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Operationalizing Data to Optimize Processes and Product Quality

Challenge

A Fortune Global 500 pharmaceutical corporation was utilizing a functional but archaic Process Control System (PCS) to operate manufacturing facilities in Singapore. Producing advanced biomedical products, our client required the complicated and disorganized data of the PCS to be extracted, read and organized for statistical analysis and management use. Through the analysis of this batch data, statistical trends could then be identified and monitored in real time. Process efficiency and product standards were sub-optimal without such operational insights.

Process

Through the consultation process, our software team understood the technicalities of the PCS and all the interconnected systems used by this pharmaceutical multinational in their Singapore plant. We worked closely with the engineers and senior management of our client to understand both the disruptions at the shop-floor staff level and the analytical needs at the management level (planning engineers, project managers, and industrial director). Our experts considered the following areas:

- **Interpreting and parsing PCS data:** Despite the old nature of the PCS used, our experts quickly identified the algorithms within the system to simplify what was sorted into complicated files and folders. Our software team was then able to code a backend program that read real-time data from the PCS and aggregated the information in a query-enable database that could be integrated with third-party statistical software and other systems.
- **Presenting information intelligibly:** To match the need for quick and easy access to real-time and historical batch conditions and outcomes, we implemented a customized, intuitive, point-and-click GUI, based on the existing ARC.OPS™. This minimizes training and adjustment time to the new system.
- **Building analytical and statistical tools:** Statistical modules deployed by Arcstone could analyze the production data that is now systematically stored and ordered. With this information, optimal production conditions are identified and reproduced for future batches.
- **Integrating the tools with existing ERP and PCS systems:** Our experts are experienced and capable of fully analyzing the inner processes of other software platforms to customize solutions that integrate smoothly into existing platforms. With Arcstone's modular software design, our client retained other legacy platforms that are critical to their operations, while utilizing Arcstone's

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solution for tailored and strategic functions that are inadequately performed by other systems.

With Arcstone's modular arc.ops™ platform that allows for maximum customization without compromising on speed or quality of delivery, we took only 4 months from the first consultation to delivery. This reflects Arcstone's commitment for time-effective consultation and implementation.

Result

Being fully modular, this client could employ specific functions or modules that Arcstone provides without completely revamping existing software platforms and infrastructure. Despite the complexity of the customization and implementation processes, Arcstone's experience with manufacturing and IT systems allowed for a short consultation-to-delivery timeframe. Satisfied with Arcstone's platform, the client has expanded the use of Arcstone's modules in many other functions. Some of the key results delivered include:

- Intuitive arc.ops™ Graphical User Interface (GUI) that allows engineers and management to easily extract comprehensive batch data, reducing weeks of man-hours spent looking through confusingly sorted PCS data
- Utilizing unstructured data to implement a customized extractor that reads and collects data from the PCS before identifying and organizing previously disorganized PCS data
- The historical batch conditions associated with high-quality outcomes are identified by analyzing data collected with Arcstone's customized extractor and are used to produce future batches. Benefits of batch analyses are also extended to plants outside of Singapore that produce similar products.
- Powerful analytics designed for Golden Batch identification, correlation analysis across multiple steps and Statistical Process Control (SPC) can now be employed in real-time to guide process improvement projects.

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.