Newcrest Mining: Setting the Gold Standard for Worker Safety and Productivity

One of the world’s largest gold producers, Newcrest Mining Limited is dedicated to maximum productivity and worker safety. But manual administrative processes required field supervisors to return to their desks for routine tasks. And a lack of insight into asset status made it hard to anticipate breakdowns. To provide real-time data and process access to the field, Newcrest needed mobile technology. To host and develop new apps, it chose SAP® Cloud Platform and SAP Cloud Platform Mobile Services.
Creating Safer, More Efficient Mining Operations with SAP® Cloud Platform

Before: Challenges and Opportunities
- Simplify business processes and increase productivity with mobile technology
- Improve safety management and access to controls and safety information
- Access back-office applications from the field, online or offline
- Get real-time visibility into transactions and data for better decision-making

Why SAP and Bourne Digital
- Secure cloud computing environment of SAP® Cloud Platform, including integration of data and business applications
- Fast, simple app development using SAP Cloud Platform Mobile Services
- Simple, consistent user experience (UX) across devices with UI5 using SAP Fiori® UX
- App development and UX design expertise of Bourne Digital Pty Ltd.

After: Value-Driven Results
- Ability to complete administrative tasks from the field – saving time and improving productivity
- Reduction in unplanned outages, costly equipment downtime, and safety hazards
- Smoother, safer, more efficient shutdown process
- Optimized inventory and warehouse processes

"Our mobile apps on SAP Cloud Platform help us keep staff in the field, away from their desks. They allow proactive equipment monitoring to avoid costly repairs, unplanned downtime, and safety risks."

Gavin Wood, Chief Information and Digital Officer, Newcrest Mining Limited

~105,000 hours ~36,000
Saved each year Mobile transactions per month

Newcrest Mining Limited
Melbourne, Australia
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Industry
Mining
Products and Services
Gold and copper

Featured Solutions
SAP Cloud Platform and SAP Cloud Platform Mobile Services
Nothing represents value, beauty, and stability like gold. One of the most sought-after metals, it is integral to many industries, from finance to high tech, healthcare, and consumer products. As one of the world’s largest producers of gold, Newcrest Mining Limited is dedicated to safe, responsible, efficient, and profitable mining that benefits workers, their communities, shareholders, and customers.

Newcrest operates multiple gold and copper mines and has a strong pipeline of exploration projects – all supported by a large on-site workforce. But the company’s legacy IT systems weren’t able to keep up with Newcrest’s expanding business. Supervisors in the field had to return to their desks to complete manual, paper-based administrative tasks, leading to communication delays and errors. There was also little insight into equipment status, making asset monitoring difficult and resulting in unplanned outages and costly repairs.

It was high time to empower field personnel with mobile solutions so they could complete warehouse management and back-office tasks more quickly and efficiently. Newcrest also needed to shift from break-fix mode to proactive and predictive maintenance scheduling and start providing managers with real-time access to critical control and safety information. Not only would this lead to greater productivity and lower costs, but it would increase worker safety.
Teaming Up on Three Major App Development Projects

Newcrest deployed SAP® Cloud Platform and uses SAP Cloud Platform Mobile Services to build SAP Fiori® apps for regional mining sites, including the Cadia and Telfer mines. It uses SAPUI5, the SAP Fiori Cloud user experience, and offline capabilities to enable remote use. Working with SAP partner Bourne Digital Pty Ltd., Newcrest created 36 mobile apps that make work easier and more efficient.

The Fix This app, built using SAP Cloud Platform SDK for iOS, applies machine learning to images taken in the field. An asset is identified with machine vision (similar to facial recognition). With speech-to-text functionality, the operator can explain the issue verbally. Text analysis identifies key words and prioritizes the problem, which is sent for maintenance scheduling.

Mine shutdowns require a large temporary workforce, most of whom are unfamiliar with the mine. Running on the SAP HANA® database, the MyTelfer app gives shutdown contractors site maps, contact details, and safety information. Uses for MyTelfer beyond shutdowns have been identified.

Warehouse Management Mobility is a collection of 12 apps running on handheld bar-coding devices and integrated with the SAP Extended Warehouse Management application. Twenty-three other apps provide employee and manager self-service access to processes in SAP applications from any mobile device.*

Newcrest is using the SAP Cloud Platform Portal service to build a custom-designed site and a Web site with the SAP Fiori launchpad.

*See the appendix for a graphic representation of Newcrest’s SAP solution landscape architecture.
Setting the **Gold Standard** for Mining Operations

By harnessing the mobile capabilities of SAP Cloud Platform, Newcrest apps increase safety and productivity for better mining operations:

- **Fix This:** Reduces unplanned outages, equipment downtime, and safety hazards by speeding identification and communication of equipment issues
- **MyTelfer:** Sends shutdown workers the information they need in real time, greatly improving the shutdown process and reducing risk of safety incidences
- **Warehouse Management Mobility:** Optimizes inventory and warehouse processes and improves lead time for parts suppliers – reducing the risk of unplanned outages
- **Self-service apps:** Allows field supervisors to perform back-office tasks on-site, boosting productivity

With 3,500 users, the benefits of mobile technology to Newcrest and its workforce are clear. Each month, approximately 6,600 work orders are accessed and 35,000 transactions are executed from remote sites.

The company saves roughly 105,000 person-hours per year by increasing the time supervisors spend in the field – not to mention the cost savings and improved data quality of going green with automated, paperless processes. Plus, by integrating data from SAP and non-SAP applications, users have a unified experience across laptops, tablets, and mobile devices.

Finally – and arguably most important – getting safety information about critical controls in real time means that mine sites and workers are safer than ever before.
SAP Solution Architecture at Newcrest Mining

Newcrest apps run on SAP Cloud Platform, using SAP Cloud Platform Mobile Services and the SAP Cloud Platform Identity Authentication service. Built with SAPUI5, the SAP Fiori Cloud UX, and SAP Cloud Platform Portal, they are accessed with the SAP Fiori launchpad. Data is in SAP HANA. A cloud connector and SAP Gateway technology connect them with SAP Business Suite software.

External network (Internet)
- SAP Cloud Platform
  - SAP Cloud Platform Mobile Services
  - SAP Cloud Platform Portal
  - Applications built with SAPUI5
  - OData services
  - RFC
  - DMZ
  - ADFS

Newcrest network (on premise)
- SAP ERP
- SAP Business Suite
- OData services
- SAP Access Control
- SAP Cloud Portal
- SAP Fiori apps and content
- Trust
- Corporate identity provider – Newcrest ADFS

Figure: Connecting Newcrest Mobile Apps with the Broader SAP Software Landscape

1. RFC = Remote Function Call
2. DMZ = Demilitarized zone
3. ADFS = Active Directory Federation Services