

How the digitalisation of the built environment will increase sustainability impact

By Jos Knops and Peter Ankerstjerne

Executive summary:

New workplace technologies, digitalisation initiatives, and automated building solutions will undoubtedly drive the transformation towards post-pandemic hybrid work and the irreversible need to decarbonise buildings. Smart sustainable building technologies will dramatically change the Real Estate and Facility Management sector in the years to come.

With this white paper, we aim to help organisations in setting priorities for their digital transformation and to implement a future-proof technology strategy.

Foreword

Technology and digitalisation are transforming the Real Estate and Facility Management market at turbo speed. Global environmental and social challenges have started to dominate the agenda for building owners, building occupiers, and service providers. Additionally, the COVID-19 pandemic radically changed organisations' future workplace strategies, bringing a strong focus on resilience, business continuity, and employee experience.



'By 2025, 90% of new commercial constructions/renovations will deploy smart facility technology supporting flexible workplaces and sustainably improving occupant experiences and operational performance.'

IDC FutureScape 2022: Worldwide Future of Work Predictions

With this paper, we aim to contribute to this new agenda by sharing knowledge and insights that are based on Planon's extensive experience in Integrated Workplace Management Systems (IWMS), also known as Computer Aided Facility Management (CAFM). We describe the key innovations and dynamics that are shaping the near future of this market. Ultimately helping organisations in setting priorities for their digital transformation and to implement a future-proof technology strategy.

The content of this paper is based on our experience with over 3,000 customers worldwide and across multiple industries like finance, pharma and biotech, retail, healthcare, government, and higher education. It includes the results from our interactions with hundreds of prospects over the past three years, and our intensive collaboration with leading market analysts like Verdantix, IDC, Gartner, and Frost & Sullivan. Also, our long-time engagements with professional bodies like IFMA, IWFM, GEFMA, and FMN contribute to the content of the report.

Analyses and insights are based on a wide range of data sets and information sources like licence data, software usage behaviour, customer research, market surveys, requirement analyses, and analyst reports.

This paper primarily focuses on the business drivers for digital transformation, the implementation challenges and priorities in practice, and the market disruptions caused by technology innovation. It aims to inspire and help RE, FM, HR, and IT decision-makers to choose the right technology strategy and set the right priorities. But most of all to learn how digital transformation will help to solve the challenges ahead.



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Introduction

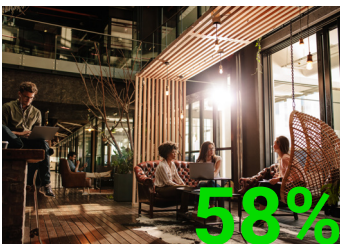
Technology disruptions, the impact of the COVID-19 pandemic on workplace transformation, and the irreversible need to decarbonise buildings are dominating the agenda for Real Estate and Facility Management executives. As a result, the business drivers and implementation challenges, and priorities for smart building technology are changing the fundamentals of how we do business and the way we operate and manage buildings. Read how new challenges and priorities lead to a market transformation towards smart sustainable building management solutions, providing one shared information platform that empowers all building stakeholders with actionable and meaningful insights.

Business Drivers

New strategic objectives

Both the emerging needs of 3,000+ Planon customers and the analyses of buyers' requirements show a strong shift in business drivers and goals to invest in IWMS and smart building technology. These drivers have expanded from primarily cost savings by better data management, transparency, and processing efficiency, towards enabling strategic objectives such as organisational resilience, workplace transformation, employee experience, sustainability, and compliance.

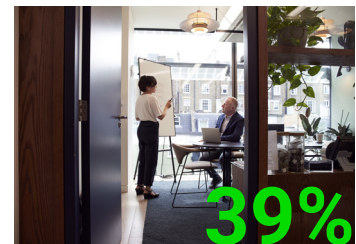
These changing objectives are confirmed by the Verdantix Global Corporate Smart Building Survey 2021 where respondents consider it of high importance to implement:



A Hybrid workplace



The collection of sustainability data



An improved employee experience

This research confirms that cost reduction remains an ongoing priority. When analysing IWMS implementations and new buyers' requirements, compliance has also become a business driver and core objective for most organisations.



'The way we manage our buildings will play a critical part in achieving a net-zero future.'

Frost & Sullivan, 2021 white paper ['Using data to drive workplace innovation and data'](#)

Bringing scattered data together

To realise these objectives, many organisations simply lack good data to gain transparency and insights for optimisations and decision-making. Data is often spread across many sources like spreadsheets, documents, or isolated software products. Bringing this data together in a structured, integrated, and manageable single source is in many cases still the initial driver for technology and digitalisation investments.

