

How Broadband Powers Tomorrow's Smart Ecosystem

Smart technologies – from video analytics to lighting to mobility – provide valuable insights that can positively impact buildings and communities. Determining the proper forms of connectivity each smart technology requires is important to maximizing the benefits.

By Michael Slovin / Comcast Smart Solutions

Today's buildings and public infrastructure are rapidly changing, primarily driven by tomorrow's evolving expectations for efficiency, productivity, collaboration and digital experiences. It is now more important than ever to have the right technologies to foster connections at work, at school and at home.

Developers are looking for new ways to empower their buildings and communities to keep up with changing business and environmental conditions. From smart lighting that can help save energy by turning off automatically to video analytics that leverage artificial intelligence (AI) to understand traffic patterns, property owners and facility managers are turning to smart technologies to improve experiences and lure tenants. In fact, the smart-building market is expected to grow from \$69.80 billion in 2021 to \$201.16 billion by 2031, according to an Allied Market Research report.

Whether for multifamily properties or a chain of businesses, smart technology can help improve efficiency, manage costs and enhance experiences. But none of this is possible without having a solid broadband infrastructure in place.

Smart technologies need reliable internet, secure networking and enough bandwidth to function efficiently and communicate information. With connectivity, technology can optimize productivity and efficiency, so it is crucial that businesses create strong connectivity infrastructures for their smart-technology ecosystems.

DESIGNING A SMART-TECH ECOSYSTEM

When it comes to smart technology, clearly understanding a company's goals is crucial. From multifamily properties to college campuses, different environments require different technologies. A mixed-use development may have various goals, such as improving safety and reducing costs. Depending on its size, a development may look to implement wide-ranging smart lighting and smart public works, which require lots of bandwidth. One enterprise business, on the other hand, may include only one building looking to install

video analytics, which requires a smaller scale of broadband. Cities and municipalities often require interconnected networks to power large smart-technology ecosystems.

However, it is important to understand that implementing smart technology solutions requires solid connectivity. This includes the security and reliability of network connections, bandwidth and wireless services to keep smart technologies that communicate with data humming.

In addition, different types of technology require different forms of connectivity. Enabling smart technology requires a clear understanding of a company's goals and the outcomes or experiences the organization wants to create. This will direct the company to the best choice and help it move toward implementation.

No matter the size or structure of an organization, it is crucial to start by examining its goals and any areas that need to improve. The business can then determine the smart technology and broadband connectivity needed. Laying a strong foundation for smart technologies is crucial for longevity and security.

TECHNOLOGIES BROADBAND POWERS

In today's digital landscape, smart solutions are becoming a necessity for efficient operations and functioning. As they become more advanced, smart technologies provide ways for buildings and communities to meet sustainability goals, optimize operations and improve overall environments. Without secure, reliable connectivity, smart technology is not dependable and cannot perform the functions operators and managers need. When considering how to power smart technologies, remembering that each form of smart technology has different connectivity needs is important.

- **Smart Buildings**

Smart buildings, which can include building management systems, energy and water usage monitoring and more, rely heavily on connectivity for communicating with operators and sometimes occupants. If the goal is improving



sustainability efforts, facility managers need to access real-time insights on energy, air quality and water monitoring. Smart-building technologies can also assist with proactive maintenance to manage costs. These features require reliable internet to transmit information that helps inform decisions.

- **Video Analytics**

Video analytics work in a similar manner. With security cameras that leverage AI, smart technology and analytics, video analytics can help facility managers understand video information, such as the number of people entering a store at a given time or parking in a lot. This data needs to be relayed to be used and needs a strong network connection to transmit video footage and data. Analytics can provide information that can help inform decisions on improving community safety with building monitoring, entry and perimeter detection and occupancy data. Understanding human and vehicular traffic patterns with data from visual analytics can help inform business decisions and provide expertise about a given environment.

- **Smart Lighting**

Smart lighting requires connectivity to integrate with other smart technologies. Within a smart lighting network, connected technologies

can include sensors, analytics and more. With a reliable internet connection, smart lighting can provide real-time information for actionable insights and mesh with other smart-building technologies for a seamless experience.

- **Smart Mobility**

Smart mobility offers smart-parking solutions, curb activity measurement and management, and cloud-based EV charging solutions – all of which require connectivity. Automated parking management solutions use software and license plate reading technology that need a strong network connection to enable reservation parking and real-time spot inventories. Accommodating the growing EV market with flexible and scalable charging solutions also requires a reliable network. When these systems have strong connectivity, they can

optimize parking and improve the driver experience.

These smart technologies provide valuable insights to operators and managers that can inform decisions and ultimately help support positive impacts on buildings and communities. Determining what form of connectivity each smart technology requires will help ensure they all work optimally.

THE FUTURE OF BROADBAND AND BEYOND

The smart technology market is constantly evolving, so having internet infrastructure in place is important for the longevity of a building. Secure networking can power a range of smart technologies, even as they adapt. Implementing reliable broadband is the first step toward creating a building or community of the future that can adjust to changes in the smart technology landscape.



Michael Slovin is the vice president and general manager of Comcast Smart Solutions. It is powered by the nation's largest gig-speed network and helps advise, design, deploy and support holistic smart technology ecosystems with a curated roster of top smart technology partnerships. They help create efficient, productive buildings and environments that meet the needs of tomorrow's communities and businesses.