In 2011, when the City of Kansas City planned to build a streetcar rail system to handle its burgeoning influx of traffic and visitors after opening a multi-use indoor arena that revitalized its once desolate downtown, city planners had a lot more in mind than just a simple means of transportation to connect discrete downtown neighborhoods. Taking advantage of an open underground during the construction of the rail system, Kansas City installed a tremendous amount of fiber and electrical systems, and invited corporate partners to make use of the additional infrastructure to build smart city solutions for the citizens of Kansas City.

The goal: “We wanted to provide 21st century citizens with a 21st century platform in which to live and thrive,” says Bob Bennett, Kansas City’s Chief Innovative Officer. Prior to joining Kansas City’s smart city initiative under Mayor Sly James, Bennett spent 24 years in the Army, holding key operational positions in challenging environments from Baghdad to Africa, providing him with the perfect skillset to successfully plan, deploy and implement large-scale strategic integrations among multiple interest groups and stakeholders.

Verizon is one of the many partners who answered Kansas City’s smart city call, providing several of the solutions that earned the city its title of “most connected city in the world.” Blanketing Kansas City’s downtown with 172 Intelligent Lighting core nodes and 122 Intelligent Video nodes, Verizon provides critical services and data, such as:

- Customized, energy-efficient lighting
- Traffic safety analytics and congestion patterns
- Pedestrian and vehicle counts
- Parking availability
- Predictive road hazards
- Illegal behaviors

Use cases
These are just a few examples of how Kansas City has implemented and customized Verizon’s Intelligent Lighting and Intelligent Video smart city solutions:

Use case: Traffic safety analytics in numbers.
Working closely with the Public Works Department, Kansas City looks at traffic data from video footage in busy intersections and assesses pedestrian count, car-related pedestrian accidents, jaywalking instances, and illegal traffic patterns in order to determine high risk areas for pedestrian incidents. Reacting accordingly, the city has and continues to install safety mechanisms such as visually impaired road bumps at intersections and multiple types of alarm warnings (visual and audio). “We share the Department of Transportation’s goal for having zero [fatalities] on our streets,” says Bennett.

Use case: What’s in a pothole?
You’d think there's nothing exciting about potholes, but in a city where inclement weather and heavy traffic patterns have a direct effect on when and where in the road a pothole will form, being able to predict the hazard before it happens is a game-changer. Using Verizon’s Intelligent Video nodes, the city can track the number and type of vehicles driving down a road at a given time. By extrapolating that data to other areas where smart nodes aren’t present, the city believes they can predict where potholes are most likely to happen.1 Armed with this information, the city’s actions then become proactive rather than reactive, with the potential of saving not only maintenance costs, but countless accidents and safety hazards, as well as improving citizen satisfaction.

Use case: Taking the karma out of parking.
You’ve been here before; driving around the city looking for parking. Meanwhile, you’re late for the meeting you were supposed to lead—all because you were literally spinning your wheels trying to find a spot. Verizon’s Intelligent Video nodes allow Kansas City to use near real-time computer vision video analytics and the MapQuest application to scope available parking spots on a block-by-block basis. Not only can this reduce the amount of time it takes to get from point A to point B, being able to quickly find a parking spot can reduce fuel emissions that would otherwise be emitted by endlessly circling the area.

Use case: The smart way to light up the city.
172 of the Kansas City downtown lights are powered by Verizon’s energy efficient core node Intelligent Lighting luminaires. Which means when it gets dark in the middle of the day due to cloud coverage, the lights come on. When there’s no citizen activity in the middle of the night, the lights dim. And on New Year’s Eve—or other designated days—the lights stay on. And when the programming of one of the lights malfunctions, support staff are alerted and can remotely repair it without having to roll out a truck to its physical location. Additionally, on a near weekly basis, the city reviews its energy conservation reports, adjusting lighting schedules for optimal energy savings while maintaining the highest levels of safety and lowest level of greenhouse gas emissions.

Solution overviews
Pave the way for a smarter city.
Verizon Smart Communities solutions can help municipalities and organizations like yours quickly and cost-effectively support initiatives for managing roadways, utilities and transportation systems.

- **Intelligent Traffic Management** provides tools and analytics to help you see into your infrastructure and optimize the flow of traffic.
- **Traffic Data Services** delivers near real-time insights and historical analysis about traffic flow to help planners minimize congestion, plan future multimodal transportation and improve land use.
- **Intersection Safety Analytics** provides 24x7 data and analytics that give insights into how cities and transportation leaders can improve the safety of citizens traveling on the roads.
- **Parking Optimization** is a cloud based, managed service solution that uses computer vision analytics to optimize revenue and create better parking experiences.
- **Intelligent Lighting** helps you control costs and save energy by regulating light levels based on the surrounding environment.
- **Intelligent Video** with edge analytics makes it possible to get eyes on remote property and assets without investing time and resources on streaming footage.
- **Digital Kiosk** is a specially designed information kiosk that helps improve community engagement by providing information about neighborhoods, services, safety and emergency assistance, as well as Wi-Fi calling and connectivity.

From local, to national, to global and back again.
Who knew this pilot smart city infrastructure would draw such collaboration from a plethora of local and national suppliers and partners? From front line workers, to law enforcement, to city planners from other states, to startup companies and national corporations, this 2.2-mile stretch of road has reached a lot further than just the boundaries of the Kansas City downtown. Namely, the planet. About their global emissions footprint, Bennett emphasizes, “We’re very concerned about that... We have a city council resolution...that says by 2020 we will [strive for] a 30% reduction [of greenhouse gas emissions] from the year 2000 value.”

Learn more
Find out how Smart Communities solutions can help you create better places for people to live, work and play.
enterprise.verizon.com/smartcommunities

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