

Article | February 28, 2024

# Overcome The Supply Chain Disruptions

Source: [Aquana](#)

As the water utility industry moves beyond older, standard meters to modern, wireless-communication smart meter devices, a world of opportunities opens. Increased technology in water utility management presents the greatest opportunities for small to medium-sized utilities where manpower and financial resources are the leanest. Incorporating automation, centralized data management, and cloud-based applications helps fill in the gaps that budget shortfalls and limited workforce availability create. Chief among these optimizing technologies is the variety of cloud-based applications tailored specifically for the water utility sector. Cloud-based apps offer billing solutions, remote water usage monitoring and control as well as field safety and operations management tools.



## Cloud-based Apps Defined

It is helpful to have context on the difference between cloud base applications and those which are housed on-site. Many organizations operate with a centralized server and application network housed at their physical location. In those cases, applications are loaded onto individual computers using the program software. Alternatively, cloud-based applications are hosted on remote servers and are accessed through the internet on any device or computer regardless of physical location.

The rise in adoption of cloud-based applications in water utility management has dramatically increased in recent years. Demand for remote work which began during the COVID pandemic continues today. Through cloud-based applications, utility management teams can collaborate and communicate seamlessly on tasks such as entering and updating field orders, controlling remote shutoffs, and monitoring water usage. These tasks are conducted and conveyed to teams in real-time.

## Application Example: Demand Forecasting and Planning

As water utilities embrace modernization, cloud-based applications play a pivotal role in forecasting demand and optimizing resource allocation. These applications leverage historical data and employ predictive analytics to provide insights into future demand patterns. By anticipating water usage trends, utilities can strategically plan for distribution, ensuring resources are allocated efficiently. This proactive approach not only enhances operational efficiency but also contributes to cost optimization and sustainable water management practices. Aquana's Smart Valve solutions, integrated into the cloud-based system, facilitates precise control over water flow, enabling utilities to dynamically respond to demand fluctuations, reduce wastage, and enhance overall demand forecasting accuracy.

Aquana's Cloud-based Application Includes:

- Enterprise-friendly multi-utility support
- Real-time insight into water systems and usage
- Schedule actuation for a single valve or in batch
- Configurable rule sets for actuation and notification
- APIs integrate with CIS and billing software.

In addition to the operational efficiency created by using a cloud-based application to manage water services, organizations benefit further by connecting multiple applications. Configurability and interoperability are hallmarks of cloud-based applications. As defined by Amazon Web Services, an Application Programming Interface or API defines how applications communicate with each other using requests and responses. An API also provides directions and structure for developers who connect the two software platforms. APIs facilitate rapid and seamless integration within existing water utility environments. In the case of Aquana, the cloud-based application has successfully integrated with a variety of billing software applications to enable easier assessment of timing for remote shutoff due to non-payment. The Aquana app also works with Center for Internet Security (CIS) benchmarks that are internationally recognized cybersecurity standards.

## Advancements in Cloud-Based Water Utility Solutions

Moving forward, machine learning and artificial intelligent attributes will increase within cloud-based applications. This ML/AI infusion will leverage data analytics to begin inter-platform communication and drive real-time decisions. For example, the entire process of delivering water to a service location from monitoring, control, and billing will one day take place with fewer humans in the loop. Layered actions will improve efficiency. Meaning more than just detecting a leak, software, and hardware will work together to shut off the water, alert the service location, diagnose the cause of failure, and order repair and remediation all nearly instantaneously.

