed us to do."

The third platform is what Herrin refers to as "proactive dialogue," meaning Xfinity Assistant is able to provide a customer a solution before they're even aware there's a problem. "As we design our process and experiences, we have to think more proactively and differently," he said. The technology that's underpinning it is the notifications and SMS communications.

Finally, Comcast is working to close the feedback loop to the AI dialogue, meaning the assistant will inform a customer when something has been completed. "It's proactive, it's based on data. And it's getting smarter and smarter," the exec said.

How does Comcast ensure its customers actually use Xfinity Assistant? The app is how service is set up, and a modem can't be activated without it. "We want to get out of the game of chasing adoption of these services," said Herrin. Results are promising so far, with Xfinity Assistant users showing lower opt-out and churn rates. ■

degrees by jacking temps up to 85. “That’ll teach them,” he joked.

Among those feted during the lunch was SCTE-ISBE vp of marketing and business development Zenita Henderson, this year’s WICT, SCTE and Cablefax Women in Technology Award recipient “This is going to be the shortest speech ever because I cannot be on stage if I’m making sure that you out there are being taken care of,” she joked. “Love has truly been the foundation to which I stand before you today. My coworkers and my work partners transcended coworkers and work partners a long time ago. We are truly a family and for that I am thankful to the cable industry.”

Steve Williams, vp, DOCSIS for Charter,

took home the Chairman’s Award, presented by outgoing SCTE-ISBE chmn Bill Warga of Liberty Global. The Rising Leader Award was rebranded to the Wilt J. Hildenbrand Jr. Award, in honor of the Cablevision technologist who passed away last year. Hildenbrand’s daughter Mandy presented the award to Christopher Zydel, principal engineer for Altice USA.

“I embarked on my journey in cable more than 21 years ago. At that time, Wilt was already a celebrated leader in the industry. He was not only an inspiration to me, but to so many others,” Zydel said. “Wilt taught us that ceaseless innovation will keep us on the cutting edge of technology, and that the most dangerous of phrases is ‘that’s how it’s

always been done’ or ‘this is how everyone else is doing it.’”

John Dolan, sr engineer, Rogers Communications, was honored with the Excellence in Standards Award, and vp, technical operations college, Comcast University Richard LaPlat with the Excellence in Learning & Development. Synamedia was recognized with the Innovators Award, and Andrew Parrott was inducted into the Hall of Fame.

The 2019 Member of the Year is director of strategic accounts for Net Insight, Cliff Simpson. “I’m very grateful for this industry, thank you, I didn’t expect this. Thank you for recognizing my efforts and I’m grateful to all the chapters I work with,” he said in his acceptance. ■

Is 5G Friend or Foe?

By Amy Maclean

When it comes to 5G’s relationship status with cable, it’s complicated.

“The potential obviously is there. You can offer multiple gigabits per second over 5G,” said John Ulm, Engineering Fellow, CTO-of-office network solutions for CommScope. “You may have a competitor come in and offer it as a service, but for them to offer it as a service, they’ve got to address where the backhaul is coming from, where am I going to power it, do the economics work.”

5G as a foe may be a very targeted situation, given that it would likely take a very dense neighborhood to really create any competitive traction. Ulm, one of the pioneers of DOCSIS 1.0, sways more to the “5G as a friend camp.”

“It appears the HFC overlays fairly well with putting down a 5G small cell network for mmWave,” he said during a Cable-Tec Expo session Tuesday. DOCSIS has

good runway for backhaul, but he suggested getting fiber out to small cells longer term. In a paper on the topic, he called it FTT5G—fiber to the 5G small cell.

Right now, when people talk about 10G, what sort of speeds can operators offer to customers? “There’s a lot of overhead... physical layer overhead, IP overhead, so that what you end up netting in the home is closer to 8.5-8.7Gbps,” he said, noting that certain HFC configurations with 108-1218 MHz could attain true 10Gbps. Over time, Ulm

predicted the cable industry will go “well past” 10Gbps. Operators won’t need a major overhaul of cable plant to achieve to the 10G milestone, but he suggested that most, if not all, cable modems will need to be migrated to DOCSIS 3.1 over the next 5-10 years. Operators should also be working toward an all IP video network, he said.

