



TRANSFORMING SMART BUILDING TECHNOLOGY

How real-time integration of smart building technology with an Integrated Workplace Management System (IWMS) enables better portfolio decision-making from a business perspective

INTRODUCTION

Facility managers, asset managers, and property portfolio directors will always need to balance limited budgets and resources with business demands to operate and maintain their building portfolio during its lifecycle.

This is a complex task for many reasons, including:

- The need to avoid budget overruns
- The large number of interventions that occur
- The pressure to make the right decisions on what actions to take
- The complexity of different priorities across a building portfolio

Making the wrong decisions about maintaining your portfolio can lead to high financial risks and costs, as well as reduced occupant comfort and wellbeing. There are additional associated risks in terms of business continuity, non-compliance, sustainability, and many more.

To conquer this challenge and reduce its impact, many organizations have transformed their building operating and maintenance regimes from reactive maintenance toward preventive or time-based maintenance.

However, 82% of asset failures are still not age related but “seem to occur at random” according to research from the ARC Advisory Group’s Enterprise Asset Management and Field Service Management Market Study. Preventive maintenance is not enough – there is still risk, but also much opportunity!

CONTENT

1	What is a smart building?	P. 3
2	Smart building technology and its data	P. 5
3	The shift toward smart business	P. 5
4	Smart business benefits	P. 8
5	Integration will make buildings self maintaining	P. 8

Driven by technology innovation, buildings can now be better equipped to become “smart” and produce large amounts of data. Smart building technology seems to be everywhere, but it raises some important questions. For instance, how can you benefit from this and transform technology-based processes into smart business decisions? And, how can you make smart portfolio decisions and act on the right things?

WHAT IS A SMART BUILDING?

Facility management is becoming more digital. A substantial component of this digitalization, includes the rise in “Smart Buildings” or “Intelligent Buildings” and the way they need to be managed. There are many definitions of a “Smart Building” but a rather practical one is defined by the Buildings Performance Institute Europe (BPIE):

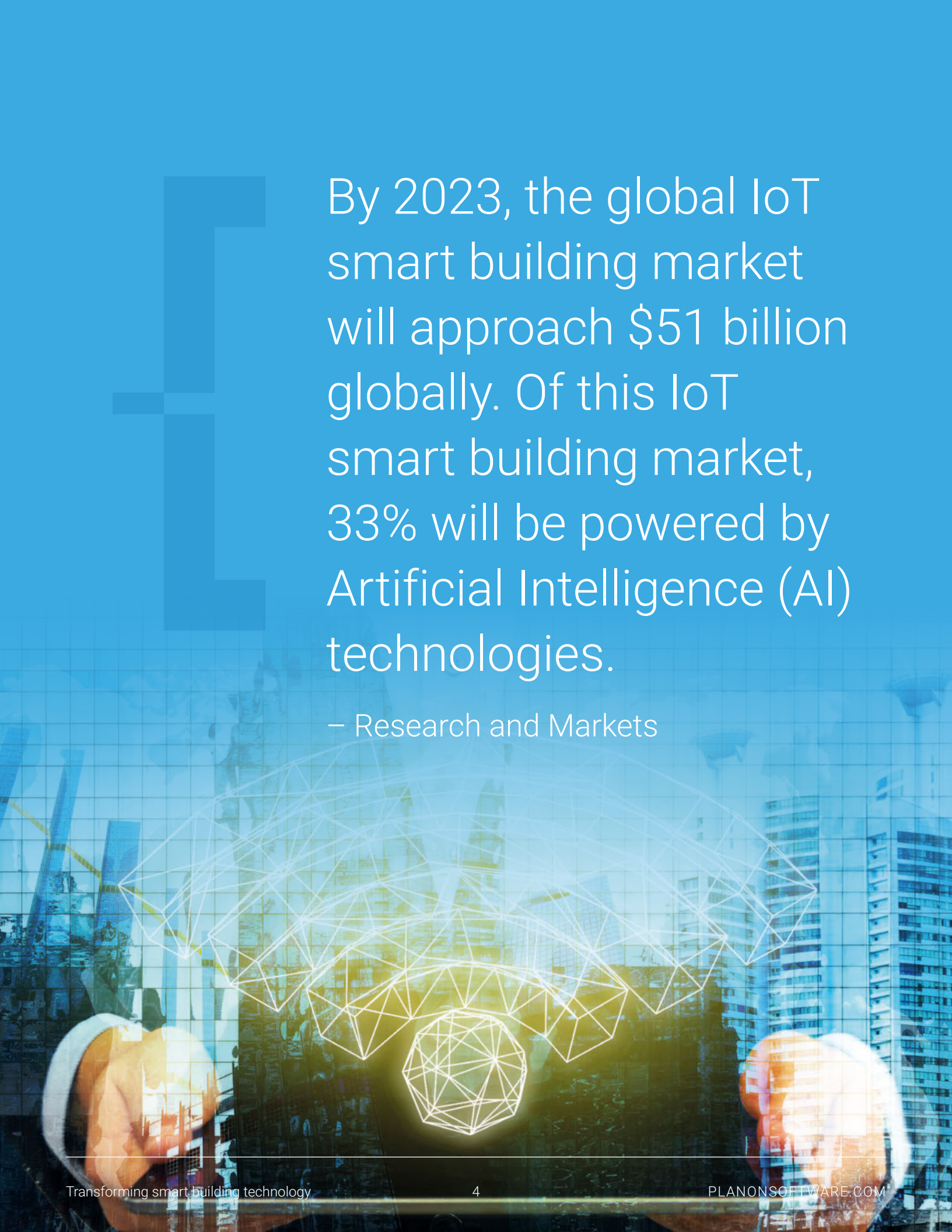
“A smart building is highly energy efficient and covers its very low energy demand to a large extent by on-site or district system-driven renewable energy sources. A smart building (i) stabilizes and drives a faster decarbonization of the energy system through energy storage and demand-side flexibility; (ii) empowers its users and occupants with control over the energy flows; (iii) recognizes and reacts to users’ and occupants’ needs in terms of comfort, health, indoor air quality, safety as well as operational requirements.”

