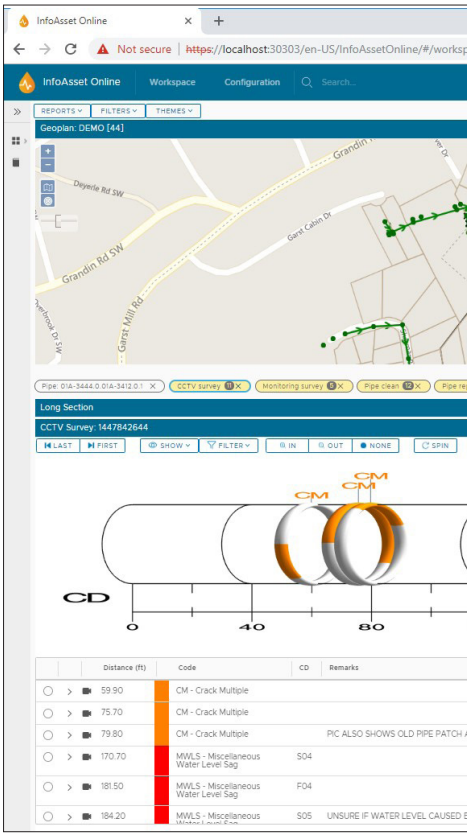
# SHARED SOLUTIONS

Innovyze is combining infrastructure asset data, real-time measurements and modelling results to help the water industry improve its performance.




Fortune: Integrating performance data and modelling results

The challenges and desired outcomes faced by the water industry have largely remained the same over time: effective service delivery, public safety and health security, resilient infrastructure, minimising costs, etcetera. What has changed is the ability to understand and respond to challenges and improve operations. That is where innovative software solutions from Innovyze have enabled massive advances in water infrastructure around the world.

The company's contribution to innovation in water infrastructure lies in creating digital twin technology, and its work in this area dates back more than 30 years. Essentially, a digital twin is a virtual model of the real world. Applying operational data to the digital twin means decision makers can simulate what would happen to a foul water or clean water network or in a catchment when conditions change.

Despite the phrase being relatively new, the concept of a "digital twin" is not. The water industry has been using digital twin technology for decades. What makes this focus especially innovative today is the realisation that digital twins that have previously been held in silos – water supply, wastewater, flood control, asset registries, etcetera – can and should be integrated. This gives utilities greater awareness of more than just their static networks. It provides insight into likely and actual operational performance in near real-time: insight that drives action.

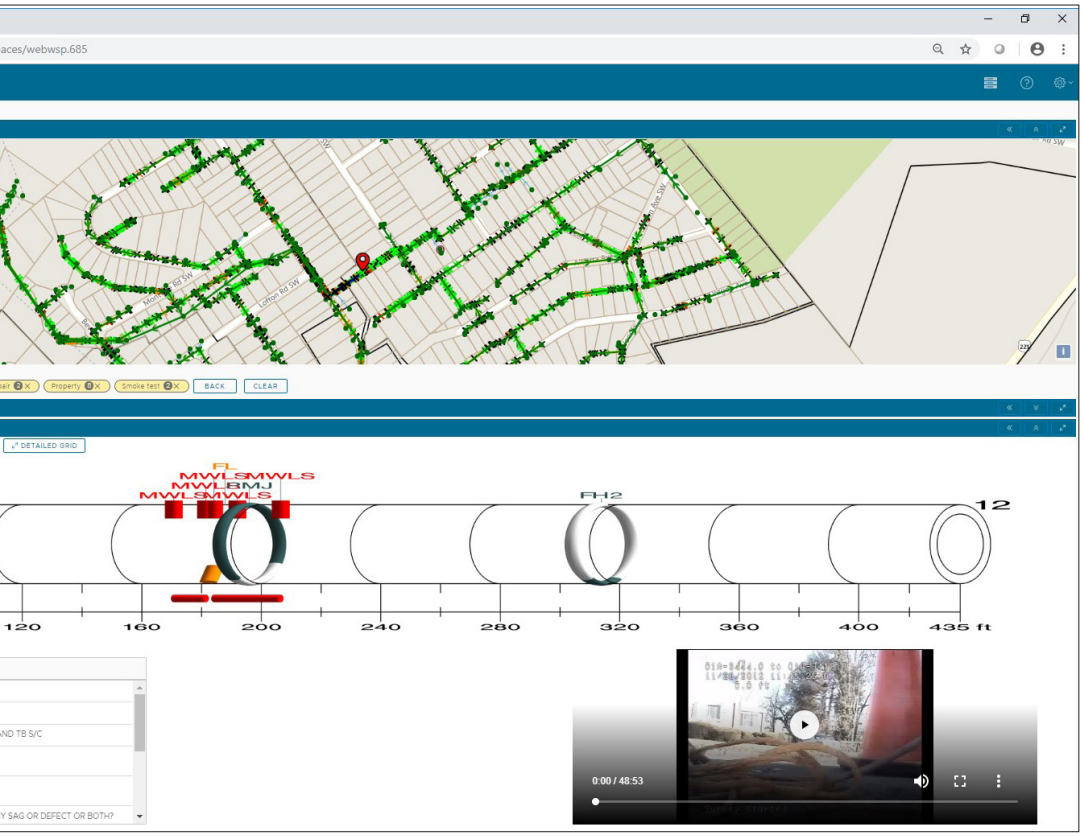
Innovyze's approach to integrated digital twin technology links asset management, modelling/simulation and real-world data streams, empowering professionals across diverse departments to make better forecasts, prioritise capital planning and optimise operations.

