ERA® DIGITAL DAS HELPS ROCKET ARENA BUILD A FRICTIONLESS FAN EXPERIENCE

80%			
More than 80% of guests enter the venue with their mobile device	Improved guest flow, with geofenced parking and seat directions	Timely fan engagement via push promotions	More purchasing options, with both touchless interactions and self-service kiosks

Rocket Arena is Northeast Ohio's premier sports and entertainment destination. Located in the heart of downtown Cleveland, it's home to the NBA's Cleveland Cavaliers and the AHL's Cleveland Monsters. Per game, it can seat almost 19,500 basketball fans and nearly 19,000 hockey fans. The arena hosts more than 150 events a year, including concerts, boxing matches, family shows, and men's and women's basketball tournaments.

Challenges

- Multiple high-density zones
- Limited space for equipment

Requirements

- Accommodate 5G and legacy standards
- Scalable for future growth
- Sustainable solution

Benefits

- Increased capacity and coverage
- Frictionless fan transactions
- Geofencing for fans who opt in

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Michael Conley
Chief Information Officer,
Cleveland Cavaliers

Background

Originally known as Gund Arena, Rocket Arena opened in October 1994 as part of Gateway Sports and Entertainment Complex in an effort to revitalize the downtown area. Although equipped with a state-of-the-art communication system at the time, the arena was built when telecom gear wasn't complicated and the internet had just been invented.

"The idea of individual distribution frame (IDF) [rooms in 1994] were really fax closets," explained Michael Conley, Chief Information Officer of the Cleveland Cavaliers. "So the communication in these venues wasn't really optimized [for] connectivity." Despite this, the arena pursued innovative solutions that could help make the fan experience more enjoyable.

"In 2006, we were one of the first teams to move over to digital ticketing," said Conley. "We were at the cutting edge at that time." And as times passed, communications technology evolved rapidly. Seven years later, Rocket Arena took steps to augment their in-building connectivity by deploying an analog distributed antenna system (DAS).

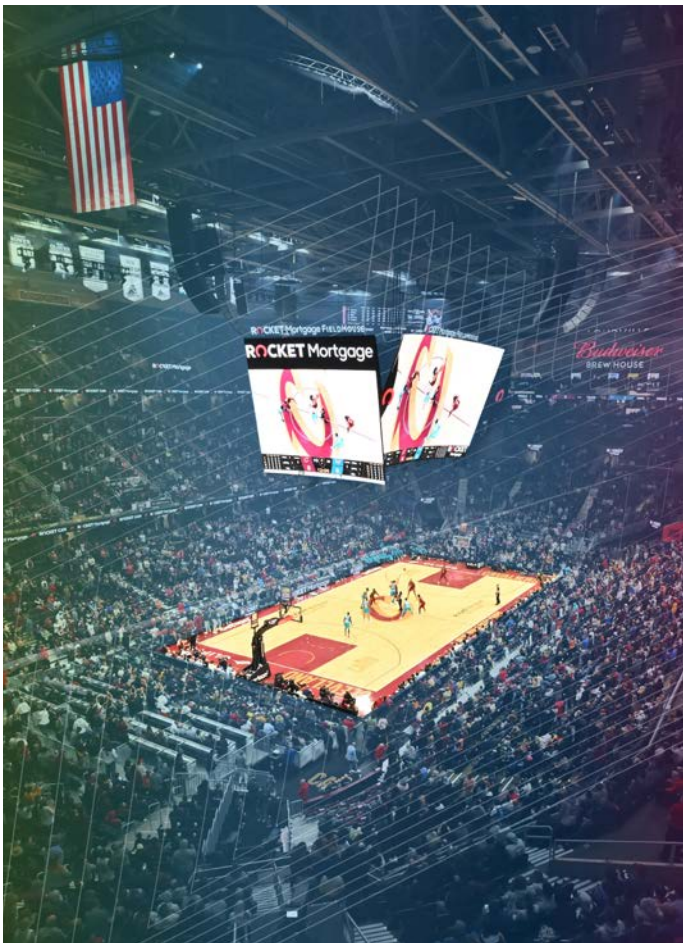
"That solution supported us for what we needed," said Conley. "In 2013, you were maybe looking at 30-40% of people coming into the building that were using their devices. [But today], everybody is relying on their devices. It's kind of like their personal remote control for the fan that comes into the venue."

