



# Making Spaces Smart

Four steps for organizations to move from vision to reality.

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Bringing smart spaces to life

## The smart-space mandate

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. In the U.S. alone, commercial buildings account for 36% of all electricity consumption and are responsible for **18% of the nation's carbon dioxide emissions**.<sup>1</sup> On average, **30% of that energy is wasted** due to built-in inefficiencies.<sup>2</sup>

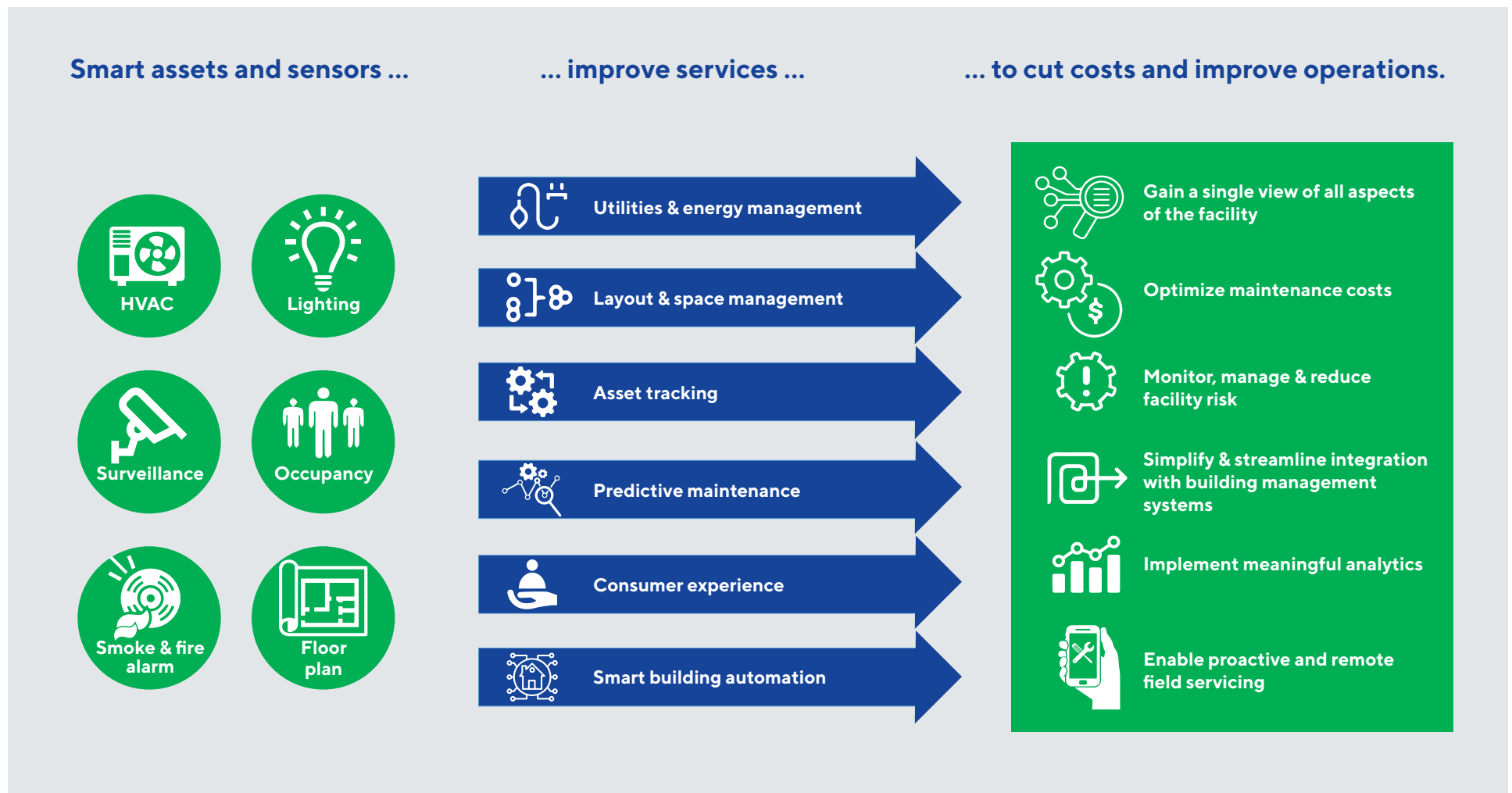
This presents compelling reasons for building owners and facility managers to seek a “smart space” solution that autonomously increases energy efficiency while also sensing, understanding and even predicting the needs of property owners and occupants. No wonder the global smart space market is estimated to grow from \$8.5 billion in 2019 to **\$19.9 billion by 2024**.<sup>3</sup> Indeed, over **80% of new construction** involves at least one facet of Internet of Things (IoT) and/or related smart buildings market-related technologies.<sup>4</sup>

