

How Can Corporate Facilities Management Support an Organization's Digital Transformation?

By Colette Temmink & Ted Ritter

The fast-changing need for business to grow and evolve continues to move at a faster pace and companies need to adapt in order to benefit from changes in the market environment. While it is imperative for companies to remain focus on adapting to this speed, including improving product quality and continuous improvement to remain competitive, this adaption translates into business transformation and involves making immediate foundational changes to how a business operates.

Business and digital transformation that goes beyond operational performance and return on investment have become a mainstream business imperative. Author Scott D. Anthony (2016) outlined how the S&P500 will turn over by 75% within a 15-year period or one company in every three will delist within five years. As technology continues to change the world, many executives are driving and responding to this change through transformational efforts.

According to Anthony (2016) there are three categories of business transformation. The first is “going digital” or operationally doing things in a quicker, better and more cost effectively by using technology. The second involves a company’s operating model or fundamentally executing the business in a different way. The third is strategic transformation which changes the company’s fundamental principle. For example: “Apple from computers to consumer gadgets, Google from advertising to driverless cars, Amazon.com from retail to cloud computing, Walgreens from pharmacy retailing to treating chronic illnesses, and so on.” (Anthony, 2016, para. 6).

Digitization includes digital conversion or changing from paper to a digital format, however digital transformation includes leveraging knowledge and enabling a fully digital business (Savić, 2019). This type of business transformation involves a company’s employees, business processes and technology systems. Whichever type of transformation companies execute they all involve or impact its most important resource-the employees.

It is essential that Corporate Real Estate and Facility Management Business Units partner with their IT Departments and primary vendors to develop an actionable digitization strategy.

During the compilation of the Facility Manager’s Guide to Information Technology 2.1 Kindle Edition in 2018 the review of case studies for inclusion indicated successful projects had three fundamental components: Effective Planning, Partnerships and Engagement.

How digital transformation will increase operational efficiencies and improve workplace experience

The influence on facilities and property management will be inevitable. This will involve technology such as digital twins to help automate remote building system adjustments and repairs to on demand production of parts (3D printing). Machine learning will increase predictable preventative maintenance, as well as increase a building's uptime, lower costs and repair time.

There is a lot of buzz around Digital Twins where in fact the technologies have been in place for quite some time. Also, of interest is the common assumption that Digital Twins is terminology for a single set of parameters.

A readily available definition is:

"A digital twin is the phrase used to describe a computerized (or **digital) version of a physical asset and/or process. The **digital twin** contains one or more sensors that collect data to represent real-time information about the physical asset."** (Vangie Beal, 2018)

This is not in fact accurate, there are distinct types of digital twins.

- **Digital Twin** Prototype ("DTP")
- **Digital Twin** Instance ("DTI")
- **Digital Twin** Aggregate ("DTA")

In the instance of a Digital Twin Prototype this would be of most use during the design phase of either new construction or renovations. It could be said that a BIM model could be a close cousin or the first half of a Digital Twin that has not yet been constructed in the physical world, and specific to the built environment. Mainstream manufacturing regularly utilizes DTP's for automotive & aerospace design.

What might be more appropriate to state is that BIM is concerned with the functions of construction and the building where an early stage digital twin prototype is an enhanced version that takes into account the people and their potential actions within the building.

The typical benefits would be to review, perhaps with the inclusion of Virtual Reality Technology key building systems, finishes, traffic patterns and space utilization all prior to any construction. The potential savings are typically tied to reduced construction times, faster turnover of operating documents and reduction in contingency budget line items.

The definition above for a Digital Twin Instance is more accurate and specifically tied to the single building envelope or instance of the level of effort applied to deploy technology to a property assist with oversight, operations and life cycle management.

For high performing organizations that have adopted BIM and Digital Twins during the design and operational phases of a single build there was a need for a more sophisticated platform solution.

The integration of substantial analytics platforms with digital twin platforms has generated the final variant of a Digital Twin Aggregate ("DTA") to support portfolios with multiple buildings and assets that have digital clone deployments. This is the leading edge of the technology stack, the capability to

support a portfolio of digitized buildings for the benefit of the operational team and those that occupy them.

How digital transformation influences Corporate Real Estate (CRE)

The involvement and impact to employees and product production has a direct influence on a company's real estate strategy. As the nature of work changes - companies will provide more types of spaces that increase collaboration, agility and increased amenities to attract talent. Manufacturing spaces will become more automated and robots will work seamlessly in the same environment and space as employees. These changes will fundamentally influence physical space requirements such as, higher ceiling clearing heights, heavier floor load requirements and increases to the configurability of office spaces. The amount of space needed by a company will also change given many of the tasks today that require space can be done virtually. For example, product design and testing can now be done virtually.

According to Chaffey (2019) based on a recent survey, 65% of respondents indicated they have or are planning a corporate program for digital transformation. Their findings are consistent with other studies such as the one conducted by Pro Tech Research which indicated 70% of companies have or are working on a digital transformation strategy.