Too much of a good thing

With the introduction of the analog DAS at the arena, more and more fans were encouraged to bring and use their devices during events, which began to stress the network. Although updates and changes were made to the network to maintain acceptable reception and transmission, the network needed to evolve to keep up with 20,000 guests and event staff.

"[When] you think about being able to support two million people that are coming into the venue per year," said Conley, "each of those individuals coming in with a mobile device that may have a different operating system, there's a lot of responsibility there. Especially since the fan experience and the opportunity to get into the building starts directly with [digital ticketing on your] mobile phone, which needs connectivity."

"Like most venues," explains Conley, "[our DAS] was an analog-built solution." Despite attempts to keep the wireless network operating as efficiently and effectively as possible, Conley knew it was time for a new solution. "We were relying on this legacy patch-worked infrastructure to be able to support ingress for all of the fans coming into our venue," he said. "We're really coming up on the first cycle of renewal from the original DAS deployment."



Space is a premium

"Traditional DAS are very complex," said Conley. "They're a significant demand on resources. They demand a significant amount of head-end space. Think about miles of coaxial cable that needed to be run through our raceways all throughout the arena. And then, the power to run and cool the system."

To ensure that the new network solution would provide the arena with everything they needed, Conley collaborated with other departments, including the facilities team and network operation group, to gauge expectations. Together, they created a list of goals they expected the new network to fulfill.

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"When we went through a modernization project for the venue," said Conley, "at the core was our need to build out a sustainable network infrastructure that will allow us to survive for another 15 to 20 years. After years and years of short-term solutions, we finally had a chance to do it correctly, [which] meant building out the infrastructure, the local area network, the wireless network and, obviously, the DAS environment."

"We were looking to reduce the footprints needed to house the network, [such as] head-end space: the space necessary on the edge and the deployment of radios throughout the venue," said Conley. "Like any large venue, space is a premium. Every square foot inside these venues is important to the bottom line."

The arena's other goals included reducing the power consumption and mitigating the amount of HVAC necessary to cool the system. Overall, Conley wanted the arena to become more sustainable.

"We have a very hyper-focused goal of looking at sustainability," said Conley. "It's a commitment we have across the organization to ensure that we are being good stewards. We have a responsibility as a large public venue to be able to reduce the amount of waste [and] to really try to get as close to carbon neutral as we can over time."

Going all in on digital DAS

After investigating a number of possibilities and visiting successful large public venues, Conley selected ANDREW® ERA® DAS for the arena's new in-building wireless network solution.

Unlike traditional systems, ERA DAS is all digital, from signal source to remotes—reducing the need of analog-to-digital conversion equipment. It also allows many functions to be performed via software as opposed to hardware, which saves rack space at the campus distribution hub. Through a CPRI-based band interface, ERA DAS reduces radio heads, points of interface, and integration panels, which further cuts down on power requirements.

Wanting a solution that's flexible and scalable, Conley was very keen on ERA DAS being a multi-operator/neutral host distributed antenna system that can seamlessly support 4G, 5G and future standards over a common set of nodes and cabling. On average, ERA DAS has been proven to provide high capacity with "five bars" of in-building coverage while lowering power and cooling costs by up to 55%. By the arena's standards, ANDREW ERA all-digital DAS met all their goals.

Deploying in real-world scenarios

Since the arena hosts more than 150 events per year, dismantling the existing analog DAS in order to deploy the new digital DAS wasn't an option. Fans needed to be able to connect to their network at all times. Fortunately, the new ERA DAS only needed a fraction of the room that the legacy system required. So ANDREW was able to install the new ERA DAS alongside the old system without additional space, while the old system was being decommissioned.