Fortunately, new devices and digital technologies are helping to meet this urgent challenge – and compelling opportunity – to drive more value from physical spaces by increasing their:

- Productivity.
- Efficiency.
- Safety.
- Environmental quotient.
- Convenience and usefulness for occupants.
- Profitability for owners.

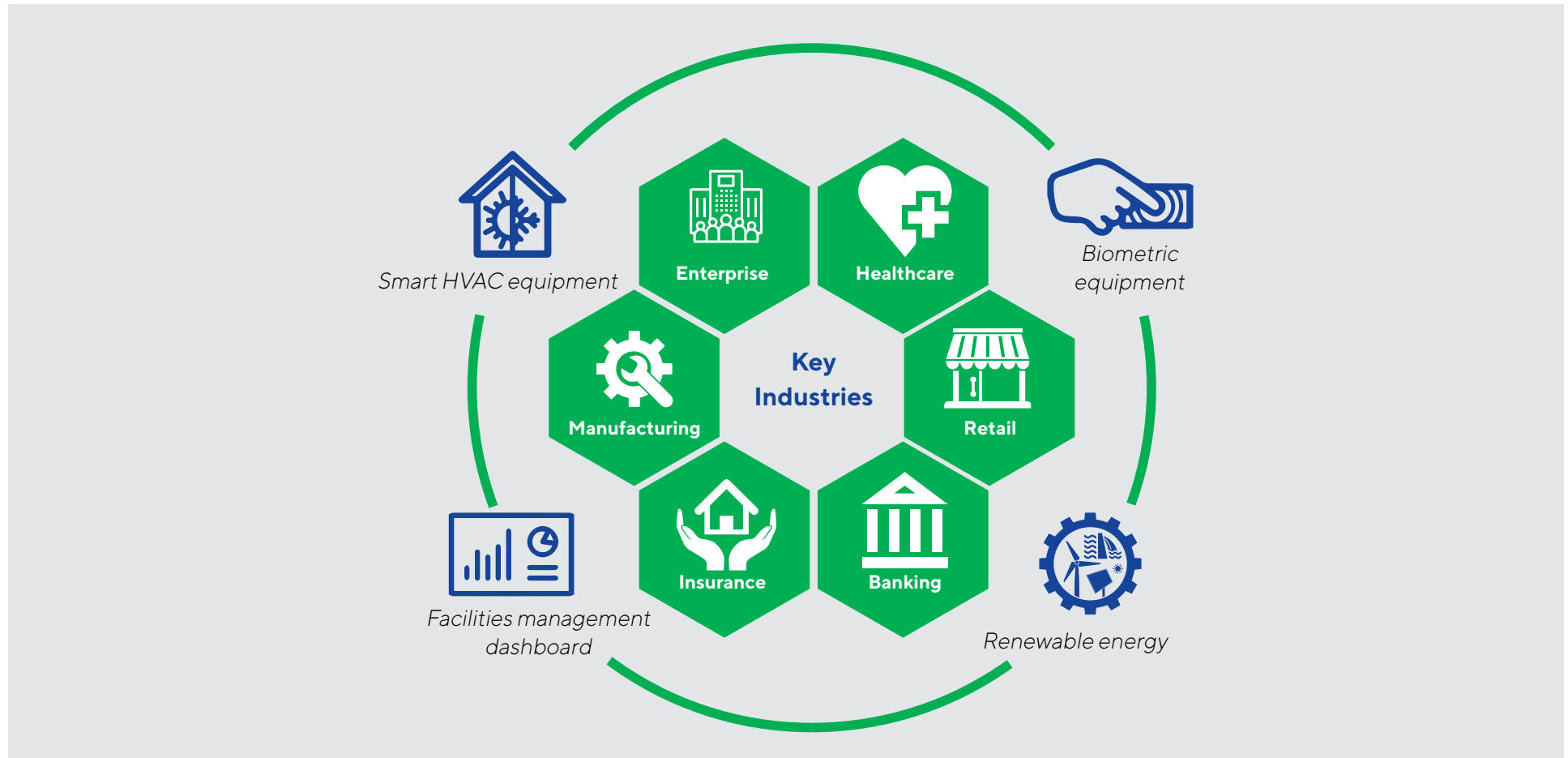


# How smart spaces boost the bottom line



## Opportunities across industries

Facility managers are benefitting not just from reduced energy usage, increased uptime of equipment, streamlined operations and regulatory compliance, but also from predictive maintenance of buildings.



Meeting these goals requires integrating IoT smart sensors with legacy building management systems (BMS) and emerging services such as 5G networks, edge computing, digital twins and artificial intelligence. It also requires making these spaces adaptable so that they, and their sensory infrastructures, can adapt to new business needs and technology capabilities.

We recommend taking a four-step approach to create self-aware, flexible and responsive spaces that maximize value for owners and occupants.



# Four steps to smart-space success

## Step 1: Understand your needs

Virtually every organization manages a unique mix of spaces, each with distinct demands from users, both collectively and as individuals. With many available smart-space options, selecting those that meet the organization's needs and budget – and deciding where to begin – can be a challenge.

