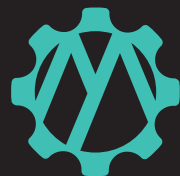# Maintenance Mobility Solution

Case Study

MECHANICAL
ROCK

The Client

The Client is one of Australia's largest resource companies, with a global portfolio in excess of $10 billion dollars.

They invest across their value chain to support operational excellence and reduce exploration, development and production costs. Operating a large number of sites around the world, the maintenance of these valuable assets consumes a sizable portion of the annual operating budget.

The Problem

Maintenance processes were paper based and complex which resulted in inefficiencies, duplication and bottlenecks as data was fed into core ERP systems. Optimising process flows was also difficult as feedback loops were so slow.

In order to drive efficiency and reduce costs, the Client was searching for a flexible and innovative technology solution to support their maintenance engineers in the field.

Our Approach

Mechanical Rock guided the Client through the product life cycle, from inception and build, to go-live and operation. We used a combination of User Experience Design (UXD) and DevOps techniques to rapidly iterate to a final product.
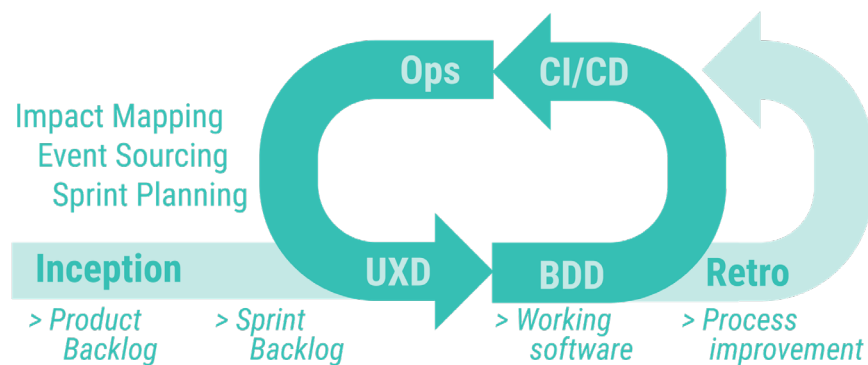
Definition and Inception

By applying a rigorous inception process, our Delivery Lead was able to help the Client evaluate technical and business options and select only those which would offer the best value. Workshops were then used iteratively to define features based on priority and value.

Build and Implementation

Working directly with users, Mechanical Rock's delivery team deployed the solution as a stream of continuous updates, tweaking the design as the applications went live in the field.

Our team even undertook several trips to site to work with maintenance engineers on-the-job, to better understand both the business process and the particular challenges that they face day-to-day.

Operation and Enhancement

From the moment the first application went live the team offered support – delivering enhancements and improvements to live production systems with zero downtime. Our use of specialist observability tools allowed us to monitor the integrated solution for cost, reliability and performance in real-time.

The Solution

Mechanical Rock delivered a maintenance mobility solution for engineers in the field which eliminated paper-based processes, improved productivity and allowed enhanced data capture, further reducing maintenance costs.

The solution was implemented as a "Progressive Web Application (PWA)" coupled to a serverless backend hosted on AWS.

Workforce Productivity

A Progressive Web Application is a web application developed to run on any browser, on any device – including mobiles, desktops and safety-rated tablets – to give the user the same smooth experience no matter where they are.

Offline Capability

The solution caches data for local use when on a remote site, synchronising with data sources when the network becomes available.

Efficient Serverless Backend

The cloud-based serverless backend integrates with corporate systems and is extremely cost effective and scalable, consuming resources only when in use. The backend caches ERP data including maintenance templates, timesheets and work orders for use on the front end.

Shared Data Stores

Further it allows ERP data to be enhanced with other media, like photos and videos, which are stored in the cloud.
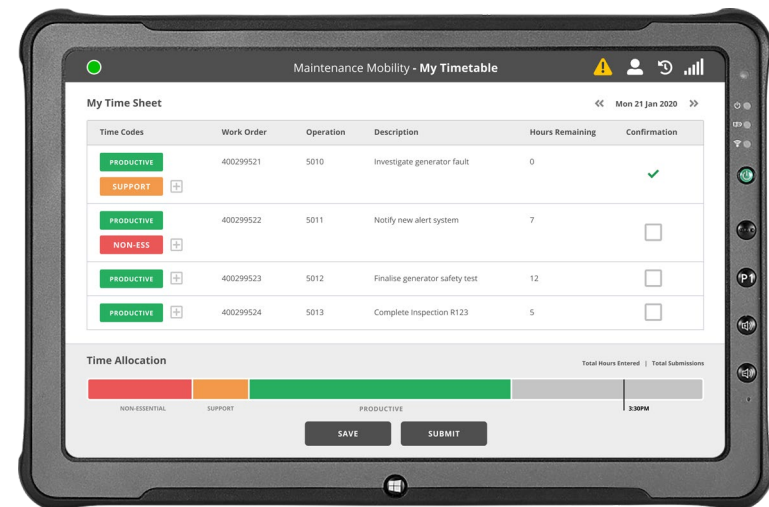
The Benefits

The solution is cost efficient and scalable and delivers significant improvements in the maintenance process – it reduced duplicate maintenance notifications by 70% alone.

The Mechanical Rock cloud-native design has significant benefits:

- A modern and easy-to-use interface via the Progressive Web App, even in the challenging ergonomic environment on-site.

- Access to native device hardware, including the camera, allows workers to capture images in the field and attach them to work artefacts.

- Dramatically lower total cost of ownership (TCO) as the solution automatically scales, up or down, to meet demand and has zero ongoing licence costs.

- Secure Single Sign-On (SSO) via the enterprise authentication platforms and encryption at rest and in-transit.

- Bulletproof reliability through 'everything-as-code' and rigorous test frameworks.

"With this solution we've been able to deliver on our vision of providing a simple and intuitive interface for our field-based technicians. This will lead to improved plant reliability & integrity (via consistent data quality) and increased productivity through the elimination of waste."

Maintenance Team Lead

Think we can help with your project?

Get in touch so we can chat about your plans over a coffee

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