Operationalizing Data for System Control and Preventive Maintenance

Challenge

An expanding business often requires new systems and solutions to meet evolving needs and address changing challenges. Running multiple and complex building management systems in many well-known buildings and industrial estates in Singapore, our client specializes in generating energy efficiency savings from optimizing Heating, Ventilation and Air Conditioning (HVAC) processes. Using its proprietary algorithm, the client was effective in producing savings for many building owners. Growing its list of clientele, the building management company however reached deadlock. The systems that were effective in running efficiency savings for individual buildings and sufficient for individual building control, were not capable of providing a global company-wide overview and system control of all buildings under the client's management. This meant that engineers and maintenance staff had to individually login to and access different systems to check for possible problems and keep track of operational issues. In addition, the client also wanted to reap the benefits of scale; having multiple buildings to manage, the client aimed at conducting targeted deployment of just-in-time and preventive maintenance to units in specific buildings with sub-optimal performance. However, this was not possible under the previous system, which did not operationalize or utilize its data to analyze the operational reliability or projected failure of machines. The previous system also did not contain alert systems and algorithms that provided the capability for immediate and targeted response.

Process

Business and software consultants from Arcstone sought to understand the business needs of the client and fully mastered the software technicalities of the systems used by the client. Arcstone's team focused on the following aspects:

- **Collection and integration of data from multiple systems:** Experienced in enterprise software design, the software team at Arcstone was able to program software that collected the relevant data that is required to manage possible failures in HVAC machines and processes. The software programmed was also capable of aggregating all relevant data and information from individual on-site and building-specific servers and systems into a central, cloud-based database as required by the client.

- **User-friendly global interface**: To provide maximum convenience for end-users such as system engineers, information in the database was displayed in a global overview of all buildings under the management of the client.

- **Smart and custom-designed alert system:** Consultants at Arcstone also designed advanced algorithms that compared current machine-level data across facilities with preset thresholds. Warnings can be displayed in the global process map and alerts would be sent out to relevant maintenance and operations staff, coupled with relevant information on possible courses of action that are tagged and linked to specific alerts and warnings.

Result

The expertise and experience of Arcstone's business, data analytics and software experts allow for cost-effective and swift design and implementation of top-in-class solutions. Some of the results that the client has achieved with Arcstone's solution include:

- Possessing a global view of operational processes across all facilities under its control, the client's engineers and maintenance staff could easily view and identify problems and developments in different facilities in Singapore and around the world at a glance. This significantly reduced the hassle of having to log in, look through, log out and then repeat the cycle for each and every building under its control.

- Using Arcstone's arc.ops™ platform that emphasizes on simplicity and intuitive use, Arcstone made the process of identifying possible problems easy through color-coded warnings displayed on the process map based on preset standards and thresholds.

- Built with an user-adjustable preset criteria and a user-editable knowledge web that contained operational instructions that addressed possible scenarios, the customized software enabled immediate and intelligent response by sending out SMSs or emails to relevant operational staff along with the tagged instructions from the knowledge web.

About ARCSTONE

Arcstone was founded to revolutionize the way data is utilized in enterprises. Giving purpose and meaning to data is fundamental in bringing an enterprise closer together. We provide management and workers an intuitive and powerful solution for running their day-to-day operations while also being able to forecast and plan for future growth.