Implementation Challenges and Priorities

Struggle with the hybrid workplace

Although it is a high business priority, organisations struggle to get a full grip on the digitalisation of the hybrid workplace. According to 2021 research called '[Harnessing the power of data](#)' by the Institute of Workplace and Facilities Management (IWFM) a big potential pitfall is seeing technology as a silver bullet that will solve all their data problems. Without a clear workplace and IT strategy, technology implementation will fail. For workplace and occupancy management dozens of point solutions combined with smart sensors are available on the market. The IWFM research states that organisations risk becoming preoccupied with these latest digital fads and fashions. This can result in a complex and non-integrated landscape of technology that is not fit for purpose, not scalable, and not future-proof.

Sustainability and Environmental, Social, Governance (ESG) become top priority

According to research from the United Nations Environment Programme, 38% of total global energy-related CO2 emissions come from buildings. Direct building CO2 emissions need to halve by 2030 to get on track for net zero carbon building stock by 2050. Effectively, FM and RE professionals are in the driver's seat to reduce the impact of buildings on the environment and lead the ESG transformation towards more livable and sustainable buildings. A global Planon ESG user research study targeting over 600 FM and RE professionals confirmed the importance of ESG on agendas. 46% of organisations have started or increased their investment in ESG software. The top five reasons to implement ESG software solutions are, in order of priority:

- 1 Improve transparency and accountability
- 2 Identify, drive & monitor ESG improvements
- 3 Save time and resources to reduce cost
- 4 Monitor ESG performance over time
- 5 Ensure and secure compliance.

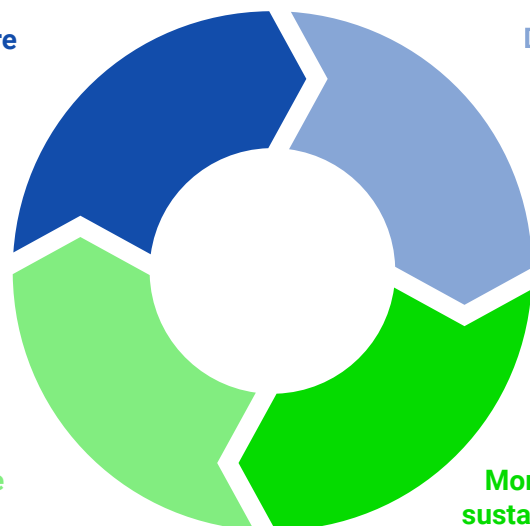
In practice, this means organisations must gain a better understanding of their energy and sustainability performance and must be transparent about the steps they are taking to measure, improve, disclose, and monitor the sustainability profile of their buildings and related processes.

Measure

Disclose

Improve

Monitor the sustainability profile






'55% of organisations have defined their ESG commitments and targets whereas 38% have a defined action plan to execute.'

Planon Global ESG Research 2022

Mobile apps drive employee experience

Implementation priorities have evolved in the past decade from FM and RE back-office processes towards more employee and workplace centric functionalities. According to recent Planon analyses, the market demand for employee self-service technology grew in the past four years by 60%. The COVID-19 pandemic significantly extended the scope of self-service with digital processes and easy to use mobile apps for occupants. Most favourite use cases include flexible workplace and meeting room reservations, online health assessments, touchless office and workplace check-in, hospitality and visitor management, and personalised services management. A workplace at the employees' fingertips.



'In facility management, mobility is increasingly important for occupants, ranging from employees, students, visitors, patients, and customers, as well as technicians responsible for maintenance.'

IDC, MarketScape Worldwide SaaS Facility Management Application 2021 Vendor Assessment

Risk of non-compliance is too high

Compliance priority is directly linked to continuously evolving new legislation and standards for lease accounting (like FASB, IASB), building health & safety (like WELL), and sustainability (like GRESB, LEED, BREEAM). This requires reliable data and structured processes to ensure compliant reporting. As well as potential reputation damage and decreased shareholders value, the financial impact of non-compliance can be huge.

Requirements analyses of the past three years show strong growing market demand for integrated software solutions that enable compliance in a wide range of domains like asset & maintenance management, occupant health & wellbeing, real estate & lease accounting, and energy & emission reporting. Implementation priorities differ strongly per industry. Most implementations include standardisation according to market standards or governmental requirements, implementing digital workflows with thorough documentation and audit trails, and creating a corporate compliant reporting and analytics framework.