Another aspect to digital transformation is the impact and effectiveness of the outsourced service provider community. A recent article published on "checkit" cited Frost & Sullivan and Sullivan's market research report which "predicts that the global outsourced FM market will be worth nearly \$1 trillion by 2025. Much of this growth will be due to enabling technologies such as Big Data and the Internet of Things (IoT) along with a wide array of additional and complimentary solutions. These will allow FM companies to widen the range of services they offer, both directly and through partnerships with providers in other areas. This is changing the landscape of how business value is presented in a global context." (Checkit Article, 2019, para. 2).

From this perspective digitization and the application of array of technologies can provide greater efficiencies and reduce the overall cost of facility management activities or alternatively significantly improve the occupant experience while maintaining a steady state budget. Given this line of thinking the impact of technology adoption and the related efficiencies are enhancing the conversations between providers and customers to include a more diverse set of options.

Whether partnering with a provider or self-managing a portfolio an additional aspect of the rapid digitization of CRE is the need for new types of resources with business units. A new component of the Annual FM Technology Benchmarking Report compiled by the IT Community of IFMA with support of the GEFMA Technology Committee fully support the notion that the advent and proliferation of these technologies are also transforming the staffing requirements of CRE and FM Teams across virtually every industry.

The IT Community findings initially reported at World Workplace, Charlotte in 2018 summarized the need for focus on a new set of Job Descriptions of "CRE & FM Technology" Specialists that could be the dynamic bridge between operations, technology providers and IT Departments. Some of the thoughts put forward included: Data Analysts, Control System Specialists [including IoT], Security System

Specialists, CMMS-IWMS Specialists, and certain hybrid role potentials that could support multiple system stacks. Although, there has been a great deal of dialog around the loss of jobs to automation, it may be that the industry is seeing a rise in new job categories of employment options.

How digital transformation influences Facilities Maintenance

Another set of components related to digitization is the need for more robust technology maintenance and refresh cycles along with enhanced disaster recovery plans.

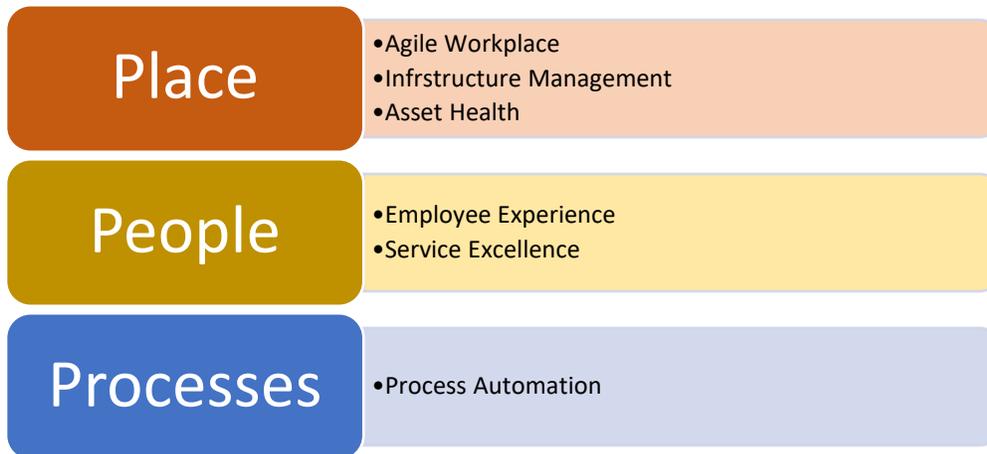
There is perhaps a false sense of security when deploying certain types of technologies that either it's going to be automatically upgraded and refreshed without effort or doesn't require a maintenance and capital refresh plan. Although the leading platforms have a much higher rate of automated updates, the ecosystem is not yet fully autonomous. Another consideration, especially when taking advantage of an IoT deployment is establishing a program for ensuring that the sensors are reporting accurately and for their periodic maintenance or replacement.

As there is major shift and increasing market trend to cloud solutions, there is a critical question to pose - are operators asking for the appropriate level of security and redundancies aligned with cloud computing? For instance, if you have a maintenance team of 50 that are fully reliant on cloud computing what happens if there is a significant interruption? How do you operate? Should you look at a multi-cloud solution? It is a planning mindset that needs to well beyond the concerns for the loss of a part of a physical portfolio. We need to think in terms of Digital Assets and Systems as well.

There are several documented case studies across all industries showing significant return on investment (ROI). As a part of developing a plan to take advantage of these cost-saving benefits, doing so in a secure manner is a fundamental requirement in the era of digital transformation.

Conclusion

Given this significant focus within so many companies in corporate real estate (CRE) departments need to respond and support these business transformations now in order to be successful. CRE departments can enable and support their company's transformation by focusing on place, people and processes.



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