The concept of a smart building is based on the use of interconnected technologies to make buildings more responsive, sustainable, and productive for their users. They contribute to energy efficiency and automated detection of anomalies in the building infrastructure, predict maintenance based on conditions, and can help in providing greater comfort and wellness for occupants.

According to Verdantix, smart building technology covers a wide area of applications including building management systems (BMS), energy management software (EMS), fault detection/diagnostics systems, Internet of Things (IoT) platforms for buildings, Computer-Aided Facility Management (CAFM), Integrated Workplace Management System (IWMS), workplace management tools, sensors, Building Information Modeling (BIM) etc.

Also, a rather new phenomenon called “PropTech” is entering the real estate market. In most cases PropTech refers to startups that launch new technologies that disrupt and drastically optimize a certain aspect in the real estate lifecycle, like building operations, occupant experience, and energy efficiency. This market accelerated in 2018 with \$4 billion invested across the smart buildings sector, according to Verdantix research, “PropTech Accelerates in 2018 with \$4 Billion Invested Across The Smart Buildings Sector.”

In practice, every organization, and even every individual building will have its own unique composition of different technologies delivered by different vendors. On a building portfolio level, the landscape of applied technologies looks very heterogeneous as technologies evolve extremely fast and investment priorities change over time. For example, a portfolio of ten buildings might include more than 200 different types of smart building technologies.



By 2023, the global IoT smart building market will approach \$51 billion globally. Of this IoT smart building market, 33% will be powered by Artificial Intelligence (AI) technologies.

– Research and Markets

SMART BUILDING TECHNOLOGY AND ITS DATA

Smart building technologies produce large amounts of data, describing the status and behavior of a wide range of systems and assets. They deliver real-time data about electricity, gas, or water consumption, give insights into climate conditions such as temperature, humidity and carbon dioxide, and can monitor behavior of occupants in buildings. Consider the data coming from individual HVAC installations, building management systems, energy management systems, sensors, smart lighting systems, and elevators.

A new generation of innovative smart building platforms - offered by vendors such as Schneider Electric, Siemens, Honeywell and more - collect and capture data from a wide range of sources in overarching and agnostic IoT platforms. According to Verdantix research published in their 2018 Green Quadrant for Facility Optimization Software, these new enterprise-scale platforms will extend the traditional energy efficiency scope with improved condition-based maintenance processing and occupant wellbeing and comfort by leveraging the developing IoT ecosystem.

