

Smart Buildings Bring Transformative Efficiencies and Sustainability Across Industries

Commercial property owners and managers are under increased pressure to reduce power usage and costs while also meeting rising expectations for a modernized space to live and work. This presents compelling reasons for building owners and facility managers to seek a smart space solution that autonomously increases energy efficiency while also sensing, understanding, and even predicting the needs of property owners and occupants. Meeting these goals requires integrating Internet of Things (IoT) smart sensors with legacy building management systems and emerging services such as 5G networks, edge computing, digital twins, and artificial intelligence.

In collaboration with

Cognizant

Cognizant Smart Building Solution Accelerator



Building Smarter Spaces on AWS

Cognizant's Smart Building Solution Accelerator, built on AWS and AWS IoT, uses data collected from a variety of networked sensors to enable smarter workspaces. The platform brings together the key components that facility managers need to realize reduced energy usage, increased uptime of equipment, streamlined operations, and regulatory compliance while giving consumers and occupants a consistent experience.



Sensors and Sensibility

Sensors continuously monitor the operations of various systems, including heating, ventilation, security, water, refrigeration, and safety. Data integrated from various sensors, assets, and third-party applications, such as traffic, weather, and location services, can be used to anticipate demands for energy, parking, asset usage, monetization, and space and occupancy management. This data can also be shared across the customer's CRM, EAM, ERP, legal systems, workspace management, or services management software.



Data at the Ready

A key attribute Cognizant's Smart Building Solution is its ability to aggregate information across many different facilities and have it instantly available in the customer's workplace management system to automate real estate processes and reporting and provide powerful enterprise-wide insights. Whether a customer manages two properties or 200, the platform aggregates the IoT sensor data from all smart devices and makes it available to their business applications. Remote systems can be monitored individually or collectively and can also be controlled from the virtual machines.



Business Benefits

- **Oversight.** Cognizant's Smart Building Solution integrates the disparate systems, assets, and sensors across a customer's real estate to provide a unified, transparent view of their entire portfolio in real time. By using automation to drive the single pane of glass, labor usage comes down significantly year over year.
- **Sustainability.** Smart buildings consume less energy by intelligently managing utilities like heat, air conditioning, and lighting so they're not operating in unoccupied spaces or after hours. Implementing these simple measures consumes less energy and significantly reduces the environmental impact from each building. Industry savings range from 10 to 30%.
- **Maintenance.** All the critical systems that operate inside of a building—like power, HVAC, plumbing, safety, elevators, and security—require periodic maintenance or risk breaking down, possibly resulting in business disruption or evacuation of the property. Smart buildings monitor these systems so preventive maintenance can be performed before a breakdown occurs. Industry savings range from 15 to 25%.
- **Regulations and compliance.** New buildings must be built to conform with the governing building compliance guidelines and safety regulations. Older buildings need to be retrofitted with safety systems to keep them compliant. Should an injury occur, the building owner is responsible and must be able to demonstrate that they exercised their duty to mitigate that risk. Smart buildings continuously monitor the integrity of fire prevention systems, emergency lighting, and more so injuries and legal problems can be averted. Customers can take advantage of various green energy programs and rewards, the value of which varies from state to state.
- **Safety.** Smart buildings can use surveillance and security systems to protect the safety of occupants and provide a safer place to live, work, and stay.
- **Cost.** As demands for energy—particularly clean energy—increase, so will the cost. Smart buildings enable corporations to operate lean and reduce their demand for energy, utilities, and resources, which offers significant cost savings for them while easing demand on natural resources and contributing to each customer's ESG targets.