Because ERA DAS operates on fiber and Category 6A cable, the arena was able to shed itself of miles of coaxial cable as well as remote radio heads (RRHs) and DAS point of interface. "We'll be reducing footprint from the old system by close to 85%," said

Conley. "It's amazing the reduction in footprint and the evolution of technology from going from RF to fiber."

The new digital DAS is also expected to provide Rocket Arena with substantial savings on capital expenditures (CapEx) and operation expenditures (OpEx). But what got Conley really excited is how this new system will improve how the arena can engage with visitors and guests.

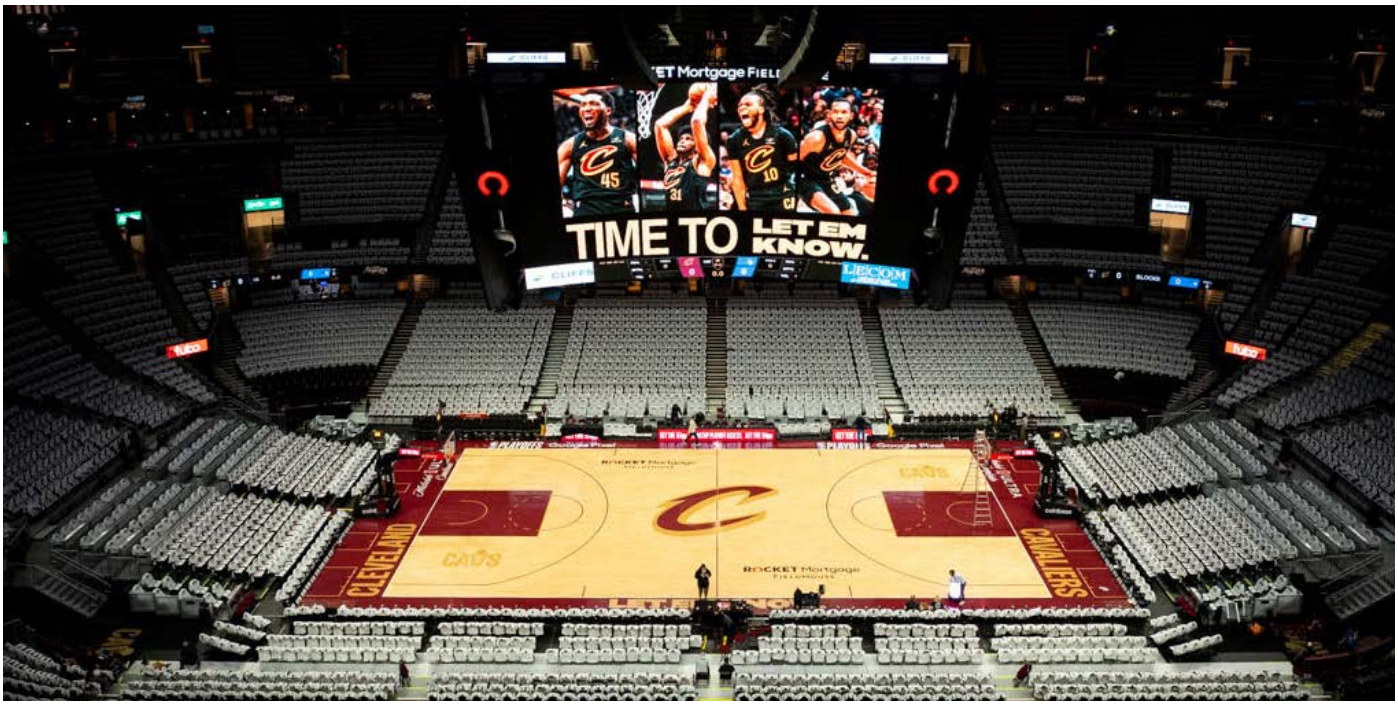
"We will have a state-of-the-art solution that's going to be able to house and host the needs of all the carriers across all spectrums," said Conley. "To be able to support legacy 4G but also take advantage of the 5G spectrums that each of the carriers have at their disposal now [will] really help us improve the fan experience across the board."