To develop a smart-spaces strategy, organizations can begin by assessing their current real estate environment and its challenges. Interview stakeholders, conduct surveys and inspect the physical locations.

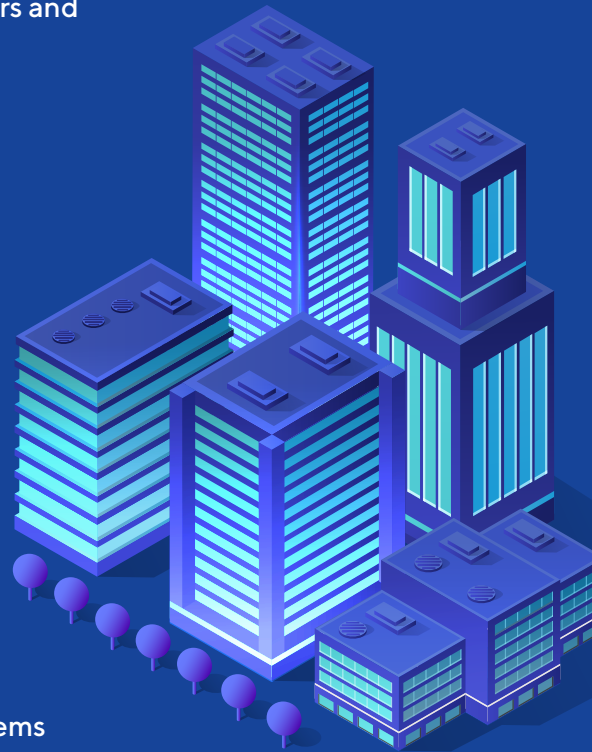
The assessment should include a detailed description of the current technology landscape, including challenges and pain areas, and a high-level overview of the smart spaces projects that are expected to deliver the greatest business value.

An implementation roadmap should be developed that describes short- and long-term desired business outcomes, a scalable technical architecture and strategies to address essential needs and gaps, such as data or system integration.

## A smart-space needs assessment

The following components are essential to developing a smart-space strategy.

- The number, size and state of the physical spaces devoted to employees, customers and machinery.
- The amount and quality of data the organization can capture and understand about the state of each space. Many organizations have limited visibility across their real estate portfolio, with data about the status and maintenance of key processes and systems (such as HVAC, power, safety and security) locked in siloed systems.
- An understanding of the most critical, high-level challenges and opportunities relating to the business portfolio. This might include excessive energy use, weak building security, high maintenance costs or high tenant turnover.
- The range, quality and type of sensors and building management systems currently in place, their age, the level of support from their vendors, and the extent to which they can share data.





