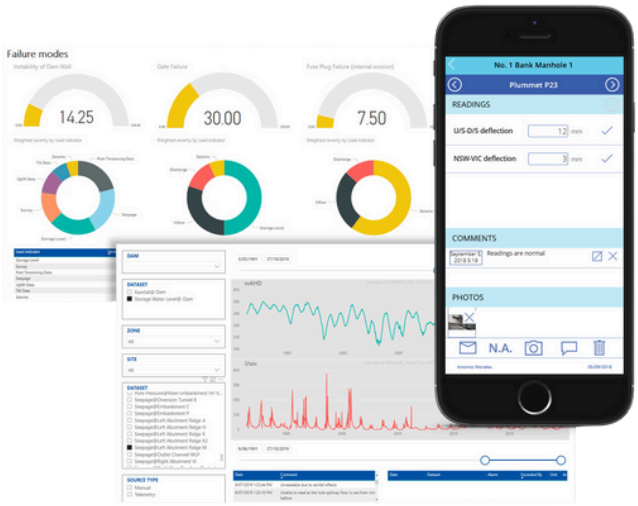
Case Study

DAMGUARD: ASSURING DAM SAFETY THROUGH HIGH QUALITY AND TIMELY DATA AND ANALYTICS

CHALLENGE

Monitoring dam safety was a complex and costly operation with relevant data such as leakage, movement, and pressure collected by several organisations and stored in multiple systems and spreadsheets.

Telemetry, manual inspections, survey, seismic, and weather data all have difference cadences of collection, processing logic and methods of analysis but all must be considered to gain an insight into the safety of a dam.



DamGuard multi-platform solution facilitates dam safety monitoring

ADASA'S SOLUTION

Adasa approach was to **unlock the value inherent in the data by bringing it together into a data lake**, automating data collection and quality assurance, building dashboards and alerts for rapid assessment and creating an analytical workbench for deeper modelling analysis.

DamGuard is a **mobile and cloud web-based solution that has replaced the written surveillance sheets**, capturing and storing in real or near real-time manual and SCADA information, allowing for immediate detection of events and generation of alarms.

DamGuard allows the time previously spent on correcting errors to be invested in the analysis.

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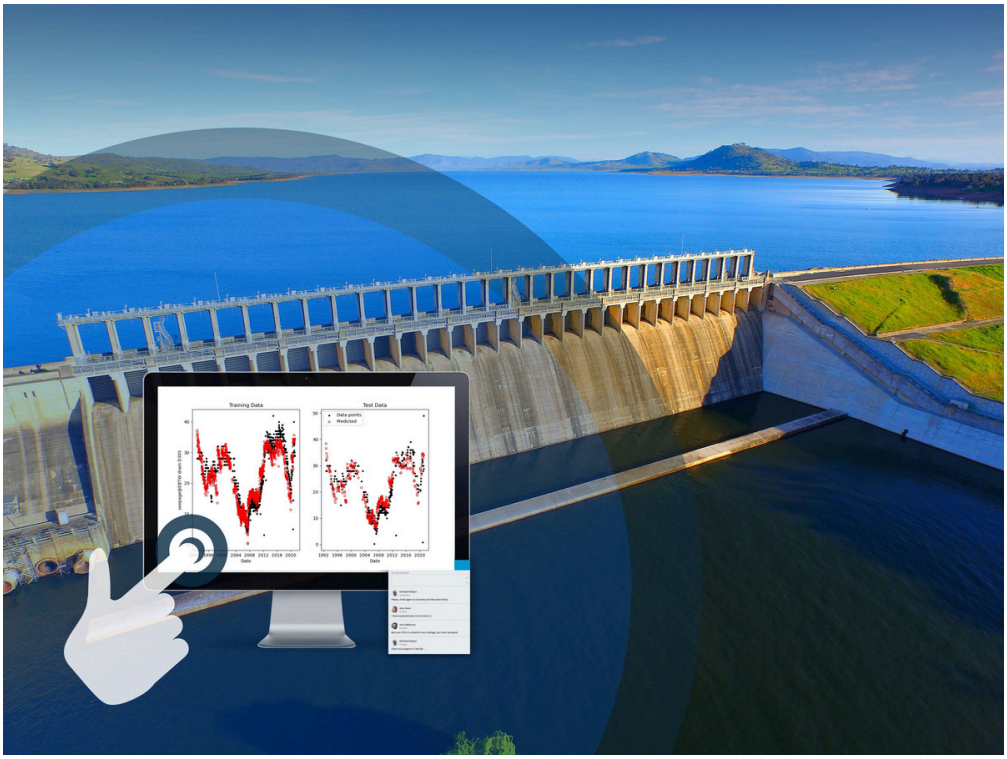

DamGuard provides risk-based insights from complex data analysis

The system also contains an advanced data analytics framework for the complex analysis required in the risk-informed dam safety management.

RESULT

Today, **data that might have taken six weeks to be considered** by an engineer can be viewed in minutes.

Paper collection of data **is replaced by an application running on smartphones.**

Time previously spent correcting errors, **is now spent in analysis**.

The analytical workbench **has opened a route to modelling and machine learning with the complete** set of historical and cross-referenced data.

Today, data, a resource that was complex and costly to use, is **the bedrock of a risk informed, data-driven decision support system for dam safety**.

A 15% reduction in life safety risk has been estimated and reported for a sample dam due the implementation of DamGuard (Australian National Committee on Large Dams, Proceedings of Technical Groups, 2020, Hench Wang et al).

CLIENT

Headquartered in Sydney, Australia, WaterNSW is responsible for supplying the bulk water needs for the 7.5 million inhabitants of the state of New South Wales.

Managing 42 dams, WaterNSW supplies two-thirds of water used in NSW and operates the largest surface and groundwater monitoring network in the southern hemisphere.

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