'In the past two years, the market demand for compliant reporting and integrated analytics solutions has tripled.'

Planon Market Demand Analyses 2022

Technology Disruptions

Internet of Things increases need for open platform technology

The drive towards further digitalisation and the rise of new technologies are changing the Real Estate and Facility Management market faster than ever before. Organisations are looking to gain new value from the Internet of Things (IoT) to make their buildings 'smart'. IoT technology collects, integrates, and analyses data, from sensors, energy meters, Building Management Systems, HVAC equipment, and many more. This development represents a fundamental move towards building digitisation on a broad scale with innovative technology provided by a large variety of vendors for a wide range of purposes. This emerging diversity and variety bring new challenges at the portfolio level: how to effectively integrate and benefit from this diverse and varied set of technologies and the huge amounts of data they produce.



'IWMS purchase criteria have changed from functionality towards ease-of-integration with the broader smart building technology ecosystem.'

[Verdantix Green Quadrant@: Integrated Workplace Management Systems \(IWMS\) 2022](#)

According to Verdantix, IWMS will become the smart building solution that unifies this technology diversity and will operate as the single pane of glass on portfolio level. Market leading IWMS vendors have already started to embed IoT technology in their platforms to support a wide range of valuable use cases. Customer and buyer research shows five priorities for IoT use cases, in order of priority:

- 1 Improving space utilisation
- 2 Planning maintenance and fault detection
- 3 Reducing energy consumption
- 4 Creating a healthy work environment
- 5 Providing a hybrid workplace

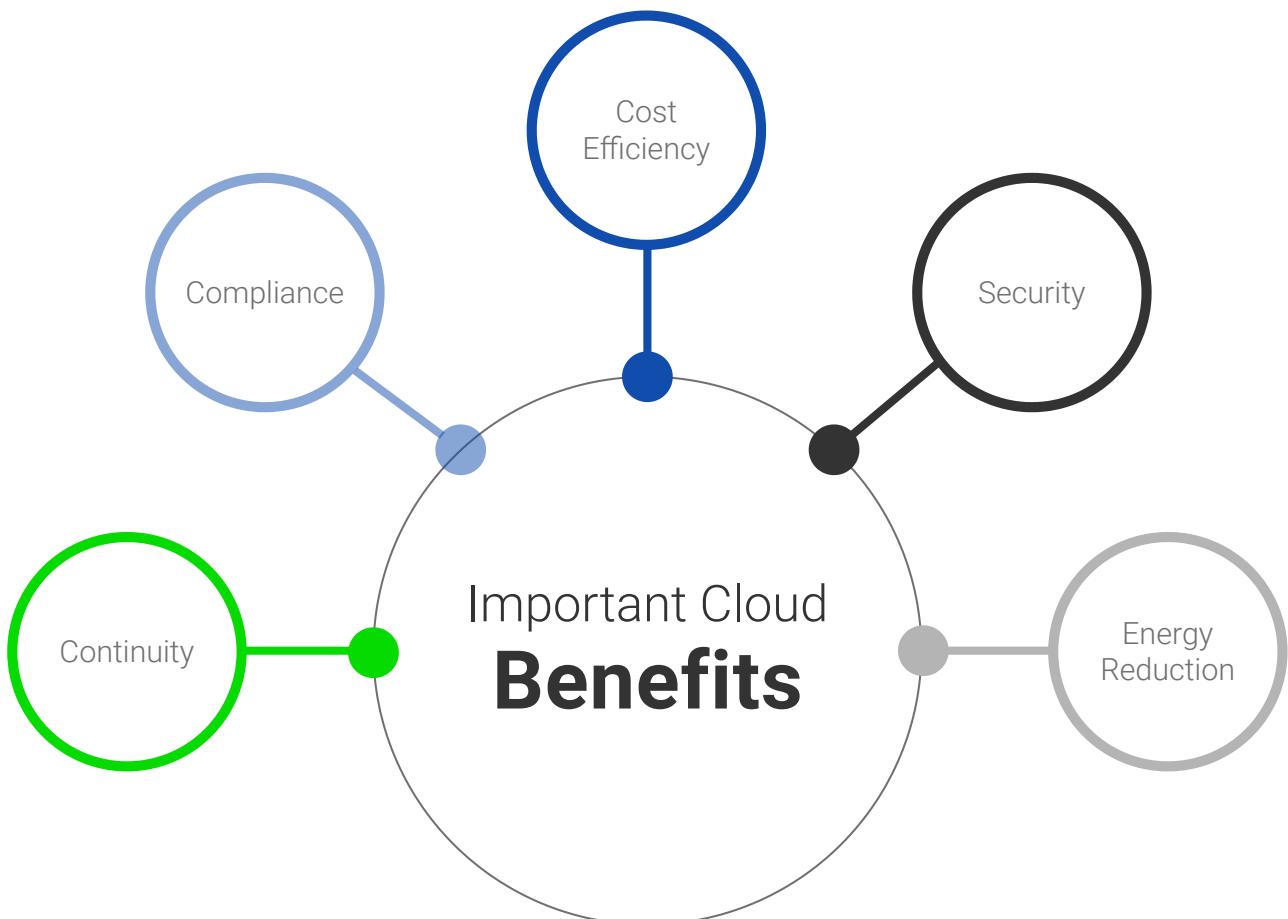
In addition to valuable use cases, IoT data is the fuel for near future Artificial Intelligence (AI) and Machine Learning applications. Based on large data sets, these self-learning applications get smarter over time and can better predict the behaviour and needs of assets. The transformation from planned preventive maintenance towards 'just in time' predictive maintenance is an already existing example of AI and Machine Learning in buildings.

