

# SENTIENT HUBS

## ENVIRONMENTAL DIGITAL TWIN

### SMART CITIES CASE STUDY

Sentient Hubs is reducing the cost of uncertainty. By augmenting big data with 'digital twins', Sentient Hubs can accurately predict the impact of external factors to support complex decision making in any scenario.

Sentient Hubs is a Perth-based data science company whose technology is built on 30 years of award-winning research and development at the University of Western Australia.

The company's software combines data from complex physical, digital and data systems to create a digital twin – a virtual model of a process, product or service. This model supports all levels of government, utilities, infrastructure and transport planners, and environmental consultants to address potential problems and undertake better planning.

The Public Utilities Board (PUB) of Singapore was looking for a way to manage and forecast water quality in the Marina Reservoir. The new waterfront required flood control and reliable water quality management, given the catchment's urban location and high level of pollutants.

PUB adopted Sentient Hubs technology, via the Australian Centre for Water Research and Singapore's Nanyang Technical University, to develop an integrated, real-time forecasting system for water quality. This enabled PUB to combine rainfall forecasting, catchment modelling/monitoring and reservoir hydrodynamics to produce a digital model.



Marina Bay, Singapore

The resulting virtual model allowed PUB to take necessary action in order to supply Singapore with 10 per cent of its ongoing water needs.

In Western Australia, 360 Environmental deployed Sentient Hubs' software for an environmental impact assessment for a new port development in Perth, based on three development scenarios and a number of specific impact targets.

The software enabled multiple complex data sets and variables to be overlaid, producing an integrated real-time meteorological, surface wave, hydrodynamic and ecological model. This virtual model helped 360 Environmental to secure government approval for the project.

Sentient Hubs can quickly localise and deliver projects globally. The company is looking to partner with in-market smart city consulting and IT-capable companies. Managing Director David Lucido can also provide training, consulting and expert speaker contributions to international conferences, government and commercial smart city project stakeholders.

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