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Cyber security

## Digital tech and Israeli water management

### David McClure

Contributor

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Australia and Israel are at once similar and different in the way they handle water management, but as digitisation disrupts water technology both countries must make their water systems more cyber resilient.

Israeli water management expert [Raanan Adin](#), who is chairman of the Israel Water Association and chief executive of water security and treatment consultancy [AH Water Consulting](#), says that the water management sector as a critical infrastructure has arrived late to digitisation - and all of the complexity that comes with it.

Mr Adin spoke on a Water Resilience and Innovation panel at the virtual Australia Israel Innovation Summit in October and gave an exclusive interview to InnovationAus following the event.

Both Australia and Israel are knowledge-driven when it comes to water management practices. In both countries Mr Adin said there is a lot of water management knowledge floating around, both in the public and private sectors.

“Starting from academies and research institutions and going through technological companies, consulting, planning and design. There is a lot of attention and awareness in government, regulators and environmental health authorities. Everybody is aligned around the fact that water is an important resource that needs to be well managed.”

The roots of Israel’s holistic approach to water management stem from the country’s first water laws, legislated in the 1950s, soon after Israel achieved statehood in 1948.

The very first Israeli water laws established a principle of measurement of a common asset, water. Mr Adin explained.

“The first water laws were set by our forefathers. Those water laws say that water belongs to the people, but its managed by the government. You can have a private well which is yours, but the water in the well is not yours, it belongs to the people.”

The very first water law set down in 1955 says all water supplied will be measured.

“Those were the foundations of the holistic management of water. We think that succeeded,” said Mr Adin, adding that water management is made easier by Israel’s relatively small size although the country’s often tense borders can be an issue.

“We do have other challenges, such as cross border and regional challenges,” Mr Adin said.

The main differences between Australia and Israel in water management lie in how water is used. Australia is much larger geographically, has a much larger and more distributed population and a number of water use cases that don’t exist in Israel, such as mining and other industrial uses.

As a panellist at the at the Australia Israel Innovation Summit, Mr Adin talked about the need to build more cyber resilience into water technology.

The water sector is entering the digital age later than many other critical infrastructure classes such as electricity, communications and transport.

“The result is the water sector is trying to a leap forward through generations of digitalisation,” said Mr Adin.

The risk is that [cyber security](#) gets left behind in this period of rapid digital advancement for water technologies.

“We’ve seen it in a much more severe way in the operational technologies. Talking with field engineers and programmers and asking them what type of [cyber security](#) measures they are taking, I often get answers such as we are okay, we’re on the internal network.”

“It’s not the system that needs to be addressed first. It’s the awareness and the understanding guiding the organisation. All that adds up to the characteristics of water. Water is a physical medium, and it flows in pipes. It flows in highly populated areas. This medium can carry toxic pathogens to large populations. In a cyberattack you can tamper with water quality and increase toxicants.

Mr Adin listed many methods a bad actor could compromise a country’s water supply by hacking into water management systems. The level of disinfectant could be reduced thus enabling a rise in pathogens. Wastewater collection could be disrupted causing it to overflow and damage property and public health.

“It takes time and resources in order to clean up and fully recover from these attacks,” Mr Adin said.

“Addressing the awareness problem around cyber resilience and water technology is a fundamental part of risk analysis and the holistic solution. This risk analysis needs to be done with water experts and service providers that understand the water systems.”