“I think there’s real potential that 10G and 5G can grow to become best friends over the long haul,” Ulm concluded. ■

Recommended Steps	Other US Considerations
<p>500 HP Node is Reasonable for 10G Over Next Decade Provided 2x2 Segmentation</p> <ul style="list-style-type: none"> N+0 helps but not required 	<p>85/204 MHz for 10G DS Only</p> <ul style="list-style-type: none"> Fine for many markets, pair with 500 Mbps or 1.5 Gbps US SLA
<p>Migrate to All D3.1 Modems</p> <ul style="list-style-type: none"> Important for overall network capacity <ul style="list-style-type: none"> OFDM >> SC-QAM, especially US 	<p>‘Traditional’ FDX for N+0</p> <ul style="list-style-type: none"> Strategic direction – stepping stone towards FTTH Best in very competitive markets
<p>Start to Remove Legacy Video</p> <ul style="list-style-type: none"> IP Video, MPEG-4, Cloud-based SDV 	<p>Static or Dynamic Soft-FDX for N+X</p> <ul style="list-style-type: none"> Defer fiber deep investments Re-use FDX modems
<p>Migrate to 1218 MHz and DAA</p> <ul style="list-style-type: none"> DAA maximizes OFDM capacity, enables scaling with Fiber Deep HFC systems 1 GHz Taps fine for next decade <ul style="list-style-type: none"> Consider 1.8/3.0 GHz when cost effective 	<p>Consider Blended HFC/FTTH Systems</p> <ul style="list-style-type: none"> Selective early adopter subs on FTTH or FTTTAP later next decade and beyond 90%+ of subs stay on traditional HFC
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Cable Operators Get Smart with RDK Data

By Terry Sweeney

In the explicit push to improve the customer experience, cable operators are leveraging RDK data from end-user devices to be more proactive in managing services and technology to ensure satisfaction, and with any luck, reduce churn, panelists told an SCTE-ISBE Cable-Tec Expo audience Wednesday morning.

In its own way, the baseline RDK toolkit has obviated what once were the three-year development cycles for set-top boxes and other CPE, a win for both operators and consumers. “Operators don’t want to be locked into different software for fiber and another for cable, then have to test twice and develop it twice,” said Marcin Godlewski, director of cable broadband product management at Technicolor. “That was inefficient—we wanted to make sure there was a single software.”

Bryan Kelly, executive director of customer experience personalization for Comcast, was also on hand to talk about how Comcast leverages RDK on its internally developed Timeline platform. Timeline integrates RDK for everyone, from service reps to technicians, and overcomes the siloed information challenge where truck roll scheduling had no access to call center info as one example of disconnect, Kelly explained.

“The Timeline platform is consuming data from across the enterprise and is using natural language programming, machine learning and AI to enable conversations that our agents are having with customers and that customers are having with self-serve capabilities,” he said.

Online chat and interactions with help centers, call centers and technicians all used to happen independently. “Timeline brings them all together so others can see how the problem is being approached,” he said. This sort of meta view also keeps customers from having to repeat the problem and its chronology to every Comcast they speak with.

“With better perceptions and NPS [Net Promoter Scores], we drive lower churn,” Kelly added. “We’re also seeing a lot of value in agent and technician metrics like reduc-



tions in repeat truck trolls, repeat calls and in-home technician times. All these things can lead to poor NPS and churn.”

Timeline also delivers a customer’s lifetime history, which helps Comcast service reps understand the full breadth of a customer’s experience. About a quarter of Comcast’s reps – 30,000 agents – use Timeline about 400,000 times a month; Timeline is also a key piece of Comcast’s strategic move to drive more customer to digital for support and education.

“All the events coming in allow us to understand the customer experience and we can even proactively message them to guide them—onboarding for example, or for moves and repairs,” Kelly said. Comcast is currently sending about 25 million SMSes a month to help customers through their experience, he added.

Godlewski touted the open source-based RDK-B as one means to address market changes wrought by broadband. “Many cable operators have gone from an access focus to a user-centric focus,” he said. Whether it’s copper, fiber, 5G or coax—operators are more agnostic about access technology. “They just want to be able to apply the same look and feel for consumers,” he added.

RDK-B also makes it easier to add additional services with the numerous partners that have integrated their capabilities into the RDK-B software and gateways. “It’s more efficient to write, test and deploy – that’s the whole idea of why we’re doing RDK-B development,” Godlewski said. “And that means more average revenue per customer, lower costs and reduced churn.” ■

Expo in Photos



Students from local high schools show off their robots and share how local cable company employees are encouraging them in the FIRST Robotics Competition on the show floor.