Building a better fan experience

Conley estimates that 80-100% of guests enter the venue with their mobile device. This means that, if the arena can find ways to connect with fans through their devices, they can make the visit more enjoyable. "We really have to be focused on being able to provide a personalized experience for everybody who's coming into the venue," said Conley.

"From a Cavs' perspective, if we know that people are probably going to be leaving work around 5 to 5:30 p.m., and they need to be down to the venue by 7:30 for tipoff—what can we start to provide that individual user based upon the preferences that they've set in our environment to put them in the best position to succeed?"

Using the new ERA digital DAS, Conley can now use geofencing to make the trip to the arena more memorable. From prompts with local traffic updates or parking recommendations to directions on where to find your seat, the arena can engage with the fans from curb to curb. "Our goal is for each [fan] to feel very special—from when they're planning to come down to when they get to the venue, to when they get to their seat to when they make a purchase, to when they leave the venue," said Conley.



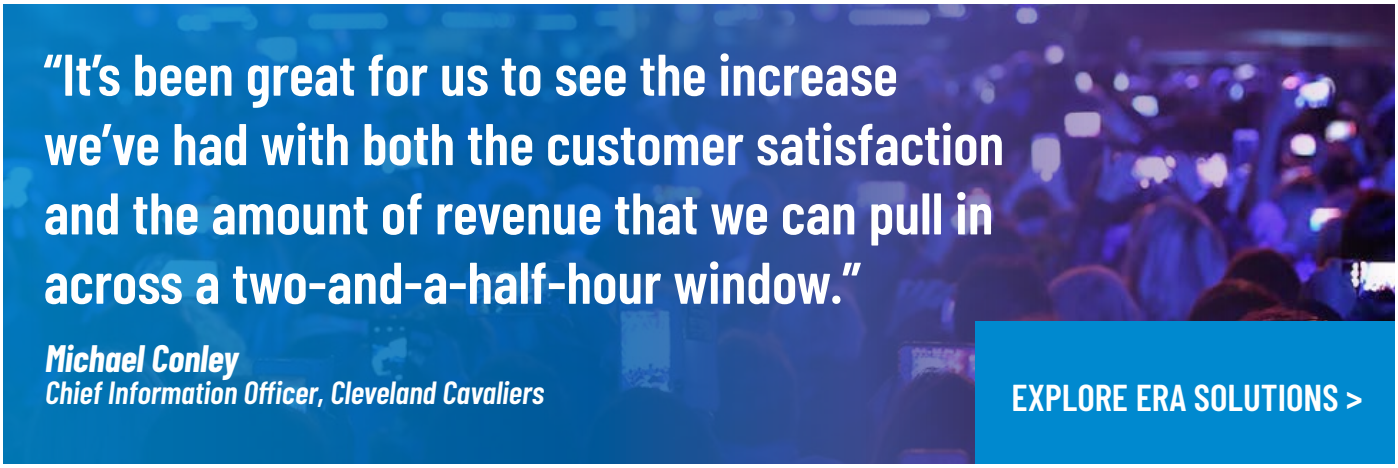
Monetizing the network

Once a fan has opted in to receive messages from the arena, Conley can also use the network as a way to offer fan purchasing. Whether it's an early-bird discount on food and beverage, or a sale on team merchandise, push promotions are one way the arena is taking advantage of fans' constant engagement with their devices.

While mobile ordering from your seat has been one way to enhance the fan experience, Conley has also found that some fans prefer to get their own food and drinks as long as it doesn't take a lot of time. Following the success of self-service lanes in retail and grocery stores, the arena installed a number of self-service kiosks that allow fans to pick up what they want and check out at a number of terminals.

While arenas are often thought of as a touch-service environment, Conley has discovered that many fans also like to engage with touchless technology. Thanks to the robust network, now they're able to get what they want, when they want. Not only are the fans happier, but the arena bottom line is also better.

"What we found was self-service was the number driver for us," said Conley. "It's been great for us to see the increase we've had with both the customer satisfaction and the amount of revenue that we can pull in across a two-and-a-half-hour window."



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