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largest fruit and vegetable juice providers, Turkey's Anadolu Etap, faced serious problems with calculating payroll. Each harvest season, thousands of farm workers head to the company's seven large fields to pick the crops. It's the workforce's fluid nature that causes a major problem for Anadolu Etap. New laborers arrive daily looking for work. Once hired, they might work a few days, leave

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Planning took several months and included meetings with both the chamber and the Chicago Police Department (CPD). Chicago police worked with Chicago-based integrator Vintech Systems, Inc., to provide a detailed outline of where existing security cameras were placed throughout the city, in addition to providing studies and statistics on local crime rates.

“The meetings helped us gather critical information to make decisions about placement of the Hikvision surveillance cameras. We wanted as much input from the community as possible to create the safe street environment for Chicago’s Chinatown,” says Sean Du y, project manager at Vintech Systems.



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By Lisa Roy

As smart buildings evolve, smart buildings benefit from connected technologies. The next step is to explore the development of smart communities. Going beyond just a single building application, smart communities can be anything from stadiums and entertainment complexes to college campuses and healthcare facilities. These communities involve multiple smart spaces like residential living, retail storefronts, offices, and even restaurants.

When approaching intelligent building systems, automation and lighting are the first applications that come to mind. However, existing and updated security systems can serve as a versatile foundation for building a more comfortable and efficient environment.

Security's smart technologies can not only help better protect and maintain physical building systems, they can also improve occupant experiences. Often at the core of a building's essential systems, security technologies like access control and video surveillance provide visibility into building operations that help enable more intelligent analysis and decision making. For example, connecting access control with fundamental building systems, such as heating and cooling, can identify opportunities for increased efficiency. Through an integrated approach, heating and cooling sensors can use the data aggregated by access control systems to better automate temperature controls based on the number of people in a room or area. Lighting can also be integrated and more efficiently managed with access control by turning lights on and off as people enter and leave rooms and, in more sophisticated applications, by dimming or changing lighting colors based on individual preferences.



autonomous technology, and are using the machines to augment everything from camera surveillance to customer interaction.

Weighing in at 400 pounds and standing about 5 feet tall, the Knightscope Autonomous Data Machine (ADM) K5 model is designed for outdoor use; the K3 is suited for indoor applications. These robots scan their environment for threats and report anomalies back to a live security team out of Allied Universal's security operations center. Another model, the K1, is designed to detect if someone is carrying a weapon.

The robots are equipped with features such as 360-degree video, thermal imaging, license plate recognition, and intercom and broadcast capabilities. These machines can be set to patrol a specific geographic area on a schedule, and can send a warning message to any unauthorized person who is in that location, such as a shopping mall after hours.

Allied Universal also partners with RAD to deploy a robot model designed for a more rugged environment, with many of the same features as the Knightscope machines. The RAD devices are useful in bigger industrial environments, such as large factories or outdoor areas that span many miles.

Steve Reinharz, CEO and founder of RAD, notes that the success of the robotics approach for security companies depends on thoughtful, meaningful placement of the machines.

"It's essential that I don't deploy robots in areas where they're going to be unsuccessful or where we're going to get bad press, or where it can negatively affect the direction of this industry," Reinharz says.

Robots have wound up in the news for less than desirable reasons. *The San Francisco Business Times* reported in December 2017 that one Knightscope machine deployed by the San Francisco SPCA, a nonprofit whose mission is to "save and protect animals," was shooing away homeless people on city sidewalks. The city ordered the SPCA to stop deploying the robots on sidewalks or face a \$1,000 per-day fine.

With movies depicting robots that are intelligent enough to be mistaken for humans, Reinharz adds that customer



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