Digital Innovation Automates Water Asset, Cultural, and Environmental Risk Analysis

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South East Water (SEW) is a metropolitan water service provider in Melbourne, Australia. SEW has revolutionised the way we manage risk with the innovation of a digital platform that couples the expertise of water engineering, risk engineering, data science, asset management, and geospatial analytics. This innovation automates water asset, cultural, and environmental risk analysis in a real-time, sophisticated backend software architecture, and display the risk data in a user-friendly geospatial database with maps, and dashboards. This allows users to make informed decisions quickly and effectively to support planning, incident response, operations and maintenance.

The key benefit of our digital innovation is its ability to provide up-to-date information, by automatically recalculating risk using the underpinning algorithm as vast amount of input data changes. For example, changes in environmental and customer impact factors, or new asset information becoming available.

In the paper, we will share case studies that demonstrate the effectiveness of the digital platform in improving business operations, as well as the challenges we overcame in implementing this change. By using this innovation, SEW can identify potential risks and vulnerabilities across our asset base. This allows us to prioritise our investment to monitor and manage risks to mitigate prospective adverse impacts and customer disruptions.

Looking to the future, we are embarking on an innovation journey to further enhance the platform with artificial intelligence (AI) and machine learning to provide more accurate predictive risk assessments.

In summary, this digital innovation has benefited SEW in improving our risk management processes. Its data and analytics capabilities have been proven effective in reducing risk and improving decision-making processes. Further innovation is expected in the field of risk engineering coupling with AI and machine learning. Collaboration, communication, and ongoing training and support will continue to be crucial for success.