Digital Twins enable autonomous operations for assets

IoT is also the foundation for the next emerging and promising technology in the smart building sector called Digital Twins. A Digital Twin is a digital representation of a physical asset in the real world. IDC, Gartner, and Forrester define digital twins as 'mini applications' where every single asset has its private application. In a building, hundreds of Digital Twin Applications can potentially exist, because there are many assets in a real estate portfolio worth monitoring and proactively managing. Digital Twin Applications connect the world of Operating Technology to the world of Business Solutions enabling automated business response and the creation of autonomous operations around assets. This leads to better and faster interventions that unlock real-world value from assets through financial savings, improved performance and services, and reduced sustainability footprints.

Software as a Service is the new standard

The COVID-19 pandemic has further pushed the global adoption of software deployment and use via the cloud. Organisations with on-premise IT policies faced huge challenges when their workforce started working hybrid and at home. Planon data analyses show that 85% of organisations require cloud deployment for their Real Estate and Facility Management applications. For North America, this percentage is even higher. The most important cloud benefits from an IT and business perspective are continuity, compliance, cost efficiency, security, and energy reduction. The huge growth in cloud deployment also comes with a growing demand for Software as a Service (SaaS). Organisations typically prefer SaaS as the financing changes from capital investment to operational expense, costs become predictable, and the service ensures operating continuity with always up-to-date software.



Market Transformation

Choosing the right IT strategy

Through the high pace of innovation and changing customer needs, the market for IWMS is strongly characterised by vendor acquisitions and venture capital investments. A lot of new single purpose or point solutions, especially around workplace and occupancy management but also ESG, have entered the market. These market developments allow organisations to choose primarily between three IT strategies: a series of point solutions, a single truly integrated IWMS solution, or a hybrid strategy. The scope of current and future functional requirements, the ease of integration, the ease of use, and the total cost of ownership are key factors for determining the right strategy.

The new style IWMS: Smart Sustainable Building Management

The emerging variety and diversity of smart building technology is pushing IWMS vendors to open up their solutions and transform them into open application platforms. Market leading vendors extend the technology stack of their solutions with IoT and Big Data capabilities to ensure organisations can fully benefit from market innovations.

This new product strategy allows organisations to easily integrate with the broader smart building ecosystem in a seamless, cost efficient, and scalable way. This new style IWMS becomes the new connection platform for all building related property technology and building management systems. It converges operational technology with its business processes, such as maintenance planning, work order execution, space and services management, energy management, capital planning, budget management, and many more. As a result, buildings, workplaces, assets, and services perform better at lower cost and with reduced impact on the environment.

This new Smart Sustainable Building Management solution connects buildings, people, and processes by eliminating data silos and legacy solutions. And ultimately it [connects building users, owners, and service providers](#) into one shared information platform and empowers them with actionable and meaningful insights.





About Planon

Planon is the leading global provider of Smart Sustainable Building Management software that connects buildings, people and processes. By eliminating data silos and aligning solutions into one shared information platform, Planon provides all building stakeholders with actionable and meaningful insights. Independent market research and consulting firms have consistently rated Planon as a global leader in the market. Planon has implemented its comprehensive solutions for more than 2,500 clients, supported by offices and partners around the world.

For more information please visit us at planonsoftware.com