## Step 2: Identify multiple use cases

With the assessment complete, identify and describe the specific use cases that will deliver the most value. The more complete the assessment, the better idea of the business benefits.

Prioritize the challenges and opportunities that will best satisfy critical objectives, such as reducing energy or management costs, increasing occupancy rates or delivering a better experience.

Next, identify the key stakeholders who will benefit from or be affected by the smart-building initiative, and understand their goals in detail.

Then, map and document the “as-is” and “to-be” processes and technologies. Finally, map a plan to close any gaps.

### Sweet spots: top use cases



**Enhance properties** with easy-to-use smart services and responsive digital amenities to attract today's demanding tenants.



**Reduce management costs** through proactive repair and maintenance.



**Increase forecast accuracy** for capital spending and repair costs.



**Ease compliance** with safety and environmental regulations.



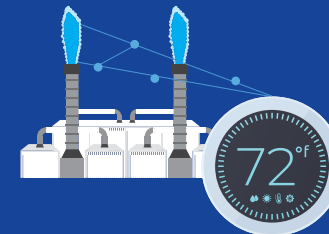
**Increase efficiency** of real estate use by matching vacancies to needs.



**Provide convenience**, such as smartphone alerts about when a washer or dryer are free.



**Improve security**, such as video surveillance of common areas or remote monitoring and management of space.



**Boost energy efficiency** by automatically controlling temperature and lighting in response to environmental changes or peak pricing.



**Provide proactive services** by predicting needs.

## Step 3: Prove the concept

Creating a compelling smart-spaces strategy is just the start of the journey to value. The next step is to deliver a real-world proof-of-concept (PoC) that proves the solution can work and deliver its promised value.

After PoC validation, launch a pilot phase with a limited rollout, such as for several floors or a single building, to further understand the implementation challenges before moving to full deployment.

### Anatomy of a proof of concept

A typical PoC comprises the following characteristics:



**Takes eight to 12 weeks to complete.**



**Includes an in-depth analysis of the data available from smart sensors and other sources.**



**Involves a testing hypotheses for potential outcomes that can drive efficiency, savings and other benefits. The aim is to gather and analyze enough data to ensure the solution can deliver the expected value.**



**Demonstrates how well the solution addresses the needs of all stakeholders, including building owners, occupants and internal and external service providers, such as repair staff. Such proof requires well-defined criteria for assessing success, such as quantifiable business results.**

## Step 4: Scale the solution

Organizations need to combine several elements to gather, store and analyze enough data to drive actionable insight from a smart space:



The strategy should clearly describe the end-to-end implementation of all required services and include the number of deployment locations and defined key performance indicators that will measure their success. It should also detail how everything from the physical IoT infrastructure to the data and analytics platforms will be managed over time.



# Real-world smart spaces

## Smart spaces in action

For some organizations, the greatest value is derived by improving space utilization to cut the real estate footprint. For **a global financial services company**, we replaced a complex, manual process for matching staff to workspaces with a digital space optimization approach that saved \$1.2 billion in real estate costs.

In some instances, data might come from smart spaces controlled by a customer or business partner. For **a global insurer**, we developed an intelligent monitoring platform for more than 100 data points in buildings it insured. By receiving timely notifications of critical issues, the insurer could underwrite coverage for the facilities with fewer site visits.

One **real-estate trust** is reimagining the user experience for every stakeholder, from building owners and managers to occupants. We developed a plan to transform an 80-year-old residential complex with thousands of units into a smart, connected space that slashes repair and energy costs while providing the convenience, safety and environmental benefits today's tenants demand. This solution will arm the property owner with a single portal that offers drill-down visibility into operations status, energy management and key measures of the tenant experience across all buildings. We have since extended the initiative to two additional properties to provide remote performance monitoring and management for senior management and portfolio owners to drive better efficiencies across the building portfolio.