“Today’s smart buildings are an increasingly diverse combination of sensors, control systems, networks, and applications,” said Larry O’Brien from the ARC Advisory Group in 2018. “This diverse blend of technologies also creates increased convergence between the worlds of information technology (IT) and operational technology (OT). At the operational level, building automation systems have traditionally been proprietary in nature using a limited number of built-for-purpose networking technologies.

Adoption of the IoT in today’s smart buildings has created a new landscape that eliminates barriers between IT and OT. The use of edge computing devices, the cloud, and IP-based technologies is fundamentally changing the way that today’s smart buildings are monitored, controlled, and optimized.”

In most cases, these smart building platforms include mechanisms and intelligence to interpret, analyze, and diagnose data and transform it into recommendations. These recommendations include suggested actions that could be or need to be taken to prevent asset failure, decreasing building performance, causing excessive energy consumption, or decreasing climate conditions. In some cases, recommendations can even include their effects on costs, energy consumption, occupant comfort, operating continuity or safety.

But this is still a theoretical and technology driven exercise. How can an organization transform these recommendations into “real world” actionable tasks? From these thousands of recommendations, how can you determine the right choices and decisions from a business and building portfolio perspective? And how can you measure and learn from the results of these actions?

THE SHIFT TOWARD SMART BUSINESS

As mentioned earlier, most business-related real estate challenges are still not solved by smart building technology itself. But imagine, you could have a fully automated and well-guarded process that transforms the insights from smart building platforms into automated decisions and concrete actions and work?

Concrete output from an automated and secure process like this would allow you to:

- Make the right decisions based on organization-specific business preferences
- Automatically take portfolio strategies and building priorities and preferences into account
- Avoid overruns and depletion of budgets
- Manage and monitor actions based on service levels and contracts
- Dispatch high priority actions immediately to field engineers
- Compare expected savings with real costs
- Reduce risks from making the wrong portfolio decisions
- Reduce human efforts for manual collecting and analyzing data
- And ultimately reduce costs and improve occupant comfort, well-being, and productivity


In this not-so-distant world, data and information from smart building technologies is transformed into a real-world business context that includes aspects like portfolio priorities, budgets, service level agreements (SLAs), contracts, quality control, performance management, workplace concepts, occupant satisfaction and more.

For real estate and facility managers, this business environment is typically managed with Integrated Workplace Management Systems (IWMS).

An IWMS, like Planon Universe, enables real estate and facility management departments to realize their strategic objectives in terms of cost efficiency, flexibility, compliance, and business continuity. A mature IWMS offers functionality across all areas of responsibility in real estate, space, workplace, asset, maintenance, services, contract, and sustainability management.

A real-time and dynamic integration of a smart building technology platform with an IWMS boosts ROI by monetizing the combination of the technical building setup and the functional business context. It drastically improves the performance of both buildings and business by providing better alignment between your portfolio strategy and its technical performance and needs.

This makes buildings more productive for your business and occupants more engaged with your organization.



Schneider Electric found that 90% of facility managers expect that technology and connected systems will improve operations while delivering better value. Yet, only 17% have facility management technology in place.

– Schneider Electric

SMART BUSINESS BENEFITS

The benefits of integrating smart building platforms with IWMS are tangible. Not only can substantial parts of the decision-making process be fully automated, it also supports the transition from a building-oriented view to a holistic portfolio view. By better portfolio decision making, the ROI in maintenance will strongly increase. Maintenance is better aligned with portfolio priorities, resulting in less wasted effort and lower costs.

An integrated portfolio view also optimizes synergies in contracting of maintenance and services, reduces associated costs, and enables improved monitoring on SLAs and costs. The full end-to-end digitization of processes eliminates human errors, reduces processing times and costs, and ensures first time right execution.

Integrating smart building platforms with an IWMS will allow organizations to exploit and realize the most value from their portfolio for both their business and for the people that work, learn, or live within these buildings.

INTEGRATION WILL MAKE BUILDINGS SELF MAINTAINING

Smart building technologies will grow further and the demands that are produced within a building will diversify. On a portfolio level, these numbers will explode exponentially. It will become impossible for any manager to decide “manually” on every issue. A smooth, self-learning and reliable integration between smart building technology and smart business processing will allow buildings to become self maintaining. In this future scenario, a building keeps itself in optimal shape and facilitates its users in the best possible way - all while keeping balance between business and portfolio priorities and remaining within budget.

Want to learn more about
the role of an IWMS in
smart buildings?

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ABOUT PLANON

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