Interoperable Product / Vendor-Agnostic Smart Buildings Solution

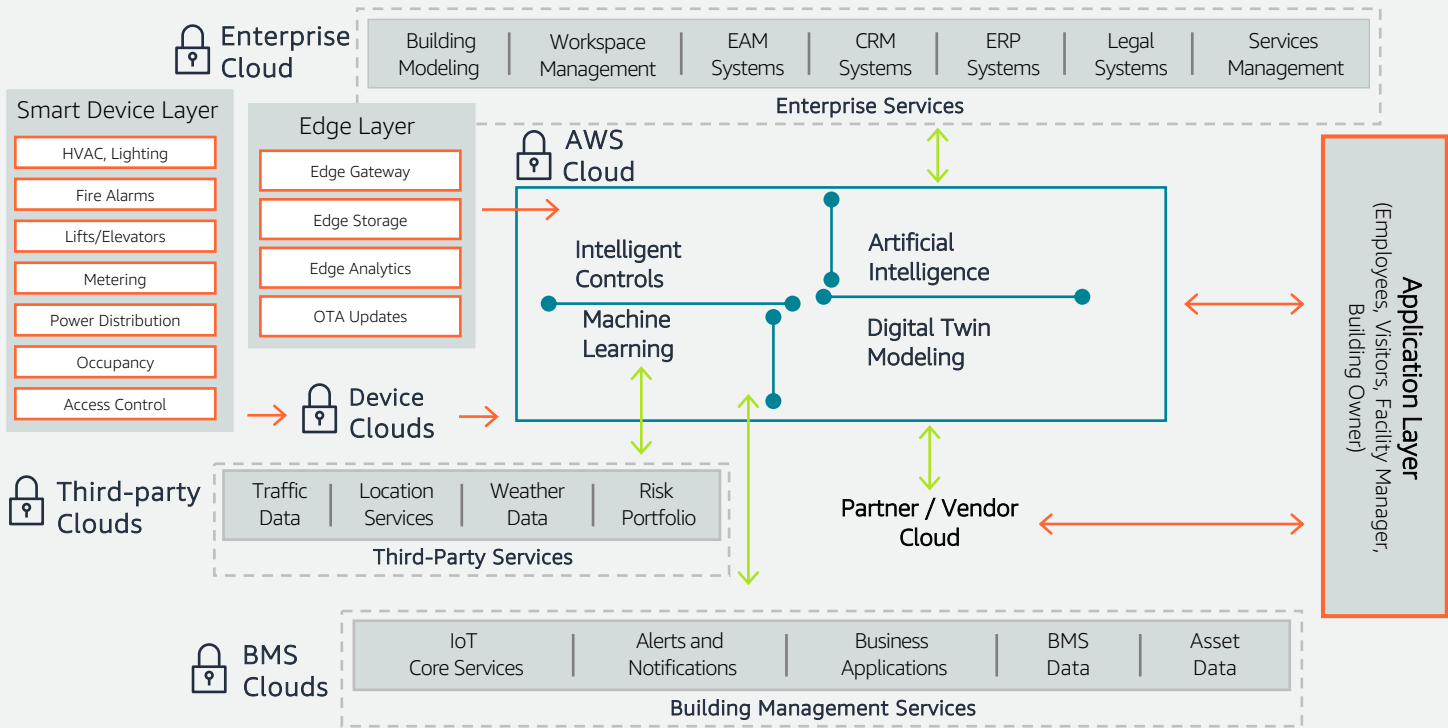


Figure 1—Data flow through the Smart Buildings platform

Use Cases Across Business Sectors

The Smart Buildings Solution aligns with the following five broad business sectors. The solution can actually cut across any vertical—whether retail, factory, or life sciences—essentially anyone who has a building or real estate.

Offices and real estate. In this sector, the typical use cases include energy management, smart workplaces, asset management, parking, and sustainability, and the solution is ideal for any real estate the customer owns.

Retail stores. This sector extends the above use cases to include inventory management, ambience management, and foot-follow heat map to help managers decide where to set merchandise in the store.

Convenience / quick-service stores. Much like offices and real estate but can accommodate food handling including food quality monitoring and preventive maintenance of critical assets within the store.

Hotels and resorts. Also similar to offices and real estate with the inclusion of utilities, parking, operations management, field service operations, and asset monitoring.

Airports and airlines. This sector introduces a major focus on safety and security, as well as asset tracking, crowd management, customer experience, airport operations, space management, and fleet management.



Getting Started with Smart Buildings

Smart Building transformation opportunities typically begin with a maturity assessment to gain a better understanding of the customer's business challenges, readiness for the program, and future aspirations. Based on this assessment study, an ROI and a transformation roadmap are created for the customer outlining the scope, timeline, and benefits of the transformation. Cognizant's Business Capability Matrix maturing accelerator provides a catalog of key performance indicators to help the customer during the assessment.

After the assessment, we recommend a quick pilot program covering representative real estate and a few use cases. These pilot programs typically run from eight to 12 weeks and are designed to showcase a key element of the customer's industry. If the customer is specifically interested in a single use case (e.g., energy savings), that can be accommodated. Pilots are conducted using the Smart Building Solution Accelerator platform, which eliminates the need to develop any custom code/integrations and information models, so customers can deploy the pilot in as little as eight weeks. This solution lays the foundation for subsequent production implementations.

Maturity Assessment

After the pilot period, the customer will have a clear picture of the benefits of the solution as well as how much money they will save in energy each month. At that time, they can opt to move ahead with outfitting additional buildings and/or adding other use cases.

Business Models

As the use cases evolve, customers are getting more interested in working with a single company that can serve as a master system integrator (MSI) that can deliver the platform, hardware, sensors, and devices and coordinate all the players including installation and construction partners. Cognizant plays the role of the MSI, overseeing the construction of new smart buildings and the retrofitting of existing buildings. Cognizant has an ecosystem of partners that do the installations, wiring, and construction, so everything is managed centrally, including the IT platform

About Cognizant Smart Buildings

Cognizant gives organizations the insights to anticipate what their customers want and act instantly to deliver on those demands. They help their customers achieve the goal of every modern business: staying one step ahead of a fast-changing world. Our Smart Buildings Solution delivers exactly that, so businesses can anticipate the changes ahead, implement the technologies needed to navigate them, and do so with an eye on sustainability.

Learn more about Cognizant Smart Buildings on AWS.

<https://aws.amazon.com/partners/cognizant/>

