acuvate®
... where *Acumen* drives *Innovation*

How Acuvate enabled a Metropolis' Water Supply Department become a data-centric as well as customer and employee friendly organization

About the client:

The client is the water utility of one of the world's largest metropolitan areas and manages the city's water supply, sewerage pipelines and wastewater treatment system. Tasked with supplying 8 million people and another million living in bordering counties with potable water, it pumps over 1.2 billion gallons daily, which involves monitoring a complex network of aqueducts, distribution pipes, water tunnels and reservoirs over a vast area.

Highlights:

Implemented a self-service Data Modernization system with Data Governance and best practices for the water department

Enabled the water department to identify and correct water quality issues in real time and develop proactive models to avoid future issues.

Modernized the department's procurement process, minimized SLA delays, order changes and cost overruns

| **Reduced** procurement cycle times, penalty costs and interest charges | Provided a unified **360-degree** employee view and a **24/7 employee chatbot** for quick problem resolution | Achieved **90% reduction** in invoice processing times | **Reduced overall process time** from 2-3 days to seconds |

THE FIRST STEP: MODERNIZING DATA PIPELINES

Acuvate first engaged with the water supply department in 2018, when we built an IT chatbot for their existing IT systems to streamline the resolution of IT issues. This soon became a larger engagement, as it required building a cloud-based enterprise data warehouse that pulled data from multiple legacy data sources.

Our first Data Modernization engagement was with the Contracting Office, which handles all its procurement requirements. Contracting Office has strict SLAs to meet but, due to its reliance on multiple on-premise databases, had no single view of SLA compliance. It needed to track workflows and trigger alerts when SLAs order changes and vendor payments, if delayed, could cost the city department penalties and interest.

Acuvate's cloud-based data solution used Azure Synapse as its data layer, with a data warehouse that pulled data from 10 legacy databases to the cloud. We eliminated large amounts of duplicated data, improving data quality. Over this, we added a reporting system and a chatbot to further refine the data experience. The chatbot was able to provide insights based on the natural language questions and also surface relevant visuals from Power BI based on the questions being asked. Being cloud-based, the platform let us build a predictive framework for Contracting Office, allowing it to obtain both diagnostic and predictive analytics.

Result:

| Achieved **90% reduction** in invoice processing times | Drastically **reduced cycle times** and change orders | Users have **24/7 access** to the system across all devices. |

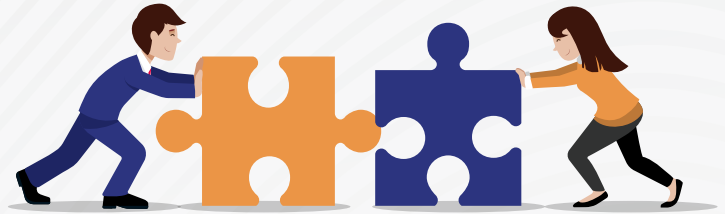## GOING FURTHER: FROM DATA TO PEOPLE

Our next Data Modernization effort was with the HR department. With over 7,000 employees scattered across its offices and in the field, it needed a 360-degree view of its employee engagement, from training to appraisals, leave admin and compensation, besides giving employees a unified channel to resolve their HR issues.

HR also used multiple databases and formats, including data in Excel sheets and PDFs. Using the same tech stack – Azure – with a different data mart, we pulled data from CSD files, HRMS and ERP systems and integrated APIs to external systems. On top of the data mart, we built a reporting system and a chatbot, which answers HR FAQs in natural language and can be accessed from multiple devices.

Result:

| HR Data Modernization process has given DEP a **single version** of truth for faster decision-making. | HR support availability is now **24/7** from the earlier TAT of **9 hours.** | Freed up HR time by **60 person** weeks annually, by completing in real time tasks that earlier took 2-3 days |

THE FINAL STEP: MERGING DATA AND WATER PIPELINES FOR CUSTOMER DELIGHT

After succeeding in its previous initiatives, Acuvate was presented with an even more challenging effort - assuring the smooth performance of the water supply bureau. The Bureau manages City's potable water supply from its seven reservoirs to individual consumer connections.

The Water bureau maintains a network of Internet of Things (IoT) sensors across its reservoirs, pipelines and aqueducts. These measure water quality – including temperature, turbidity, Ph levels, chlorine levels, etc., in real-time. This data then got stored across over 90 heterogeneus databases and 70+ apps, posing the same problem to the Bureau as it did to other departments. data redundancy ,a lack of a single view of its operations, lack of data governance, and inability to find the right data at the right time to make data-based decisions. Considering that this potentially affected the well-being of millions of people, the department made it a priority to modernize and rationalize the Bureau's data systems.

Acuvate took a similar approach to its earlier engagements but on a much larger scale. It first built a data catalogue using Azure Purview that will ingest data from all the department's 90+ databases with owners identified and assigned in the system. Using Azure Synapse analytics workspace has enabled department water scientists what they had been lacking – a space to collate and analyse data and build data models within the workspace (as opposed to Excel spreadsheets as before using in-system Machine Learning models. This has allowed them to build predictive models that could anticipate issues and initiate proactive corrective measures before the issue could actually occur.

From an operations perspective, Acuvate built a streaming reporting solution which provided real-time data on water quality. By migrating the Bureau's legacy data systems to Azure data warehouse and Power BI reporting, operating staff could now create flexible, need-based custom reports. This helps them monitor the water quality in real-time and correlate it to the corrective actions which disrupted the water quality, reducing the number of customer complaints received, resolving the customer issues quicker and lesser load on their support teams.

Acuvate's initiatives have touched every part of the bureau's system, making it a nimble, responsive organisation that can better serve its customers and employees. Acuvate is empowering the customer to become a data-centric organisation, helping them make data-driven decisions on the go – every single day.

TECHNOLOGIES USED

- Azure Synapse analytics
- Azure Databricks
- Azure Purview
- Azure Data Lake
- Azure Datafactory
- Power BI
- BotCore
- Azure Stream Analytics

THE ACUVATE ADVANTAGE

Acuvate is a global player in next-generation digital services and consulting. We enable clients across the globe to steer their digital transformation strategy with AI. We are a global service provider for business-specific solutions. With over 15 years of experience in digital solutions, we believe in employing state-of-the-art technologies to develop mission-critical business solutions. Leveraging Microsoft technologies, including BI, AI, SharePoint, .Net, etc., to provide effective enterprise solutions is our forte.

We help our enterprises transform their conventional processes to match the next-generation technological trend. With a strong commitment to excel in business solutions, we support our business partners to spur their growth rate and ROI by enhanced productivity and efficiency through our business solutions.