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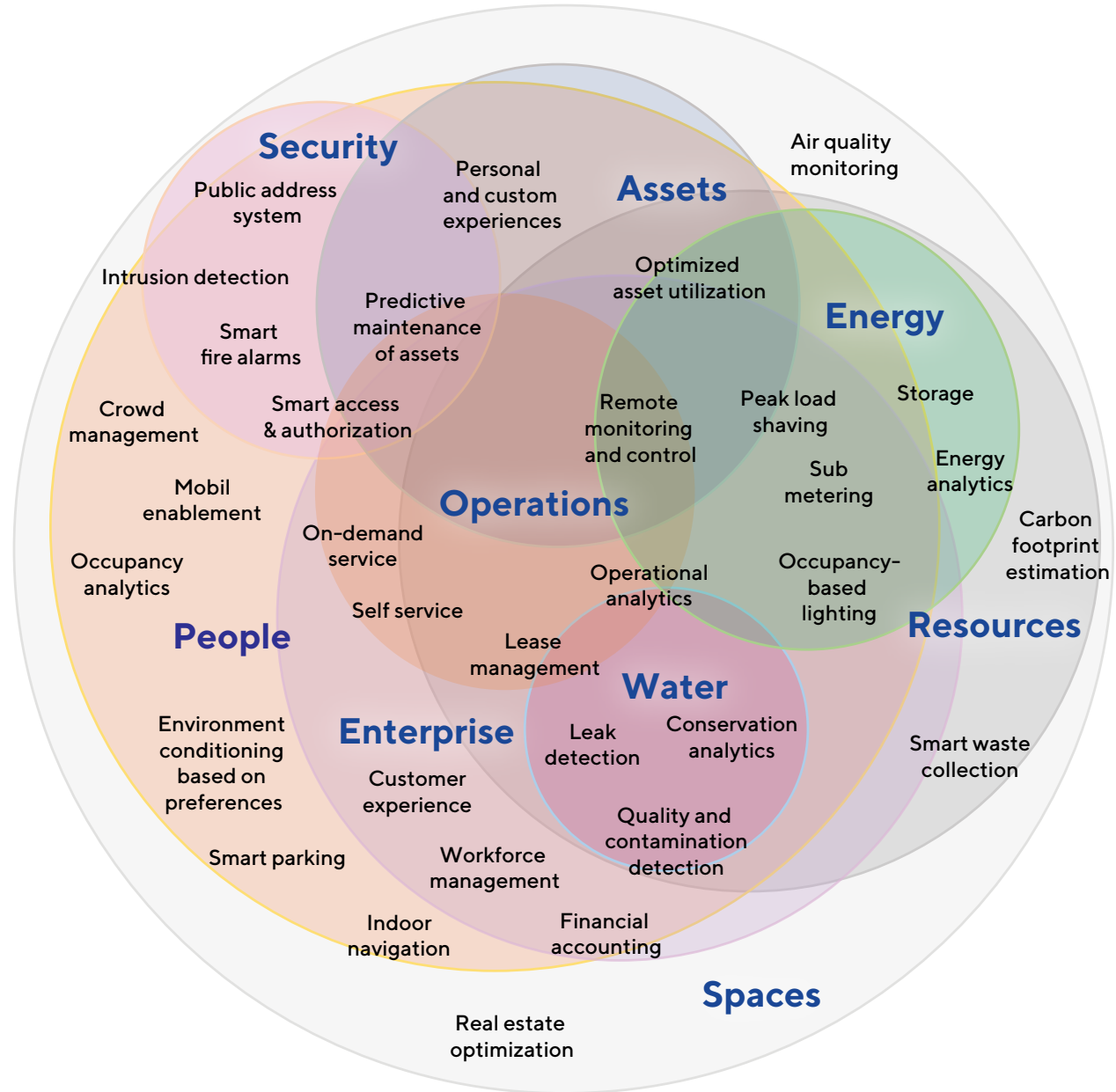
Moving toward the future of smart buildings

## Get smart

Building owners, managers and tenants demand far more efficiency, safety and convenience from physical spaces than they did just years ago. They want the same level of awareness, intelligence and proactivity from buildings as they experience from their smartphone apps.

Whether you're a chief operating officer, vice president of operations or building owner, seek to understand the challenges of smart spaces and the opportunities they provide as you craft a strategy to maximize their benefits.

## A web of opportunities for smart spaces



## Learn More

Make the smart move for your building portfolio with a solution that addresses the needs of your business and is scalable, secure and future-proof. To begin your smart-space journey, contact us at [www.cognizant.com/iot](http://www.cognizant.com/iot).

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