

TRANSFORMING FACILITIES MANAGEMENT DIGITALLY

Innovative concepts using artificial intelligence, Internet of Things, sensors, as well as machine learning have already been rolled out **BY CALVIN LIM**

DIGITAL technology is all the rage these days. Sector by sector, new technologies have disrupted business models and forced companies to rethink the way that they operate. In a similar way, digital transformation is putting a new spin on old practices in the facilities management industry.

Facilities management is a multi-disciplinary function that focuses on the proper operation of every aspect of buildings to deliver a cost-effective environment for its occupants. These would typically include security; building inspection; cleaning; landscaping; fire safety; environment, health and safety (EHS); building and equipment maintenance; asset management; and other duties related to the administration of office towers, industrial properties, and retail malls.

It is by no means an easy job, and many organisations or landlords – who may not have extensive facility management expertise – opt to outsource the function to external vendors, such as consultancy firms like Colliers International. The vendor, in turn, works with a range of services providers to make sure that buildings and their facilities – including lifts, air conditioning, common areas and toilets – are well-maintained and operating properly, thereby serving the end-users' needs.

Important as they are, facility management tasks are often seen as labour intensive with low productivity and little appreciation from end-users. This in turn affects the perception of the industry and makes jobs in the sector unappealing.

EMBRACING DIGITAL TRANSFORMATION

However, all that is set to change, thanks to the rise of new technologies. With the government pushing for a Smart Nation vision through greater innovation and more smart solutions within the facilities management sector (under the Real Estate Industry Transformation Map), it is not a question of if but when technology will radically reshape the way that facility managers work.

To be sure, change is already underway, such as the use of drones for building facade inspection. In the years to come, technologies including artificial intelligence (AI), Internet of Things (IOT) and sensors, as well as machine learning will no doubt chart a new future for the industry. Some innovative concepts have already been rolled out in the marketplace:

- **Drones:** As an area becomes more built-up and skyscrapers get ever taller, the use of drones to assess a building's facade or hard to reach places, or even to survey a large site will help to improve productivity and reduce cost. For instance, a facade inspection job which



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requires three workers could potentially be done by one person operating the drone.

- **IOT and sensors:** Wireless smart sensors in buildings can act as the “ears, eyes and nose” on the ground, boosting efficiencies in facility management operations. For example, smart toilet systems can track how heavily used the toilets are. They are equipped with air quality sensors which detect the level of substances such as ammonia (which is present in urine) in the restrooms as well as people-counter sensors to detect the number of people going in and out of the toilets. Such systems can sniff out when a toilet needs to be cleaned. In addition, the data collected could be used to plan the toilet maintenance schedule, which will lead to improved productivity and reduced dependence on labour.

Another sensor technology can measure the level of carbon dioxide within a given space and use the data to determine the number of occupants in the room. With such information,

a smart building system could then adjust ventilation or air-conditioning accordingly, potentially helping to conserve energy.

- **Artificial intelligence:** Some buildings have also adopted facial recognition technology for security and building access control. This could be particularly handy for office landlords in Singapore, given stricter personal data protection rules on the collection of identity cards from September this year. Staff manning the concierge desk at commercial buildings could make use of facial recognition software to register visitors to the property instead of collecting their IDs.
- **Big data:** Facility managers can glean meaningful insights from a myriad of information that have been collected from various machinery and sensors. These data sets can be mined and analysed, providing key takeaways that could facilitate real-time decision making and enhance the deployment of resources.



More important than ever, facilities management consultants must be plugged into the tech scene, and understand what is trending in the market and how it can better serve clients. To this end, Colliers works with a wide range of established service providers – including technology solutions partners – to offer customised solutions for our projects.

SMART BUILDINGS AND SUSTAINABLE BUILT ENVIRONMENT

Technology aside, new trends in how buildings are being constructed and the growing focus on sustainability and wellness could also increase the complexity of a facility manager's job. For instance, more and more newly constructed buildings come equipped with BIM (Building Information Modelling) system which changes the way that facility managers manage their buildings. Although such a system enables a building to be more intelligently managed, it also raises the bar for the technical skill sets of the building management professionals.

In addition, building features such as a green wall – a wall covered with greenery, also known as a living wall – may have a water delivery or irrigation system, which will have different maintenance requirements compared with a normal wall. All these could increase maintenance

cost substantially. The choice of building materials too, can impact the facility management budget. The cost of replacing normal timber is higher than that of composite wood, for example. All these need to be considered carefully in order to create an optimal facility management strategy.

HELP THE INDUSTRY RAISE THE GAME

There is no question that the industry needs to embrace change – and do so quickly. Continuous training and skills upgrading will remain critical in equipping workers with new knowhow and helping them to stay relevant. However, a key challenge is how to encourage a mindset shift among workers, many of whom have been in the business for a long time.

To attract younger talent to the industry, perhaps there could be some initiatives that will boost the professionalism of the sector. These may include certification and professional recognition, as well as having an established set of standards to guide facility management service delivery.

Opportunities will come with technology disruption. In embarking on this journey of change, it is also important that the industry sees it with new eyes. ■

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