



Using the Capgemini XIoT platform to monitor and deploy services for Pharmaceuticals and Biotech

Re-connecting with customers

A global manufacturer of precision fluid monitoring systems deploys micropipette solutions for liquid measurement and precision sampling used in the pharmaceutical and biotechnology industries. These micropipettes are finely calibrated instruments, capable of measuring liquids to the microliter (one millionth of a liter) and less, but the underlying technology has hardly changed in fifty years and many are still semi-manually operated.

Despite the benefits of its large and successful distributor network, the company believed it had lost contact with its customers. As a business with a reputation as a technology leader, the manufacturer saw an opportunity to use emerging Internet of Things (IoT) technologies to get closer to customers and develop a better understanding of how their micropipettes are used.

Equipped with a system for automated information collection and delivery, the company knew it could optimize product maintenance schedules and calibration checks. It would also be able to develop new solutions and services, create strategies for increasing sales of high-margin consumables and add value for both customers and distributors.

Following the successful development of a prototype with Sogeti, a subsidiary of Capgemini, the manufacturer launched a pilot program involving 400 connected pipettes, spread across 20 customers in Europe and the US. The production phase will soon deploy thousands of connected micropipettes.

Scaling with the XIoT platform

Working in combination with world-leading technology partner Intel, Sogeti proposed a solution leveraging the partnership's technology and expertise to collect and

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analyze data in near-real time to provide the company with insights into product usage. The solution also includes a tablet based application that delivers these insights to distributors' mobile technicians, empowering them to tailor customer interactions.

Finally, an extension of this same solution offers connected tablets to act as controllers for the previously unconnected micropipettes, improving the repeatability of testing conditions, automating preparation and enabling the capture of activity data for later review.

The solution architecture built by Sogeti is based on the Capgemini XIoT platform and leverages Intel® architecture and Intel® IoT Gateways, which live at the edge of the network in the end customer's premises. The gateways connect sensors on the micropipettes to the Microsoft Azure public cloud where the Capgemini XIoT platform and a custom application server analyze the data sent from each customer, before pushing the insights to distributors' maintenance technicians via the tablet-based application.

This analysis enables smarter maintenance and calibration schedules and can even predict customer requirements.

For example, the platform provides push notifications to distributors when users are running low on key consumables, such as sterile plastic nozzle tips that must be replaced after every use.

The benefits

Customers depend on the company to provide reliable precision equipment; and data-driven predictive maintenance and calibration means it can deliver exactly this.

Previously maintenance was carried out at regular intervals whether the micropipettes needed it or not, but today the installed base can be serviced at exactly the right time, every time. Predictive maintenance has also improved product performance in the field by minimizing the chances of customers compromising their tests and experiments with un-calibrated equipment.

Technicians with the custom tablet-ready application built by Sogeti are triggered to take appropriate actions by near real-time status updates on every micropipette in their area. This could be a maintenance call or a sales opportunity alert.

The combination of Intel's hardware, software and security ecosystem with Capgemini's Smart Services XIoT middleware and analytics capabilities provides customers with a unique, business-case oriented and secure end-to-end IoT solution, available 'as a service' and ready for industrial deployment. The Intel IoT Gateways provide pre-integrated, pre-validated hardware and software building blocks. They connect legacy and new systems, and enable seamless and secure data flow between edge devices and the cloud. The technology offers leading performance and security for intelligence at the edge.

Besides maintenance improvement and product modernization, the connected micropipettes platform also

helps the manufacturer reconnect with end customers. It improves the client's competitiveness by exploiting Capgemini XIoT technologies and establishes a platform on which it can continue to develop and deploy new tools and processes.

Expanding the ecosystem and deploying new services

Following the successful pilot, the next production phase will deploy thousands of connected micropipettes.

This deployment represents a significant digital transformation for the customer's business model - enabled by Sogeti expertise, the Capgemini Smart Services XIoT Platform and Intel architecture, the combination reduces complexity through a defined, repeatable foundation for device connectivity and edge-to-cloud data delivery. With this foundation, the customer can scale and grow the solution and continue to innovate on top.

The Capgemini Smart Services XIoT platform promises to open a new era in industrialization and innovation, providing organizations with the ability to automatically collect and analyze data from connected devices, sensors, machines and people.

Capgemini's end-to-end IoT services include:

- IoT strategy
- Innovation Portfolio Management
- Solution design and delivery on top of wearable technologies
- Machine-to-machine solutions in manufacturing and maintenance
- Rapid concept and design prototyping

Want to find out more about how Capgemini's Smart Services and XIoT platform can transform your business?

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