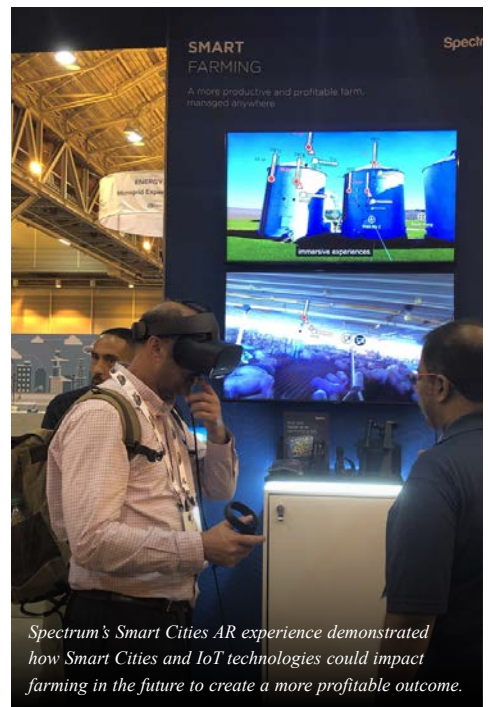
Cable-Tec Expo attendees wait anxiously by the doors of the show floor for the opening of the exhibit hall morning.



Spectrum's Smart Lighting Lego display shows how the company plans to use light poles to improve security within cities themselves.



Women at the Wednesday morning WICT/SCTE-ISBE TechConnect Mentee/Mentor Breakfast. Alum and current mentors and mentees attended breakfast to catch up and talk about their growth and achievements over the past year.



Spectrum's Smart Cities AR experience demonstrated how Smart Cities and IoT technologies could impact farming in the future to create a more profitable outcome.



New Orleans style festivities kick off the opening of the Expo show floor.



The first place winner of the Cable-Tec games celebrated on stage with the trophy that will be engraved his name as a champion of the 2019 SCTE-ISBE International Cable-Tec Games.



Dean Kamen, DEKA Research & Development Corp founder, signs autographs for students in the FIRST Robotics Competition on the show floor after he presented in the opening general session in his iBot Stair Climbing Wheelchair.

Cablefax's Cable-Tec Top Picks

Here are Cablefax's picks for the last day of Expo, with smart cities dominating the agenda. The schedule may still change! To get the most up-to-the-minute changes and full explanations of these panels and more, go to expo.scte.org.

THURSDAY

ISBE/ANGA International Attendee Breakfast

Room: R02-R03

Time: 7:30 - 9am

Participants: Andrew Baxter, NBN; Bill Warga, Liberty Global; Carsten Engelke, ANGA Association; Chris Bastian, SCTE-ISBE; Marcos Takanoashi, Commscope

Look: No Wires... and Fast Broadband

Room: 228-230

Time: 8 - 9am

Participants: PJ Jayawardene, Charter Communications; Mohamed Daoud, Charter Communications; Kashif Shakil, Ericsson

Smart Cities Opening Keynote

Room: Exhibit Hall – Innovation Theater

Time: 9:15 - 9:45am

Participants: Jeff Baumgartner, Light Reading; Bill Warga, Liberty Global; Tom Adams, Charter

US Ignite: Cable and the Smart City - Partnerships Happening Now

Room: Exhibit Hall - Innovation Theater

Time: 9:45 - 10:30am

Participants: Alison Barlow, St. Petersburg Innovation District; Bill Maguire, Connected Communities LLC; Dominic Papa, The Institute for Digital Progress; Mari Silbey, US Ignite; Satya Parimi, Spectrum Enterprise; Susan Anable, Cox Communications

The Smart City Opportunity – Transforming the City-Citizen Relationship through Connectivity

Room: Exhibit Hall – Innovation Theater

Time: 10:30 - 11:00am

Participants: Jason Nelson, Smart Cities Council; Catherine McNaught, Corning Optical Communications; Jack Hanley, Telensa; Jacob Peters, Columbia Parc

US Ignite: CIO & CTO Chat: New Orleans Speaks Out on Smart Cities

Room: Exhibit Hall - Innovation Theater

Time: 11 - 11:30am

Participants: Jonathan Wisbey, City of New Orleans; Kimberly Walker LaGrue, City of New Orleans; Mari Silbey, US Ignite

Product Spotlight

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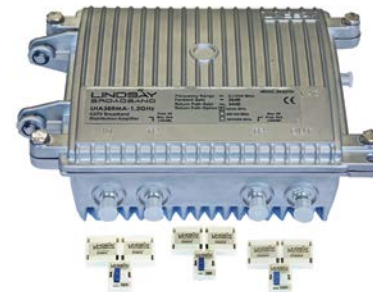
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