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The value of your data

Buildings have evolved, along with virtually everything else. The concept of the 'smart building' is not a new one and, indeed, there are many examples of operational and successful smart buildings in use today. However, as with all smart things, buildings produce vast quantities of data which, if analysed and contextualised, can help to solve a multitude of problems and improve the overall efficiencies of the facility.

Previously, the various components of a building operated disparately. CCTV and boundary control, for example, formed part of security, while air flow and chillers formed part of Heating, Ventilation and Air-conditioning (HVAC). Yet as we saw the convergence of multiple systems onto a single IP-network, integration became a reality and along with it, the aggregation of data.

Collective data analysis

Data provided by the aforementioned CCTV cameras can give insight into which areas of a building are most frequently occupied and require the most air flow and cooling, enabling better energy efficiency by adapting the cooling according to whether a room is occupied or not. Equally, Internet of Things (IoT) enabled sensors can help to determine when a chiller may be on the brink of failure, given a knowledge of the signs – knowledge which is provided by data analytics from various systems.

The applications for data analysis continue to expand and Artificial Intelligence (AI) is helping them to do so to best effect. Data analysis, coupled with AI, creates an opportunity to move beyond past efforts in the areas of energy efficiency and sustainability, and into issues like productivity.

The value in data

Algorithms can be used to run multiple 'what if' scenarios to determine potential outcomes, and adapt the systems according to these analyses, delivering the capability for predictive analysis. In addition, systems are able to self-learn and self-adapt based on these calculations, ensuring that the productivity and efficiency of these systems are not only continuously maintained, but improved upon.

In order to run these algorithms and enable AI functionality, as well as effective data analytics, buildings require cloud-based data analytics platforms, where all the data is located in a single repository with background software constantly analysing the data and making adaptations and changes accordingly.

A truly integrated environment

The more integrated the building, the more value is extracted from the data. When you have multiple systems, all generating their own data yet integrating seamlessly, best value can be achieved. As we have mentioned, occupancy impacts cooling systems and air control. Integration is the precursor to analytics. Without it, you only need people and not algorithms.

Analytics becomes necessary when systems are producing too much data to be handled by one or more persons. Adding an analytics layer on top of an existing building environment is relatively easy – more so when the building systems are integrated. The cloud enables systems to integrate with each other and provides a single repository for data required for analytics.

More often than not, modern buildings are already equipped with systems that can be easily integrated onto a cloud platform, however, in the case of older buildings, a forklift upgrade to a more modern system is needed. We've had open protocol for many years now, though, so most systems can easily be integrated.

Analytics can only advise on what is possible and, while Artificial Intelligence can affect some of the changes automatically, there is still a level of human interaction required to carry out the suggested changes and make the necessary improvements. This means that businesses require maintenance staff to be upskilled enough to read the results of analytics and know what to look for in order to make decisions and carry them out. The true value of analytics and data lies in the improvements and changes to the operational efficiency and effectiveness of a building, which is enabled by integrated systems and underpinned by the cloud.

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