## Innovation in water infrastructure asset management

In November 2018, the company launched its latest innovation which it claims will better enable infrastructure asset management data sharing.

InfoAsset Online enables utilities to share the status of their water, wastewater and other assets – such as pipes, pumps, valves and drainage structures – with maintenance crews, contractors, planning departments, regulators and consultants.

Even non-specialist users can view, choose, filter and report on historic and current inspections and maintenance as well as the operational status of water and wastewater networks. Innovyze says this will enable utilities achieve immediate gains in efficiency and productivity as data and information that was traditionally held separately




in data silos becomes immediately available in the office or in the field through an easy-to-use web application.

The new product is the latest addition to the company's asset management solution, InfoAsset, which comprises asset planning, management and mobile tools. The data model embodied in InfoAsset Manager is essentially the water network's digital twin.

## Technology unleashes innovative thinking

With an eye to the future, the company is looking to enable the next logical steps in digital twin technology for the water industry: real-time event support, live operational optimisation and system forecasting using Internet of Things data streams.

Innovyze vice president of innovation David Fortune says: "We can do exciting things when we take data about the static network and apply performance data and modelling results to the digital twin. Integrating live data into the digital twin paints an even fuller picture that makes a big difference to operational, and even life-saving, decisions."

The company's integrated catchment modelling software – InfoWorks ICM and ICMLive – enables robust decision making and unleashes innovative thinking. The technology is widely used around the world. From forecasting storm and sewer surges to ensure the safety of workers during the construction of the Thames Tideway Tunnel, to informing operators of the "Smart Tunnel" the road tunnel that converts to a drain in certain conditions to protect large parts of Kuala Lumpur from flooding.

> **Turning data into information and information into decisions will accelerate improvements in the water industry**

The company's technology provided the hydraulic modelling solution for the Smart Tunnel, and its live modelling technology models real-time and forecast data to determine when to use the Smart Tunnel for traffic and when to close it to handle floodwater.

By combining comprehensive integrated catchment modelling capabilities with sophisticated real-time operational forecasting, early warning, and emergency management, water agencies and municipalities can make stronger, more informed decisions to protect people and communities.

## Meeting customer demands for water supply

Applying the same principles of offline and live digital twin models to water distribution, the company's water supply solutions, InfoWorks WS Pro and IWLive Pro power everyday operations, combining metered flows and pressures with detailed hydraulic models. Utilities in the UK, the Netherlands and Australia rely on the software to get a better understanding of how their distribution networks are performing in real time.

More and more utilities are starting to use these systems to predict whether they will be able to meet required service levels several days ahead. If adequate flows, pressures and water quality are at risk, operations managers can test the effectiveness of remedial action on the digital twin before putting the best option into practice.

## Using innovation to accelerate improvements

"Turning data into information and information into decisions will accelerate improvements in the water industry," says Fortune. "This will be powered by increased adoption of water infrastructure asset management, adoption of digital twin technology and analytics of real-world data."

Around the world, Innovyze technology is used to build reliable hydraulic models, design and manage water networks and provide answers to critical questions about leakage detection, flood risk analysis, and optimal maintenance and rehabilitation planning.